July 15, 2019

10220         CAG         IEEE 802.11n (IHT Muxed, 25 Mbps, 81-OAM)         WLAN         8.12         ± 9.6 %.           10221         CAG         IEEE 802.11n (IHT Muxed, 15 Mbps, 81-OAM)         WLAN         8.02         ± 9.6 %.           10223         CAG         IEEE 802.11n (IHT Muxed, 15 Mbps, 81-OAM)         WLAN         8.48         ± 9.6 %.           10224         CAG         IEEE 802.11n (IHT Muxed, 150 Mbps, 64-OAM)         WLAN         8.49         ± 9.6 %.           10225         CAB         IHTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-OAM)         ILTE-TDD         9.4 ± 9.6 %.           10226         CAA         IHTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-OAM)         ILTE-TDD         9.4 ± 9.6 %.           10226         CAA         IHTE-TDD (SC-FDMA, 1 RB, 3.MHz, 16-OAM)         ILTE-TDD         9.4 ± 9.6 %.           10230         CAC         IHTE-TDD (SC-FDMA, 1 RB, 3.MHz, 16-OAM)         ILTE-TDD         9.1 ± 9.6 %.           10231         CAF         IHTE-TDD (SC-FDMA, 1 RB, 3.MHz, 16-OAM)         ILTE-TDD         9.2 ± 9.6 %.           10232         CAF         IHTE-TDD (SC-FDMA, 1 RB, 3.MHz, 16-OAM)         IHTE-TDD         9.2 ± 9.6 %.           10234         CAF         IHTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-OAM)         IHTE-TDD         9.2 ± 9.6 %.           10234	40000			1 1 4 1 4 1 1	0.10	
10222         CAC         IEEE 802.11n (HT Mixed, 15 Mbps, 16-OAM)         WLAN         8.46         ± 9.6 %.           10233         CAC         IEEE 802.11n (HT Mixed, 150 Mbps, 16-OAM)         WLAN         8.47         ± 9.6 %.           10226         CAB         UMTS-FDD (ISC-FDM, 1 RB, 14 MHz, 16-OAM)         ITE-TDD (9.27 FDM, 1 RB, 14 MHz, 16-OAM)         ITE-TDD (9.27 FDM, 1 RB, 14 MHz, 07-OAM)         ITE-TDD (9.28 ± 9.6 %.           10226         CAA         ITE-TDD (9.27 FDM, 1 RB, 14 MHz, 07-OAM)         ITE-TDD (9.28 ± 9.6 %.         10.28 ± 9.6 %.           10228         CAA         ITE-TDD (9.27 FDM, 1 RB, 14 MHz, 07-OAM)         ITE-TDD (9.28 ± 9.6 %.         10.28 ± 9.6 %.           10228         CAC         ITE-TDD (9.27 FDM, 1 RB, 3 MHz, 16-OAM)         ITE-TDD (9.28 ± 9.6 %.         10.28 ± 9.6 %.           10231         CAC         ITE-TDD (9.27 FDM, 1 RB, 5 MHz, 16-OAM)         ITE-TDD (9.28 ± 9.6 %.         10.28 ± 9.6 %.           10232         CAF         ITE-TDD (9.27 FDM, 1 RB, 5 MHz, 16-OAM)         ITE-TDD (9.24 ± 9.6 %.         10.28 ± 9.6 %.           10233         CAF         ITE-TDD (9.26 FDM, 1 RB, 16 MHz, 0-OAM)         ITE-TDD (9.22 ± 9.6 %.         10.28 ± 9.6 %.           10234         CAF         ITE-TDD (9.27 FDM, 1 RB, 16 MHz, 0-OAM)         ITE-TDD (9.24 ± 9.6 %.         10.28 ± 9.6 %.         10.28 ± 9.6 %. <t< td=""><td>10220</td><td>CAC</td><td>IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)</td><td>WLAN</td><td>8.13</td><td>± 9.6 %</td></t<>	10220	CAC	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10223         CAC         IEEE 802.11n (HT Mixed, 90 Mbps, 16-OAM)         WLAN         8.08         ± 9.6 %           10224         CAC         IEEE 802.11n (HT Mixed, 90 Mbps, 64-OAM)         WLOBMA         5.07         ± 9.6 %           10226         CAB         UMTS-PD (HSPA4)         WLOBMA         5.97         ± 9.6 %           10226         CAA         LTE-TDD (SC-FDMA, 1 RB, 14 MHz, 64-OAM)         LTE-TDD         9.49         ± 9.6 %           10227         CAA         LTE-TDD (SC-FDMA, 1 RB, 14 MHz, 64-OAM)         LTE-TDD         9.22         ± 9.6 %           10228         CAA         LTE-TDD (SC-FDMA, 1 RB, 14 MHz, 64-OAM)         LTE-TDD         9.24         ± 9.6 %           10230         CAC         LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-OAM)         LTE-TDD         9.28         ± 9.6 %           10231         CAC         LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-OAM)         LTE-TDD         9.21         ± 9.6 %           10232         CAF         LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-OAM)         LTE-TDD         9.21         ± 9.6 %           10235         CAF         LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-OAM)         LTE-TDD         9.21         ± 9.6 %           10236         CAF         LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 20-SAM)         LTE-TDD         9.22 </td <td>·</td> <td></td> <td></td> <td></td> <td></td> <td></td>	·					
10224         CAC         IEEE 802.110 (PT Mixed, 150 Mbps, 64-0AM)         WLAN         8.08         19.6 %           10225         CAA         LTE-TDD (SC-PDMA, 1R8, 1.4 MHz, 16-0AM)         LTE-TDD         9.6 %           10226         CAA         LTE-TDD (SC-PDMA, 1R8, 1.4 MHz, 0F-0AM)         LTE-TDD         9.28           10226         CAA         LTE-TDD (SC-PDMA, 1R8, 1.4 MHz, 0F-0AM)         LTE-TDD         9.42         9.8 %           10228         CAA         LTE-TDD (SC-PDMA, 1R8, 1.4 MHz, 0F-0AM)         LTE-TDD         9.42         9.8 %           10229         CAC         LTE-TDD (SC-PDMA, 1R8, 1.4 MHz, 0F-0AM)         LTE-TDD         9.42         9.8 %           10231         CAC         LTE-TDD (SC-PDMA, 1R8, 1.4 Hz, 0P-SK)         LTE-TDD         9.42         9.8 %           10232         CAF         LTE-TDD (SC-PDMA, 1R8, 0.4 Hz, 0AM)         LTE-TDD         9.25         9.8 %           10233         CAF         LTE-TDD (SC-PDMA, 1R8, 10.4 Hz, 0AM)         LTE-TDD         9.25         9.6 %           10234         CAF         LTE-TDD (SC-PDMA, 1R8, 10.4 Hz, 16-OAM)         LTE-TDD         9.25         9.6 %           10235         CAF         LTE-TDD (SC-PDMA, 1R8, 10.4 Hz, 16-OAM)         LTE-TDD         9.25         9.6 %						
10226         CAB         UMIS-FDD (H\$PA+)         VCDMA         5.97         ±9.6 %           10227         CAA         LTE-TDD (SC+FDMA, 1 RB, 14 MHz, 64-GAM)         LTE-TDD (0.26         ±9.6 %           10228         CAA         LTE-TDD (SC+FDMA, 1 RB, 14 MHz, 64-GAM)         LTE-TDD (0.26         ±9.6 %           10228         CAC         LTE-TDD (SC+FDMA, 1 RB, 3 MHz, 16-GAM)         LTE-TDD (0.26         ±9.6 %           10230         CAC         LTE-TDD (SC+FDMA, 1 RB, 3 MHz, 64-GAM)         LTE-TDD (0.27         ±9.6 %           10231         CAC         LTE-TDD (SC+FDMA, 1 RB, 5 MHz, 0FGAM)         LTE-TDD (0.27         ±9.6 %           10232         CAF         LTE-TDD (SC+FDMA, 1 RB, 5 MHz, 0FGAM)         LTE-TDD (0.27         ±9.6 %           10234         CAF         LTE-TDD (SC+FDMA, 1 RB, 10 MHz, 4-GAM)         LTE-TDD (0.27         ±9.6 %           10236         CAF         LTE-TDD (SC+FDMA, 1 RB, 10 MHz, 4-GAM)         LTE-TDD (0.26         ±9.6 %           10238         CAF         LTE-TDD (SC+FDMA, 1 RB, 10 MHz, 4-GAM)         LTE-TDD (0.26         ±9.6 %           10238         CAF         LTE-TDD (SC+FDMA, 1 RB, 10 MHz, 4-GAM)         LTE-TDD (0.26         ±9.6 %           10242         CAA         LTE-TDD (SC+FDMA, 1 RB, 10 MHz, 6+GAM)         LTE-TDD (0.26 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
10226         CAA         LTE-TDD (SC-FDMA, 1 RB, 14 MHz, 46-CAM)         LTE-TDD (D, 26         9.49         ± 9.6 %.           10228         CAA         LTE-TDD (SC-FDMA, 1 RB, 14 MHz, 4C-ACAM)         LTE-TDD (D, 26         ± 9.6 %.           10228         CAC         LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-CAM)         LTE-TDD (D, 25         ± 9.6 %.           10231         CAC         LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-CAM)         LTE-TDD (D, 25         ± 9.6 %.           10232         CAF         LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 26-CAM)         LTE-TDD (D, 25         ± 9.6 %.           10232         CAF         LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 20-CAM)         LTE-TDD (D, 25         ± 9.6 %.           10233         CAF         LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 20-CAM)         LTE-TDD (D, 25         ± 9.6 %.           10236         CAF         LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 20-CAM)         LTE-TDD (D, 25         ± 9.6 %.           10237         CAF         LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 20-CAM)         LTE-TDD (D, 25         ± 9.6 %.           10238         CAF         LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 26-CAM)         LTE-TDD (D, 25         ± 9.6 %.           10238         CAF         LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 26-CAM)         LTE-TDD (D, 25         ± 9.6 %.           10240         CAA         LTE						
10227         CAA         LTE-TDD         IO.26         ± 9.6 %           10228         CAC         LTE-TDD         SC-FDMA, 18R, 3 MHz, 16-QAM)         LTE-TDD         9.42         ± 9.6 %           10230         CAC         LTE-TDD         SC-FDMA, 18R, 3 MHz, 16-QAM)         LTE-TDD         9.48         ± 9.6 %           10231         CAC         LTE-TDD         SC-FDMA, 18R, 3 MHz, 16-QAM)         LTE-TDD         9.48         ± 9.6 %           10232         CAF         LTE-TDD         SC-FDMA, 18R, 5 MHz, 16-QAM)         LTE-TDD         9.48         ± 9.6 %           10234         CAF         LTE-TDD         SC-FDMA, 18R, 5 MHz, 16-QAM)         LTE-TDD         9.21         ± 9.6 %           10236         CAF         LTE-TDD [SC-FDMA, 18R, 10 MHz, 16-QAM)         LTE-TDD         9.21         ± 9.6 %           10238         CAF         LTE-TDD [SC-FDMA, 18R, 10 MHz, 16-QAM)         LTE-TDD         9.21         ± 9.6 %           10240         CAF         LTE-TDD [SC-FDMA, 18R, 16 MHz, 16-QAM)         LTE-TDD         9.21         ± 9.6 %           10241         CAA         LTE-TDD [SC-FDMA, 18R, 16 MHz, 2FSA)         LTE-TDD         9.21         ± 9.6 %           10242         CAA         LTE-TDD [SC-FDMA, 50% RB, 14 MHz, 16-QAM)						
10228         CAA         LTE-TDD         9.22         ± 9.6 %.           10229         CAC         LTE-TDD         GAC         LTE-TDD         9.42         ± 9.6 %.           10230         CAC         LTE-TDD         GAC         LTE-TDD         9.6 %.           10231         CAC         LTE-TDD         GSC-FDMA, 1RB, 3 MHz, 64-OAM)         LTE-TDD         9.48         ± 9.6 %.           10232         CAF         LTE-TDD (SC-FDMA, 1RB, 5 MHz, 64-OAM)         LTE-TDD         9.48         ± 9.6 %.           10234         CAF         LTE-TDD (SC-FDMA, 1RB, 5 MHz, 64-OAM)         LTE-TDD         9.21         ± 9.6 %.           10235         CAF         LTE-TDD (SC-FDMA, 1RB, 10 MHz, 46-OAM)         LTE-TDD         9.24         ± 9.6 %.           10236         CAF         LTE-TDD (SC-FDMA, 1RB, 10 MHz, 46-OAM)         LTE-TDD         9.24         ± 9.6 %.           10237         CAF         LTE-TDD (SC-FDMA, 1RB, 16 MHz, 26-SGN)         LTE-TDD         9.24         ± 9.6 %.           10238         CAF         LTE-TDD (SC-FDMA, 178, 16 MHz, 26-SGN)         LTE-TDD         9.24         ± 9.6 %.           10240         CAF         LTE-TDD (SC-FDMA, 50%, RB, 14 MHz, 64-OAM)         LTE-TDD         9.24         ± 9.6 %.						
10220         CAC         LTE-TDD         9.48         ± 9.6 %.           10230         CAC         LTE-TDD         0.25 C+PDMA, 1RB, 3 MHz, 64-OAM)         LTE-TDD         10.25         ± 9.6 %.           10231         CAC         LTE-TDD         0.5C FPDMA, 1RB, 5 MHz, 16-OAM)         LTE-TDD         9.48         ± 9.6 %.           10232         CAF         LTE-TDD         0.5C FPDMA, 1RB, 5 MHz, 20-CAM)         LTE-TDD         9.48         ± 9.6 %.           10234         CAF         LTE-TDD (SC-FDMA, 1RB, 5 MHz, 20-SK)         LTE-TDD         9.48         ± 9.6 %.           10236         CAF         LTE-TDD (SC-FDMA, 1RB, 10 MHz, 40-CAM)         LTE-TDD         9.48         ± 9.6 %.           10236         CAF         LTE-TDD (SC-FDMA, 1RB, 10 MHz, 40-CAM)         LTE-TDD         9.48         ± 9.6 %.           10236         CAF         LTE-TDD (SC-FDMA, 1RB, 15 MHz, 40-CAM)         LTE-TDD         9.48         ± 9.6 %.           10242         CAA         LTE-TDD (SC-FDMA, 1RB, 15 MHz, 40-CAM)         LTE-TDD         9.48         ± 9.6 %.           10242         CAA         LTE-TDD (SC-FDMA, 50%, NB, 1.4 MHz, 40-CAM)         LTE-TDD         9.48         ± 9.6 %.           10244         CAA         LTE-TDD (SC-FDMA, 50%, NB, 1.4 MHz, 40-CAM)				1		
10230         CAC         LTE-TDD         10.25         ± ± 9.6 %           10231         CAC         LTE-TDD         SC-PEMA, 1.RB, 3 MHz, 20-PSK)         LTE-TDD         9.48         ± 9.6 %           10232         CAF         LTE-TDD         SC-PEMA, 1.RB, 5 MHz, 40-CAM)         LTE-TDD         9.48         ± 9.6 %           10235         CAF         LTE-TDD         SC-PEMA, 1.RB, 5 MHz, 40-CAM)         LTE-TDD         9.21         ± 9.6 %           10236         CAF         LTE-TDD (SC-FDMA, 1.RB, 10 MHz, 0F-GAM)         LTE-TDD         9.21         ± 9.6 %           10236         CAF         LTE-TDD (SC-FDMA, 1.RB, 10 MHz, 0F-GAM)         LTE-TDD         9.21         ± 9.6 %           10236         CAF         LTE-TDD (SC-FDMA, 1.RB, 10 MHz, 0F-SM)         LTE-TDD         9.24         ± 9.6 %           10236         CAF         LTE-TDD (SC-FDMA, 1.RB, 10 MHz, 0F-SM)         LTE-TDD         9.24         ± 9.6 %           10240         CAF         LTE-TDD (SC-FDMA, 1.RB, 16 MHz, 0F-SN)         LTE-TDD         9.22         ± 9.6 %           10241         CAA         LTE-TDD (SC-FDMA, 50% RB, 14 MHz, 4-GAM)         LTE-TDD         9.06 ± 9.6 %           10242         CAA         LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)         LTE-TDD         9.06						
10231         CAC         LTE-TDD         9:19         ± 9:6 %           10232         CAF         LTE-TDD         9:48         ± 9:6 %           10234         CAF         LTE-TDD         10:25         ± 9:6 %           10234         CAF         LTE-TDD         10:25         ± 9:6 %           10235         CAF         LTE-TDD         10:25         ± 9:6 %           10236         CAF         LTE-TDD         10:25         ± 9:6 %           10236         CAF         LTE-TDD (SC-FDMA, 1:R8, 10 MHz, 16-QAM)         LTE-TDD         9:21         ± 9:6 %           10237         CAF         LTE-TDD (SC-FDMA, 1:R8, 10 MHz, 16-QAM)         LTE-TDD         9:24         ± 9:6 %           10238         CAF         LTE-TDD (SC-FDMA, 1:R8, 10 MHz, 64-QAM)         LTE-TDD         9:24         ± 9:8 %           10241         CAA         LTE-TDD (SC-FDMA, 1:R8, 1:MHz, 4:GAM)         LTE-TDD         9:24         ± 9:8 %           10242         CAA         LTE-TDD (SC-FDMA, 1:R4, 1:Ma, 1:GAMA)         LTE-TDD         9:24         ± 9:8 %           10242         CAA         LTE-TDD (SC-FDMA, 50% R8, 1:MHz, 4:GAM)         LTE-TDD         9:48         ± 9:8 %           10242         CAA         LTE-TDD (SC-FDMA,						
10232         CAF         LTE-TDD         9:68         ± 9:6 %           10233         CAF         LTE-TDD         10:05 C-FDMA, 1RB, 5 MHz, 64-CAM)         LTE-TDD         9:21         ± 9:6 %           10234         CAF         LTE-TDD (SC-FDMA, 1RB, 5 MHz, 64-CAM)         LTE-TDD         9:21         ± 9:6 %           10235         CAF         LTE-TDD (SC-FDMA, 1RB, 10 MHz, 64-CAM)         LTE-TDD         9:21         ± 9:6 %           10236         CAF         LTE-TDD (SC-FDMA, 1RB, 10 MHz, 64-CAM)         LTE-TDD         9:48         ± 9:6 %           10237         CAF         LTE-TDD (SC-FDMA, 1RB, 15 MHz, 64-CAM)         LTE-TDD         9:48         ± 9:6 %           10240         CAF         LTE-TDD (SC-FDMA, 1RB, 15 MHz, 64-CAM)         LTE-TDD         9:48         ± 9:6 %           10241         CAA         LTE-TDD (SC-FDMA, 90% RB, 14 MHz, 64-CAM)         LTE-TDD         9:46         ± 9:6 %           10242         CAA         LTE-TDD (SC-FDMA, 90% RB, 3 MHz, 64-CAM)         LTE-TDD         9:46         ± 9:6 %           10244         CAC         LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-CAM)         LTE-TDD         9:06         ± 9:6 %           10245         CAC         LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-CAM)         LTE-TDD         9:06 ± 9:6 % <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
10233         CAF         LTE-TDD         10.25         ± 9.6 %           10234         CAF         LTE-TDD         9.26 %         ± 9.6 %           10235         CAF         LTE-TDD         10.26 / ± 9.6 %         ± 9.6 %           10236         CAF         LTE-TDD         10.26 / ± 9.6 %         LTE-TDD         9.48 / ± 9.6 %           10236         CAF         LTE-TDD         10.26 / ± 9.6 %         LTE-TDD         9.41 / ± 9.6 %           10236         CAF         LTE-TDD         10.26 / ± 9.6 %         LTE-TDD         9.43 / ± 9.6 %           10236         CAF         LTE-TDD         10.26 / ± 9.6 %         LTE-TDD         9.43 / ± 9.6 %           10240         CAA         LTE-TDD (SC-FDMA, 178, 16 MHz, G+OAM)         LTE-TDD         9.42 / ± 9.6 %           10241         CAA         LTE-TDD (SC-FDMA, 50% RB, 14 Hz, G+OAM)         LTE-TDD         9.46 / ± 9.6 %           10242         CAA         LTE-TDD (SC-FDMA, 50% RB, 3 Hz, G+OAM)         LTE-TDD         9.46 / ± 9.6 %           10242         CAA         LTE-TDD (SC-FDMA, 50% RB, 3 Hz, G+OAM)         LTE-TDD         9.46 / ± 9.6 %           10246         CAC         LTE-TDD (SC-FDMA, 50% RB, 3 Hz, G+OAM)         LTE-TDD         9.00 / ± 9.6 %           10246						
10234         CAF         LTE-TDD         9.21         ±9.6 %           10235         CAF         LTE-TDD         9.26         ±9.6 %           10236         CAF         LTE-TDD         10.25         ±9.6 %           10237         CAF         LTE-TDD         10.25         ±9.6 %           10238         CAF         LTE-TDD         10.25         ±9.6 %           10238         CAF         LTE-TDD         10.25         ±9.6 %           10239         CAF         LTE-TDD         10.25         ±9.6 %           10240         CAF         LTE-TDD         10.25         ±9.6 %           10241         CAA         LTE-TDD         10.25         ±9.6 %           10242         CAA         LTE-TDD         10.25         ±9.6 %           10242         CAA         LTE-TDD         10.26         ±9.6 %           10243         CAA         LTE-TDD         10.26         ±9.8 %           10244         CAC         LTE-TDD         10.6 ±9.8 %         ±9.8 %           10245         CAC         LTE-TDD         10.6 ±9.8 %         ±9.6 %           10246         CAF         LTE-TDD         10.6 ±9.8 %         ±9.6 %		1	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)			
19235         CAF         LTE-TDD         9.48         ±9.6 %           19236         CAF         LTE-TDD         10.25         ±9.6 %           19237         CAF         LTE-TDD         10.25         ±9.6 %           19238         CAF         LTE-TDD         10.25         ±9.6 %           19238         CAF         LTE-TDD         10.25         ±9.6 %           19239         CAF         LTE-TDD         10.25         ±9.6 %           19240         CAF         LTE-TDD         10.25         ±9.6 %           19241         CAA         LTE-TDD         10.25         ±9.6 %           19242         CAA         LTE-TDD         10.25         ±9.6 %           19243         CAA         LTE-TDD         10.26         ±9.6 %           19244         CAC         LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)         LTE-TDD         10.06         ±9.6 %           19245         CAC         LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)         LTE-TDD         10.06         ±9.6 %           19246         CAC         LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)         LTE-TDD         10.09         ±9.6 %           19246         CAF         LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)         L						
10236         CAF         LTE-TDD         10.25         ± 9.6 %           10237         CAF         LTE-TDD         (95C-FDMA, 1 RB, 10 MHz, 0PSK)         LTE-TDD         9.21         ± 9.6 %           10238         CAF         LTE-TDD         (95C-FDMA, 1 RB, 15 MHz, 16-GAM)         LTE-TDD         9.48         ± 9.6 %           10240         CAF         LTE-TDD         (95C-FDMA, 1 RB, 15 MHz, 04-QAM)         LTE-TDD         9.21         ± 9.6 %           10241         CAA         LTE-TDD         (95C-FDMA, 50% RB, 1.4 MHz, 04-QAM)         LTE-TDD         9.82         ± 9.8 %           10242         CAA         LTE-TDD         (95C-FDMA, 50% RB, 1.4 MHz, 04-QAM)         LTE-TDD         9.48         ± 9.8 %           10242         CAA         LTE-TDD         (95C-FDMA, 50% RB, 3 MHz, 16-QAM)         LTE-TDD         10.06         ± 9.8 %           10244         CAC         LTE-TDD (95C-FDMA, 50% RB, 5 MHz, 16-QAM)         LTE-TDD         10.06         ± 9.8 %           10246         CAC         LTE-TDD (95C-FDMA, 50% RB, 5 MHz, 16-QAM)         LTE-TDD         10.09         ± 9.6 %           10247         CAF         LTE-TDD (95C-FDMA, 50% RB, 5 MHz, 16-QAM)         LTE-TDD         10.09         ± 9.6 %           10244         CAF						
10237         CAF         LTE-TDD (SC-FDMA, 1 RB, 10 MHz, GPSK)         LTE-TDD         9.21         ± 9.6 %           10239         CAF         LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)         LTE-TDD         9.42         ± 9.6 %           10240         CAF         LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)         LTE-TDD         9.21         ± 9.6 %           10241         CAA         LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)         LTE-TDD         9.82         ± 9.6 %           10242         CAA         LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)         LTE-TDD         9.86         ± 9.6 %           10243         CAA         LTE-TDD (SC-FDMA, 50% RB, 3.4 MHz, QPSK)         LTE-TDD         9.46         ± 9.8 %           10244         CAC         LTE-TDD (SC-FDMA, 50% RB, 3.4 MHz, QPSK)         LTE-TDD         10.06         ± 9.8 %           10245         CAC         LTE-TDD (SC-FDMA, 50% RB, 3.4 MHz, QPSK)         LTE-TDD         10.06         ± 9.8 %           10246         CAC         LTE-TDD (SC-FDMA, 50% RB, 5.4 MHz, QPSK)         LTE-TDD         10.06         ± 9.6 %           10246         CAF         LTE-TDD (SC-FDMA, 50% RB, 5.4 MHz, QPSK)         LTE-TDD         9.0 ± 9.6 %           10246         CAF         LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)         LTE-TDD		£				
10238         CAF         LTE-TDD         SC-FDMA, 1 RB, 15 MHz, 16-QAM)         LTE-TDD         9.48         ± 9.6 %           10239         CAF         LTE-TDD         ISC-FDMA, 108, 15 MHz, 04-QAM)         LTE-TDD         9.21         ± 9.6 %           10241         CAA         LTE-TDD         ISC-FDMA, 50% RB, 14 MHz, 16-QAM)         LTE-TDD         9.82         ± 9.6 %           10242         CAA         LTE-TDD [SC-FDMA, 50% RB, 14 MHz, 64-QAM)         LTE-TDD         9.86         ± 9.6 %           10243         CAA         LTE-TDD [SC-FDMA, 50% RB, 31 MHz, 16-QAM)         LTE-TDD         10.06         ± 9.6 %           10244         CAC         LTE-TDD [SC-FDMA, 50% RB, 3 MHz, QPSK)         LTE-TDD         10.06         ± 9.6 %           10245         CAC         LTE-TDD [SC-FDMA, 50% RB, 5 MHz, QPSK)         LTE-TDD         9.30         ± 9.6 %           10246         CAC         LTE-TDD [SC-FDMA, 50% RB, 5 MHz, QPSK)         LTE-TDD         9.31         ± 9.6 %           10247         CAF         LTE-TDD [SC-FDMA, 50% RB, 5 MHz, QPSK)         LTE-TDD         9.81         ± 9.6 %           10248         CAF         LTE-TDD [SC-FDMA, 50% RB, 10 MHz, 16-QAM)         LTE-TDD         9.81         ± 9.6 %           10250         CAF         LTE-						
10239         CAF         LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)         LTE-TDD         10.26         ± 9.6 %           10240         CAA         LTE-TDD (SC-FDMA, 50% RB, 14 MHz, 16-QAM)         LTE-TDD         9.82         ± 9.6 %           10241         CAA         LTE-TDD (SC-FDMA, 50% RB, 14 MHz, 16-QAM)         LTE-TDD         9.86         ± 9.6 %           10242         CAA         LTE-TDD (SC-FDMA, 50% RB, 14 MHz, 42-QAM)         LTE-TDD         9.86         ± 9.6 %           10244         CAC         LTE-TDD (SC-FDMA, 50% RB, 81 MHz, 42-QAM)         LTE-TDD         10.06         ± 9.6 %           10245         CAC         LTE-TDD (SC-FDMA, 50% RB, 81 MHz, 42-QAM)         LTE-TDD         9.30         ± 9.6 %           10246         CAC         LTE-TDD (SC-FDMA, 50% RB, 81 MHz, 64-QAM)         LTE-TDD         9.91         ± 8.6 %           10248         CAF         LTE-TDD (SC-FDMA, 50% RB, 81 MHz, 64-QAM)         LTE-TDD         9.29         ± 9.6 %           10250         CAF         LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)         LTE-TDD         9.24         ± 9.6 %           10251         CAF         LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)         LTE-TDD         9.24         ± 9.6 %           10252         CAF         LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QA		1				
10240         CAF         LTE-TDD         SC-EDMA, 50% RB, 14 MHz, 16-OAM)         LTE-TDD         9.21         ± 9.6 %           10241         CAA         LTE-TDD (SC-EDMA, 50% RB, 14 MHz, 16-OAM)         LTE-TDD         9.86 ± 9.6 %           10242         CAA         LTE-TDD (SC-EDMA, 50% RB, 14 MHz, 16-OAM)         LTE-TDD         9.46 ± 9.6 %           10243         CAC         LTE-TDD (SC-EDMA, 50% RB, 31 MHz, 16-OAM)         LTE-TDD         9.46 ± 9.6 %           10244         CAC         LTE-TDD (SC-EDMA, 50% RB, 31 MHz, 04-OAM)         LTE-TDD         10.06 ± 9.6 %           10245         CAC         LTE-TDD (SC-EDMA, 50% RB, 31 MHz, 04-OAM)         LTE-TDD         9.30 ± 9.6 %           10246         CAC         LTE-TDD (SC-EDMA, 50% RB, 5 MHz, 04-OAM)         LTE-TDD         9.91 ± 9.6 %           10248         CAF         LTE-TDD (SC-EDMA, 50% RB, 5 MHz, 04-OAM)         LTE-TDD         9.29 ± 9.6 %           10251         CAF         LTE-TDD (SC-EDMA, 50% RB, 10 MHz, 04-OAM)         LTE-TDD         9.24 ± 9.6 %           10252         CAF         LTE-TDD (SC-EDMA, 50% RB, 10 MHz, 04-OAM)         LTE-TDD         9.4 ± 9.6 %           10252         CAF         LTE-TDD (SC-EDMA, 50% RB, 15 MHz, 04-OAM)         LTE-TDD         9.4 ± 9.6 %           10253         CAF         LT		1				
10241         CAA         LTE-TDD         9.82         ± 9.6 %           10242         CAA         LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-OAM)         LTE-TDD         9.86         ± 9.6 %           10243         CAA         LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-OAM)         LTE-TDD         9.46         ± 9.6 %           10244         CAC         LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-OAM)         LTE-TDD         10.06         ± 9.6 %           10245         CAC         LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-OAM)         LTE-TDD         9.30         ± 9.6 %           10247         CAC         LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-OAM)         LTE-TDD         9.29         ± 9.6 %           10248         CAF         LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-OAM)         LTE-TDD         9.29         ± 9.6 %           10250         CAF         LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-OAM)         LTE-TDD         9.21         ± 9.6 %           10253         CAF         LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-OAM)         LTE-TDD         9.04         ± 9.6 %           10253         CAF         LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-OAM)         LTE-TDD         9.04         ± 9.6 %           10254         CAF         LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-OAM)         LTE-TDD         9.06 %						
10242         CAA         LTE-TDD         9.86         ± 9.6 %           10243         CAA         LTE-TDD         SC-FDMA, 50% RB, 14 MHz, QPSK)         LTE-TDD         9.46         ± 9.6 %           10244         CAC         LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)         LTE-TDD         10.06         ± 9.6 %           10245         CAC         LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)         LTE-TDD         9.30         ± 9.6 %           10246         CAC         LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)         LTE-TDD         9.30         ± 9.6 %           10248         CAF         LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)         LTE-TDD         9.29         ± 9.6 %           10249         CAF         LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 40-QAM)         LTE-TDD         9.21         ± 9.6 %           10251         CAF         LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 40-QAM)         LTE-TDD         10.17         ± 9.6 %           10252         CAF         LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 40-QAM)         LTE-TDD         10.17         ± 9.6 %           10253         CAF         LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 40-QAM)         LTE-TDD         9.0 ± 9.6 %           10254         CAF         LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)         LTE-TDD         9.0 ± 9.6 %		1				
10244         CAC         LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)         LTE-TDD         10.06         ± 9.6 %           10245         CAC         LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 04-QAM)         LTE-TDD         9.08         ± 9.6 %           10247         CAF         LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)         LTE-TDD         9.91         ± 9.6 %           10248         CAF         LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)         LTE-TDD         9.91         ± 9.6 %           10249         CAF         LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 04-QAM)         LTE-TDD         9.29         ± 9.6 %           10250         CAF         LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 04-QAM)         LTE-TDD         9.81         ± 9.6 %           10251         CAF         LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 04-QAM)         LTE-TDD         9.04         ± 9.6 %           10253         CAF         LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 0FSK)         LTE-TDD         9.04         ± 9.6 %           10254         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 0FSK)         LTE-TDD         9.04         ± 9.6 %           10255         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 0FSK)         LTE-TDD         9.04         ± 9.6 %           10256         CAA         LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 0FSK)	10242	CAA		LTE-TDD	9.86	
10244         CAC         LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)         LTE-TDD         10.06         ± 9.6 %           10245         CAC         LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 04-QAM)         LTE-TDD         9.30         ± 9.6 %           10247         CAF         LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)         LTE-TDD         9.91         ± 9.6 %           10248         CAF         LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)         LTE-TDD         9.29         ± 9.6 %           10249         CAF         LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)         LTE-TDD         9.81         ± 9.6 %           10251         CAF         LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)         LTE-TDD         9.01         ± 9.6 %           10251         CAF         LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)         LTE-TDD         10.17         ± 9.6 %           10254         CAF         LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 20-SK)         LTE-TDD         9.0 ± 9.6 %           10255         CAF         LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 20-SK)         LTE-TDD         9.0 ± 9.6 %           10256         CAF         LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 40-QAM)         LTE-TDD         9.0 ± 9.6 %           10256         CAF         LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 40-QAM)         LTE-TDD         9.0 ± 9.6 %<		CAA		LTE-TDD	9.46	
10245         CAC         LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)         LTE-TDD         10.06         ± 9.6 %           10246         CAC         LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)         LTE-TDD         9.30         ± 9.6 %           10247         CAF         LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)         LTE-TDD         9.91         ± 9.6 %           10248         CAF         LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)         LTE-TDD         9.29         ± 9.6 %           10250         CAF         LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)         LTE-TDD         9.21         ± 9.6 %           10251         CAF         LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)         LTE-TDD         9.24         ± 9.6 %           10252         CAF         LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 20PSK)         LTE-TDD         9.24         ± 9.6 %           10254         CAF         LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 46-QAM)         LTE-TDD         9.04         ± 9.6 %           10255         CAF         LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 40-QAM)         LTE-TDD         9.04         ± 9.6 %           10256         CAA         LTE-TDD (SC-FDMA, 100% RB, 14 MHz, QPSK)         LTE-TDD         9.04         ± 9.6 %           10257         CAA         LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)         <		CAC		LTE-TDD	10.06	±9.6 %
10247         CAF         LTE-TDD         9:01         ± 9:6 %           10248         CAF         LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)         LTE-TDD         10.09         ± 9:6 %           10249         CAF         LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)         LTE-TDD         9.29         ± 9:6 %           10250         CAF         LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)         LTE-TDD         9.81         ± 9:6 %           10251         CAF         LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 04-QAM)         LTE-TDD         10.17         ± 9:6 %           10252         CAF         LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 04-QAM)         LTE-TDD         9.01         ± 9:6 %           10254         CAF         LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 04-QAM)         LTE-TDD         10.114         ± 9:6 %           10255         CAF         LTE-TDD (SC-FDMA, 50% RB, 14 MHz, 04-QAM)         LTE-TDD         9.01         ± 9:6 %           10256         CAA         LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 04-QAM)         LTE-TDD         9.02         ± 9:6 %           10257         CAA         LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 04-QAM)         LTE-TDD         9.08         ± 9:6 %           10260         CAC         LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 04-QAM)         LTE-TDD         9:8 ± 9:6		CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-TDD	10.06	
10248       CAF       LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)       LTE-TDD       10.09       ±9.6 %         10249       CAF       LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)       LTE-TDD       9.29       ±9.6 %         10250       CAF       LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)       LTE-TDD       9.81       ±9.6 %         10251       CAF       LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)       LTE-TDD       9.01       ±9.6 %         10252       CAF       LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)       LTE-TDD       9.02       ±9.6 %         10253       CAF       LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)       LTE-TDD       10.14       ±9.6 %         10255       CAF       LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 16-QAM)       LTE-TDD       9.20       ±9.6 %         10256       CAA       LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 16-QAM)       LTE-TDD       9.20       ±9.6 %         10257       CAA       LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 16-QAM)       LTE-TDD       10.08       ±9.6 %         10258       CAA       LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)       LTE-TDD       9.34       ±9.6 %         10259       CAC       LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)       LTE-TDD       9.34       ±9.6 %         10260 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td></t<>						
10249         CAF         LTE-TDD         9.29         ± 9.6 %           10250         CAF         LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)         LTE-TDD         9.81         ± 9.6 %           10251         CAF         LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)         LTE-TDD         9.24         ± 9.6 %           10252         CAF         LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)         LTE-TDD         9.04         ± 9.6 %           10254         CAF         LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 46-QAM)         LTE-TDD         10.14         ± 9.6 %           10255         CAF         LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)         LTE-TDD         10.14         ± 9.6 %           10256         CAA         LTE-TDD (SC-FDMA, 100% RB, 14 MHz, QPSK)         LTE-TDD         9.06         ± 9.6 %           10257         CAA         LTE-TDD (SC-FDMA, 100% RB, 14 MHz, QPSK)         LTE-TDD         9.08         ± 9.6 %           10258         CAA         LTE-TDD (SC-FDMA, 100% RB, 14 MHz, QPSK)         LTE-TDD         9.94         ± 9.6 %           10260         CAC         LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 46-QAM)         LTE-TDD         9.93         ± 9.6 %           10261         CAC         LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)         LTE-TDD         9.94 & ± 9.6 %					9.91	
10250         CAF         LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)         LTE-TDD         9.81         ± 9.6 %           10251         CAF         LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)         LTE-TDD         10.17         ± 9.6 %           10252         CAF         LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)         LTE-TDD         9.24         ± 9.6 %           10253         CAF         LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)         LTE-TDD         9.01         ± 9.6 %           10254         CAF         LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)         LTE-TDD         9.20         ± 9.6 %           10255         CAF         LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)         LTE-TDD         9.96 ± 9.6 %           10256         CAA         LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)         LTE-TDD         9.34 ± 9.6 %           10258         CAC         LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)         LTE-TDD         9.34 ± 9.6 %           10260         CAC         LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)         LTE-TDD         9.97 ± 9.6 %           10261         CAC         LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)         LTE-TDD         9.24 ± 9.6 %           10263         CAF         LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)         LTE-TDD         9.23 ± 9.6 %			LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)			
10251         CAF         LTE-TDD [SC-FDMA, 50% RB, 10 MHz, 64-QAM)         LTE-TDD         10.17         ± 9.6 %           10252         CAF         LTE-TDD [SC-FDMA, 50% RB, 15 MHz, QPSK)         LTE-TDD         9.24         ± 9.6 %           10253         CAF         LTE-TDD [SC-FDMA, 50% RB, 15 MHz, 16-QAM)         LTE-TDD         9.04         ± 9.6 %           10254         CAF         LTE-TDD [SC-FDMA, 50% RB, 15 MHz, QPSK)         LTE-TDD         9.02         ± 9.6 %           10255         CAA         LTE-TDD [SC-FDMA, 100% RB, 14 MHz, QPSK)         LTE-TDD         9.06         ± 9.6 %           10256         CAA         LTE-TDD [SC-FDMA, 100% RB, 14 MHz, 16-QAM)         LTE-TDD         9.04         ± 9.6 %           10257         CAA         LTE-TDD [SC-FDMA, 100% RB, 14 MHz, 16-QAM)         LTE-TDD         9.34         ± 9.6 %           10259         CAC         LTE-TDD [SC-FDMA, 100% RB, 3 MHz, 16-QAM)         LTE-TDD         9.98         ± 9.6 %           10260         CAC         LTE-TDD [SC-FDMA, 100% RB, 3 MHz, QPSK)         LTE-TDD         9.24         ± 9.6 %           10261         CAC         LTE-TDD [SC-FDMA, 100% RB, 5 MHz, QPSK)         LTE-TDD         9.24         ± 9.6 %           10262         CAF         LTE-TDD [SC-FDMA, 100% RB, 5 MHz, QPSK)			LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)			
10252         CAF         LTE-TDD         SC-FDMA, 50% RB, 10 MHz, QPSK)         LTE-TDD         9.24         ± 9.6 %           10253         CAF         LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)         LTE-TDD         9.01         ± 9.6 %           10254         CAF         LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)         LTE-TDD         9.02         ± 9.6 %           10255         CAF         LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)         LTE-TDD         9.06         ± 9.6 %           10256         CAA         LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)         LTE-TDD         9.34         ± 9.6 %           10258         CAA         LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)         LTE-TDD         9.34         ± 9.6 %           10259         CAC         LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)         LTE-TDD         9.97         ± 9.6 %           10261         CAC         LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)         LTE-TDD         9.24         ± 9.6 %           10262         CAF         LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)         LTE-TDD         9.24         ± 9.6 %           10263         CAF         LTE-TDD (SC-FDMA, 100% RB, 5 MHz, GPAM)         LTE-TDD         9.24         ± 9.6 %           10264         CAF         LTE-TDD (SC-FDMA, 100% RB,						
10253       CAF       LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)       LTE-TDD       9.90       ± 9.6 %         10254       CAF       LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)       LTE-TDD       9.20       ± 9.6 %         10256       CAF       LTE-TDD (SC-FDMA, 100% RB, 14 MHz, QPSK)       LTE-TDD       9.20       ± 9.6 %         10256       CAA       LTE-TDD (SC-FDMA, 100% RB, 14 MHz, QPSK)       LTE-TDD       9.90       ± 9.6 %         10257       CAA       LTE-TDD (SC-FDMA, 100% RB, 14 MHz, QPSK)       LTE-TDD       9.34       ± 9.6 %         10258       CAA       LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 46-QAM)       LTE-TDD       9.98       ± 9.6 %         10259       CAC       LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 46-QAM)       LTE-TDD       9.98       ± 9.6 %         10260       CAC       LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)       LTE-TDD       9.97       ± 9.6 %         10261       CAC       LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)       LTE-TDD       9.83       ± 9.6 %         10262       CAF       LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)       LTE-TDD       9.24       ± 9.6 %         10263       CAF       LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)       LTE-TDD       9.24       ± 9.6 %         10264 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td></t<>						
10254       CAF       LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)       LTE-TDD       10.14       ± 9.6 %         10255       CAA       LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)       LTE-TDD       9.20       ± 9.6 %         10256       CAA       LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)       LTE-TDD       9.96       ± 9.6 %         10257       CAA       LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 04-QAM)       LTE-TDD       9.98       ± 9.6 %         10258       CAA       LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)       LTE-TDD       9.98       ± 9.6 %         10260       CAC       LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)       LTE-TDD       9.98       ± 9.6 %         10261       CAC       LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)       LTE-TDD       9.97       ± 9.6 %         10262       CAF       LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)       LTE-TDD       9.83       ± 9.6 %         10263       CAF       LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)       LTE-TDD       9.33       ± 9.6 %         10264       CAF       LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)       LTE-TDD       9.23       ± 9.6 %         10265       CAF       LTE-TDD (SC-FDMA, 100% RB, 10 MHz, G4-QAM)       LTE-TDD       9.02       ± 9.6 %         10266 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td></td<>						
10255         CAF         LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)         LTE-TDD         9.20         ± 9.6 %           10256         CAA         LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)         LTE-TDD         9.96         ± 9.6 %           10257         CAA         LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)         LTE-TDD         9.96         ± 9.6 %           10258         CAA         LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)         LTE-TDD         9.38         ± 9.6 %           10259         CAC         LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)         LTE-TDD         9.97         ± 9.6 %           10260         CAC         LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)         LTE-TDD         9.97         ± 9.6 %           10261         CAC         LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 04-QAM)         LTE-TDD         9.24         ± 9.6 %           10262         CAF         LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 04-QAM)         LTE-TDD         9.23         ± 9.6 %           10263         CAF         LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 0FAQM)         LTE-TDD         9.23         ± 9.6 %           10264         CAF         LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)         LTE-TDD         9.02         ± 9.6 %           10266         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz,						***************
10256       CAA       LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)       LTE-TDD       9.96       ± 9.6 %         10257       CAA       LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)       LTE-TDD       10.08       ± 9.6 %         10258       CAA       LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)       LTE-TDD       9.34       ± 9.6 %         10269       CAC       LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)       LTE-TDD       9.97       ± 9.6 %         10260       CAC       LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)       LTE-TDD       9.97       ± 9.6 %         10261       CAC       LTE-TDD (SC-FDMA, 100% RB, 3 MHz, G4-QAM)       LTE-TDD       9.83       ± 9.6 %         10262       CAF       LTE-TDD (SC-FDMA, 100% RB, 5 MHz, G4-QAM)       LTE-TDD       9.83       ± 9.6 %         10263       CAF       LTE-TDD (SC-FDMA, 100% RB, 5 MHz, G4-QAM)       LTE-TDD       9.23       ± 9.6 %         10264       CAF       LTE-TDD (SC-FDMA, 100% RB, 10 MHz, G4-QAM)       LTE-TDD       9.02       ± 9.6 %         10265       CAF       LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)       LTE-TDD       10.07       ± 9.6 %         10266       CAF       LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)       LTE-TDD       10.06       ± 9.6 %         10266						
10257       CAA       LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)       LTE-TDD       10.08       ± 9.6 %         10258       CAA       LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)       LTE-TDD       9.34       ± 9.6 %         10259       CAC       LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)       LTE-TDD       9.97       ± 9.6 %         10260       CAC       LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 4-QAM)       LTE-TDD       9.97       ± 9.6 %         10261       CAC       LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)       LTE-TDD       9.24       ± 9.6 %         10262       CAF       LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)       LTE-TDD       9.23       ± 9.6 %         10263       CAF       LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)       LTE-TDD       10.16       ± 9.6 %         10264       CAF       LTE-TDD (SC-FDMA, 100% RB, 10 MHz, G4-QAM)       LTE-TDD       9.23       ± 9.6 %         10265       CAF       LTE-TDD (SC-FDMA, 100% RB, 10 MHz, G4-QAM)       LTE-TDD       9.02       ± 9.6 %         10266       CAF       LTE-TDD (SC-FDMA, 100% RB, 10 MHz, G4-QAM)       LTE-TDD       9.00       ± 9.6 %         10268       CAF       LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)       LTE-TDD       10.06       ± 9.6 %         10268		1				
10258         CAA         LTE-TDD         9.34         ± 9.6 %           10259         CAC         LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)         LTE-TDD         9.98         ± 9.6 %           10260         CAC         LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)         LTE-TDD         9.97         ± 9.6 %           10261         CAC         LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 2PSK)         LTE-TDD         9.24         ± 9.6 %           10262         CAF         LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)         LTE-TDD         9.24         ± 9.6 %           10263         CAF         LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 0F-QAM)         LTE-TDD         9.24         ± 9.6 %           10264         CAF         LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 0F-QAM)         LTE-TDD         9.24         ± 9.6 %           10265         CAF         LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)         LTE-TDD         9.23         ± 9.6 %           10266         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)         LTE-TDD         9.01         ± 9.6 %           10267         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)         LTE-TDD         10.07         ± 9.6 %           10268         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)         LTE-TDD         10.06						
10259         CAC         LTE-TDD         SO: 4 : 0.0          LTE-TDD         9.98         ± 9.6 %           10260         CAC         LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)         LTE-TDD         9.97         ± 9.6 %           10261         CAC         LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)         LTE-TDD         9.24         ± 9.6 %           10262         CAF         LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)         LTE-TDD         9.23         ± 9.6 %           10264         CAF         LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)         LTE-TDD         9.23         ± 9.6 %           10265         CAF         LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)         LTE-TDD         9.22         ± 9.6 %           10266         CAF         LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)         LTE-TDD         9.30         ± 9.6 %           10267         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 0F-QAM)         LTE-TDD         10.07         ± 9.6 %           10268         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 0F-QAM)         LTE-TDD         10.06         ± 9.6 %           10269         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 0F-QAM)         LTE-TDD         10.13         ± 9.6 %           10270         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 0F		1				
10260         CAC         LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)         LTE-TDD         9.97         ± 9.6 %           10261         CAC         LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)         LTE-TDD         9.24         ± 9.6 %           10262         CAF         LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)         LTE-TDD         9.23         ± 9.6 %           10263         CAF         LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)         LTE-TDD         9.23         ± 9.6 %           10264         CAF         LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)         LTE-TDD         9.23         ± 9.6 %           10265         CAF         LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)         LTE-TDD         9.23         ± 9.6 %           10266         CAF         LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)         LTE-TDD         9.30         ± 9.6 %           10267         CAF         LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)         LTE-TDD         10.07         ± 9.6 %           10268         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, GPSK)         LTE-TDD         10.13         ± 9.6 %           10270         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)         LTE-TDD         10.13         ± 9.6 %           10274         CAB         UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.1						
10261       CAC       LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)       LTE-TDD       9.24       ± 9.6 %         10262       CAF       LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)       LTE-TDD       9.83       ± 9.6 %         10263       CAF       LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)       LTE-TDD       9.23       ± 9.6 %         10264       CAF       LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)       LTE-TDD       9.23       ± 9.6 %         10265       CAF       LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)       LTE-TDD       9.92       ± 9.6 %         10266       CAF       LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)       LTE-TDD       10.07       ± 9.6 %         10267       CAF       LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)       LTE-TDD       9.30       ± 9.6 %         10268       CAF       LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)       LTE-TDD       10.06       ± 9.6 %         10269       CAF       LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)       LTE-TDD       10.13       ± 9.6 %         10270       CAF       LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)       LTE-TDD       9.58       ± 9.6 %         10275       CAB       UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)       WCDMA       4.87       ± 9.6 %         10277						
10262         CAF         LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)         LTE-TDD         9.83         ± 9.6 %           10263         CAF         LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)         LTE-TDD         10.16         ± 9.6 %           10264         CAF         LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)         LTE-TDD         9.23         ± 9.6 %           10265         CAF         LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)         LTE-TDD         9.92         ± 9.6 %           10266         CAF         LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)         LTE-TDD         9.02         ± 9.6 %           10267         CAF         LTE-TDD (SC-FDMA, 100% RB, 10 MHz, d4-QAM)         LTE-TDD         9.30         ± 9.6 %           10268         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 0FQAM)         LTE-TDD         9.30         ± 9.6 %           10269         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 0FQAM)         LTE-TDD         10.13         ± 9.6 %           10270         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)         LTE-TDD         9.58         ± 9.6 %           10274         CAB         UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)         WCDMA         4.87         ± 9.6 %           10275         CAB         UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4						
10263         CAF         LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)         LTE-TDD         10.16         ± 9.6 %           10264         CAF         LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)         LTE-TDD         9.23         ± 9.6 %           10265         CAF         LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)         LTE-TDD         9.92         ± 9.6 %           10266         CAF         LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)         LTE-TDD         10.07         ± 9.6 %           10268         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)         LTE-TDD         9.30         ± 9.6 %           10269         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)         LTE-TDD         10.06         ± 9.6 %           10270         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)         LTE-TDD         10.13         ± 9.6 %           10274         CAB         UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)         WCDMA         4.87         ± 9.6 %           10275         CAB         UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)         WCDMA         3.96         ± 9.6 %           10276         CAA         PHS (QPSK)         PHS         11.81         ± 9.6 %           10276         CAA         PHS (QPSK, BW 884MHz, Rolloff 0.5)         PHS			LIE-IDD (SC-FDMA, 100% KD, 3 MHZ, QFSK)			
10264         CAF         LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)         LTE-TDD         9.23         ± 9.6 %           10265         CAF         LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)         LTE-TDD         9.92         ± 9.6 %           10266         CAF         LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)         LTE-TDD         10.07         ± 9.6 %           10267         CAF         LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)         LTE-TDD         9.30         ± 9.6 %           10268         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)         LTE-TDD         10.06         ± 9.6 %           10269         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)         LTE-TDD         10.13         ± 9.6 %           10270         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)         LTE-TDD         9.58         ± 9.6 %           10274         CAB         UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)         WCDMA         4.87         ± 9.6 %           10277         CAA         PHS (QPSK)         PHS         11.81         ± 9.6 %           10278         CAA         PHS (QPSK, BW 884MHz, Rolloff 0.5)         PHS         11.81         ± 9.6 %           10290         AAB         CDMA2000, RC1, SO55, Full Rate         CDMA2000         3.91 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
10265         CAF         LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)         LTE-TDD         9.92         ± 9.6 %           10266         CAF         LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)         LTE-TDD         10.07         ± 9.6 %           10267         CAF         LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)         LTE-TDD         9.30         ± 9.6 %           10268         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)         LTE-TDD         10.06         ± 9.6 %           10269         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)         LTE-TDD         10.13         ± 9.6 %           10270         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)         LTE-TDD         9.58         ± 9.6 %           10274         CAB         UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)         WCDMA         4.87         ± 9.6 %           10275         CAB         UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)         WCDMA         3.96         ± 9.6 %           10277         CAA         PHS (QPSK)         PHS         11.81         ± 9.6 %           10278         CAA         PHS (QPSK, BW 884MHz, Rolloff 0.5)         PHS         11.81         ± 9.6 %           10290         AAB         CDMA2000, RC1, SO55, Full Rate         CDMA2000         3.91	}					
10266         CAF         LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)         LTE-TDD         10.07         ± 9.6 %           10267         CAF         LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)         LTE-TDD         9.30         ± 9.6 %           10268         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)         LTE-TDD         10.06         ± 9.6 %           10269         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)         LTE-TDD         10.13         ± 9.6 %           10270         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)         LTE-TDD         9.58         ± 9.6 %           10270         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)         LTE-TDD         9.58         ± 9.6 %           10274         CAB         UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)         WCDMA         4.87         ± 9.6 %           10275         CAB         UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)         WCDMA         3.96         ± 9.6 %           10277         CAA         PHS (QPSK)         PHS         11.81         ± 9.6 %           10278         CAA         PHS (QPSK, BW 884MHz, Rolloff 0.5)         PHS         11.81         ± 9.6 %           10290         AAB         CDMA2000, RC1, SO55, Full Rate         CDMA2000         3.91						
10267CAFLTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)LTE-TDD9.30± 9.6 %10268CAFLTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)LTE-TDD10.06± 9.6 %10269CAFLTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)LTE-TDD10.13± 9.6 %10270CAFLTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)LTE-TDD9.58± 9.6 %10270CAFLTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)LTE-TDD9.58± 9.6 %10274CABUMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)WCDMA4.87± 9.6 %10275CABUMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)WCDMA3.96± 9.6 %10277CAAPHS (QPSK)PHS11.81± 9.6 %10278CAAPHS (QPSK, BW 884MHz, Rolloff 0.5)PHS11.81± 9.6 %10290AABCDMA2000, RC1, SO55, Full RateCDMA20003.91± 9.6 %10291AABCDMA2000, RC3, SO32, Full RateCDMA20003.39± 9.6 %10292AABCDMA2000, RC3, SO32, Full RateCDMA20003.50± 9.6 %10293AABCDMA2000, RC3, SO3, Full RateCDMA20003.50± 9.6 %10295AABCDMA2000, RC1, SO3, 1/8th Rate 25 fr.CDMA20003.50± 9.6 %10297AADLTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)LTE-FDD5.81± 9.6 %10298AADLTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)LTE-FDD5.72± 9.6 %						
10268         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)         LTE-TDD         10.06         ± 9.6 %           10269         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)         LTE-TDD         10.13         ± 9.6 %           10270         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)         LTE-TDD         9.58         ± 9.6 %           10274         CAB         UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)         WCDMA         4.87         ± 9.6 %           10275         CAB         UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)         WCDMA         3.96         ± 9.6 %           10277         CAA         PHS (QPSK)         PHS         11.81         ± 9.6 %           10278         CAA         PHS (QPSK, BW 884MHz, Rolloff 0.5)         PHS         11.81         ± 9.6 %           10290         AAB         CDMA2000, RC1, SO55, Full Rate         CDMA2000         3.91         ± 9.6 %           10291         AAB         CDMA2000, RC3, SO32, Full Rate         CDMA2000         3.39         ± 9.6 %           10292         AAB         CDMA2000, RC3, SO3, Full Rate         CDMA2000         3.39         ± 9.6 %           10292         AAB         CDMA2000, RC3, SO3, Full Rate         CDMA2000         3.50         ± 9.6 % <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
10269         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)         LTE-TDD         10.13         ± 9.6 %           10270         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)         LTE-TDD         9.58         ± 9.6 %           10274         CAB         UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)         WCDMA         4.87         ± 9.6 %           10275         CAB         UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)         WCDMA         3.96         ± 9.6 %           10277         CAA         PHS (QPSK)         PHS         11.81         ± 9.6 %           10278         CAA         PHS (QPSK, BW 884MHz, Rolloff 0.5)         PHS         11.81         ± 9.6 %           10279         CAA         PHS (QPSK, BW 884MHz, Rolloff 0.38)         PHS         12.18         ± 9.6 %           10290         AAB         CDMA2000, RC1, SO55, Full Rate         CDMA2000         3.91         ± 9.6 %           10291         AAB         CDMA2000, RC3, SO32, Full Rate         CDMA2000         3.39         ± 9.6 %           10292         AAB         CDMA2000, RC3, SO3, Full Rate         CDMA2000         3.39         ± 9.6 %           10292         AAB         CDMA2000, RC3, SO3, Full Rate         CDMA2000         3.50         ± 9.6 %						
10270         CAF         LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)         LTE-TDD         9.58         ± 9.6 %           10274         CAB         UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)         WCDMA         4.87         ± 9.6 %           10275         CAB         UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)         WCDMA         3.96         ± 9.6 %           10277         CAA         PHS (QPSK)         PHS         11.81         ± 9.6 %           10278         CAA         PHS (QPSK, BW 884MHz, Rolloff 0.5)         PHS         11.81         ± 9.6 %           10279         CAA         PHS (QPSK, BW 884MHz, Rolloff 0.38)         PHS         12.18         ± 9.6 %           10290         AAB         CDMA2000, RC1, SO55, Full Rate         CDMA2000         3.91         ± 9.6 %           10291         AAB         CDMA2000, RC3, SO55, Full Rate         CDMA2000         3.91         ± 9.6 %           10292         AAB         CDMA2000, RC3, SO32, Full Rate         CDMA2000         3.39         ± 9.6 %           10293         AAB         CDMA2000, RC3, SO3, Full Rate         CDMA2000         3.50         ± 9.6 %           10295         AAB         CDMA2000, RC3, SO3, Full Rate         CDMA2000         3.50         ± 9.6 % <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td></td<>						
10274       CAB       UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)       WCDMA       4.87       ± 9.6 %         10275       CAB       UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)       WCDMA       3.96       ± 9.6 %         10277       CAA       PHS (QPSK)       PHS       11.81       ± 9.6 %         10278       CAA       PHS (QPSK)       PHS       11.81       ± 9.6 %         10279       CAA       PHS (QPSK, BW 884MHz, Rolloff 0.5)       PHS       11.81       ± 9.6 %         10290       AAB       CDMA2000, RC1, SO55, Full Rate       CDMA2000       3.91       ± 9.6 %         10291       AAB       CDMA2000, RC3, SO55, Full Rate       CDMA2000       3.91       ± 9.6 %         10292       AAB       CDMA2000, RC3, SO32, Full Rate       CDMA2000       3.39       ± 9.6 %         10293       AAB       CDMA2000, RC3, SO3, Full Rate       CDMA2000       3.50       ± 9.6 %         10295       AAB       CDMA2000, RC3, SO3, Full Rate       CDMA2000       3.50       ± 9.6 %         10295       AAB       CDMA2000, RC1, SO3, 1/8th Rate 25 fr.       CDMA2000       12.49       ± 9.6 %         10297       AAB       CDMA2000, RC1, SO% RB, 20 MHz, QPSK)       LTE-FDD       5.81       ± 9.6 %						
10275         CAB         UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)         WCDMA         3.96         ± 9.6 %           10277         CAA         PHS (QPSK)         PHS         11.81         ± 9.6 %           10278         CAA         PHS (QPSK, BW 884MHz, Rolloff 0.5)         PHS         11.81         ± 9.6 %           10279         CAA         PHS (QPSK, BW 884MHz, Rolloff 0.38)         PHS         12.18         ± 9.6 %           10290         AAB         CDMA2000, RC1, SO55, Full Rate         CDMA2000         3.91         ± 9.6 %           10291         AAB         CDMA2000, RC3, SO55, Full Rate         CDMA2000         3.46         ± 9.6 %           10292         AAB         CDMA2000, RC3, SO32, Full Rate         CDMA2000         3.39         ± 9.6 %           10292         AAB         CDMA2000, RC3, SO3, Full Rate         CDMA2000         3.39         ± 9.6 %           10293         AAB         CDMA2000, RC3, SO3, Full Rate         CDMA2000         3.50         ± 9.6 %           10295         AAB         CDMA2000, RC1, SO3, 1/8th Rate 25 fr.         CDMA2000         12.49         ± 9.6 %           10297         AAB         CDMA2000, RC1, SO% RB, 20 MHz, QPSK)         LTE-FDD         5.81         ± 9.6 %           1029	1					
10277         CAA         PHS (QPSK)         PHS         11.81         ± 9.6 %           10278         CAA         PHS (QPSK, BW 884MHz, Rolloff 0.5)         PHS         11.81         ± 9.6 %           10279         CAA         PHS (QPSK, BW 884MHz, Rolloff 0.38)         PHS         12.18         ± 9.6 %           10290         AAB         CDMA2000, RC1, SO55, Full Rate         CDMA2000         3.91         ± 9.6 %           10291         AAB         CDMA2000, RC3, SO55, Full Rate         CDMA2000         3.91         ± 9.6 %           10292         AAB         CDMA2000, RC3, SO35, Full Rate         CDMA2000         3.46         ± 9.6 %           10292         AAB         CDMA2000, RC3, SO32, Full Rate         CDMA2000         3.39         ± 9.6 %           10293         AAB         CDMA2000, RC3, SO3, Full Rate         CDMA2000         3.50         ± 9.6 %           10295         AAB         CDMA2000, RC1, SO3, 1/8th Rate 25 fr.         CDMA2000         12.49         ± 9.6 %           10297         AAB         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)         LTE-FDD         5.81         ± 9.6 %           10298         AAD         LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)         LTE-FDD         5.72         ± 9.6 %						
10278         CAA         PHS (QPSK, BW 884MHz, Rolloff 0.5)         PHS         11.81         ± 9.6 %           10279         CAA         PHS (QPSK, BW 884MHz, Rolloff 0.38)         PHS         12.18         ± 9.6 %           10290         AAB         CDMA2000, RC1, SO55, Full Rate         CDMA2000         3.91         ± 9.6 %           10291         AAB         CDMA2000, RC3, SO55, Full Rate         CDMA2000         3.91         ± 9.6 %           10292         AAB         CDMA2000, RC3, SO55, Full Rate         CDMA2000         3.46         ± 9.6 %           10292         AAB         CDMA2000, RC3, SO32, Full Rate         CDMA2000         3.39         ± 9.6 %           10293         AAB         CDMA2000, RC3, SO3, Full Rate         CDMA2000         3.50         ± 9.6 %           10295         AAB         CDMA2000, RC1, SO3, 1/8th Rate 25 fr.         CDMA2000         12.49         ± 9.6 %           10297         AAD         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)         LTE-FDD         5.81         ± 9.6 %           10298         AAD         LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)         LTE-FDD         5.72         ± 9.6 %						
10279         CAA         PHS (QPSK, BW 884MHz, Rolloff 0.38)         PHS         12.18         ± 9.6 %           10290         AAB         CDMA2000, RC1, SO55, Full Rate         CDMA2000         3.91         ± 9.6 %           10291         AAB         CDMA2000, RC3, SO55, Full Rate         CDMA2000         3.46         ± 9.6 %           10292         AAB         CDMA2000, RC3, SO32, Full Rate         CDMA2000         3.39         ± 9.6 %           10293         AAB         CDMA2000, RC3, SO32, Full Rate         CDMA2000         3.50         ± 9.6 %           10295         AAB         CDMA2000, RC1, SO3, I/8th Rate 25 fr.         CDMA2000         12.49         ± 9.6 %           10297         AAB         CDMA2000, RC1, SO3, 1/8th Rate 25 fr.         CDMA2000         12.49         ± 9.6 %           10297         AAD         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)         LTE-FDD         5.81         ± 9.6 %           10298         AAD         LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)         LTE-FDD         5.72         ± 9.6 %						
10290         AAB         CDMA2000, RC1, S055, Full Rate         CDMA2000         3.91         ± 9.6 %           10291         AAB         CDMA2000, RC3, S055, Full Rate         CDMA2000         3.46         ± 9.6 %           10292         AAB         CDMA2000, RC3, S032, Full Rate         CDMA2000         3.39         ± 9.6 %           10293         AAB         CDMA2000, RC3, S032, Full Rate         CDMA2000         3.50         ± 9.6 %           10295         AAB         CDMA2000, RC1, SO3, I/8th Rate 25 fr.         CDMA2000         12.49         ± 9.6 %           10297         AAD         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)         LTE-FDD         5.81         ± 9.6 %           10298         AAD         LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)         LTE-FDD         5.72         ± 9.6 %						
10291         AAB         CDMA2000, RC3, SO55, Full Rate         CDMA2000         3.46         ± 9.6 %           10292         AAB         CDMA2000, RC3, SO32, Full Rate         CDMA2000         3.39         ± 9.6 %           10293         AAB         CDMA2000, RC3, SO3, Full Rate         CDMA2000         3.50         ± 9.6 %           10295         AAB         CDMA2000, RC1, SO3, 1/8th Rate 25 fr.         CDMA2000         12.49         ± 9.6 %           10297         AAD         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)         LTE-FDD         5.81         ± 9.6 %           10298         AAD         LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)         LTE-FDD         5.72         ± 9.6 %						
10292         AAB         CDMA2000, RC3, SO32, Full Rate         CDMA2000         3.39         ± 9.6 %           10293         AAB         CDMA2000, RC3, SO3, Full Rate         CDMA2000         3.50         ± 9.6 %           10295         AAB         CDMA2000, RC1, SO3, 1/8th Rate 25 fr.         CDMA2000         12.49         ± 9.6 %           10297         AAD         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)         LTE-FDD         5.81         ± 9.6 %           10298         AAD         LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)         LTE-FDD         5.72         ± 9.6 %						
10293         AAB         CDMA2000, RC3, SO3, Full Rate         CDMA2000         3.50         ± 9.6 %           10295         AAB         CDMA2000, RC1, SO3, 1/8th Rate 25 fr.         CDMA2000         12.49         ± 9.6 %           10297         AAD         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)         LTE-FDD         5.81         ± 9.6 %           10298         AAD         LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)         LTE-FDD         5.72         ± 9.6 %						
10295         AAB         CDMA2000, RC1, SO3, 1/8th Rate 25 fr.         CDMA2000         12.49         ± 9.6 %           10297         AAD         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)         LTE-FDD         5.81         ± 9.6 %           10298         AAD         LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)         LTE-FDD         5.72         ± 9.6 %						
10297         AAD         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)         LTE-FDD         5.81         ± 9.6 %           10298         AAD         LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)         LTE-FDD         5.72         ± 9.6 %						<b>└────</b> ┤
10298 AAD LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK) LTE-FDD 5.72 ± 9.6 %						
				LTE-FDD		±9.6 %

40200				0.00	
10300 10301	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10301	AAA AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC)		12.03	± 9.6 %
10302	AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3 CTRL symbols)	WIMAX	12.57	± 9.6 %
10303	AAA	IEEE 802.16e WiMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	WIMAX	10.50	+069/
10304	AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, 64QAM, POSC)	WIMAX	12.52 11.86	± 9.6 %
10305	AAA	IEEE 802.16e WIMAX (31:15, 10ms, 10MHz, 64QAM, PUSC, 15	WIMAX	15.24	± 9.6 % ± 9.6 %
10000	1.000	symbols)		10.24	1 3.0 %
10306	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18	WIMAX	14.67	± 9.6 %
		symbols)		11.01	10.0 /0
10307	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18	WIMAX	14.49	± 9.6 %
		symbols)			
10308	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	WIMAX	14.46	± 9.6 %
10309	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3, 18	WiMAX	14.58	±9.6 %
		symbols)			
10310	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18	WIMAX	14.57	± 9.6 %
40044		symbols)			
10311	AAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-FDD	6.06	± 9.6 %
10313	AAA	IDEN 1:3	IDEN	10.51	±9.6 %
10314	AAA	IDEN 1:6	IDEN	13.48	± 9.6 %
10315	AAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)	WLAN	1.71	± 9.6 %
10316 10317	AAB AAC	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle) IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)	WLAN	8.36	± 9.6 %
10317	AAA	Pulse Waveform (200Hz, 10%)	WLAN	8.36	±9.6 %
10352	AAA	Pulse Waveform (200Hz, 10%)	Generic	10.00	± 9.6 %
10354	AAA	Pulse Waveform (200Hz, 40%)	Generic Generic	6.99	$\pm 9.6\%$
10355	AAA	Pulse Waveform (200Hz, 60%)	Generic	3.98 2.22	±9.6 % ±9.6 %
10356	AAA	Pulse Waveform (200Hz, 80%)	Generic	0.97	$\pm 9.6\%$
10387	AAA	QPSK Waveform, 1 MHz	Generic	5.10	±9.6%
10388	AAA	QPSK Waveform, 10 MHz	Generic	5.22	± 9.6 %
10396	AAA	64-QAM Waveform, 100 kHz	Generic	6.27	± 9.6 %
10399	AAA	64-QAM Waveform, 40 MHz	Generic	6.27	± 9.6 %
10400	AAD	IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc duty cycle)	WLAN	8.37	± 9.6 %
10401	AAD	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc duty cycle)	WLAN	8.60	± 9.6 %
10402	AAD	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc duty cycle)	WLAN	8.53	± 9.6 %
10403	AAB	CDMA2000 (1xEV-DO, Rev. 0)	CDMA2000	3.76	± 9.6 %
10404	AAB	CDMA2000 (1xEV-DO, Rev. A)	CDMA2000	3.77	±9.6 %
10406	AAB	CDMA2000, RC3, SO32, SCH0, Full Rate	CDMA2000	5.22	±9.6 %
10410	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
	ļ	Subframe=2,3,4,7,8,9, Subframe Conf=4)			
10414	AAA	WLAN CCDF, 64-QAM, 40MHz	Generic	8.54	± 9.6 %
10415	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	WLAN	1.54	±9.6 %
10416	AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	±9.6 %
10417	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	± 9.6 %
10418	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle,	WLAN	8.14	±9.6 %
10110		Long preambule)			
10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle,	WLAN	8.19	±9.6 %
10400		Short preambule)	1440 4 1 1		
10422 10423	AAB	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	WLAN	8.32	±9.6%
10423	AAB AAB	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	WLAN	8.47	±9.6 %
10424	AAB	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	WLAN	8.40	± 9.6 %
10425	AAB	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK) IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	WLAN	8.41	± 9.6 %
10427	AAB	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	WLAN	8.45	± 9.6 %
10427	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)		8.41	± 9.6 %
10430	AAD	LTE-FDD (OFDMA, 3 MHz, E-TM 3.1) LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	LTE-FDD LTE-FDD	8.28	$\pm 9.6\%$
10431	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	LTE-FDD	8.38	±9.6%
10433	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	LTE-FDD	<u>8.34</u> 8.34	± 9.6 %
10434	AAA	W-CDMA (BS Test Model 1, 64 DPCH)	WCDMA	8.60	± 9.6 % ± 9.6 %
10435	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
		Subframe=2,3,4,7,8,9)		1.02	± 3,0 70
10447	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.56	± 9.6 %
10448	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	LTE-FDD	7.53	± 9.6 %
10449	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Cliping 44%)	LTE-FDD	7.51	± 9.6 %
10450	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.48	± 9.6 %
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10451	AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	WCDMA	7.59	± 9.6 %
10456	AAB	IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc duty cycle)	WLAN	8.63	± 9.6 %
10457	AAA	UMTS-FDD (DC-HSDPA)	WCDMA	6.62	± 9.6 %
10458	AAA	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	CDMA2000	6.55	±9.6 %
10459	AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	CDMA2000	8.25	± 9.6 %
10460	AAA	UMTS-FDD (WCDMA, AMR)	WCDMA	2.39	± 9.6 %
10461	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10462	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.30	±9.6 %
10463	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.56	±9.6%
10464	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	±9.6 %
10465	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	±9.6 %
10466	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	± 9.6 %
10467	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10468	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8,32	± 9.6 %
10469	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.56	± 9.6 %
10470	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10471	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10472	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	± 9.6 %
10473	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10474	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10475	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	± 9.6 %
10477	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10478	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	± 9.6 %
10479	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	±9.6 %
10480	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.18	± 9.6 %
10481	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.45	± 9.6 %
10482	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.71	± 9.6 %
10483		LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.39	± 9.6 %
10484	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.47	± 9.6 %
10485	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.59	± 9.6 %
10486	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.38	± 9.6 %
10487	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.60	± 9.6 %
10488	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.70	± 9.6 %
10489	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.31	± 9.6 %
10490	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	± 9.6 %
10491	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	± 9.6 %

10492	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL	LTE-TDD	8.41	± 9.6 %
10493	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL	LTE-TDD	8.55	± 9.6 %
10100	1,0,0	Subframe=2,3,4,7,8,9)		0.00	1 3.0 %
10494	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL	LTE-TDD	7.74	±9.6 %
10495	AAF	Subframe=2,3,4,7,8,9)		0.07	1001
10495		LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.37	± 9.6 %
10496	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL	LTE-TDD	8.54	± 9.6 %
	<u> </u>	Subframe=2,3,4,7,8,9)			
10497	AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.67	±9.6 %
10498	AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL	LTE-TDD	8.40	±9.6 %
		Subframe=2,3,4,7,8,9)		0110	- 0.0 /0
10499	AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL	LTE-TDD	8.68	±9.6 %
10500	AAB	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL	LTE-TDD	7.67	± 9.6 %
10000	,,,,,,	Subframe=2,3,4,7,8,9)		7.07	± 9.0 %
10501	AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL	LTE-TDD	8.44	± 9.6 %
10502	AAB	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL		0.50	
10002		Subframe=2,3,4,7,8,9)	LTE-TDD	8.52	± 9.6 %
10503	AAE	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL	LTE-TDD	7.72	± 9.6 %
10501		Subframe=2,3,4,7,8,9)			
10504	AAE	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.31	± 9.6 %
10505	AAE	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL	LTE-TDD	8.54	±9.6 %
		Subframe=2,3,4,7,8,9)			_ 0.0 /0
10506	AAE	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL	LTE-TDD	7.74	± 9.6 %
10507	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL	LTE-TDD	8.36	± 9.6 %
10001		Subframe=2,3,4,7,8,9)		0.30	I9.0 %
10508	AAE	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL	LTE-TDD	8.55	± 9.6 %
10509	AAE	Subframe=2,3,4,7,8,9)			
10009	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.99	± 9.6 %
10510	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL	LTE-TDD	8.49	± 9.6 %
40544		Subframe=2,3,4,7,8,9)			
10511	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.51	±9.6%
10512	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL	LTE-TDD	7.74	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10513	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.42	± 9.6 %
10514	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL	LTE-TDD	8.45	± 9.6 %
		Subframe=2,3,4,7,8,9)		0.40	
10515	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)	WLAN	1.58	± 9.6 %
10516 10517	AAA AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)	WLAN	1.57	± 9.6 %
10517	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)	WLAN WLAN	1.58	±9.6%
10510	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)	WLAN	8.23	± 9.6 %
10520	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)	WLAN	8.39	± 9.6 %
10521	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)	WLAN	8.12 7.97	±9.6%
10522	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)	WLAN	8.45	±9.6 % ±9.6 %
10523	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)	WLAN		$\pm 9.6\%$ $\pm 9.6\%$
10524	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)	WLAN	8.08	
10525	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)	WLAN	8.27 8.36	±9.6 % ±9.6 %
10526	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)	WLAN	8.42	$\pm 9.6\%$ $\pm 9.6\%$
10527	AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)	WLAN	8.21	$\pm 9.6\%$ $\pm 9.6\%$
10528	AAB	IEEE 802.11ac WiFI (20MHz, MCS3, 99pc duty cycle)	WLAN	8.36	$\pm 9.6\%$ $\pm 9.6\%$
10529	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)	WLAN	8.36	± 9.0 % ± 9.6 %
10531	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)	WLAN	8.43	± 9.6 %
10532	AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10533	AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle)	WLAN	8.38	± 9.6 %
10534	AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc duty cycle)	WLAN	8.45	± 9.6 %
			1 YY - 71N	1 0.40	1 2 3.0 70

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10535	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10536	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc duty cycle)	WLAN	8.32	±9.6 %
10537	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)	WLAN	8.44	±9.6 %
10538	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc duty cycle)	WLAN	8.54	±9.6%
10540	AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 99pc duty cycle)	WLAN	8.39	±9.6 %
10541	AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc duty cycle)	WLAN	8.46	± 9.6 %
10542	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)	WLAN	8.65	± 9.6 %
10543	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)	WLAN	8.65	± 9.6 %
10544	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)	WLAN	8.47	± 9.6 %
10545	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle)	WLAN	8.55	±9.6 %
10546	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)	WLAN	8.35	±9.6 %
10547	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)	WLAN	8,49	± 9.6 %
10548	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc duty cycle)	WLAN	8.37	± 9.6 %
10550	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle)	WLAN	8.38	± 9.6 %
10551	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc duty cycle)	WLAN	8.50	± 9.6 %
10552	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10553	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle)	WLAN	8.45	±9.6 %
10554	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc duty cycle)	WLAN	8.48	± 9.6 %
10555	AAC	IEEE 802.11ac WiFI (160MHz, MCS1, 99pc duty cycle)	WLAN	8.47	± 9.6 %
10556	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle)	WLAN	8.50	± 9.6 %
10557	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle)	WLAN		± 9.6 %
10558	AAC	IEEE 802.11ac WiFt (160MHz, MCS3, 99pc duty cycle)	WLAN	8.52	
10560	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc duty cycle)		8,61	± 9.6 %
10561	AAC		WLAN	8,73	± 9.6 %
10562		IEEE 802.11ac WiFi (160MHz, MCS7, 99pc duty cycle)	WLAN	8.56	± 9.6 %
10562	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc duty cycle)	WLAN	8.69	± 9.6 %
	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc duty cycle)	WLAN	8.77	± 9.6 %
10564	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty	WLAN	8.25	± 9.6 %
40505					
10565	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty	WLAN	8.45	± 9.6 %
40500					
10566	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty	WLAN	8.13	± 9.6 %
40507					
10567	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty	WLAN	8.00	± 9.6 %
40500	0.0.0				
10568	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty	WLAN	8.37	± 9.6 %
40500					ļ
10569	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty	WLAN	8.10	±9.6 %
40570					
10570	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty	WLAN	8.30	± 9.6 %
40574					
10571	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)	WLAN	1.99	±9.6 %
10572	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	WLAN	1.99	± 9.6 %
10573	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)	WLAN	1.98	± 9.6 %
10574	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)	WLAN	1.98	±9.6 %
10575	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty	WLAN	8.59	± 9.6 %
	<u></u>	cycle)			
10576	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty	WLAN	8.60	± 9.6 %
	<u> </u>	cycle)			
10577	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty	WLAN	8.70	±9.6 %
		cycle)			
10578	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty	WLAN	8.49	±9.6 %
	<u> </u>	cycle)			<u> </u>
10579	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty	WLAN	8.36	± 9.6 %
				•	
		cycle)			[]
10580	AAA	IEEE 802.11g WiFI 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty	WLAN	8.76	± 9.6 %
		IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)		8.76	± 9.6 %
10580 10581	AAA AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty	WLAN	8.76 8.35	± 9.6 % ± 9.6 %
10581	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)			
		IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty			
10581 10582	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)	WLAN	8.35	±9.6 %
10581	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty	WLAN	8.35	±9.6 %
10581 10582	AAA AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	WLAN WLAN	8.35 8.67	± 9.6 % ± 9.6 % ± 9.6 %
10581 10582 10583	AAA AAA AAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	WLAN WLAN WLAN	8.35 8.67 8.59 8.60	± 9.6 % ± 9.6 % ± 9.6 % ± 9.6 %
10581 10582 10583 10584	AAA AAA AAB AAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN	8.35 8.67 8.59	± 9.6 % ± 9.6 % ± 9.6 %

40500	0.00			0.70	
10588	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)	WLAN	8.76	± 9.6 %
10589	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)	WLAN	8.35	±9.6%
10590	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)	WLAN	8.67	±9.6 %
		IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle)	WLAN	8.63	±9.6%
10592	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10593 10594	AAB AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle)	WLAN	8.64	± 9.6 %
		IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle)	WLAN	8.74	±9.6%
10595	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10596	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle)	WLAN	8.71	±9.6%
10597	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle) IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle)	WLAN	8.72	± 9.6 %
10598	AAB		WLAN	8.50	± 9.6 %
10599 10600	AAB AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle) IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle)	WLAN WLAN	8.79 8.88	±9.6 % ±9.6 %
10601	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle)	WLAN	8.82	±9.6 %
10602	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle)	WLAN	8.94	$\pm 9.6\%$
10602	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle)	WLAN	9.03	$\pm 9.6\%$
10604	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCG4, 30pc duty cycle)	WLAN	9.03 8.76	± 9.6 %
10605	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle)	WLAN	8.97	± 9.6 %
10606	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCSO, sope duty cycle)	WLAN	8.82	± 9.6 %
10607	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	WLAN	8.64	$\pm 9.6\%$ $\pm 9.6\%$
10608	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	WLAN	8.77	$\pm 9.6\%$
10609	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)	WLAN	8.57	$\pm 9.6\%$
10610	AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle)	WLAN	8.78	± 9.6 %
10611	AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10612	AAB	IEEE 802.11ac Will (20MHz, MCS5, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10613	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle)	WLAN	8.94	±9.6 %
10614	AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle)	WLAN	8.59	± 9.6 %
10615	AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10616	AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10617	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10618	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle)	WLAN	8.58	± 9.6 %
10619	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle)	WLAN	8.86	± 9.6 %
10620	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle)	WLAN	8.87	±9.6 %
10621	AAB	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle)	WLAN	8.77	±9.6 %
10622	AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle)	WLAN	8.68	±9.6 %
10623	AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc duty cycle)	WLAN	8.82	±9.6 %
10624	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)	WLAN	8.96	±9.6 %
10625	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)	WLAN	8.96	±9.6 %
10626	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)	WLAN	8.83	±9.6 %
10627	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)	WLAN	8.88	±9.6 %
10628	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)	WLAN	8.71	±9.6 %
10629	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle)	WLAN	8.85	± 9.6 %
10630	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)	WLAN	8.72	± 9.6 %
10631	AAB	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)	WLAN	8.81	±9.6 %
10632	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10633	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10634	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)	WLAN	8.80	± 9.6 %
10635	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10636	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10637	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	WLAN	8.79	±9.6 %
10638	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)	WLAN	8.86	± 9.6 %
10639	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)	WLAN	8.85	± 9.6 %
10640 10641	AAC AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)	WLAN	8.98	±9.6%
10641	AAC	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)	WLAN	9.06	±9.6%
10642	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle) IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)	WLAN	9.06	± 9.6 %
10643	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)	WLAN WLAN	8.89	±9.6%
10645	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	WLAN	9.05 9.11	± 9.6 % ± 9.6 %
10646	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)	LTE-TDD	9.11 11.96	
10647	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, 0L Subframe=2,7)	LTE-TDD	11.96	$\pm 9.6\%$
10648	AAA	CDMA2000 (1x Advanced)	CDMA2000	3.45	$\pm 9.6\%$
10652	AAD	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	<u>3.45</u> 6.91	± 9.6 % ± 9.6 %
10653	AAD	LTE-TDD (OFDMA, 3 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.42	± 9.6 %
10654	AAD	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.96	± 9.6 %
<u></u>	1,010	$\frac{1}{1}$		0.30	<u>- 3.0 70</u>

10055	A A 67				
10655	AAE	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.21	± 9.6 %
10658	AAA	Pulse Waveform (200Hz, 10%)	Test	10.00	±9.6%
10659	AAA	Pulse Waveform (200Hz, 20%)	Test	6.99	± 9.6 %
10660	AAA	Pulse Waveform (200Hz, 40%)	Test	3.98	± 9.6 %
10661	AAA	Pulse Waveform (200Hz, 60%)	Test	2.22	± 9.6 %
10662	AAA	Pulse Waveform (200Hz, 80%)	Test	0.97	±9.6 %
10670	AAA	Bluetooth Low Energy	Bluetooth	2.19	± 9.6 %
10671	AAA	IEEE 802.11ax (20MHz, MCS0, 90pc duty cycle)	WLAN	9.09	± 9.6 %
10672	AAA	IEEE 802.11ax (20MHz, MCS1, 90pc duty cycle)	WLAN	8.57	±9.6 %
10673	AAA	IEEE 802.11ax (20MHz, MCS2, 90pc duty cycle)	WLAN	8.78	±9.6 %
10674	AAA	IEEE 802.11ax (20MHz, MCS3, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10675	AAA	IEEE 802.11ax (20MHz, MCS4, 90pc duty cycle)	WLAN	8.90	±9.6%
10676	AAA	IEEE 802.11ax (20MHz, MCS5, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10677	AAA	IEEE 802.11ax (20MHz, MCS6, 90pc duty cycle)	WLAN	8.73	± 9.6 %
10678	AAA	IEEE 802.11ax (20MHz, MCS7, 90pc duty cycle)	WLAN	8.78	± 9.6 %
10679	AAA	IEEE 802.11ax (20MHz, MCS8, 90pc duty cycle)	WLAN	8.89	±9.6 %
10680	AAA	IEEE 802.11ax (20MHz, MCS9, 90pc duty cycle)	WLAN	8.80	±9.6 %
10681	AAA	IEEE 802.11ax (20MHz, MCS10, 90pc duty cycle)	WLAN	8.62	±9.6 %
10682	AAA	IEEE 802.11ax (20MHz, MCS11, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10683	AAA	IEEE 802.11ax (20MHz, MCS0, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10684	AAA	IEEE 802.11ax (20MHz, MCS1, 99pc duty cycle)	WLAN	8.26	± 9.6 %
10685	AAA	IEEE 802.11ax (20MHz, MCS2, 99pc duty cycle)	WLAN	8.33	± 9.6 %
10686	AAA	IEEE 802.11ax (20MHz, MCS3, 99pc duty cycle)	WLAN	8.28	± 9.6 %
10687	AAA	IEEE 802.11ax (20MHz, MCS4, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10688	AAA	IEEE 802.11ax (20MHz, MCS5, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10689	AAA	IEEE 802.11ax (20MHz, MCS6, 99pc duty cycle)	WLAN	8.55	± 9.6 %
10690	AAA	IEEE 802.11ax (20MHz, MCS7, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10691	AAA	IEEE 802.11ax (20MHz, MCS8, 99pc duty cycle)	WLAN	8,25	$\pm 9.6\%$
10692	AAA	IEEE 802.11ax (20MHz, MCS9, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10693	AAA	IEEE 802.11ax (20MHz, MCS10, 99pc duty cycle)	WLAN	8.25	± 9.6 %
10694	AAA	IEEE 802.11ax (20MHz, MCS11, 99pc duty cycle)	WLAN	8.57	± 9.6 %
10695	AAA	IEEE 802.11ax (40MHz, MCS0, 90pc duty cycle)	WLAN		
10696	AAA	IEEE 802.11ax (40MHz, MCS1, 90pc duty cycle)	WLAN	8.78	$\pm 9.6\%$
10697	AAA	IEEE 802.11ax (40MHz, MCS2, 90pc duty cycle)	WLAN	8.91 8.61	± 9.6 %
10698	AAA	IEEE 802.11ax (40MHz, MCS3, 90pc duty cycle)	WLAN		± 9.6 %
10699	AAA	IEEE 802.11ax (40MHz, MCS4, 90pc duty cycle)		8.89	± 9.6 %
10700	AAA	IEEE 802.11ax (40MHz, MCS4, sope duty cycle)	WLAN	8.82	± 9.6 %
10701	AAA	IEEE 802.11ax (40MHz, MCS6, 90pc duty cycle)	WLAN	8.73	± 9.6 %
10702	AAA	IEEE 802.11ax (40MHz, MCS0, 90pc duty cycle)	WLAN	8.86	± 9.6 %
10702	AAA		WLAN	8.70	±9.6 %
10703	AAA	IEEE 802.11ax (40MHz, MCS8, 90pc duty cycle)	WLAN	8.82	±9.6 %
10704		IEEE 802.11ax (40MHz, MCS9, 90pc duty cycle)	WLAN	8.56	±9.6 %
	AAA	IEEE 802.11ax (40MHz, MCS10, 90pc duty cycle)	WLAN	8.69	±9.6 %
10706	AAA	IEEE 802.11ax (40MHz, MCS11, 90pc duty cycle)	WLAN	8.66	±9.6 %
10707	AAA	IEEE 802.11ax (40MHz, MCS0, 99pc duty cycle)	WLAN	8.32	±9.6 %
10708	AAA	IEEE 802.11ax (40MHz, MCS1, 99pc duty cycle)	WLAN	8.55	± 9.6 %
10709	AAA	IEEE 802.11ax (40MHz, MCS2, 99pc duty cycle)	WLAN	8.33	±9.6 %
10710	AAA	IEEE 802.11ax (40MHz, MCS3, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10711	AAA	IEEE 802.11ax (40MHz, MCS4, 99pc duty cycle)	WLAN	8.39	±9.6 %
10712	AAA	IEEE 802.11ax (40MHz, MCS5, 99pc duty cycle)	WLAN	8.67	±9.6 %
10713	AAA	IEEE 802.11ax (40MHz, MCS6, 99pc duty cycle)	WLAN	8.33	± 9.6 %
10714	AAA	IEEE 802.11ax (40MHz, MCS7, 99pc duty cycle)	WLAN	8.26	±9.6 %
10715	AAA	IEEE 802.11ax (40MHz, MCS8, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10716	AAA	IEEE 802.11ax (40MHz, MCS9, 99pc duty cycle)	WLAN	8.30	±9.6 %
10717	AAA	IEEE 802.11ax (40MHz, MCS10, 99pc duty cycle)	WLAN	8.48	±9.6 %
10718	AAA	IEEE 802.11ax (40MHz, MCS11, 99pc duty cycle)	WLAN	8.24	± 9.6 %
10719	AAA	IEEE 802.11ax (80MHz, MCS0, 90pc duty cycle)	WLAN	8.81	±9.6 %
10720	AAA	IEEE 802.11ax (80MHz, MCS1, 90pc duty cycle)	WLAN	8.87	±9.6 %
10721	AAA	IEEE 802.11ax (80MHz, MCS2, 90pc duty cycle)	WLAN	8.76	± 9.6 %
10722	AAA	IEEE 802.11ax (80MHz, MCS3, 90pc duty cycle)	WLAN	8.55	± 9.6 %
10723	AAA	IEEE 802.11ax (80MHz, MCS4, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10724	AAA	IEEE 802.11ax (80MHz, MCS5, 90pc duty cycle)	WLAN	8.90	± 9.6 %
10725	AAA	IEEE 802.11ax (80MHz, MCS6, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10726	AAA	IEEE 802.11ax (80MHz, MCS7, 90pc duty cycle)	WLAN	8.72	± 9.6 %
10727	AAA	IEEE 802.11ax (80MHz, MCS8, 90pc duty cycle)	WLAN	8.66	± 9.6 %
		······································			- 0.0 /0

10728	AAA	IEEE 802.11ax (80MHz, MCS9, 90pc duty cycle)	WLAN	8.65	± 9.6 %
10729	AAA	IEEE 802.11ax (80MHz, MCS10, 90pc duty cycle)	WLAN	8.64	± 9.6 %
10730	AAA	IEEE 802.11ax (80MHz, MCS11, 90pc duty cycle)	WLAN	8.67	±9.6 %
10731	AAA	IEEE 802.11ax (80MHz, MCS0, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10732	AAA	IEEE 802.11ax (80MHz, MCS1, 99pc duty cycle)	WLAN	8.46	± 9.6 %
10733	AAA	IEEE 802.11ax (80MHz, MCS2, 99pc duty cycle)	WLAN	8.40	± 9.6 %
10734	AAA	IEEE 802.11ax (80MHz, MCS3, 99pc duty cycle)	WLAN	8.25	± 9.6 %
10735	AAA	IEEE 802.11ax (80MHz, MCS4, 99pc duty cycle)	WLAN	8.33	± 9.6 %
10736	AAA	IEEE 802.11ax (80MHz, MCS5, 99pc duty cycle)	WLAN	8.27	± 9.6 %
10737	AAA	IEEE 802.11ax (80MHz, MCS6, 99pc duty cycle)	WLAN	8.36	±9.6%
10738	AAA	IEEE 802.11ax (80MHz, MCS7, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10739	AAA	IEEE 802.11ax (80MHz, MCS8, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10740	AAA	IEEE 802.11ax (80MHz, MCS9, 99pc duty cycle)	WLAN	8.48	± 9.6 %
10741	AAA	IEEE 802.11ax (80MHz, MCS10, 99pc duty cycle)	WLAN	8.40	± 9.6 %
10742	AAA	IEEE 802.11ax (80MHz, MCS11, 99pc duty cycle)	WLAN	8.43	± 9.6 %
10743	AAA	IEEE 802.11ax (160MHz, MCS0, 90pc duty cycle)	WLAN	8.94	± 9.6 %
10744	AAA	IEEE 802.11ax (160MHz, MCS1, 90pc duty cycle)	WLAN	9.16	± 9.6 %
10745	AAA	IEEE 802.11ax (160MHz, MCS2, 90pc duty cycle)	WLAN	8.93	± 9.6 %
10746	AAA	IEEE 802.11ax (160MHz, MCS3, 90pc duty cycle)	WLAN	9.11	±9.6 %
10747	AAA	IEEE 802.11ax (160MHz, MCS4, 90pc duty cycle)	WLAN	9.04	±9.6 %
10748	AAA	IEEE 802.11ax (160MHz, MCS5, 90pc duty cycle)	WLAN	8.93	±9.6 %
10749	AAA	IEEE 802.11ax (160MHz, MCS6, 90pc duty cycle)	WLAN	8.90	± 9.6 %
10750	AAA	IEEE 802.11ax (160MHz, MCS7, 90pc duty cycle)	WLAN	8.79	±9.6 %
10751	AAA	IEEE 802.11ax (160MHz, MCS8, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10752	AAA	IEEE 802.11ax (160MHz, MCS9, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10753	AAA	IEEE 802.11ax (160MHz, MCS10, 90pc duty cycle)	WLAN	9.00	± 9.6 %
10754	AAA	IEEE 802.11ax (160MHz, MCS11, 90pc duty cycle)	WLAN	8.94	± 9.6 %
10755	AAA	IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle)	WLAN	8.64	± 9.6 %
10756	AAA	IEEE 802.11ax (160MHz, MCS1, 99pc duty cycle)	WLAN	8.77	± 9.6 %
10757	AAA	IEEE 802.11ax (160MHz, MCS2, 99pc duty cycle)	WLAN	8.77	± 9.6 %
10758	AAA	IEEE 802.11ax (160MHz, MCS3, 99pc duty cycle)	WLAN	8.69	± 9.6 %
10759	AAA	IEEE 802.11ax (160MHz, MCS4, 99pc duty cycle)	WLAN	8.58	± 9.6 %
10760	AAA	IEEE 802.11ax (160MHz, MCS5, 99pc duty cycle)	WLAN	8,49	± 9.6 %
10761	AAA	IEEE 802.11ax (160MHz, MCS6, 99pc duty cycle)	WLAN	8.58	± 9.6 %
10762	AAA	IEEE 802.11ax (160MHz, MCS7, 99pc duty cycle)	WLAN	8.49	± 9.6 %
10763	AAA	IEEE 802.11ax (160MHz, MCS8, 99pc duty cycle)	WLAN	8.53	± 9.6 %
10764	AAA	IEEE 802.11ax (160MHz, MCS9, 99pc duty cycle)	WLAN	8.54	± 9.6 %
10765	AAA	IEEE 802.11ax (160MHz, MCS10, 99pc duty cycle)	WLAN	8.54	± 9.6 %
10766	AAA	IEEE 802.11ax (160MHz, MCS11, 99pc duty cycle)	WLAN	8.51	± 9.6 %

<sup>E</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

#### **Calibration Laboratory of**

Schmid & Partner **Engineering AG** Zeughausstrasse 43, 8004 Zurich, Switzerland





Schweizerischer Kalibrierdienst S

- Service suisse d'étalonnage С
  - Servizio svizzero di taratura
- S Swiss Calibration Service

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS) The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

**PC Test** Client

Certificate No: EX3-3914\_Feb19

## **CALIBRATION CERTIFICATE**

Object	EX3DV4 - SN:3914
Calibration procedure(s)	GA CAL-01 v9, QA DAL-12 v9, QA GAL-14 v5, QA GAL-23 v5, GA CAL-25 v7 Galbration procedure for dosimetric Eriteic probes
Calibration date:	February 19, 2019 02-26-2019
This calibration certificate docume	nts the traceability to national standards, which realize the physical units of measurements (SI).

The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-18 (No. 217-02682)	Apr-19
DAE4	SN: 660	19-Dec-18 (No. DAE4-660_Dec18)	Dec-19
Reference Probe ES3DV2	SN: 3013	31-Dec-18 (No. ES3-3013_Dec18)	Dec-19
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-18)	In house check: Jun-20
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
		<u> </u>	- tee-
Approved by:	Katja Pokovic	Technical Manager	alle
			Issued: February 20, 2019
This calibration certificate	e shall not be reproduced except in	full without written approval of the labora	atory.

#### Calibration Laboratory of

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst

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- Servizio svizzero di taratura
- Swiss Calibration Service

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

#### Glossary: tissue simulating liquid TSL sensitivity in free space NORMx,y,z sensitivity in TSL / NORMx,y,z ConvF diode compression point DCP crest factor (1/duty\_cycle) of the RF signal CF A, B, C, D modulation dependent linearization parameters φ rotation around probe axis Polarization $\phi$ 9 rotation around an axis that is in the plane normal to probe axis (at measurement center), Polarization 9 i.e., $\vartheta = 0$ is normal to probe axis

Connector Angle information used in DASY system to align probe sensor X to the robot coordinate system

#### Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, ", "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from handheld and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

#### Methods Applied and Interpretation of Parameters:

- NORMx,y,z: Assessed for E-field polarization 9 = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E<sup>2</sup>-field uncertainty inside TSL (see below ConvF).
- NORM(f)x,y,z = NORMx,y,z \* frequency\_response (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCPx,y,z: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *PAR*: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- *Ax,y,z*; *Bx,y,z*; *Cx,y,z*; *Dx,y,z*; *VRx,y,z*: *A*, *B*, *C*, *D* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters: Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORMx,y,z \* ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy): in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- Connector Angle: The angle is assessed using the information gained by determining the NORMx (no uncertainty required).

#### **Basic Calibration Parameters**

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm $(\mu V/(V/m)^2)^A$	0.46	0.41	0.44	± 10.1 %
DCP (mV) <sup>B</sup>	98.0	104.4	100.8	

#### **Calibration Results for Modulation Response**

UID	Communication System Name		A dB	B dBõV	С	D dB	VR mV	Max dev.	Max Unc <sup>E</sup> (k=2)
0	CW	X	0.00	0.00	1.00	0.00	135.8	± 3.3 %	± 4.7 %
		Y	0.00	0.00	1.00		149.1		
		Z	0.00	0.00	1.00		130.4		
10352-	Pulse Waveform (200Hz, 10%)	X	11.50	82.25	17.46	10.00	60.0	±2.9 %	± 9.6 %
AAA		Y	13.06	84.85	18.88		60.0		
		Z	15.00	85.74	19.04		60.0		
10353-	Pulse Waveform (200Hz, 20%)	X	15.00	85.61	17.12	6.99	80.0	± 1.7 %	± 9.6 %
AAA		Y	15.00	87.20	18.40		80.0		
		Z	15.00	86.88	18.11		80.0		
10354-	Pulse Waveform (200Hz, 40%)	X	15.00	85.07	15.18	3.98	95.0	± 1.1 %	± 9.6 %
AAA		Y	15.00	89.57	18.09		95.0		
		Z	15.00	87.22	16.52		95.0		
10355-	Pulse Waveform (200Hz, 60%)	X	0.82	65.05	7.38	2.22	120.0	± 1.2 %	± 9.6 %
AAA		Y	15.00	94.17	19.03		120.0		
		Z	15.00	84.14	13.59		120.0		
10387-	QPSK Waveform, 1 MHz	Х	0.56	60.35	7.26	0.00	150.0	± 2.8 %	± 9.6 %
AAA		Y	0.80	64.04	10.54		150.0	]	
		Z	0.51	60.00	6.79		150.0		
10388-	QPSK Waveform, 10 MHz	Х	2.18	68.24	15.67	0.00	150.0	± 1.2 %	± 9.6 %
AAA		Y	2.41	70.06	16.91		150.0		
		Z	2.04	67.38	15.28		150.0		
10396-	64-QAM Waveform, 100 kHz	X	2.71	69.05	18.06	3.01	150.0	± 0.7 %	± 9.6 %
AAA		Y	3.50	74.05	20.22		150.0		
		Z	2.76	69.32	18.16		150.0		
10399-	64-QAM Waveform, 40 MHz	X	3.50	67.38	15.86	0.00	150.0	± 2.2 %	± 9.6 %
AAA		Υ	3.57	67.89	16.25		150.0	]	
		Z	3.38	66.82	15.58		150.0		
10414-	WLAN CCDF, 64-QAM, 40MHz	X	4.87	65.94	15.72	0.00	150.0	± 4.2 %	± 9.6 %
AAA		Y	4.84	65.99	15.74		150.0	1	
		Z	4.71	65.47	15.46		150.0		

Note: For details on UID parameters see Appendix

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

<sup>&</sup>lt;sup>A</sup> The uncertainties of Norm X,Y,Z do not affect the E<sup>2</sup>-field uncertainty inside TSL (see Pages 5 and 6). <sup>B</sup> Numerical linearization parameter: uncertainty not required. <sup>E</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

#### Sensor Model Parameters

	C1 fF	C2 fF	α V <sup>-1</sup>	T1 ms.V <sup>-2</sup>	T2 ms.V⁻¹	T3 ms	T4 V⁻²	T5 V <sup>-1</sup>	Т6
Х	42.5	324.17	36.82	9.95	0.55	5.06	0.00	0.49	1.01
Y	42.9	310.45	33.81	12.34	0.63	5.02	2.00	0.15	1.01
Z	39.7	301.66	36.55	9.75	0.75	5.05	0.45	0.44	1.01

#### **Other Probe Parameters**

Sensor Arrangement	Triangular
Connector Angle (°)	0.5
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm
	1

f (MHz) <sup>c</sup>	Relative Permittivity <sup>F</sup>	Conductivity (S/m) <sup>F</sup>	ConvF X	ConvF Y	ConvF Z	Alpha <sup>G</sup>	Depth <sup>G</sup> (mm)	Unc (k=2)
6	55.5	0.75	21.24	21.24	21.24	0.00	1.00	± 13.3 %
13	55.5	0.75	18.06	18.06	18.06	0.00	1.00	± 13.3 %
750	41.9	0.89	10.00	10.00	10.00	0.54	0.82	± 12.0 %
835	41.5	0.90	9.50	9.50	9.50	0.50	0.86	± 12.0 %
1750	40.1	1.37	8.16	8.16	8.16	0.41	0.80	± 12.0 %
1900	40.0	1.40	7.80	7.80	7.80	0.40	0.84	± 12.0 %
2300	39.5	1.67	7.44	7.44	7.44	0.37	0.84	± 12.0 %
2450	39.2	1.80	7.13	7.13	7.13	0.39	0.86	± 12.0 %
2600	39.0	1.96	7.11	7.11	7.11	0.39	0.89	± 12.0 %
3500	37.9	2.91	6.99	6.99	6.99	0.25	1.20	± 13.1 %
3700	37.7	3.12	6.75	6.75	6.75	0.25	1.20	± 13.1 %
5250	35.9	4.71	5.19	5.19	5.19	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.73	4.73	4.73	0.40	1.80	± 13.1 %
5750	35.4	5.22	4.90	4.90	4.90	0.40	1.80	± 13.1 %

#### Calibration Parameter Determined in Head Tissue Simulating Media

<sup>C</sup> Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.

<sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\varepsilon$  and  $\sigma$ ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\varepsilon$  and  $\sigma$ ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

the ConvF uncertainty for indicated target tissue parameters. <sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

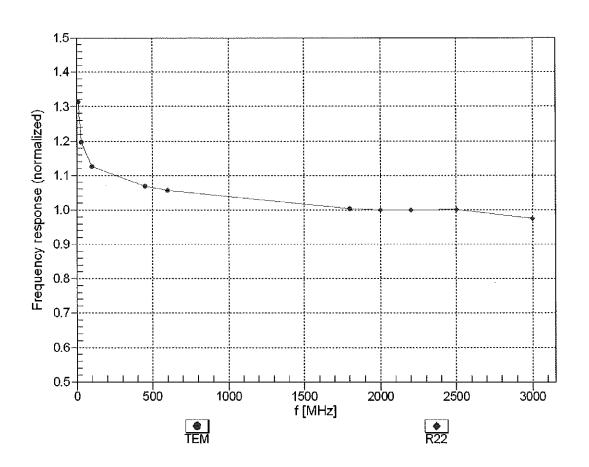
f (MHz) <sup>C</sup>	Relative Permittivity <sup>F</sup>	Conductivity (S/m) <sup>F</sup>	ConvF X	ConvF Y	ConvF Z	Alpha <sup>G</sup>	Depth <sup>G</sup> (mm)	Unc (k=2)
750	55.5	0.96	9.73	9.73	9.73	0.54	0.84	± 12.0 %
835	55.2	0.97	9.46	9.46	9.46	0.50	0.80	± 12.0 %
1750	53.4	1.49	7.89	7.89	7.89	0.38	0.84	± 12.0 %
1900	53.3	1.52	7.60	7.60	7.60	0.29	1.03	± 12.0 %
2300	52.9	1.81	7.43	7.43	7.43	0.38	0.84	± 12.0 %
2450	52.7	1.95	7.34	7.34	7.34	0.33	0.87	± 12.0 %
2600	52.5	2.16	7.15	7.15	7.15	0.26	0.97	± 12.0 %
3500	51.3	3.31	6.88	6.88	6.88	0.25	1.15	± 13.1 %
3700	51.0	3.55	6.58	6.58	6.58	0.30	1.15	± 13.1 %
5250	48.9	5.36	4.61	4.61	4.61	0.50	1,90	± 13.1 %
5600	48.5	5.77	3.92	3.92	3.92	0.50	1.90	± 13.1 %
5750	48.3	5.94	4.05	4.05	4.05	0.50	1,90	± 13.1 %

#### Calibration Parameter Determined in Body Tissue Simulating Media

<sup>c</sup> Frequency validity above 300 MHz of  $\pm$  100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to  $\pm$  50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is  $\pm$  10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to  $\pm$  110 MHz.

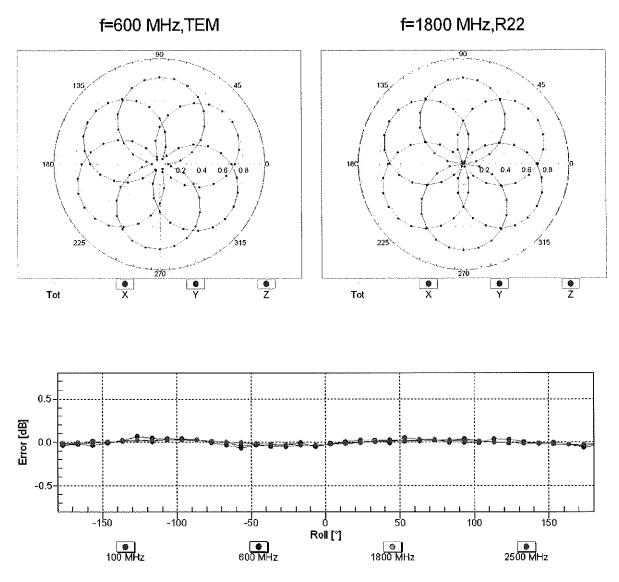
<sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to  $\pm$  10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to  $\pm$  5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters. <sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is

<sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.



## Frequency Response of E-Field (TEM-Cell:ifi110 EXX, Waveguide: R22)

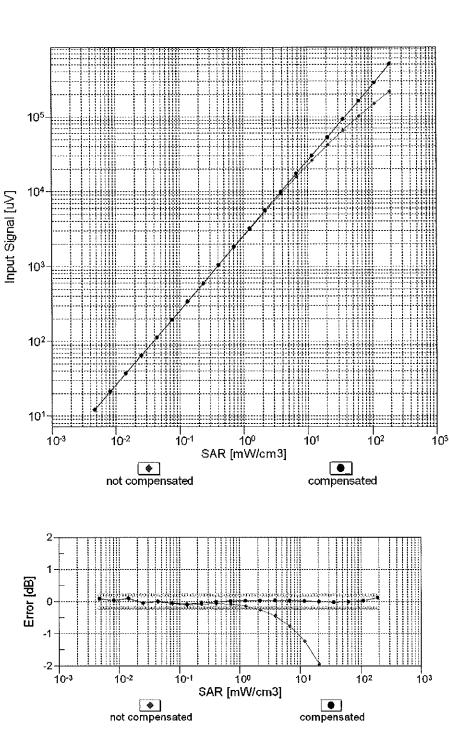
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)



## Receiving Pattern ( $\phi$ ), $\vartheta = 0^{\circ}$

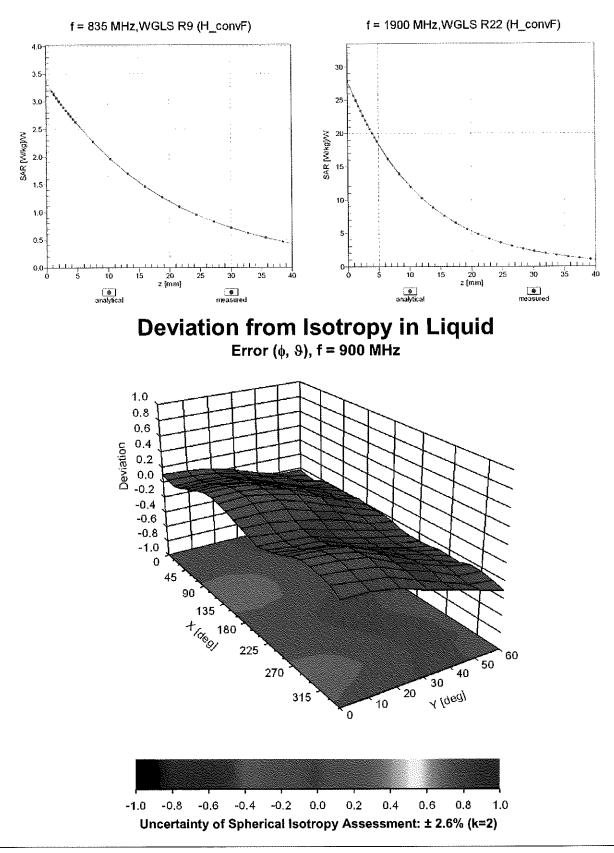
Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

February 19, 2019



## Dynamic Range f(SAR<sub>head</sub>) (TEM cell , f<sub>eval</sub>= 1900 MHz)

Uncertainty of Linearity Assessment: ± 0.6% (k=2)



## **Conversion Factor Assessment**

### Appendix: Modulation Calibration Parameters

UID	Rev	Communication System Name	Group	PAR (dB)	Unc <sup>E</sup> (k=2)
0		CW	CW	0.00	±4.7 %
10010	CAA	SAR Validation (Square, 100ms, 10ms)	Test	10.00	± 9.6 %
10011	CAB	UMTS-FDD (WCDMA)	WCDMA	2.91	±9.6 %
10012	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	WLAN	1.87	±9.6 %
10013	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	WLAN	9.46	±9.6 %
10021	DAC	GSM-FDD (TDMA, GMSK)	GSM	9.39	±9.6 %
10023	DAC	GPRS-FDD (TDMA, GMSK, TN 0)	GSM	9.57	± 9.6 %
10024	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	GSM	6.56	± 9.6 %
10025	DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	GSM	12.62	± 9.6 %
10026	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	GSM	9,55	±9.6 %
10027	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	GSM	4.80	±9.6 %
10028	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	GSM	3.55	±9.6 %
10029	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	GSM	7.78	±9.6 %
10030	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	Bluetooth	5.30	±9.6 %
10031	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	Bluetooth	1.87	± 9.6 %
10032	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	Bluetooth	1.16	± 9.6 %
10033	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	Bluetooth	7.74	± 9.6 %
10034	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	Bluetooth	4.53	± 9.6 %
10035	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	Bluetooth	3.83	± 9.6 %
10036	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	Bluetooth	8.01	± 9.6 %
10037	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	Bluetooth	4.77	$\pm 9.6\%$
10038	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	Bluetooth	4.10	±9.6 %
10039	CAB	CDMA2000 (1xRTT, RC1)	CDMA2000	4.57	± 9.6 %
10000	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate)	AMPS	7.78	± 9.6 %
10042	CAB	IS-91/EIA/TIA-553 FDD (FDMA, FMA-DQF3K, Flamate)	AMPS	0.00	$\pm 9.6\%$
10044	CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	DECT	13.80	± 9.6 %
10048		DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	DECT	10.79	± 9.6 %
10049		UMTS-TDD (TD-SCDMA, 1.28 Mcps)	TD-SCDMA	11.01	$\pm 9.6\%$
10058	DAC				
10058		EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	GSM WLAN	6.52	±9.6%
10059		IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)		2.12	± 9.6 %
	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	WLAN	2.83	± 9.6 %
10061	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	WLAN	3.60	±9.6%
10062	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	WLAN	8.68	±9.6%
10063	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	WLAN	8.63	±9.6%
10064	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	WLAN	9.09	±9.6 %
10065	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	WLAN	9.00	±9.6 %
10066	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)	WLAN	9.38	± 9.6 %
10067	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)	WLAN	10.12	±9.6 %
10068	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	WLAN	10.24	± 9.6 %
10069	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	WLAN	10.56	± 9.6 %
10071	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)	WLAN	9.83	± 9.6 %
10072	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	WLAN	9.62	± 9.6 %
10073	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	WLAN	9.94	± 9.6 %
10074	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	WLAN	10.30	± 9.6 %
10075	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)	WLAN	10.77	± 9.6 %
10076	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	WLAN	10.94	± 9.6 %
10077	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	WLAN	11.00	± 9.6 %
10081	CAB	CDMA2000 (1xRTT, RC3)	CDMA2000	3.97	± 9.6 %
10082	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate)	AMPS	4.77	±9.6 %
10090	DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	GSM	6.56	± 9.6 %
10097	CAB	UMTS-FDD (HSDPA)	WCDMA	3.98	±9.6 %
10098	CAB	UMTS-FDD (HSUPA, Subtest 2)	WCDMA	3.98	±9.6 %
10099	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	GSM	9.55	± 9.6 %
10100	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-FDD	5.67	± 9.6 %
10101	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
10102	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10103	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-TDD	9.29	±9.6 %
10104	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-TDD	9.97	± 9.6 %
	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-TDD	10.01	± 9.6 %
10105					

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10109	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10110	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-FDD	5.75	±9.6 %
10111	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-FDD	6.44	± 9.6 %
10112	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-FDD	6.59	±9.6 %
10113	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-FDD	6.62	±9.6%
10114	CAC	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	WLAN	8.10	±9.6%
10115	CAC	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	WLAN	8,46	±9.6%
10116	CAC	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	WLAN	8.15	±9.6 %
10117	CAC	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	WLAN	8.07	±9.6 %
10118	CAC	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)	WLAN	8.59	± 9.6 %
10119	CAC	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	WLAN	8.13	±9.6 %
10140	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-FDD	6.49	±9.6 %
10141	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-FDD	6.53	±9.6 %
10142	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-FDD	5.73	±9.6 %
10143	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-FDD	6.35	±9.6 %
10144	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-FDD	6.65	±9.6 %
10145	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-FDD	5.76	± 9.6 %
10146	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.41	± 9.6 %
10147	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.72	±9.6 %
10149	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	±9.6 %
10150	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	±9.6 %
10151	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-TDD	9.28	±9.6%
10152	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-TDD	9.92	±9.6 %
10153	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-TDD	10.05	±9.6 %
10154	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10155	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10156	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-FDD	5.79	±9.6 %
10157	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-FDD	6.49	±9.6 %
10158	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-FDD	6.62	±9.6 %
10159	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-FDD	6.56	±9.6 %
10160	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-FDD	5.82	± 9.6 %
10161	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10162	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-FDD	6.58	± 9.6 %
10166	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-FDD	5.46	± 9.6 %
10167	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.21	±9.6 %
10168	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.79	±9.6 %
10169	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10170	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10171	AAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	6.49	± 9.6 %
10172	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10173	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10174	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10175	CAG		LTE-FDD	5.72	±9.6 %
10176	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-FDD	6.52	±9.6%
10177	CAI	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-FDD	5.73	±9.6%
10178	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10179	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-FDD	6.50	$\pm 9.6\%$
10180	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10181	CAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10182	CAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-FDD	6.52	±9.6%
10183	AAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-FDD	6.50	±9,6%
10184	CAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10185		LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-FDD	6.51	± 9.6 %
10186	AAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-FDD	6.50	$\pm 9.6\%$
10187	CAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-FDD	5.73	±9.6%
10188	CAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.52	±9.6%
10189	AAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10193	CAC	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	WLAN	8.09	± 9.6 %
10194		IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	WLAN	8.12	± 9.6 %
10195	CAC	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	WLAN	8.21	±9.6%
10196		IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	WLAN	8.10	± 9.6 %
10197	CAC	IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10198	CAC	IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)	WLAN	8.27	$\pm 9.6\%$
10219	CAC	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	WLAN	8.03	± 9.6 %

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10220	CAC	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	WLAN	8.13	±9.6 %
10221	CAC	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	WLAN	8.27	±9.6 %
10222	CAC	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	WLAN	8.06	±9.6 %
10223	CAC	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	WLAN	8.48	± 9.6 %
10224	CAC	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	WLAN	8.08	±9.6 %
10225	CAB	UMTS-FDD (HSPA+)	WCDMA	5.97	±9.6 %
10226	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.49	±9.6 %
10227	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.26	±9.6 %
10228	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-TDD	9.22	±9.6 %
10229	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-TDD	9.48	±9.6 %
10230	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-TDD	10.25	±9.6 %
10231	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-TDD	9.19	±9.6%
10232	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-TDD	9.48	±9.6 %
10233	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-TDD	10.25	±9.6 %
10234	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-TDD	9.21	±9.6%
10235	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-TDD	9.48	±9.6 %
10236	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-TDD	10.25	±9.6 %
10237	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-TDD	9.21	±9.6 %
10238	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-TDD	9.48	±9.6 %
10239	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10240	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-TDD	9.21	±9.6 %
10241	CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.82	± 9.6 %
10242		LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-TDD	9.86	±9.6 %
10243		LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-TDD	9.46	± 9.6 %
10244	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-TDD	10.06	±9.6 %
10245	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-TDD	10.06	±9.6 %
10246	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-TDD	9.30	±9.6 %
10247	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-TDD	9.91	±9.6 %
10248	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-TDD	10.09	±9.6 %
10249	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-TDD	9.29	±9.6 %
10250	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-TDD	9.81	±9.6 %
10251	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-TDD	10.17	±9.6 %
10252	CAF CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-TDD	9.24	± 9.6 %
10253		LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-TDD	9.90	± 9.6 %
10255	CAF CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-TDD	10.14	± 9.6 %
10255	CAA	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK) LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.20	± 9.6 %
10257	CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 10-QAM)	LTE-TDD	9.96	±9.6 % ±9.6 %
10257	CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-TDD LTE-TDD	10.08 9.34	± 9.6 % ± 9.6 %
10259	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-TDD	9.94	$\pm 9.6\%$ $\pm 9.6\%$
10255	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-TDD	9.96	±9.6 %
10260	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-TDD	9.97	$\pm 9.6\%$
10261	CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-TDD		
10202	CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-TDD	9.83 10.16	±9.6 % ±9.6 %
10264	CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-TDD	9.23	$\pm 9.6\%$
10265	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10266	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-TDD	10.07	± 9.6 %
10267	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-TDD	9.30	± 9.6 %
10268	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-TDD	10.06	± 9.6 %
10269	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-TDD	10.00	± 9.6 %
10270	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-TDD	9.58	± 9.6 %
10274	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)	WCDMA	4.87	± 9.6 %
10275	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	WCDMA	3.96	± 9.6 %
10277	CAA	PHS (QPSK)	PHS	11.81	±9.6 %
10278	CAA	PHS (QPSK, BW 884MHz, Rolloff 0.5)	PHS	11.81	± 9.6 %
10279	CAA	PHS (QPSK, BW 884MHz, Rolloff 0.38)	PHS	12.18	± 9.6 %
10290	AAB	CDMA2000, RC1, SO55, Full Rate	CDMA2000	3.91	± 9.6 %
10291	AAB	CDMA2000, RC3, SO55, Full Rate	CDMA2000	3.46	± 9.6 %
10292	AAB	CDMA2000, RC3, SO32, Full Rate	CDMA2000	3.39	± 9.6 %
10293	AAB	CDMA2000, RC3, SO3, Full Rate	CDMA2000	3.50	±9.6 %
10295	AAB	CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	CDMA2000	12.49	± 9.6 %
10297	AAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-FDD	5.81	± 9.6 %
10298	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10299	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-FDD	6.39	± 9.6 %

10300	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-FDD	6.60	±9.6 %
10301	AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	WIMAX	12.03	±9.6%
10302	AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3 CTRL symbols)	WIMAX	12.57	± 9.6 %
10303	ААА	IEEE 802.16e WiMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	WIMAX	12.52	± 9.6 %
10304	AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	WIMAX	11.86	± 9.6 %
10305	AAA	IEEE 802.16e WIMAX (31:15, 10ms, 10MHz, 64QAM, PUSC, 15 symbols)	WiMAX	15.24	± 9.6 %
10306	ААА	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18 symbols)	WIMAX	14.67	± 9.6 %
10307	ААА	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18 symbols)	WIMAX	14.49	± 9.6 %
10308	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	WIMAX	14.46	± 9.6 %
10309	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3, 18 symbols)	WIMAX	14.58	±9.6 %
10310	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18 symbols)	WIMAX	14.57	± 9.6 %
10311	AAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-FDD	6.06	±9.6 %
10313	AAA	IDEN 1:3	IDEN	10.51	± 9.6 %
10314	AAA	iDEN 1:6	IDEN	13.48	±9.6%
10315	AAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)	WLAN	1.71	±9.6 %
10316	AAB	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle)	WLAN	8.36	± 9.6 %
10317	AAC	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)	WLAN	8.36	±9.6 %
10352	AAA	Pulse Waveform (200Hz, 10%)	Generic	10.00	± 9.6 %
10353	AAA	Pulse Waveform (200Hz, 20%)	Generic	6.99	± 9.6 %
10354	AAA	Pulse Waveform (200Hz, 40%)	Generic	3.98	± 9.6 %
10355	AAA	Pulse Waveform (200Hz, 60%)	Generic	2.22	± 9.6 %
10356	AAA	Pulse Waveform (200Hz, 80%)	Generic	0.97	±9.6 %
10387	AAA	QPSK Waveform, 1 MHz	Generic	5.10	± 9.6 %
10388	AAA	QPSK Waveform, 10 MHz	Generic	5.22	± 9.6 %
10396	AAA	64-QAM Waveform, 100 kHz	Generic	6.27	± 9.6 %
10399	AAA	64-QAM Waveform, 40 MHz	Generic	6.27	± 9.6 %
10400	AAD	IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc duty cycle)	WLAN	8.37	±9.6 %
10401	AAD	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc duty cycle)	WLAN	8.60	± 9.6 %
10402	AAD	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc duty cycle)	WLAN	8.53	± 9.6 %
10403	AAB	CDMA2000 (1xEV-DO, Rev. 0)	CDMA2000	3.76	± 9.6 %
10404	AAB	CDMA2000 (1xEV-DO, Rev. A)	CDMA2000	3.77	± 9.6 %
10406	AAB	CDMA2000, RC3, SO32, SCH0, Full Rate	CDMA2000	5.22	± 9.6 %
10410	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9, Subframe Conf=4)	LTE-TDD	7.82	± 9.6 %
10414	AAA	WLAN CCDF, 64-QAM, 40MHz	Generic	8.54	± 9.6 %
10415	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	WLAN	1.54	± 9.6 %
10416	AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	± 9.6 %
10417	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	± 9.6 %
10418	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Long preambule)	WLAN	8.14	± 9.6 %
10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule)	WLAN	8.19	± 9.6 %
10422	AAB	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	WLAN	8.32	± 9.6 %
10423	AAB	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	WLAN	8.47	± 9.6 %
10424	AAB	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	WLAN	8.40	± 9.6 %
10425	AAB	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	WLAN	8.41	± 9.6 %
10426		IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	WLAN	8.45	± 9.6 %
10427	AAB	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)		8.41 8.28	$\pm 9.6\%$
10430	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	LTE-FDD		± 9.6 % ± 9.6 %
10431	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	LTE-FDD	8.38 8.34	± 9.6 %
10432 10433	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1) LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	LTE-FDD	8.34	± 9.6 %
	AAC	W-CDMA (BS Test Model 1, 64 DPCH)	WCDMA	8.60	± 9.6 %
10434 10435	AAA AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10447	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.56	± 9.6 %
10448	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	LTE-FDD	7.53	± 9.6 %
10449	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Cliping 44%)	LTE-FDD	7.51	± 9.6 %
10450	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.48	± 9.6 %

10451	AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	WCDMA	7.59	± 9.6 %
10456	AAB	IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc duty cycle)	WLAN	8.63	± 9.6 %
10457	AAA	UMTS-FDD (DC-HSDPA)	WCDMA	6.62	± 9.6 %
10458	AAA	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	CDMA2000	6.55	± 9.6 %
<u>10459</u> 10460		CDMA2000 (1xEV-DO, Rev. B, 3 carriers) UMTS-FDD (WCDMA, AMR)	CDMA2000	8.25	± 9.6 %
10460	AAA	LTE-TDD (WCDMA, AMR)	UCDMA	2.39 7.82	± 9.6 %
10401		Subframe=2,3,4,7,8,9)	LIE-IDD	1.02	± 9.6 %
10462	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL	LTE-TDD	8.30	± 9.6 %
10463	AAA	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL	LTE-TDD	8.56	± 9.6 %
10464	AAB	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
10465	AAB	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL	LTE-TDD	8.32	± 9.6 %
10466	AAB	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL	LTE-TDD	8.57	± 9.6 %
10467	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10468	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10469	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.56	±9.6 %
10470	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10471	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10472	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	± 9.6 %
10473	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10474	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10475	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL	LTE-TDD	8.57	± 9.6 %
10477	AAF	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,2,4,7,8,0)	LTE-TDD	8.32	± 9.6 %
10478	AAF	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,2,4,7,8,0)	LTE-TDD	8.57	± 9.6 %
10479	AAA	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL	LTE-TDD	7.74	± 9.6 %
10480	AAA	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL	LTE-TDD	8.18	± 9.6 %
10481	AAA	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL	LTE-TDD	8.45	± 9.6 %
10482	AAB	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL	LTE-TDD	7.71	± 9.6 %
10483	AAB	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL	LTE-TDD	8.39	± 9.6 %
10484	AAB	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL	LTE-TDD	8.47	± 9.6 %
10485	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL	LTE-TDD	7.59	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10486	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.38	± 9.6 %
10487	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.60	± 9.6 %
10488	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.70	± 9.6 %
10489	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.31	± 9.6 %
10490	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	± 9.6 %
10491	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL	LTE-TDD	7.74	± 9.6 %
		Subframe=2,3,4,7,8,9)		L	

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10492	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.41	±9.6 %
10493	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.55	± 9.6 %
10494	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL	LTE-TDD	7.74	± 9.6 %
10495	AAF	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL	LTE-TDD	8.37	± 9.6 %
10496	AAF	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL	LTE-TDD	8.54	± 9.6 %
10497	AAA	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL	LTE-TDD	7.67	± 9.6 %
10498	ААА	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL	LTE-TDD	8.40	± 9.6 %
10499	AAA	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL	LTE-TDD	8.68	± 9.6 %
10500	AAB	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL	LTE-TDD	7.67	± 9.6 %
10501	AAB	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL	LTE-TDD	8.44	±9.6 %
10502	AAB	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL	LTE-TDD	8.52	±9.6 %
10503	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL	LTE-TDD	7.72	±9.6 %
10504	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL	LTE-TDD	8.31	± 9.6 %
10505	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL	LTE-TDD	8.54	± 9.6 %
10506	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL	LTE-TDD	7.74	± 9.6 %
10507	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL	LTE-TDD	8.36	±9.6 %
10508	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL	LTE-TDD	8.55	± 9.6 %
10509	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,2,4,7,8,9)	LTE-TDD	7.99	± 9.6 %
10510	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.49	±9.6 %
10511	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.51	±9.6 %
10512	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	± 9.6 %
10513	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.42	± 9.6 %
10514	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.45	± 9.6 %
10515	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)	WLAN	1.58	± 9.6 %
10516	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)	WLAN	1.57	± 9.6 %
10517	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)	WLAN	1.58	± 9.6 %
10518	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)	WLAN	8.23	± 9.6 %
10519	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)	WLAN	8.39	± 9.6 %
10520	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)	WLAN	8.12	± 9.6 %
10521	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)	WLAN	7.97	± 9.6 %
10522	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)	WLAN	8,45	± 9.6 %
10523	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)	WLAN	8.08	± 9.6 %
10524	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)	WLAN	8.27	± 9.6 %
10525	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)	WLAN	8.36	± 9.6 %
10526	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10527	AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)	WLAN	8.21	± 9.6 %
10528	AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)	WLAN	8.36	± 9.6 %
10529	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)	WLAN	8.36	± 9.6 %
10531	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)	WLAN	8.43	± 9.6 %
10532	AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10533	AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle)	WLAN	8.38	± 9.6 %
10534	AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc duty cycle)	WLAN	8.45	± 9.6 %

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10535	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle)	WLAN	8.45	±9.6%
10536	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc duty cycle)	WLAN	8.32	±9.6 %
10537	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)	WLAN	8.44	±9.6 %
10538	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc duty cycle)	WLAN	8.54	±9.6 %
10540	AAB	IEEE 802.11ac WiFI (40MHz, MCS6, 99pc duty cycle)	WLAN	8.39	± 9.6 %
10541	AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc duty cycle)	WLAN	8.46	± 9.6 %
10542	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)	WLAN	8.65	±9.6 %
10543	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)	WLAN	8.65	±9.6 %
10544	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)	WLAN	8.47	± 9.6 %
10545	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle)	WLAN	8.55	± 9.6 %
10546	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)	WLAN	8.35	
10547	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)	WLAN	******	±9.6%
10548	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)		8.49	±9.6%
10550	AAB		WLAN	8.37	± 9.6 %
		IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle)	WLAN	8.38	± 9.6 %
10551	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc duty cycle)	WLAN	8.50	±96%
10552	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10553	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10554	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc duty cycle)	WLAN	8.48	±9.6 %
10555	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc duty cycle)	WLAN	8.47	±9.6 %
10556	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle)	WLAN	8.50	± 9.6 %
10557	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle)	WLAN	8.52	± 9.6 %
10558	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc duty cycle)	WLAN	8.61	±9.6 %
10560	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc duty cycle)	WLAN	8.73	± 9.6 %
10561	AAC	IEEE 802.11ac WIFI (160MHz, MCS7, 99pc duty cycle)	WLAN	8.56	± 9.6 %
10562	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc duty cycle)	WLAN	8.69	± 9.6 %
10563	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc duty cycle)	WLAN	8.77	± 9.6 %
10564	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty	WLAN	8.25	± 9.6 %
10004	1001		W LAIN	0.25	1.9.0 %
10565	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty	WLAN	0.45	+0.6.9/
10000		cvcle)	<b>WLAN</b>	8.45	±9.6 %
10566	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty	WLAN	0.42	
10500			<b>WLAN</b>	8.13	± 9.6 %
10567			34/1 441		
10007	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty	WLAN	8.00	± 9.6 %
40500					
10568	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty	WLAN	8.37	± 9.6 %
40700		cycle)			
10569	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty	WLAN	8.10	± 9.6 %
		cycle)			
10570	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty	WLAN	8.30	±9.6 %
		cycle)			
10571	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)	WLAN	1.99	±9.6 %
10572	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	WLAN	1.99	±9.6 %
10573	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)	WLAN	1.98	±9.6 %
10574	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)	WLAN	1.98	±9.6 %
10575	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty	WLAN	8.59	±9.6 %
	1	cycle)			
10576	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty	WLAN	8.60	±96%
-		cycle)			
10577	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty	WLAN	8.70	± 9.6 %
		cycle)	y a best bit 1		0.0 /0
10578	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty	WLAN	8.49	± 9.6 %
			116/11	0.40	± 0.0 /0
10579	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty	WLAN	8.36	± 9.6 %
10010	1,0,04	cvcle)		0.30	
10580	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty	WLAN	8.76	± 9.6 %
10000	1.0.01	cvcle)	VVL/N	0.70	± 9.0 %
10581	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty	WLAN	8.35	± 9.6 %
10001	10004		<b>WLAN</b>	0.30	19.0 %
10500		Cycle)	10/1 0.8.1		1000
10582	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty	WLAN	8.67	± 9.6 %
40500	+				
10583	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)	WLAN	8.59	± 9.6 %
10584	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	WLAN	8.60	±9.6 %
	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10585					
10585 10586 10587	AAB AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)	WLAN WLAN	8.49	± 9.6 % ± 9.6 %

10588	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)	WLAN	8.76	±9.6 %
10589	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)	WLAN	8.35	±9.6 %
10590	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)	WLAN	8.67	±9.6 %
10591	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle)	WLAN	8.63	± 9.6 %
10592	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10593	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle)	WLAN	8.64	±9.6 %
10594	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle)	WLAN	8.74	±9.6 %
10595	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle)	WLAN	8.74	<u>± 9.6 %</u>
10596	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle)	WLAN	8.71	± 9.6 %
10597	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle)	WLAN	8.72	± 9.6 %
10598	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle)	WLAN	8.50	± 9.6 %
10599	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10600	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle)	WLAN	8.88	±9.6 %
10601	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle)	WLAN	8.82	±9.6 %
10602	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle)	WLAN	8.94	±9.6 %
10603	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc duty cycle)	WLAN	9.03	±9.6 %
10604	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc duty cycle)	WLAN	8.76	± 9.6 %
10605	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle)	WLAN	8.97	± 9.6 %
10606	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10607	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	WLAN	8.64	±9.6 %
10608	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)	WLAN	8.77	±9.6 %
10609	AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle)	WLAN	8.57	± 9.6 %
10610	AAB	IEEE 802.11ac WIFI (20MHz, MCS3, 90pc duty cycle)	WLAN	8.78	± 9.6 %
10611	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10612	AAB	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10613	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle)	WLAN	8.94	± 9.6 %
10614	AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle)	WLAN	8.59	± 9.6 %
10615	AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10616	AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10617	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10618	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle)	WLAN	8.58	± 9.6 %
10619	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle)	WLAN	8.86	± 9.6 %
10610	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle)	WLAN	8.87	± 9.6 %
10621	AAB	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10622	AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle)	WLAN	8.68	± 9.6 %
10623	AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10624	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)	WLAN	8.96	± 9.6 %
10625	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)	WLAN	8.96	± 9.6 %
10626	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10627	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)	WLAN	8.88	± 9.6 %
10628	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)	WLAN	8.71	± 9.6 %
10629	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle)	WLAN	8.85	± 9.6 %
10630	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)	WLAN	8.72	± 9.6 %
10631	AAB	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10632	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10633	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10633	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)	WLAN	8.80	± 9.6 %
10635	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10635	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10636	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10637	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	WLAN	8.86	± 9.6 %
10638	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)	WLAN	8.85	± 9.6 %
10639		IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)	WLAN	8.98	± 9.6 %
	AAC	IEEE 802.11ac WiFI (160MHz, MCS4, 90pc duty cycle)	WLAN	9.06	$\pm 9.6\%$
10641	AAC AAC	IEEE 802.11ac WiFI (160MHz, MCS6, 90pc duty cycle)	WLAN	9.06	± 9.6 %
		IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)	WLAN	8.89	± 9.6 %
10643	AAC		WLAN	9.05	$\pm 9.6\%$
10644	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)	WLAN	9.05	$\pm 9.6\%$
10645	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)			
10646	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)	LTE-TDD	11.96	± 9.6 %
10647	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7)	LTE-TDD	11.96	$\pm 9.6\%$
10648	AAA	CDMA2000 (1x Advanced)	CDMA2000	3.45	$\pm 9.6\%$
10652	AAD	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.91	$\pm 9.6\%$
10653	AAD	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.42	$\pm 9.6\%$
10654	AAD	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6,96	± 9.6 %

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10655	AAE	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.21	± 9.6 %
10658	AAA	Pulse Waveform (200Hz, 10%)	Test	10.00	± 9.6 %
10659	AAA	Pulse Waveform (200Hz, 20%)	Test	6.99	± 9.6 %
10660	AAA	Pulse Waveform (200Hz, 40%)	Test	3.98	± 9.6 %
10661	AAA	Pulse Waveform (200Hz, 60%)	Test	2.22	± 9.6 %
10662	AAA	Pulse Waveform (200Hz, 80%)	Test	0.97	± 9.6 %
10670	AAA	Bluetooth Low Energy	Bluetooth	2.19	± 9.6 %

<sup>E</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

#### Calibration Laboratory of

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





S Schweizerischer Kalibrierdienst

- C Service suisse d'étalonnage
- S Servizio svizzero di taratura
  - Swiss Calibration Service

Accreditation No.: SCS 0108

51 V 1720/2018

Multilateral Agreement for the recognition of calibration certificates
Client PC Test

Accredited by the Swiss Accreditation Service (SAS)

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сепи	icate n	(): LC	La Plan	400	8 <b>1</b> 15	610

## **CALIBRATION CERTIFICATE**

The Swiss Accreditation Service is one of the signatories to the EA

Object
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ES3DV3 - SN:3288

Calibration procedure(s)

QA CAL-01.99, QA CAL-23.95, QA CAL-25.96 Calibration procedure for doctmetric E-field probes

Calibration date:

December 11, 2018

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Duine and Otan davida			Scheduled Calibration
Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-18 (No. 217-02682)	Apr-19
Reference Probe ES3DV2	SN: 3013	30-Dec-17 (No. ES3-3013_Dec17)	Dec-18
DAE4	- SN: 660	21-Dec-17 (No. DAE4-660_Dec17)	Dec-18
			· · · · · · · · · · · · · · · · · · ·
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-18)	In house check: Jun-20
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19

	Name	Function	Signature
Calibrated by:	Manu Seitz	Laboratory Technician	and the second second
			and the second s
Approved by:	Katja Pokovic	Technical Manager	All
			Issued: December 13, 2018
This calibration certificate	shall not be reproduced except i	n full without written approval of the labor	ratory.

#### Calibration Laboratory of

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland



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- Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

#### Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization &	$\vartheta$ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta$ = 0 is normal to probe axis

Connector Angle information used in DASY system to align probe sensor X to the robot coordinate system

#### Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, ", "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from handheld and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

#### Methods Applied and Interpretation of Parameters:

- NORMx,y,z: Assessed for E-field polarization 9 = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E<sup>2</sup>-field uncertainty inside TSL (see below ConvF).
- NORM(f)x, y, z = NORMx, y, z \* frequency\_response (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCPx,y,z: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- PAR: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- *Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,y,z: A, B, C, D* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters: Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORMx,y,z \* ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy): in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- Connector Angle: The angle is assessed using the information gained by determining the NORMx (no uncertainty required).

Accreditation No.: SCS 0108

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# Probe ES3DV3

## **SN:3288**

Manufactured: July 6, 2010 Calibrated:

December 11, 2018

Calibrated for DASY/EASY Systems (Note: non-compatible with DASY2 system!)

#### Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm $(\mu V/(V/m)^2)^A$	1.13	1.09	1.09	± 10.1 %
DCP (mV) <sup>B</sup>	103.7	106.0	104.2	

#### **Modulation Calibration Parameters**

UID	Communication System Name		A dB	Β dB√μV	С	D dB	VR mV	Unc <sup>⊨</sup> (k=2)
0	CW	X	0.0	0.0	1.0	0.00	191.1	±3.0 %
		Y	0.0	0.0	1.0		196.5	
		Z	0.0	0.0	1.0		194.8	

Note: For details on UID parameters see Appendix.

#### Sensor Model Parameters

	C1 fF	C2 fF	α V <sup>-1</sup>	T1 ms.V⁻²	T2 ms.V <sup>−1</sup>	T3 ms	T4 V⁻²	T5 V⁻¹	Т6
X	42.42	304.2	35.17	23.59	0.843	5.100	1.279	0.215	1.009
Y	45.72	323.4	34.48	25.10	1.269	5.100	1.663	0.175	1.011
Z	44.40	317.9	35.06	25.34	1.194	5.100	1.225	0.273	1.011

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

<sup>A</sup> The uncertainties of Norm X,Y,Z do not affect the E<sup>2</sup>-field uncertainty inside TSL (see Pages 5 and 6).

<sup>6</sup> Numerical linearization parameter: uncertainty not required.

<sup>E</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

f (MHz) <sup>C</sup>	Relative Permittivity <sup>F</sup>	Conductivity (S/m) <sup>F</sup>	ConvF X	ConvF Y	ConvF Z	Alpha <sup>G</sup>	Depth <sup>G</sup> (mm)	Unc (k=2)
750	41.9	0.89	6.75	6.75	6.75	0.80	1.17	± 12.0 %
835	41.5	0.90	6.48	6.48	6.48	0.64	1.34	± 12.0 %
1750	40.1	1.37	5.52	5.52	5.52	0.43	1.66	± 12.0 %
1900	40.0	1.40	5.30	5.30	5.30	0.74	1.23	± 12.0 %
2300	39.5	1.67	4.94	4.94	4.94	0.55	1.47	± 12.0 %
2450	39.2	1.80	4.63	4.63	4.63	0.68	1.37	± 12.0 %
2600	39.0	1.96	4.47	4.47	4.47	0.80	1.27	± 12.0 %

#### Calibration Parameter Determined in Head Tissue Simulating Media

<sup>c</sup> Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz. <sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\varepsilon$  and  $\sigma$ ) can be relaxed to ± 10% if liquid compensation formula is applied to

<sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\varepsilon$  and  $\sigma$ ) can be relaxed to  $\pm$  10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\varepsilon$  and  $\sigma$ ) is restricted to  $\pm$  5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters. <sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is

<sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

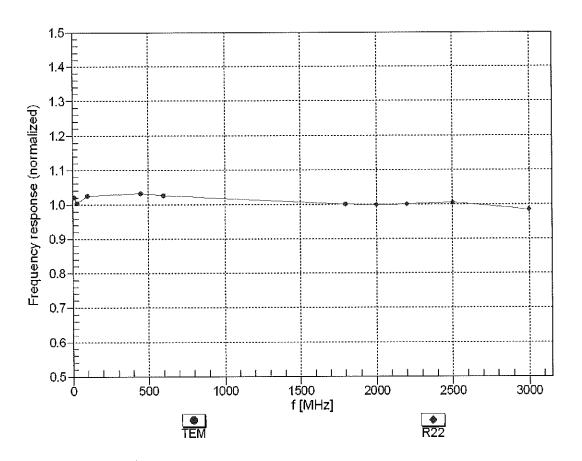
f (MHz) <sup>C</sup>	Relative Permittivity <sup>F</sup>	Conductivity (S/m) <sup>F</sup>	ConvF X	ConvF Y	ConvF Z	Alpha <sup>G</sup>	Depth <sup>G</sup> (mm)	Unc (k=2)
750	55.5	0.96	6.38	6.38	6.38	0.60	1.40	± 12.0 %
835	55.2	0.97	6.21	6.21	6.21	0.60	1.40	± 12.0 %
1750	53.4	1.49	5.09	5.09	5.09	0.45	1.67	± 12.0 %
1900	53.3	1.52	4.89	4.89	4.89	0.56	1.55	± 12.0 %
2300	52.9	1.81	4.57	4.57	4.57	0.71	1.32	± 12.0 %
2450	52,7	1.95	4.50	4.50	4.50	0.70	1.30	± 12.0 %
2600	52.5	2.16	4.38	4.38	4.38	0.80	1.20	± 12.0 %

#### Calibration Parameter Determined in Body Tissue Simulating Media

<sup>c</sup> Frequency validity above 300 MHz of  $\pm$  100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to  $\pm$  50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is  $\pm$  10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity validity can be extended to  $\pm$  110 MHz.

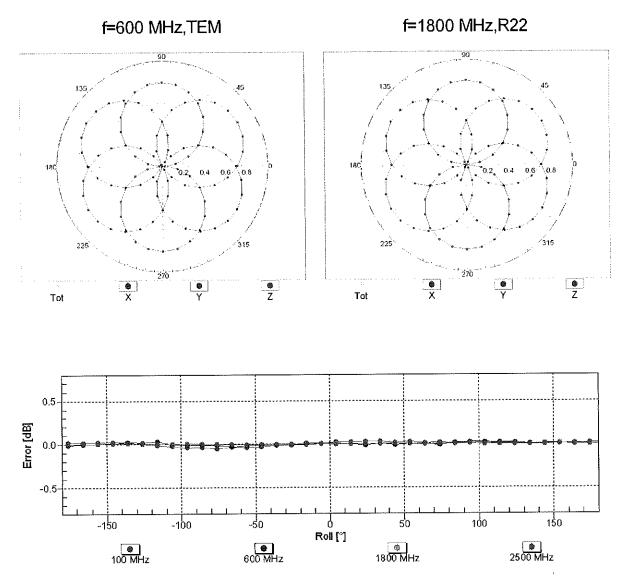
<sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\varepsilon$  and  $\sigma$ ) can be relaxed to  $\pm$  10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\varepsilon$  and  $\sigma$ ) is restricted to  $\pm$  5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

the ConvF uncertainty for indicated target tissue parameters. <sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.



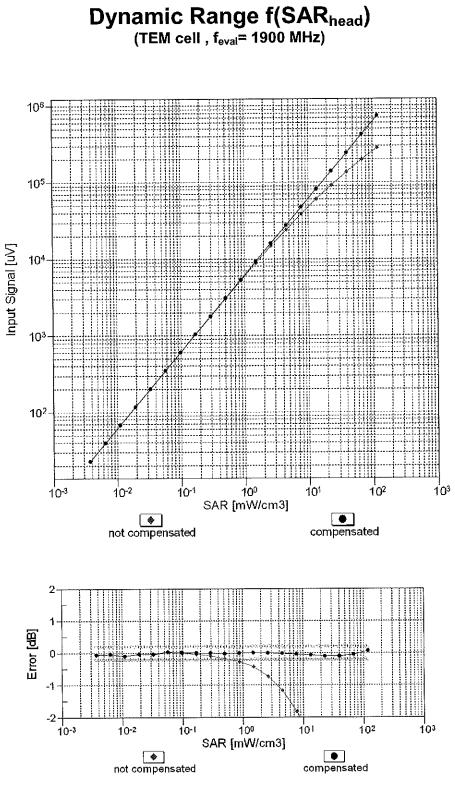
## Frequency Response of E-Field (TEM-Cell:ifi110 EXX, Waveguide: R22)

Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

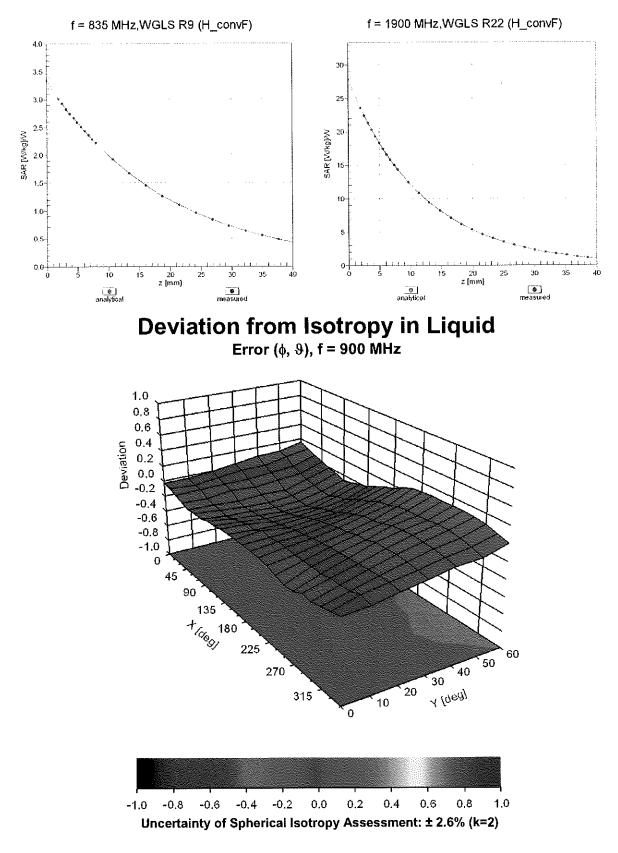


## Receiving Pattern ( $\phi$ ), $\vartheta = 0^{\circ}$

Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)



Uncertainty of Linearity Assessment: ± 0.6% (k=2)



## **Conversion Factor Assessment**

## **Other Probe Parameters**

Triangular
94.1
enabled
disabled
337 mm
10 mm
10 mm
4 mm
2 mm
2 mm
2 mm
3 mm

## **Appendix: Modulation Calibration Parameters**

UID	Communication System Name		A dB	B dBõV	С	D dB	VR mV	Max Unc <sup>E</sup> (k=2)
0	CW	X	0.00	0.00	1.00	0.00	191.1	± 3.0 %
		Y	0.00	0.00	1.00		196.5	
10010		Z	0.00	0.00	1.00		194.8	
10010- CAA	SAR Validation (Square, 100ms, 10ms)	X	6.24	76.67	15.81	10.00	25.0	± 9.6 %
		Y	9.09	81.21	18.14		25.0	*******
10011		Z	6.22	76.01	15.93		25.0	
10011- CAB	UMTS-FDD (WCDMA)	×	0.85	64.24	12.79	0.00	150.0	± 9.6 %
		Y	0.99	66.97	14.74		150.0	
40040		Z	0.84	64.26	12.74	0.44	150.0	
10012- CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	×	1.17	63.37	14.30	0.41	150.0	± 9.6 %
		L	1.24	64.74	15,45		150.0	
10010		Z	1.16	63.48	14.32		150.0	
10013- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 6 Mbps)	×	4.87	66.95	17.04	1.46	150.0	± 9.6 %
		Y	4.96	67.25	17.32		150.0	
40003		Z	4.89	66.97	17.05		150.0	
10021- DAC	GSM-FDD (TDMA, GMSK)	X	100.00	117.46	29.69	9.39	50.0	±9.6 %
		Y	100.00	118.87	30.88		50.0	
10000		Z	100.00	117.65	30.17		50.0	
10023- DAC	GPRS-FDD (TDMA, GMSK, TN 0)	×	100.00	117.25	29.63	9.57	50.0	± 9.6 %
		Y	100.00	118.78	30.89		50.0	
		Z	100.00	117.55	30.17	0.50	50.0	
10024- DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	×	100.00	114.32	27.30	6.56	60.0	± 9.6 %
		Y	100.00	115.92	28.46		60.0	
		Z	100.00	114.14	27.52	10 ===	60.0	
10025- DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	X	14.49	106.35	41.86	12.57	50.0	± 9.6 %
		Y	35.14	132.48	50.59		50.0	
40000		Z	17.38	109.14	42.18	0.56	50.0	1069
10026- DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	X	18.23	106.85	37.52	9.56	60.0	± 9.6 %
		Y	31.69	119.75	41.58		60.0	
10027-	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	Z X	19.94 100.00	107.22 113.24	37.22 26.09	4.80	60.0 80.0	± 9.6 %
DAC		<u> </u>	400.00	445.40	07.00			
		Y	100.00	115.16	27.33		80.0	
10028-	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	Z X	100.00 100.00	112.68 113.00	26.08 25.31	3.55	80.0 100.0	± 9.6 %
DAC		Y	100.00	115.51	26.77	[	100.0	
		Z	100.00	112.04	25.10		100.0	1
10029-	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	X	9.83	91.59	30.93	7.80	80.0	± 9.6 %
DAC		Y		99.61	33.83	, .uu	80.0	± 0.0 /0
		Z	14.24 11.04	99.61	33.83		80.0	
10030-	IEEE 802.15.1 Bluetooth (GFSK, DH1)	X	100.00	112.24	25.90	5.30	70.0	± 9.6 %
CAA	<u> </u>	Y	100.00	114.24	27.20		70.0	
		Z	100.00	112.05	26.08	<u> </u>	70.0	
10031- CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	X	100.00	109.56	22.52	1.88	100.0	± 9.6 %
0/01		Y	100.00	114.84	25.05		100.0	
		Ż	100.00	108.38	22.17		100.0	

10032-	IEEE 802.15.1 Bluetooth (GFSK, DH5)	X	100.00	109.17	21.47	1.17	100.0	± 9.6 %
CAA			400.00	447.00	05.00		400.0	
		Y	100.00	117.68	25.23		100.0	
40000	IFFF 902 45 1 Divetesth (DV4 DODOK	Z	100.00	107.06	20.70	E 20	100.0	± 9.6 %
10033- CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	X	31.59	105.89	28.05	5.30	70.0	± 9.0 %
		Y	45.55	111.97	30.13		70.0	
		Ζ	23.03	100.25	26.50		70,0	
10034- CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	Х	3.87	77.59	17.36	1.88	100.0	± 9.6 %
		Y	7.94	87.73	21.39		100.0	
		Z	4.00	77.59	17.40		100.0	
10035- CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	X	2.17	71.58	14.70	1.17	100.0	± 9.6 %
		Y	3.80	79.25	18.25		100.0	
		Z	2.27	71.81	14.83		100.0	
10036- CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	X	52.58	113.84	30.16	5.30	70.0	±9.6 %
		Y	75.42	120.08	32.21		70.0	
		Ζ	33.31	106.06	28.16		70.0	
10037- CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	X	3.59	76.73	17.02	1.88	100.0	±9.6 %
		Y	7.22	86.52	20.98		100.0	
		Ζ	3,75	76.83	17.09		100.0	
10038- CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	X	2,19	71.91	14.93	1.17	100.0	± 9.6 %
		Y	3.90	79.88	18.59		100.0	
		Ζ	2.30	72.18	15.07		100.0	
10039- CAB	CDMA2000 (1xRTT, RC1)	Х	1.10	65.55	11.57	0.00	150.0	± 9.6 %
		Y	1.54	69.93	14.28		150.0	
		Z	1.13	65.72	11.73		150.0	
10042- CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4- DQPSK, Halfrate)	X	100.00	112.53	26.64	7.78	50.0	± 9.6 %
		Y	100.00	114.28	27.90		50.0	
		Z	100.00	112.67	27.03		50.0	
10044- CAA	IS-91/EIA/TIA-553 FDD (FDMA, FM)	X	0.00	107.70	4.22	0.00	150.0	± 9.6 %
		Y	0.00	100.41	3.59		150.0	
		Ż	0.00	120.42	8.19		150.0	
10048- CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	X	100.00	119.69	31.98	13.80	25.0	±9.6 %
		Y	48.39	109.13	30.30		25.0	
		Z	58.19	111.18	30.43		25.0	
10049- CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	X	100.00	117.41	29.98	10.79	40.0	± 9.6 %
		Y	79.06	115.65	30.55		40.0	
		Z	72.30	113.22	29.54		40.0	
10056-	UMTS-TDD (TD-SCDMA, 1.28 Mcps)	Х	41.93	108.97	29.91	9.03	50.0	± 9.6 %
CAA		1						i
CAA		Y	29.97	103.37	28.82		50.0	
CAA		Y Z						
10058-	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)		29.97 23.56 6.89	103.37 98.69 83.98	28.82 27.10 27.22	6.55	50.0 50.0 100.0	± 9.6 %
	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	Z	23.56	98.69	27.10	6.55	50.0	± 9.6 %
10058-	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	Z X Y	23.56 6.89	98.69 83.98	27.10 27.22	6.55	50.0 100.0	± 9.6 %
10058- DAC 10059-	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	Z X	23.56 6.89 9.07	98.69 83.98 89.65	27.10 27.22 29.47	6.55 0.61	50.0 100.0 100.0	± 9.6 %
10058- DAC	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2	Z X Y Z X	23.56 6.89 9.07 7.67 1.25	98.69 83.98 89.65 85.42 64.83	27.10 27.22 29.47 27.53 15.08		50.0 100.0 100.0 100.0	
10058- DAC 10059-	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2	Z X Y Z	23.56 6.89 9.07 7.67	98.69 83.98 89.65 85.42 64.83 66.69	27.10 27.22 29.47 27.53 15.08 16.45		50.0 100.0 100.0 100.0 110.0	
10058- DAC 10059- CAB 10060-	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5	Z X Y Z X Y	23.56 6.89 9.07 7.67 1.25 1.37	98.69 83.98 89.65 85.42 64.83	27.10 27.22 29.47 27.53 15.08		50.0 100.0 100.0 100.0 110.0 110.0	
10058- DAC 10059- CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	Z X Y Z X Y Z	23.56 6.89 9.07 7.67 1.25 1.37 1.27	98.69 83.98 89.65 85.42 64.83 66.69 65.07	27.10 27.22 29.47 27.53 15.08 16.45 15.14	0.61	50.0 100.0 100.0 100.0 110.0 110.0 110.0	± 9.6 %

10061- CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	X	4.84	85.60	23.20	2.04	110.0	± 9.6 %
		Y	10.62	98.65	27.68		110.0	
		Z	5.56	86.94	23.43		110.0	
10062- CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	X	4.60	66.69	16.30	0.49	100.0	± 9.6 %
		Y	4,69	67.02	16.59		100.0	
		Z	4,62	66.69	16.30		100.0	
10063- CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	X	4.63	66.83	16.43	0.72	100.0	± 9.6 %
		Y	4,72	67.16	16.72		100.0	
	**************************************	Z	4.65	66.84	16.43		100.0	
10064- CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	X	4.91	67.11	16.69	0.86	100.0	± 9.6 %
		Y	5.01	67.44	16.97		100.0	
		Z	4.93	67.13	16.69		100.0	
10065- CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	X	4.81	67.08	16.84	1.21	100.0	± 9.6 %
		Y	4.91	67.44	17.13		100.0	
~~~~~		Z	4.84	67.12	16.85		100.0	
10066- CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)	X	4.84	67.17	17.05	1.46	100.0	± 9.6 %
		Y	4.96	67.54	17.35		100.0	
		Z	4.88	67.22	17.07		100.0	
10067- CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)	X	5.16	67.50	17.60	2.04	100.0	± 9.6 %
		Y	5.28	67.83	17.88		100.0	
		Z	5.21	67.54	17.60		100.0	
10068- CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	X	5.23	67.59	17.86	2.55	100.0	± 9.6 %
		Y	5.36	67.99	18.17		100.0	
		Z	5.29	67.68	17.89	<u> </u>	100.0	
10069- CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	X	5.32	67.64	18.07	2.67	100.0	± 9.6 %
		Y	5.45	68.03	18.39		100.0	
		Z	5.37	67,72	18.10		100.0	
10071- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)	X	4.99	67.13	17.42	1.99	100.0	± 9.6 %
		Y	5.09	67.46	17.70		100.0	
		z	5.02	67.17	17.43		100.0	
10072- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	X	4.99	67.53	17.69	2.30	100.0	± 9.6 %
	<u> </u>	Y	5.11	67.92	17.99		100.0	
		Z	5.04	67.60	17.71		100.0	
10073- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	X	5.10	67.83	18.10	2.83	100.0	± 9.6 %
		Y	5.23	68.26	18.42		100.0	
		Z	5.15	67.94	18.13	1	100.0	
10074- CAB	IEEE 802.11g WIFI 2.4 GHz (DSSS/OFDM, 24 Mbps)	X	5.12	67.86	18.32	3.30	100.0	± 9.6 %
		Y	5.26	68.31	18.66		100.0	
		Z	5.18	67.98	18.36		100.0	
10075- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)	X	5.19	68.08	18.71	3.82	90.0	± 9.6 %
		Y	5.35	68.62	19.08	1	90.0	
		Z	5.28	68.27	18.77		90.0	
10076- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	X	5.23	67.97	18.89	4.15	90.0	± 9.6 %
		Y	5.39	68.49	19.26		90.0	
		Z	5.31	68.15	18.95	[	90.0	
						+·····	4	
10077- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	X	5.27	68.07	19.00	4.30	90.0	± 9.6 %
10077- CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)		5.27	68.07 68.60	19.00 19.38	4.30	90.0 90.0	± 9.6 %

10081-	CDMA2000 (1xRTT, RC3)	X	0.61	62.32	9.35	0.00	150.0	± 9.6 %
CAB								
		Y	0.74	64.78	11.38		150.0	
		Z	0.61	62.34	9.39	4 77	150.0	1069/
10082- CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4- DQPSK, Fullrate)	X	1.14	60.55	5.66	4.77	80.0	±9.6 %
		Y	1.45	61.81	6.79		80.0	
		Ζ	1.33	61.07	6.17		80.0	
10090- DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	X	100.00	114.39	27.35	6.56	60.0	± 9.6 %
		Y	100.00	115.99	28.52		60.0	
		Z	100.00	114.23	27.58		60.0	
10097- CAB	UMTS-FDD (HSDPA)	Х	1.62	65.79	14.04	0.00	150.0	± 9,6 %
		<u>Y</u>	1.78	67.49	15.30		150.0	
		Z	1.61	65.76	14.04		150.0	1000
10098- CAB	UMTS-FDD (HSUPA, Subtest 2)	X	1.58	65.72	14.00	0.00	150.0	±9.6 %
		Y	1.74	67.44	15.28		150.0	
		Z	1.58	65.69	13.99		150.0	
10099- DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	×	18.34	106.95	37.55	9.56	60.0	±9.6 %
		Y	31.67	119.68	41.55		60.0	
		Z	19.99	107.23	37.22		60.0	
10100- CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	×	2.78	68.40	15.45	0.00	150.0	±9.6 %
		Y	3.04	70.07	16.43		150.0	
		Z	2.79	68.47	15.43		150.0	
10101- CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	X	3.06	66.64	15.18	0.00	150.0	± 9.6 %
		Y	3.19	67.51	15.78		150.0	
		Z	3.06	66.68	15.17		150.0	
10102- CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	X	3.17	66.68	15.31	0.00	150.0	± 9.6 %
		Y	3.29	67.48	15.87		150.0	
		Z	3.17	66.71	15.30		150.0	
10103- CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	X	8.02	79.01	21.59	3.98	65.0	± 9.6 %
		Y	8.44	79.45	21.80		65.0	
		Z	8.25	78.96	21.46		65.0	
10104- CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	X	7.51	76.34	21.32	3.98	65.0	± 9.6 %
		Y	8.14	77.48	21.87		65.0	
		Z	7.76	76.48	21.29		65.0	
10105- CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	X	7.39	76.00	21.50	3.98	65.0	± 9.6 %
		Y	7.49	75.83	21.47		65.0	
		Z	7.70	76.31	21.54		65.0	ļ
10108- CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	X	2.41	67.68	15.23	0.00	150.0	± 9.6 %
		Y	2.65	69.34	16.25		150.0	
		Z	2.43	67.74	15.22		150.0	
10109- CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	X	2.69	66.38	14.94	0.00	150.0	± 9.6 %
		Y	2.84	67.34	15.64		150.0	
		Z	2.70	66.40	14.95		150.0	
10110- CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	X	1.93	66.68	14.63	0.00	150.0	± 9.6 %
		Y	2.14	68.47	15.82		150.0	
		Z	1.94	66.73	14.64		150.0	
10111- CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	X	2.36	66.79	14.88	0.00	150.0	± 9.6 %
070		Y	2.53	68.00	15.78		150.0	1
			L.00	1 00.00	1 10.10		10010	

10112-	LTE-FDD (SC-FDMA, 100% RB, 10	X	2.82	66.47	15.05	0.00	150.0	± 9.6 %
CAG	MHz, 64-QAM)							
		Y	2.96	67.34	15.71		150.0	
40440		Z	2.83	66.48	15.05	0.0-	150.0	
10113- CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	X	2.51	67.02	15.07	0.00	150.0	± 9.6 %
		Y	2.68	68.15	15.92		150.0	
		Z	2.52	67.03	15.09		150,0	
10114- CAC	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	X	5.02	67.05	16.17	0.00	150.0	± 9.6 %
		Y	5.10	67.38	16.42		150.0	
40445		Z	5.03	67.06	16.15	0.00	150.0	
10115- CAC	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	X	5.28	67.15	16.23	0.00	150.0	±9.6 %
		Y	5.37	67.48	16.48		150.0	
40440		Z	5.30	67.17	16.22	0.00	150.0	
10116- CAC	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	X	5.11	67.23	16.18	0.00	150.0	± 9.6 %
		Y	5.19	67.55	16.44		150.0	
4047-		Z	5.11	67.23	16.17	0.05	150.0	
10117- CAC	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	X	4.99	66.92	16.12	0.00	150.0	± 9.6 %
		Y	5.06	67.22	16.36		150.0	
40440		Z	4.99	66.90	16.09		150.0	
10118- CAC	IEEE 802.11n (HT Mixed, 81 Mbps, 16- QAM)	X	5.37	67.37	16.35	0.00	150.0	±9.6 %
		Y	5.46	67.70	16.60		150.0	
40440		Z	5.38	67.38	16.34		150.0	1000
10119- CAC	IEEE 802.11n (HT Mixed, 135 Mbps, 64- QAM)	X	5.09	67.20	16.18	0.00	150.0	± 9.6 %
		Y	5.17	67.51	16.43		150.0	
		Z	5.10	67.20	16.16		150.0	
10140- CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	X	3.19	66.70	15.23	0.00	150.0	± 9.6 %
		Y	3.33	67.50	15.80		150.0	
		Z	3.20	66.72	15.22		150.0	
10141- CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	X	3.32	66.85	15.43	0.00	150.0	± 9.6 %
		Y	3.45	67.60	15.96		150.0	
		Z	3.33	66.87	15.42		150.0	
10142- CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	X	1.67	66.25	13.92	0.00	150.0	± 9.6 %
		Y	1.90	68.32	15.35		150.0	
		Z	1.69	66.31	13.96		150.0	
10143- CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	X	2.11	66.79	14.05	0.00	150.0	± 9.6 %
		Y	2.35	68.49	15.29		150.0	
		Z	2.13	66.84	14.13		150.0	
10144- CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	X	1.96	65.04	12.67	0.00	150.0	± 9.6 %
		Y	2.15	66.40	13.78		150.0	
		Z	1.98	65.11	12.78		150.0	
10145- CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	X	0.91	62.04	8.96	0.00	150.0	± 9.6 %
		Y	1.08	64.00	10.69		150.0	
		Z	0.93	62.23	9.21		150.0	
10146- CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	X	1.46	63.31	9.13	0.00	150.0	± 9.6 %
		Y	2.12	67.43	11.83		150.0	
		Z	1.64	64.44	10.03		150.0	
10147- CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	X	1.58	64.11	9.66	0.00	150.0	± 9.6 %
	· · · · · · · · · · · · · · · · · · ·	Y	2.61	69.87	13.06		150.0	
		Z	1.82	65.59	10.73		150.0	

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10149- CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	Х	2.70	66.43	14.99	0.00	150.0	± 9.6 %
		Y	2.85	67.39	15.69		150.0	
		Z	2.71	66.46	14.99		150.0	
10150- CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	Х	2.83	66.51	15.09	0.00	150.0	± 9.6 %
		Y	2.97	67.39	15.74		150.0	
		Z	2.84	66.53	15.09		150.0	
10151- CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	Х	8.63	81.75	22.67	3.98	65.0	± 9.6 %
		Y	9.56	83.05	23.22		65.0	
		Z	8.80	81.43	22.44		65.0	
10152- CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	Х	7.08	76.45	21.00	3,98	65.0	± 9.6 %
		Y	7.78	77.80	21.67		65.0	
		Ζ	7.34	76.60	20.99		65.0	
10153- CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	Х	7.56	77.60	21.84	3.98	65.0	±9.6 %
		Υ	8.22	78.75	22.41		65.0	
		Ζ	7.82	77.69	21.80		65.0	
10154- CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	Х	1.96	66.95	14.82	0.00	150.0	±9.6 %
		Y	2.18	68.80	16.04		150.0	
	······	Ζ	1.97	67.02	14.84		150.0	
10155- CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	Х	2.36	66.81	14.90	0.00	150.0	±9.6 %
		Y	2.53	68.02	15.80		150.0	
		Ζ	2.37	66.81	14.92		150.0	
10156- CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	Х	1.49	65.86	13.36	0.00	150.0	±9.6 %
		Y	1.73	68.22	15.00		150.0	
		Ζ	1.50	65.96	13.45		150.0	
10157- CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	Х	1.74	65.04	12.33	0.00	150.0	± 9.6 %
		Y	1.97	66.76	13.67		150.0	
		Ζ	1.77	65.14	12.46		150.0	
10158- CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	X	2.51	67.08	15.11	0.00	150.0	±9.6 %
		Y	2.69	68.21	15.97		150.0	
		Ζ	2.52	67.08	15.13		150.0	
10159- CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	X	1.82	65.33	12.53	0.00	150.0	± 9.6 %
		Y	2.06	67.13	13.90		150.0	
		Z	1.85	65.45	12.68		150.0	
10160- CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	X	2.50	67.33	15.24	0.00	150.0	± 9.6 %
		Y	2.69	68.61	16.11		150.0	
		Z	2.51	67.34	15.23		150.0	
10161- CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	X	2.72	66.41	14.96	0.00	150.0	±9.6 %
		Y	2.86	67.32	15.65		150.0	
		Z	2.73	66.43	14.97	[	150.0	
10162- CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	X	2.83	66.62	15.11	0.00	150.0	± 9.6 %
		Y	2.97	67.49	15.77		150.0	ļ
		Z	2.84	66.62	15.11		150.0	
10166- CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	X	3.44	69.49	18.93	3.01	150.0	± 9.6 %
		Y	3.74	71.12	19.94		150.0	
		Z	3.54	69.89	19.15		150.0	
10167- CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	X	4.25	72.83	19.54	3.01	150.0	± 9.6 %
	·····		1.00	75.04	20.98	1	150.0	1
		Y	4.98	75.61	ZU.90		1 100.0	

10168- CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	X	4.80	75.44	21.03	3.01	150.0	±9.6 %
		Y	5.66	78.37	22.46		150.0	
	· · · · · · · · · · · · · · · · · · ·	Ż	5.04	76.01	21.30		150.0	
10169- CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	X	2.83	68.75	18.61	3.01	150.0	± 9.6 %
		Y	3.21	71.38	20.14		150.0	
		Z	2.97	69.43	18.96		150.0	
10170- CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	X	3.99	75.54	21.31	3.01	150.0	±9.6 %
		Y	5.30	81.05	23.77		150.0	
		Z	4.32	76.64	21.77		150.0	
10171- AAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	X	3.21	70.99	18.32	3.01	150.0	± 9.6 %
		Y	4.07	75.35	20.48		150.0	
		Z	3.43	71.82	18.71		150.0	
10172- CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	×	22.60	110.62	34.58	6.02	65.0	± 9.6 %
		Y	48.93	125.83	38.92		65.0	
		Z	16.45	103.03	32.18		65.0	
10173- CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	X	72.94	125.95	36.27	6.02	65.0	±9.6 %
		Y	100.00	130.47	37.35		65.0	
		Z	80.34	126.17	36.18		65.0	
10174- CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	X	46.54	116.03	33.12	6.02	65.0	± 9.6 %
		Y	100.00	128.69	36.37		65.0	
		Z	52.96	116.84	33.20		65.0	
10175- CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	X	2.80	68.45	18.36	3.01	150.0	± 9.6 %
		Y	3.17	71.05	19.89		150.0	
		Z	2.93	69.12	18.71		150.0	
10176- CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	X	4.00	75.57	21.32	3.01	150.0	±9.6 %
		Y	5.31	81.08	23.78		150.0	
		Z	4.32	76.67	21.79		150.0	
10177- CAI	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	X	2.82	68.59	18.45	3.01	150.0	± 9.6 %
		Y	3.20	71.20	19.98		150.0	
		Z	2.95	69.26	18.80		150.0	
10178- CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16- QAM)	X	3.96	75.36	21.21	3.01	150.0	± 9.6 %
		Y	5,25	80.81	23.65		150.0	
		Z	4.28	76.44	21.67	]	150.0	
10179- CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	X	3.55	73.11	19.66	3.01	150.0	± 9.6 %
		Y	4.63	78.06	21.98		150.0	
		Z	3.83	74.06	20.09		150.0	
10180- CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64- QAM)	X	3.20	70.94	18.28	3.01	150.0	± 9.6 %
		Y	4.05	75.27	20.43		150.0	
		Z	3.42	71.76	18.67		150.0	
10181- CAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	X	2.82	68.57	18.44	3.01	150.0	±9.6 %
		Y	3.19	71.19	19.97		150.0	
		Z	2.95	69.25	18.79		150.0	
10182- CAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	X	3.95	75.33	21.20	3.01	150.0	± 9.6 %
		Y	5.24	80.78	23.64	1	150.0	
		Z	4.27	76.41	21.66		150.0	
10183- AAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	X	3.19	70.91	18.27	3.01	150.0	± 9.6 %
		Υ	4.04	75.24	20.41	İ	150.0	
			1 <b>T</b> .VT	10.24	20.41		1 100.0	

10184- CAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	x	2.83	68.62	18.46	3.01	150.0	± 9.6 %
		Y	3.20	71.23	19.99		150.0	
		Z	2.96	69.29	18.81		150.0	
10185- CAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16- QAM)	Х	3.97	75.41	21.24	3.01	150.0	± 9.6 %
		Y	5.27	80.87	23.68		150.0	
		Ζ	4.29	76.50	21.70		150.0	
10186- AAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64- QAM)	X	3.21	70.98	18.31	3.01	150.0	± 9.6 %
		Y	4.07	75.33	20.45		150.0	
		Ζ	3.43	71.80	18.69		150.0	
10187- CAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	Х	2.84	68.68	18.53	3.01	150.0	± 9.6 %
		Y	3.22	71.30	20.06		150.0	
		Z	2.97	69.35	18.88		150.0	
10188- CAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	Х	4.11	76.12	21.64	3.01	150.0	± 9.6 %
		Y	5.49	81.77	24.13		150.0	
		Ζ	4.45	77.25	22,11		150.0	
10189- AAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	Х	3.28	71.42	18.59	3.01	150.0	± 9.6 %
		Y	4.19	75.89	20.78		150.0	
		Ζ	3.52	72.27	18.99		150.0	
10193- CAC	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	X	4.40	66.45	15.78	0.00	150.0	± 9.6 %
		Y	4.48	66.78	16.08		150.0	
		Ζ	4.40	66.42	15.77		150.0	
10194- CAC	IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	Х	4.55	66.73	15.92	0.00	150.0	± 9.6 %
		Y	4.65	67.08	16.22		150.0	ĺ
		Z	4.57	66.72	15.91		150.0	
10195- CAC	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	x	4.59	66.77	15.94	0.00	150.0	± 9.6 %
0		Y	4.69	67.11	16.23		150.0	
		Z	4.61	66.75	15.93		150.0	
10196- CAC	IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	X	4.39	66.48	15.78	0.00	150.0	± 9.6 %
		Y	4.48	66.83	16.10		150.0	
		Z	4.40	66.46	15.78		150.0	
10197- CAC	IEEE 802.11n (HT Mixed, 39 Mbps, 16- QAM)	X	4.57	66.75	15.93	0.00	150.0	± 9.6 %
		Y	4.66	67.10	16.23		150.0	
		Ζ	4.58	66.74	15.92		150.0	
10198- CAC	IEEE 802.11n (HT Mixed, 65 Mbps, 64- QAM)	X	4.59	66.78	15.95	0.00	150.0	± 9.6 %
		Y	4.69	67.13	16.25		150.0	
		Z	4.61	66.77	15.94		150.0	İ
10219- CAC	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	×	4.34	66.48	15.74	0.00	150.0	± 9.6 %
		Y	4.43	66.84	16.06		150.0	
		Z	4.35	66.47	15.73	1	150.0	
10220- CAC	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16- QAM)	X	4.56	66.71	15.92	0.00	150.0	± 9.6 %
		Y	4.65	67.07	16.22		150.0	
······································		Z	4.57	66.71	15.91		150.0	
10221- CAC	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64- QAM)	X	4.61	66.72	15.94	0.00	150.0	± 9.6 %
		Y	4.70	67.06	16.23		150.0	[
	**************************************	Z	4.62	66.71	15.93		150.0	1
10222-	IEEE 802.11n (HT Mixed, 15 Mbps,	X	4.96	66.91	16.10	0.00	150.0	± 9.6 %
	I BPSK)							
CAC	BPSK)	Y	5.03	67.23	16.35		150.0	

10223- CAC	IEEE 802.11n (HT Mixed, 90 Mbps, 16- QAM)	X	5.26	67.19	16.27	0.00	150.0	± 9.6 %
***		Y	5.35	67.49	16.51		150.0	
		Z	5.28	67.21	16.27		150.0	
10224- CAC	IEEE 802.11n (HT Mixed, 150 Mbps, 64- QAM)	X	5,00	67.01	16.08	0.00	150.0	± 9.6 %
		Y	5.08	67.33	16.33		150.0	
		Z	5.01	67.01	16.06		150.0	
10225- CAB	UMTS-FDD (HSPA+)	X	2.63	65.42	14.42	0.00	150.0	± 9.6 %
		Y	2.75	66.16	15.09		150.0	
		Z	2.64	65.42	14.46		150.0	
10226- CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	×	87.54	129.49	37.24	6.02	65.0	± 9.6 %
		Y	100.00	130.69	37.49		65.0	
40007		Z	95.28	129.48	37.08		65.0	
10227- CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	X	70.84	123.19	34.95	6.02	65.0	± 9.6 %
		Y	100.00	128.18	36.17		65.0	
10000		Z	72.30	122.22	34.60		65.0	
10228- CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	X	23.91	111.94	35.01	6.02	65.0	±9.6 %
		Y	100.00	140.30	42.50		65.0	
		Z	32.77	116.73	36.13		65.0	
10229- CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16- QAM)	X	73.51	126.08	36.31	6.02	65.0	± 9.6 %
·····		Y	100.00	130.46	37.35		65.0	
		Z	80.80	126.27	36.21		65.0	
10230- CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64- QAM)	×	60.26	120.23	34.13	6.02	65.0	± 9.6 %
		Y	100.00	128.03	36.07		65.0	
		Z	62.58	119.56	33.86		65.0	
10231- CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	X	21.94	110.07	34.40	6.02	65.0	± 9.6 %
		Y	96,90	139.48	42.23		65.0	
		Z	29.83	114.70	35.49		65.0	
10232- CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16- QAM)	X	73.48	126.08	36.32	6.02	65.0	± 9.6 %
		Y	100.00	130.47	37.36		65.0	
		Z	80.83	126.29	36.22		65.0	
10233- CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64- QAM)	X	60.09	120.20	34.13	6.02	65.0	± 9.6 %
		Y	100.00	128.05	36.08		65.0	
		Z	62.48	119.55	33.86		65.0	
10234- CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	X	20.42	108.40	33.79	6.02	65.0	± 9.6 %
		Y	85.29	136.53	41.39		65.0	
		Z	27.51	112.84	34.85	<u> </u>	65.0	
10235- CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	X	74.06	126.24	36.36	6.02	65.0	± 9.6 %
	······································	Y	100.00	130.49	37.36		65.0	
		Z	81.47	126.44	36.26		65.0	
10236- CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	×	61.46	120.53	34.20	6.02	65.0	± 9.6 %
		Y	100.00	127.99	36.05		65.0	
		Z	63.70	119.84	33.93		65.0	
10237- CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	X	22.09	110.25	34.45	6.02	65.0	± 9.6 %
		Y	99.25	140.00	42.36		65.0	
		Z	30.12	114.93	35.55		65.0	
10238- CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	X	73.45	126.09	36.32	6.02	65.0	± 9.6 %
		Y	100.00	130.48	37.36		65.0	
		Z	80.85	126.30	36.22		65.0	1

10239- CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	Х	59.93	120.17	34.12	6.02	65.0	± 9.6 %
		Υ	100.00	128.07	36.08		65.0	
		Z	62.38	119.54	33.86		65.0	
10240- CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	х	22.01	110.18	34.43	6.02	65.0	±9.6 %
	· · · · · · · · · · · · · · · · · · ·	Y	98.83	139.93	42.34		65.0	
		Z	30.00	114.86	35.53		65.0	
10241- CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	Х	11.17	88.32	28.11	6.98	65.0	± 9.6 %
		Y	14.12	92.90	29.93		65.0	
		Ζ	11.94	88.91	28.24		65.0	
10242- CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	Х	10.58	87.20	27.63	6.98	65.0	± 9.6 %
		Y	11.64	88.74	28.35		65.0	
		Ζ	11.55	88.22	27.92		65.0	
10243- CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	х	8.01	82.52	26.78	6.98	65.0	± 9.6 %
0		Y	8.59	83.63	27.39		65.0	
		Z	8.75	83.76	27.20		65.0	-
10244- CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	X	7.49	77.98	18.72	3.98	65.0	± 9.6 %
		Y	9.57	81.63	20.57		65.0	
		Z	8.24	79.09	19.36		65.0	
10245- CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	X	7.15	77.05	18.30	3.98	65.0	± 9.6 %
0/10		Y	9.11	80.61	20.14		65.0	
		Ż	7.89	78.19	18.96		65.0	
10246- CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	X	7.31	80.59	19.91	3.98	65.0	± 9.6 %
0/10		Y	9.28	84.03	21.54		65.0	
		Ż	7.54	80.49	19.93		65.0	
10247- CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	X	6.19	75.83	18.78	3.98	65.0	± 9.6 %
	10-82AW)	Y	7.08	77.67	19.84		65.0	
		z	6.46	76.00	18.90		65.0	
10248- CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	X	6.07	75.10	18.47	3.98	65.0	± 9.6 %
		Y	6.95	76.95	19.55		65.0	
		Z	6.36	75.34	18.62		65.0	
10249- CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	X	9.60	85.58	22.75	3.98	65.0	± 9.6 %
0/ ()		Y	11.62	88.40	24.00		65.0	
		Z	9.64	84.99	22.52		65.0	
10250- CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	X	7.52	79.44	22.06	3.98	65.0	± 9.6 %
		Y	8.31	80,79	22.74		65.0	
		Z	7.79	79.47	22.02		65.0	
10251- CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	X	6.92	76.78	20.63	3.98	65.0	± 9.6 %
		Y	7.69	78.24	21.42		65.0	
		Z	7.19	76.91	20.66		65.0	
10252-	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	X	9.67	85.65	23.94	3.98	65.0	± 9.6 %
UAF		Y	11.12	87.60	24.76	1	65.0	
CAF			9.78	85.11	23.65	-	65.0	
		Z	1 0.10			1		
10253-	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	Z X	6.93	75.93	20.74	3.98	65.0	± 9.6 %
	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	Х	6.93	75.93		3.98		± 9.6 %
10253-		X Y	6.93 7.59	75.93 77.20	21.41	3.98	65.0	± 9.6 %
10253- CAF 10254-	16-QAM)	Х	6.93	75.93		3.98		± 9.6 %
10253- CAF	16-QAM)	X Y Z	6.93 7.59 7.18	75.93 77.20 76.07	21.41 20.74		65.0 65.0	

10255- CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	X	8.26	81.20	22.65	3.98	65.0	±9.6 %
		Y	9.16	82,56	23.25		65.0	
		Z	8.45	80.97	22.45		65.0	
10256- CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	X	5.31	72.46	15.37	3.98	65.0	±9.6 %
		Y	7.14	76.50	17.57		65.0	
		Z	6.06	73.94	16.26		65.0	
10257- CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	X	5.06	71.46	14.84	3.98	65.0	±9.6 %
		Y	6.72	75.28	16.99		65.0	
		Z	5.76	72.92	15.73		65.0	
10258- CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	X	4.98	74.24	16.51	3.98	65.0	± 9.6 %
		Y	6.52	77.88	18.42		65.0	
		Z	5.35	74.75	16.84		65.0	0.0.0/
10259- CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	X	6.73	77.24	19.99	3.98	65.0	± 9.6 %
		Y	7.58	78,86	20.90		65.0	1
100		Z	6.99	77.33	20.04	<b>.</b>	65.0	
10260- CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	X	6.69	76.84	19.83	3.98	65.0	± 9.6 %
		Y	7.52	78.42	20.73		65.0	
1		Z	6.96	76.96	19.90	0.00	65.0	
10261- CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	X	9.07	84.65	22.90	3.98	65.0	±9.6 %
		Y	10.71	87.04	23.97		65.0	
		Z	9.18	84.16	22.68		65.0	
10262- CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	X	7.50	79.37	22.01	3.98	65.0	± 9.6 %
		Y	8.30	80.73	22.69		65.0	
		Z	7.77	79.40	21.97		65.0	
10263- CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	X	6.91	76.76	20.63	3.98	65.0	± 9.6 %
		Υ	7.68	78.22	21.41		65.0	
		Z	7.18	76.89	20.65		65.0	
10264- CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	X	9.55	85.40	23.83	3.98	65.0	± 9.6 %
		Y	11.00	87.37	24.66		65.0	1
		Z	<del>9</del> .67	84.88	23.54		65.0	
10265- CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	X	7.08	76.46	21.01	3.98	65.0	± 9.6 %
		Y	7.78	77.80	21.68		65.0	
		Z	7.34	76.60	20.99		65.0	
10266- CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	X	7.56	77.59	21.83	3.98	65.0	± 9.6 %
		Y	8.22	78.74	22.40		65.0	
		Z	7.81	77.68	21.79		65.0	
10267- CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	X	8.61	81.70	22.65	3.98	65.0	± 9.6 %
		Y	9.54	83.00	23.20		65.0	l
		Z	8.78	81.39	22.42		65.0	
10268- CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	X	7.64	76.16	21.36	3.98	65.0	± 9.6 %
		Y	8.22	77.19	21.86		65.0	
		Z	7.88	76.29	21.33		65.0	
10269- CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	X	7.58	75.72	21.23	3.98	65.0	± 9.6 %
		Y	8.14	76.72	21.73		65.0	
		Z	7.82	75.87	21.21		65.0	
10270- CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	X	7.95	78.32	21.55	3.98	65.0	± 9.6 %
		Y	8.58	79.24	21.95		65.0	
		Z	8.14	78.21	21.40		65.0	

10274- CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP	X	2.42	65.66	14.26	0.00	150.0	± 9.6 %
UND	Rel8.10)	Y	2.54	66.55	15.02		150.0	ļ
40075		Z	2.42	65.63	14.28	0.00	150.0	
10275- CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	X	1.38	65.51	13.67	0.00	150.0	± 9.6 %
		Υ	1.55	67.64	15.15		150.0	
		Z	1.37	65.53	13.65		150.0	
10277- CAA	PHS (QPSK)	X	3.00	63.81	8.90	9.03	50.0	± 9.6 %
		Y	3.74	65.65	10.52		50.0	
		Z	3.50	64.83	9.85		50.0	
10278- CAA	PHS (QPSK, BW 884MHz, Rolloff 0.5)	X	6.31	75.25	16.86	9.03	50.0	± 9.6 %
		Y	7.73	77.90	18.55		50.0	
		Z	6.71	75.50	17.26		50.0	
10279- CAA	PHS (QPSK, BW 884MHz, Rolloff 0.38)	X	6.44	75.48	17.00	9.03	50.0	± 9.6 %
		Y	7.87	78.12	18.68		50.0	
		Z	6.83	75.71	17.39		50.0	
10290- AAB	CDMA2000, RC1, SO55, Full Rate	X	0.97	64.09	10.56	0.00	150.0	± 9.6 %
		Y	1.25	67.20	12.74		150.0	
		Z	1.00	64.23	10.70		150.0	
10291- AAB	CDMA2000, RC3, SO55, Full Rate	Х	0.60	62.22	9.27	0.00	150.0	± 9.6 %
		Y	0.73	64.60	11.26		150.0	
		Z	0.60	62.23	9.31		150.0	
10292- AAB	CDMA2000, RC3, SO32, Full Rate	Х	0.65	63.74	10.44	0.00	150.0	± 9.6 %
		Y	0.90	68.02	13.35		150.0	
		Z	0.65	63.74	10.46		150.0	
10293- AAB	CDMA2000, RC3, SO3, Full Rate	X	0.79	65.96	12.01	0.00	150.0	± 9.6 %
		Y	1.33	73.30	16.16		150.0	
		Z	0.79	65.97	12.05		150.0	·····
10295- AAB	CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	X	16.78	93.84	26.47	9.03	50.0	± 9.6 %
		Y	14.66	91.28	26.06		50.0	
		Ż	13.94	89.83	25.22		50.0	·
10297- AAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	X	2.42	67.75	15.29	0.00	150.0	± 9.6 %
		Y	2.66	69.43	16.31		150.0	
		Z	2.43	67.82	15.27		150.0	
10298- AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	X	1.17	64.16	11.29	0.00	150.0	± 9.6 %
		Y	1.41	66.65	13.15		150.0	
		Z	1.20	64.34	11.47	[	150.0	
10299- AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	X	2.07	66.78	12.02	0.00	150.0	± 9.6 %
		Y	3.21	72.39	15.13		150.0	
		Z	2.34	68.19	12.96		150.0	1
10300- AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	X	1.65	63.55	9.70	0.00	150.0	± 9.6 %
		Y	2.09	66.20	11.60		150.0	
		Z	1,79	64.31	10.35		150.0	
10301- AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	X	4.96	66.63	17.66	4.17	80.0	± 9.6 %
		Y	5.40	68.26	18.68		80.0	ļ
		Z	5.12	67.10	17.89		80.0	
10302- AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3 CTRL symbols)	X	5.40	67.04	18.27	4.96	80.0	± 9.6 %
<u> </u>		Y	5.77	68,38	19.15		80.0	1

10303- AAA	IEEE 802.16e WiMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	X	5.19	66.81	18.14	4.96	80.0	± 9.6 %
		Y	5.57	68.27	19.10		80.0	
		Z	5.33	67.21	18.34		80.0	
10304- AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	X	4.95	66.49	17.52	4.17	80.0	±9.6 %
		Y	5.28	67.74	18.36		80.0	
	······································	Z	5.07	66.79	17.68		80.0	
10305- AAA	IEEE 802.16e WiMAX (31:15, 10ms, 10MHz, 64QAM, PUSC, 15 symbols)	X	5.33	71.69	20.97	6.02	50.0	± 9.6 %
		Y	6.67	76.67	23.65		50.0	
		Z	5.94	73.75	21.94		50.0	
10306- AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18 symbols)	X	5.25	69.25	20.07	6.02	50.0	± 9.6 %
		Y	5.72	70.35	20.68		50.0	
		Z	5.58	70.41	20.67		50.0	
10307- AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18 symbols)	X	5.21	69.62	20.11	6.02	50.0	± 9.6 %
		Y	5.70	70.74	20.71		50.0	
		Z	5.59	70.95	20.78		50.0	
10308- AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	X	5.23	70.00	20.32	6.02	50.0	±9.6 %
		Y	5.75	71.18	20.94		50.0	
		Z	5.64	71.43	21.03		50.0	
10309- AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3, 18 symbols)	X	5.30	69.44	20.21	6.02	50.0	± 9.6 %
		Y	5.79	70.61	20.85		50.0	
		Z	5.65	70.64	20.82		50.0	
10310- AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18 symbols)	X	5.23	69.44	20.10	6.02	50.0	± 9.6 %
		Y	5.71	70.52	20.69		50.0	
		Z	5.59	70.66	20.72		50.0	
10311- AAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	X	2.76	67.15	15.05	0.00	150.0	± 9.6 %
		Y	3.01	68.71	15,98		150.0	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Z	2.77	67.21	15.04		150.0	
10313- AAA	iDEN 1:3	X	6.69	78.91	18.28	6.99	70.0	± 9.6 %
		Y	8.21	81.16	19.29		70.0	
		Z	6.41	77.39	17.66		70.0	
10314- AAA	IDEN 1:6	X	10.80	90.27	25.03	10.00	30.0	±9.6 %
		Y	13.17	92.20	25.68		30.0	
		Z	9.96	87.29	23.81		30.0	
10315- AAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)	X	1.05	62.92	13.97	0.17	150.0	±9.6 %
		Y	1.11	64.25	15.15		150.0	
		Z	1.04	62.98	13.97		150.0	
10316- AAB	IEEE 802.11g WiFi 2.4 GHz (ERP- OFDM, 6 Mbps, 96pc duty cycle)	X	4.48	66.60	16.01	0.17	150.0	±9.6 %
		Y	4.57	66.95	16.31		150.0	
		Z	4.49	66.60	16.00		150.0	
10317- AAC	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)	X	4.48	66.60	16.01	0.17	150.0	± 9.6 %
		Y	4.57	66.95	16.31		150.0	l
		Z	4.49	66.60	16.00		150.0	
10400- AAD	IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc duty cycle)	X	4,53	66.77	15.91	0.00	150.0	± 9.6 %
		Y	4.64	67.15	16.22	1	150.0	
		Z	4.55	66.77	15.90		150.0	
10401- AAD	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc duty cycle)	X	5.30	67.15	16.23	0.00	150.0	± 9.6 %
		Y	5.37	67.42	16.46	1	150.0	
		Z	5.31	67.15	16.21	1	150.0	1

10402-	IEEE 802.11ac WiFi (80MHz, 64-QAM,	Х	5.52	67.30	16.17	0.00	150.0	± 9.6 %
AAD	99pc duty cycle)	Y	5.60	67.64	16.40		150.0	
		Y Z	5.50	67.61 67.31	16.40		150.0	
10403-	CDMA2000 (1xEV-DO, Rev. 0)	X	0.97	64.09	10.10	0.00	115.0	± 9.6 %
AAB	CDWA2000 (TXEV-DO, Rev. 0)		0.37	04.03	10.00	0.00	110.0	10.070
7010		Y	1.25	67.20	12.74		115.0	
		Z	1.00	64.23	10.70	······································	115.0	
10404-	CDMA2000 (1xEV-DO, Rev. A)	X	0.97	64.09	10.56	0.00	115.0	±9.6 %
AAB								
		Y	1.25	67.20	12.74		115.0	
		Z	1.00	64.23	10.70		115.0	
10406- AAB	CDMA2000, RC3, SO32, SCH0, Full Rate	X	100.00	116.01	27.29	0.00	100.0	±9.6 %
		Y	100.00	117.87	28.36		100.0	
		Z	100.00	117.33	28.06		100.0	
10410- AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9, Subframe Conf=4)	X	100.00	121.05	29.92	3.23	80.0	± 9.6 %
		Y	100.00	121.81	30.57		80.0	
		Z	100.00	120.53	29.90	ļ	80.0	
10415- AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	X	0.95	61.88	13.25	0.00	150.0	± 9.6 %
		Y	0.99	62.95	14.33		150.0	
		Z	0.93	61.85	13.22		150.0	
10416- AAA	IEEE 802.11g WiFi 2.4 GHz (ERP- OFDM, 6 Mbps, 99pc duty cycle)	X	4.40	66.48	15.86	0.00	150.0	±9.6 %
		Y	4.48	66.82	16.16		150.0	
		Z	4.41	66.46	15.85		150.0	
10417- AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)	X	4.40	66.48	15.86	0.00	150.0	± 9.6 %
		Y	4.48	66.82	16.16		150.0	
		Z	4.41	66.46	15.85		150.0	
10418- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 6 Mbps, 99pc duty cycle, Long preambule)	X	4.39	66.63	15.88	0.00	150.0	± 9.6 %
		Y	4.48	66.98	16.18		150.0	
		Z	4.39	66.61	15.86		150.0	
10419- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 6 Mbps, 99pc duty cycle, Short preambule)	X	4.41	66.58	15.88	0.00	150.0	± 9.6 %
		Y	4.50	66.93	16.18		150.0	
		Z	4.42	66.56	15.87		150.0	Į
10422- AAB	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	X	4.52	66.60	15.91	0.00	150.0	± 9.6 %
		Y	4.61	66.93	16.20		150.0	
		Z	4.53	66.58	15.90		150.0	
10423- AAB	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	X	4.67	66.88	16.01	0.00	150.0	± 9.6 %
		Y	4.77	67.23	16.31		150.0	
		Z	4.68	66.87	16.00		150.0	
10424- AAB	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	X	4.59	66.82	15.98	0.00	150.0	± 9.6 %
		Y	4.69	67.18	16.28		150.0	
		Z	4.60	66.81	15.97		150.0	
10425- AAB	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	X	5.22	67.18	16.24	0.00	150.0	± 9.6 %
		Y	5.30	67.49	16.48		150.0	
		Z	5.23	67.17	16.22		150.0	
10426- AAB	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	X	5.25	67.29	16.29	0.00	150.0	± 9.6 %
		Y	5.32	67.56	16.52	1	150.0	1
							1 100.0	

40407		1				T		
10427- AAB	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	X	5.24	67.18	16.24	0.00	150.0	±9.6 %
AAD		Y	5.32	07.50	40.40		450.0	
		Z	5.32	67.50	16.49		150.0	
10430-	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	X	3.95	67.20 70.04	16.23	0.00	150.0	1000
AAD	CTE-1 DD (OF DMA, 5 MHZ, E-1W 3.1)		3.90	70.04	17.27	0.00	150.0	± 9.6 %
		Y	4.09	70.48	17.72		150.0	
		Z	3.97	69.98	17.29	<u> </u>	150.0 150.0	· · · · · · · · · · · · · · · · · · ·
10431-	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	X	4.02	66.87	15.69	0.00		100%
AAD	$E^{-1} D^{-1} $	$  \uparrow$	4.02	00.07	15.09	0.00	150.0	± 9.6 %
7 0 10		Y	4.14	67.34	16.10		150.0	
		Z	4.04	66.86	15.70		150.0	
10432-	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	X	4.35	66.83	15.87	0.00	150.0	± 9.6 %
AAC			1.00	00.00	10.01	0.00	100.0	1 3.0 %
		Y	4.45	67.22	16.21		150.0	
	**************************************	Z	4.36	66.82	15.87		150.0	· · · ·
10433-	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	X	4.61	66.85	16.00	0.00	150.0	± 9.6 %
AAC							10010	
		Y	4.70	67.21	16.30		150.0	
		Z	4.62	66.84	15.99		150.0	
10434-	W-CDMA (BS Test Model 1, 64 DPCH)	X	3.96	70.56	17.00	0.00	150.0	± 9.6 %
AAA	· · · · · · · · · · · · · · · · · · ·			1				
		Y	4.15	71.19	17.59		150.0	
		Z	3.98	70.52	17.06		150.0	8
10435-	LTE-TDD (SC-FDMA, 1 RB, 20 MHz,	X	100.00	120.82	29.81	3.23	80.0	±9.6%
AAF	QPSK, UL Subframe=2,3,4,7,8,9)							
		Y	100.00	121.59	30.47		80.0	
		Z	100.00	120.31	29.80		0,08	
10447-	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1,	X	3.24	66.49	14.60	0.00	150.0	± 9.6 %
AAD	Clipping 44%)							
		Υ	3.41	67.22	15.27		150.0	
10110		Z	3.27	66.51	14.67		150.0	
10448-	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1,	X	3.87	66.65	15.54	0.00	150.0	±9.6 %
AAD	Clippin 44%)	<u> </u>					(	
		Y	3.99	67.12	15.96		150.0	
10110		Z	3.89	66.63	15.55		150.0	
10449-	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1,	X	4.17	66.64	15.75	0.00	150.0	± 9.6 %
AAC	Cliping 44%)		4.07	07.04	10.10		450.0	
		Y	4.27	67.04	16.10		150.0	
40450		Z	4.18	66.62	15.75		150.0	
10450-	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1,	X	4.38	66.60	15.84	0.00	150.0	± 9.6 %
AAC	Clipping 44%)	Y	\$ A7	00.07	40.45		450.0	
		3	4.47	66.97	16.15		150.0	
10451-	W-CDMA (BS Test Model 1, 64 DPCH,	Z X	4.39	66.59	15.82	0.00	150.0	100%
10451- AAA	Clipping 44%)		3.07	66.37	13.99	0.00	150.0	± 9.6 %
~~~		Y	3.28	67.28	14 70		150.0	
		Z	3.28	66.44	14.79		150.0	
10456-	IEEE 802.11ac WiFi (160MHz, 64-QAM,	X	6.16	67.89	14.10 16.51	0.00	150.0	+060/
AAB	99pc duty cycle)	^	0.10	01.09	10.01	0.00	150.0	± 9.6 %
1010		Y	6.19	68.07	16.66		150.0	
	· · · · · · · · · · · · · · · · · · ·	Z	6.19	67.84	16.46		150.0	
10457-	UMTS-FDD (DC-HSDPA)	X	3.71	65.16	15.55	0.00	150.0	± 9.6 %
AAA		^	0.11	00.10	10.00	0.00	100.0	1 3.0 70
		Y	3.76	65.47	15.86		150.0	
		Z	3.70	65.13	15.54		150.0	
10458-	CDMA2000 (1xEV-DO, Rev. B, 2	X	3.56	69.52	16.11	0.00	150.0	± 9.6 %
AAA	carriers)		0.00	00.02		0.00	100.0	- 3.0 /0
		Y	3.80	70.49	16.94		150.0	
		Z	3.60	69.58	16.25		150.0	
10459-	CDMA2000 (1xEV-DO_Rev_B_3		4.82	1 68 13	17.51	1 () (11)	1 150 0	1 + 4 6 %
10459- AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	X	4.82	68.13	17.51	0.00	150.0	± 9.6 %
10459- AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	X Y	4.82	68.13 68.06	17.51	0.00	150.0	± 9.6 %

10460-	UMTS-FDD (WCDMA, AMR)	х	0.72	64.25	13.06	0.00	150.0	± 9.6 %
AAA		Y	0.85	67.52	15.41		150.0	
		r Z	0.85	64.27	13.01		150.0	
10461- AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	126.16	32.32	3,29	80.0	± 9.6 %
1001		Y	100.00	128.30	33.57		80.0	
		Ζ	100.00	125.51	32.24		80.0	
10462- AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	Х	5.29	76.66	15.10	3.23	80.0	± 9.6 %
		Y	100.00	107.26	23.61		80.0	
10463- AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	Z X	19.76 1.77	89.48 65.52	19.03 10.51	3.23	80.0 80.0	± 9.6 %
	04-QAW, CE SUBIRAINE=2,0,4,7,0,0)	Y	62.77	98,74	20.70		80.0	
		Ż	3.01	69.97	12.51		80.0	
10464- AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	123.40	30.88	3.23	80.0	± 9.6 %
		Y	100.00	125.93	32.30		80.0	
		Z	100.00	122.95	30.89		80.0	
10465- AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16- QAM, UL Subframe=2,3,4,7,8,9)	Х	3.53	72.68	13.71	3.23	80.0	± 9.6 %
		Y	100.00	106.62	23.31		80.0	
		Z	8.88	81.40	16.74		80.0	
10466- AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64- QAM, UL Subframe=2,3,4,7,8,9)	X	1.58	64.43	10.00	3.23	80.0	± 9.6 %
		Y	17.28	86.47	17.66		80.0	
10467- AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	Z X	2.45 100.00	67.96 123.70	<u>11.70</u> 31.01	3.23	80.0 80.0	± 9.6 %
		Y	100.00	126.21	32.43		80.0	
		Ż	100.00	123.23	31.02		80.0	
10468- AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16- QAM, UL Subframe=2,3,4,7,8,9)	X	3.92	73.71	14.09	3.23	80.0	± 9.6 %
		Y	100.00	106.83	23.40		80.0	
		Z	10.75	83.35	17.32		80.0	
10469- AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64- QAM, UL Subframe=2,3,4,7,8,9)	X	1.58	64.46	10.01	3.23	80.0	± 9.6 %
		Y	18.16	86.94	17.78		80.0	
		Z	2.46	68.02	11.72		80.0	
10470- AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	×	100.00	123.72	31.01	3.23	80.0	± 9.6 %
		Y	100.00	126.24	32.43		80.0	
10471- AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16- QAM, UL Subframe=2,3,4,7,8,9)	Z X	100.00 3.86	123.25 73.56	<u>31.02</u> 14.02	3.23	80.0	± 9.6 %
		Y	100.00	106.76	23.37		80.0	
		Z	10.54	83.13	17.24		80.0	
10472- AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64- QAM, UL Subframe=2,3,4,7,8,9)	Х	1.57	64.40	9.97	3.23	80,0	± 9.6 %
		Y	17.74	86.68	17.69		80.0	
		Z	2.44	67.93	11.67		80.0	
10473- AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	100.00	123.69	31.00	3.23	80.0	± 9.6 %
		Y	100.00	126.21	32.42		80.0	Į
10474-	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-	Z X	100.00 3.82	123.22 73.48	<u>31.00</u> 13.99	3.23	80.0 80.0	± 9.6 %
AAE	QAM, UL Subframe=2,3,4,7,8,9)	Y	100.00	106.76	23.36		80.0	
		Z	100.00	82.98	17.20		80.0	+
10475- AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64- QAM, UL Subframe=2,3,4,7,8,9)	X	1.56	64.37	9.96	3.23	80.0	± 9.6 %
/ <sup>-</sup> // <sup>-</sup>		Y	17.32	86.47	17.64		80.0	
		z	2.42	67.89	11.66		80.0	-

10477- AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16- QAM, UL Subframe=2,3,4,7,8,9)	X	3.53	72.67	13.69	3.23	80.0	± 9.6 %
		Y	100.00	106.55	23,26		80.0	
		Z	8.97	81.48	16.74		80.0	
10478- AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64- QAM, UL Subframe=2,3,4,7,8,9)	X	1.56	64.31	9.93	3.23	80.0	± 9.6 %
	·····	Y	16.59	86.04	17.51		80.0	
		Z	2.40	67.79	11.61		80.0	
10479- AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	17.18	97.84	26.15	3.23	80.0	± 9.6 %
		Y	67.82	119.39	32.25		80.0	
		Z	23.68	102.24	27.47		80.0	
10480- AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	13.44	87.88	21.01	3.23	80.0	± 9.6 %
		Y	73.56	110.56	27.54		80.0	
10.101		Z	18.97	92.14	22.47		80.0	
10481- AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	8.48	81.26	18.55	3.23	80.0	± 9.6 %
		Y	35.81	99.73	24.39		80.0	
40400		Z	11.84	85.18	20.01	0.00	80.0	
10482- AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	2.92	70.56	15.40	2.23	80.0	±9.6 %
		Y	4.78	77.09	18.38		80.0	L
40400	LTE-TDD (SC-FDMA, 50% RB, 3 MHz,	Z	3.15	71.16	15.69	0.00	80.0	
10483- AAB	16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.51	73.02	15.95	2.23	80.0	± 9.6 %
		Y	9.30	82.76	20.00		80.0	
40404	LTE TOD (CO EDMA CON DD 2 MUL	Z	5.86	76.22	17.39	0.00	80.0	1000
10484- AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.12	71.69	15.43	2.23	80.0	±9.6 %
		<u>Y</u>	7.87	80.35	19.20		80.0	ļ
40405		Z	5.24	74.59	16.79		80.0	
10485- AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	3.63	73.64	17.76	2.23	80.0	± 9.6 %
		Y	5.34	79.18	20.20		80.0	
40400		Z	3.86	74.09	17.92	0.00	80.0	
10486- AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.28	69.11	15.32	2.23	80.0	± 9.6 %
		Y	4.18	72.40	17.08		80.0	
40.407		Z	3.45	69.50	15.54		80.0	
10487- AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	×	3.26	68.70	15.13	2.23	80.0	± 9.6 %
		Y	4.11	71.80	16.83		80.0	<b>[</b>
		Z	3.43	69.09	15.36		80.0	
10488- AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	3.97	73.40	18.62	2.23	80.0	±9.6 %
		Y	5.12	77.21	20.31	<b>.</b>	80.0	[
40400		Z	4.20	73,83	18.71	0.0	80.0	
10489- AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.77	69.90	17.16	2.23	80.0	± 9.6 %
		Y	4.35	71.94	18.26		80.0	<b>_</b>
10.100		Z	3.92	70.17	17.26	<b></b>	80.0	
10490- AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.86	69.73	17.11	2.23	80.0	± 9.6 %
		<u>Y</u>	4.41	71.64	18.15		80.0	ļ
10101		Z	4.01	70.00	17.20	0.00	80.0	
10491- AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.15	71.88	18.23	2.23	80.0	± 9.6 %
		Y	4.95	74.53	19.47		80.0	ļ
10.000		Z	4.34	72.24	18.30		80.0	
10492- AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.11	69.22	17.29	2.23	80.0	± 9.6 %
		Y	4.57	70.76	18.13		80.0	ļ
	1	Z	4.26	69.48	17.37	1	80.0	

10493- AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.17	69.09	17.25	2.23	80.0	±9.6 %
		Y	4.62	70.56	18.06		80.0	
		Z	4.32	69.34	17.33		80.0	
10494-	LTE-TDD (SC-FDMA, 50% RB, 20 MHz,	X	4.47	73.20	18.63	2.23	80.0	± 9.6 %
10494- AAF	QPSK, UL Subframe=2,3,4,7,8,9)					2,20		<u> </u>
		Y	5.50	76.30	20.00		80.0	
		Z	4.69	73.58	18.69		80.0	
10495- AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.15	69.55	17.49	2.23	80.0	± 9.6 %
		Y	4.64	71.19	18.35		80.0	
		Z	4.30	69.84	17.56		80.0	
10496- AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	Х	4.22	69.31	17.43	2.23	80,0	±9.6 %
		Y	4.68	70.81	18.23		80.0	
		Z	4.37	69.57	17.50		80.0	
10497- AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	1.90	65.16	11.93	2.23	80.0	± 9.6 %
7001	Mil2, Qr 610, 62 600 and 2,0,4,1,0,0	Y	3.10	70.87	14.94		80.0	
		Z	2.09	65.87	12.38	·	80.0	
10498-	LTE-TDD (SC-FDMA, 100% RB, 1.4	X	1.49	60.55	8.58	2.23	80.0	± 9.6 %
10498- AAA	MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)		1.43		0.00	2.20	00.0	2 3.0 70
		Y	1.97	63.21	10.49		80.0	
		Z	1.63	61.16	9.08		80.0	
10499- AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	1.44	60.12	8.21	2.23	80.0	± 9.6 %
		İΥ	1.88	62.52	10.01		80.0	
		Z	1.59	60.72	8.71		80.0	
10500- AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	3.73	73.39	18.06	2.23	80.0	± 9.6 %
		Y	5.11	77.97	20.12		80.0	
·····		Ż	3.96	73.80	18.18		80.0	
10501- AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.53	69.63	16.11	2.23	80.0	± 9,6 %
		Y	4.28	72.30	17.56		80.0	
		Z	3.69	69.93	16.27		80.0	
10502- AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.56	69,43	15.97	2.23	80.0	± 9.6 %
		Y	4.30	72.01	17.39	İ	80.0	
		Ż	3.73	69.73	16.13		80.0	
10503- AAE	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	×	3.91	73.20	18.52	2.23	80.0	± 9.6 %
		Y	5.05	76.99	20.21		80.0	
				10.00			80.0	
	····	Z			18.61		00.0	1
10504- AAE	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	Z X	4.14 3.75	73.63 69.80	18.61 17.10	2.23	80.0	± 9.6 %
		X Y	4.14	73.63 69.80 71.84	17.10 18.20	2.23	80.0 80.0	± 9.6 %
		X	4.14 3.75	73.63 69.80	17.10	2.23	80.0	± 9.6 %
		X Y Z X	4.14 3.75 4.33 3.90 3.83	73.63 69.80 71.84 70.07 69.64	17.10 18.20 17.20 17.05	2.23	80.0 80.0 80.0 80.0	± 9.6 %
AAE 10505-	16-QAM, UL Subframe=2,3,4,7,8,9)	X Y Z X Y	4.14 3.75 4.33 3.90 3.83 4.39	73.63 69.80 71.84 70.07 69.64 71.55	17.10 18.20 17.20 17.05 18.10		80.0 80.0 80.0 80.0 80.0	
AAE 10505-	16-QAM, UL Subframe=2,3,4,7,8,9)	X Y Z X Y Z	4.14 3.75 4.33 3.90 3.83	73.63 69.80 71.84 70.07 69.64	17.10 18.20 17.20 17.05		80.0 80.0 80.0 80.0	
AAE 10505-	16-QAM, UL Subframe=2,3,4,7,8,9)	X Y Z X Y Z X	4.14 3.75 4.33 3.90 3.83 4.39	73.63 69.80 71.84 70.07 69.64 71.55 69.90 73.06	17.10 18.20 17.20 17.05 18.10 17.15 18.56		80.0 80.0 80.0 80.0 80.0 80.0 80.0	
AAE 10505- AAE 10506-	16-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 10	X Y Z X Y Z X Y	4.14 3.75 4.33 3.90 3.83 4.39 3.98	73.63 69.80 71.84 70.07 69.64 71.55 69.90	17.10 18.20 17.20 17.05 18.10 17.15	2.23	80.0 80.0 80.0 80.0 80.0 80.0	± 9.6 %
AAE 10505- AAE 10506-	16-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 10	X Y Z X Y Z X	4.14 3.75 4.33 3.90 3.83 4.39 3.98 4.43	73.63 69.80 71.84 70.07 69.64 71.55 69.90 73.06	17.10 18.20 17.20 17.05 18.10 17.15 18.56	2.23	80.0 80.0 80.0 80.0 80.0 80.0 80.0	± 9.6 %
AAE 10505- AAE 10506-	16-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL	X Y Z X Y Z X Y	4.14 3.75 4.33 3.90 3.83 4.39 3.98 4.43 5.45	73.63 69.80 71.84 70.07 69.64 71.55 69.90 73.06 76.14	17.10 18.20 17.20 17.05 18.10 17.15 18.56 19.92	2.23	80.0 80.0 80.0 80.0 80.0 80.0 80.0 80.0	± 9.6 %
AAE 10505- AAE 10506- AAE 10507-	16-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 100% RB, 10	X Y Z X Y Z X Y Z	4.14 3.75 4.33 3.90 3.83 4.39 3.98 4.43 5.45 4.65	73.63 69.80 71.84 70.07 69.64 71.55 69.90 73.06 76.14 73.43	17.10 18.20 17.20 17.05 18.10 17.15 18.56 19.92 18.62	2.23	80.0 80.0 80.0 80.0 80.0 80.0 80.0 80.0	± 9.6 %

10508- AAE	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.21	69.24	17.39	2.23	80.0	± 9.6 %
		Y	4.66	70.74	18.19		80.0	
		Z	4.35	69.50	17.45		80.0	
10509- AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.74	71.77	18.10	2.23	80.0	± 9.6 %
		Y	5.47	73.93	19.10		80.0	
		Z	4.92	72.05	18.14		80.0	
10510- AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.61	69.17	17.49	2.23	80.0	± 9.6 %
	······································	Y	5.04	70.50	18.18		80.0	
		Z	4.76	69.43	17.55		80.0	
10511- AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.67	68.95	17.44	2.23	80.0	± 9.6 %
	····	Y	5.07	70.18	18.09		80.0	
	····	Z	4.81	69.20	17.49		80.0	
10512- AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.93	73.11	18.49	2.23	80.0	±9.6 %
		Y	5.92	75.87	19.69		80.0	
40540		Z	5.14	73.45	18.53		80.0	
10513- AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.50	69.40	17.57	2,23	80.0	± 9.6 %
		Y	4.96	70.86	18.32		80.0	
		Z	4.65	69.68	17.64		80.0	
10514- AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.53	69.02	17.47	2.23	80.0	± 9.6 %
		Y	4.94	70.35	18.17		80.0	
		Z	4.67	69.29	17.53		80.0	
10515- AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)	X	0.91	61.95	13.22	0.00	150.0	±9.6 %
		Y	0.95	63.11	14.37		150.0	
		Z	0.89	61.92	13.19		150.0	
10516- AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)	X	0.43	63.99	12.55	0.00	150.0	±9.6 %
		Y	0.56	69.22	16.17		150.0	
10547	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11	Z	0.41	64.06	12.42	0.00	150.0	
10517- AAA	Mbps, 99pc duty cycle)	X	0.73	62.78	13.11	0.00	150.0	± 9.6 %
		Y Z	0.79 0.71	64.79 62.78	14.83 13.06		150.0 150.0	
10518- AAB	IEEE 802.11a/h WiFl 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)	X	4.39	66.55	15.83	0.00	150.0	±9.6 %
		Y	4.48	66.89	16.14		150.0	
		Z	4.40	66.53	15.82		150.0	
10519- AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)	X	4.55	66.76	15.95	0.00	150.0	± 9.6 %
		Y	4.65	67.11	16.25		150.0	
10551		Z	4.57	66.75	15.94		150.0	
10520- AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)	X	4.40	66.68	15.85	0.00	150.0	± 9.6 %
		Y	4.50	67.06	16.16		150.0	
10521- AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)	Z X	4.42 4.34	66.67 66.65	15.84 15.82	0.00	150.0 150.0	± 9.6 %
, , , , , , , , , , , , , , , , , , , ,		Y	4.44	67.04	16.15	1	150.0	
		Z	4.35	66.64	15.81		150.0	
10522- AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)	X	4.40	66.78	15.93	0.00	150.0	±9.6 %
		Y	4.50	67.17	16.25		150.0	
		Z	4.41	66.77	15.92	1	150.0	

				<u>.</u>				
10523- AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)	X	4.29	66.67	15.78	0.00	150.0	±9.6 %
		Y	4.39	67.04	16.10		150.0	
		Z	4.30	66.64	15.76		150.0	
10524- AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)	X	4.34	66.70	15.89	0.00	150.0	± 9.6 %
		Y	4.44	67.08	16.21		150.0	
		Z	4.35	66.69	15.88		150.0	
10525- AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)	X	4.35	65.77	15.50	0.00	150.0	± 9.6 %
		Y	4.44	66.13	15.81		150.0	
		Z	4.35	65.74	15.48		150.0	
10526- AAB	IEEE 802.11ac WIFI (20MHz, MCS1, 99pc duty cycle)	X	4.49	66.08	15.63	0.00	150.0	±9.6 %
		Y	4.59	66.48	15.95		150.0	
		Z	4.50	66.07	15.61		150.0	
10527- AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)	X	4.41	66.03	15.55	0.00	150.0	±9.6 %
		Y	4.52	66.43	15.88		150.0	
-		Z	4.42	66.02	15.54		150.0	
10528- AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)	X	4.43	66.05	15.59	0.00	150.0	±9.6 %
		Y	4.53	66.45	15.92		150.0	
		Z	4.44	66.04	15.58		150.0	
10529- AAB	IEEE 802.11ac WIFI (20MHz, MCS4, 99pc duty cycle)	X	4.43	66.05	15,59	0.00	150.0	± 9.6 %
		Y	4.53	66.45	15.92		150.0	
		Z	4.44	66.04	15.58		150.0	
10531- AAB	IEEE 802.11ac WIFI (20MHz, MCS6, 99pc duty cycle)	X	4.40	66.10	15.58	0.00	150.0	±9.6 %
		Y	4.51	66.53	15.92		150.0	
		Z	4.42	66.10	15.57		150.0	
10532- AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)	X	4.27	65.94	15.50	0.00	150.0	± 9.6 %
		Y	4.38	66.38	15.85		150.0	
		Z	4.28	65.94	15.49		150.0	
10533- AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle)	X	4.43	66.11	15.58	0.00	150.0	±9,6 %
		Y	4.54	66.51	15.91		150.0	
		Z	4.44	66.09	15.57		150.0	
10534- AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc duty cycle)	X	4.99	66.22	15.73	0.00	150.0	± 9.6 %
		Y	5.08	66.55	15.99		150.0	
		Z	5.00	66.21	15.71		150.0	
10535- AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle)	X	5.05	66.39	15,82	0.00	150.0	± 9.6 %
		Y	5.14	66.74	16.08		150.0	
		Z	5.06	66.40	15.80		150.0	
10536- AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc duty cycle)	X	4.93	66.33	15.76	0.00	150.0	± 9.6 %
		Y	5.01	66.69	16.03		150.0	
		Z	4.93	66.33	15.74		150.0	
10537- AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)	X	4.98	66.30	15.75	0.00	150.0	± 9.6 %
		Y	5.07	66.65	16.02		150.0	ļ
		Z	4.99	66.30	15.74		150.0	
10538- AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc duty cycle)	X	5.06	66.32	15.80	0.00	150.0	± 9.6 %
		Y	5.15	66.66	16.07		150.0	
		Z	5.07	66.32	15.79		150.0	
10540- AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 99pc duty cycle)	X	4.99	66.30	15.81	0.00	150.0	± 9.6 %
		Y	5.09	66.67	16.09		150.0	
		Z	5.00	66.31	15.80		150.0	

10541- AAB 10542-	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc duty cycle)	X	4.97	66.19	15.74	0.00	150.0	± 9.6 %
								1
10542		Y	5.06	66.55	16.01		150.0	
10542		Z	4.98	66.20	15.73		150.0	
AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)	X	5.13	66.30	15.82	0.00	150.0	±9.6 %
		Y	5.22	66.63	16.07		150.0	
		Z	5.14	66.30	15.80		150.0	
10543- AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)	X	5.20	66.33	15.86	0.00	150.0	±9.6 %
		Y	5.29	66.66	16.11		150.0	
10544- AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)	Z X	<u>5.21</u> 5.33	66.33 66.35	15.84 15.76	0.00	150.0 150.0	± 9.6 %
		Y	5.40	66.67	16.00		150.0	
		Z	5.33	66.35	15.74		150.0	
10545- AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle)	X	5.52	66.80	15.94	0.00	150.0	±9.6 %
		Y	5.59	67.10	16.17		150.0	
		Z	5.52	66.79	15.92		150.0	
10546- AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)	X	5.37	66.50	15.80	0.00	150.0	± 9.6 %
		Y	5.45	66.85	16.05		150.0	
10547-	IEEE 802.11ac WiFi (80MHz, MCS3,	Z X	5.38 5.45	66.51 66.58	15.79 15.84	0.00	150.0 150.0	+0.0 %
AAB	99pc duty cycle)	А Т Т Т	5.45	66.90	15.84	0.00	150.0	± 9.6 %
		Z	5.45	66.58	15.82		150.0	
10548- AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc duty cycle)	X	5.66	67.41	16.23	0.00	150.0	± 9.6 %
		Y	5.76	67.80	16.50		150.0	
		Z	5.67	67.45	16.23		150.0	
10550- AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle)	X	5.42	66.63	15.88	0.00	150.0	± 9.6 %
		Y	5.49	66.91	16.10		150.0	
		Z	5.42	66.61	15.85		150.0	
10551- AAB	IEEE 802.11ac WIFI (80MHz, MCS7, 99pc duty cycle)	X	5.40	66.55	15.80	0.00	150.0	± 9.6 %
		Y	5.49	66.92	16.06		150.0	
		Z	5.41	66.58	15.80		150.0	
10552- AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle)	X	5.33	66.42	15.74	0.00	150.0	± 9.6 %
		Y	5.41	66.74	15.97		150.0	
10553- AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle)	Z X	<u>5.33</u> 5.40	66.41 66.42	<u>15.72</u> 15.77	0.00	150.0 150.0	± 9.6 %
		Y	5.48	66.76	16.01		150.0	
		Z	5.41	66.43	15.76	·····	150.0	
10554- AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc duty cycle)	X	5.75	66.73	15.87	0.00	150.0	±9.6 %
		Y	5.81	67.03	16.09		150.0	
		Z	5.75	66.74	15.85		150.0	
10555- AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc duty cycle)	X	5.86	67.02	15.99	0.00	150.0	± 9.6 %
		Y	5.93	67.33	16.22		150.0	
10550		Z	5.87	67.03	15.98	0.00	150.0	
10556- AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle)	X	5.89	67.08	16.02	0.00	150.0	± 9.6 %
<del>_</del>		Y	5.96	67.39	16.24		150.0	<u> </u>
	1	Z	5.89	67.08	16.00		150.0	
10557-	IEEE 802.11ac WIFi (160MHz, MCS3,	X	5.84	66.95	15.97	0.00	150.0	± 9.6 %
10557- AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle)	X Y	5.84 	66.95 67.27	15.97	0.00	150.0	± 9.6 %

				r				
10558- AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc duty cycle)	X	5.88	67.09	16.06	0.00	150.0	±9.6 %
		Y	5.96	67.43	16.30		150.0	
		z	5.89	67.11	16.05		150.0	
10560- AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc duty cycle)	X	5.88	66.96	16.03	0.00	150.0	± 9.6 %
		Y	5.96	67.28	16.26		150.0	
,		Z	5.88	66.97	16.02		150.0	
10561- AAC	IEEE 802.11ac WIFI (160MHz, MCS7, 99pc duty cycle)	X	5.82	66.95	16.06	0.00	150.0	±9.6 %
		Y	5.89	67.26	16.29		150.0	
		z	5.82	66.96	16.05		150.0	
10562- AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc duty cycle)	X	5.90	67.20	16.19	0.00	150.0	±9.6 %
		Y	5.99	67.59	16.45		150.0	
		Z	5.91	67.25	16.19		150.0	
10563- AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc duty cycle)	X	5.99	67.15	16.13	0.00	150.0	±9.6 %
		Y	6.11	67.60	16.42		150.0	
		Z	6.02	67.22	16.14		150.0	
10564- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 9 Mbps, 99pc duty cycle)	X	4.73	66.69	16.05	0.46	150.0	± 9.6 %
		Y	4.81	67.02	16.34		150.0	
		Z	4.74	66.67	16.04	·	150.0	
10565- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 12 Mbps, 99pc duty cycle)	X	4.93	67,10	16.36	0.46	150.0	± 9.6 %
,		Y	5.03	67.43	16.64		150.0	
		Z	4.95	67.09	16.35		150.0	
10566- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 18 Mbps, 99pc duty cycle)	X	4.77	66.92	16.16	0.46	150.0	± 9.6 %
		Y	4.86	67.28	16.46		150.0	
		Z	4.78	66.92	16.16		150.0	
10567- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 24 Mbps, 99pc duty cycle)	X	4.79	67.28	16.50	0.46	150.0	± 9.6 %
7000	Or Divi, 24 Mops, cope duty cycle)	Y	4.89	67.62	16.78		150.0	
		Z	4.81	67.28	16.49		150.0	
10568- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 36 Mbps, 99pc duty cycle)	X	4.69	66.74	15.95	0.46	150.0	± 9.6 %
,		Y	4.79	67.12	16.27		150.0	
		Z	4.70	66.74	15.95		150.0	
10569- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 48 Mbps, 99pc duty cycle)	X	4.77	67.43	16.60	0.46	150.0	± 9.6 %
		Y	4.86	67.75	16.86		150.0	
		Z	4.78	67.42	16.58		150.0	
10570- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 54 Mbps, 99pc duty cycle)	X	4.79	67.27	16.52	0.46	150.0	± 9.6 %
		Y	4.88	67.60	16.79		150.0	
		Z	4.80	67.26	16.50	1	150.0	
10571- AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)	X	1.17	63.92	14.55	0.46	130.0	± 9.6 %
·		Y	1.26	65.53	15.82		130.0	
		Z	1.18	64.09	14.59		130.0	
10572- AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	X	1.18	64.38	14.83	0.46	130.0	±9.6 %
		Y	1.28	66.13	16.18		130.0	
		Z	1.19	64.56	14.88		130.0	
10573- AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)	X	1.16	73.40	17.12	0.46	130.0	±9.6%
ΑΑΑ		Y	3.60	91.72	24.40		130.0	
						1	130.0	1
		7	1.24	/4.20	1.ZZ		1 100.0	1
10574-	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11	Z X	1.24 1.20	74.20 68.26	17.22 16.69	0.46	130.0	± 9.6 %
	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)					0.46		± 9.6 %

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10575-	IEEE 802.11g WiFi 2.4 GHz (DSSS-	X	4.54	66.55	16.13	0.46	130.0	± 9.6 %
AAA	OFDM, 6 Mbps, 90pc duty cycle)						10010	
		Y	4.63	66.89	16.43		130.0	
		Z	4.55	66.55	16.13		130.0	
10576- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 9 Mbps, 90pc duty cycle)	X	4.56	66.71	16.20	0.46	130.0	± 9.6 %
		Υ	4.65	67.05	16.49		130.0	
		Z	4.57	66.71	16.19		130.0	
10577- AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS- OFDM, 12 Mbps, 90pc duty cycle)	X	4.74	66.97	16.36	0.46	130.0	± 9.6 %
		Y	4.84	67.31	16.65		130.0	
		Z	4.76	66.97	16.35		130.0	
10578- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 18 Mbps, 90pc duty cycle)	X	4.64	67.09	16.44	0.46	130.0	± 9.6 %
		Y	4.74	67.44	16.73		130.0	
40570		Z	4.66	67.10	16.44		130.0	
10579- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 24 Mbps, 90pc duty cycle)	X	4.41	66.39	15.75	0.46	130.0	± 9.6 %
		Y	4.51	66.80	16.10		130.0	
40500		Z	4.43	66.40	15.76		130.0	
10580- AAA	IEEE 802.11g WIFi 2.4 GHz (DSSS- OFDM, 36 Mbps, 90pc duty cycle)	X	4,45	66.46	15.79	0.46	130.0	±9.6 %
		Y	4.56	66.87	16.14		130.0	
1050		Z	4.47	66.47	15.79		130.0	
10581- 	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 48 Mbps, 90pc duty cycle)	X	4.54	67.14	16.39	0.46	130.0	± 9.6 %
		Y	4.64	67.51	16.69		130.0	
		Z	4.56	67.14	16.38		130.0	
10582- AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS- OFDM, 54 Mbps, 90pc duty cycle)	X	4.35	66.17	15.55	0.46	130.0	±9.6 %
		Y	4.46	66.59	15.91		130.0	
		Z	4.37	66.18	15.55		130.0	
10583- AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)	X	4.54	66.55	16.13	0.46	130.0	± 9.6 %
		Y	4.63	66.89	16.43		130.0	
		Z	4.55	66.55	16.13		130.0	
10584- AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	X	4.56	66.71	16.20	0.46	130.0	± 9.6 %
		Y	4.65	67.05	16.49		130.0	
		Z	4.57	66.71	16.19		130.0	
10585- AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)	X	4.74	66.97	16.36	0.46	130.0	± 9.6 %
		Y	4,84	67.31	16.65		130.0	
		Z	4.76	66.97	16.35		130.0	
10586- AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle)	X	4.64	67.09	16.44	0.46	130.0	± 9.6 %
		Y	4.74	67.44	16.73		130.0	
		Z	4.66	67.10	16.44		130.0	
10587- AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)	X	4.41	66.39	15.75	0.46	130.0	± 9.6 %
		Υ	4.51	66.80	16.10		130.0	
		Z	4.43	66.40	15.76		130.0	
10588- AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)	X	4.45	66.46	15.79	0.46	130.0	± 9.6 %
		Y	4.56	66.87	16.14		130.0	
		Z	4.47	66.47	15.79		130.0	
10589- AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)	X	4.54	67.14	16.39	0.46	130.0	± 9.6 %
		Y	4.64	67.51	16.69		130.0	
		Z	4.56	67.14	16.38		130.0	
10590- AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)	X	4.35	66.17	15.55	0.46	130.0	±9.6 %
		Y	4.46	66.59	15.91		130.0	
		Z	4.37	66.18	15.55		130.0	

10591- AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle)	X	4.69	66.63	16.25	0.46	130.0	± 9.6 %
	· · · · · · · · · · · · · · · · · · ·	Y	4.77	66.94	16.53		130.0	
		Z	4.70	66.62	16.24		130.0	
10592- AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle)	X	4.82	66.93	16.38	0.46	130.0	± 9.6 %
		Y	4.92	67.26	16.65		130.0	
		Z	4.84	66.94	16.37		130.0	
10593- AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle)	×	4.74	66.82	16.24	0.46	130.0	± 9.6 %
70.00		Y	4.84	67,17	16.54		130.0	
		Z	4.76	66.83	16.24		130.0	
10594- AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle)	×	4.80	66.99	16.40	0.46	130.0	± 9.6 %
		Y	4.89	67.32	16.69		130.0	
		Z	4.81	67.00	16.40		130.0	
10595- AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle)	X	4.76	66.96	16.31	0.46	130.0	± 9,6 %
		Y	4.86	67.29	16.59		130.0	
		Z	4.78	66,96	16.30		130.0	
10596- AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle)	X	4.70	66.94	16.30	0.46	130.0	± 9.6 %
		Y	4.80	67.30	16.60		130.0	
		Z	4.72	66.94	16.30		130.0	
10597- AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle)	×	4.65	66.82	16.16	0.46	130.0	± 9.6 %
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Y	4.75	67.19	16.47		130.0	
		Z	4.67	66.83	16.16		130.0	
10598- AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle)	X	4.63	67.02	16.41	0.46	130.0	±9.6 %
		Y	4.73	67.38	16.71		130.0	
		Z	4.65	67.03	16.41		130.0	
10599- AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle)	X	5.37	67.18	16.53	0.46	130.0	± 9.6 %
70.0		Y	5.44	67.44	16.74		130.0	
		Z	5.38	67.17	16.51		130.0	1
10600- AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle)	X	5.50	67.63	16.73	0.46	130.0	± 9.6 %
		Y	5.58	67.89	16.95		130.0	
		- ż	5.51	67.62	16.70		130.0	
10601- AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle)	X	5.39	67.35	16.60	0.46	130.0	± 9.6 %
		Y	5.46	67.62	16.83		130.0	
		Z	5.40	67.34	16.58		130.0	1
10602- AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle)	X	5.52	67.50	16.61	0.46	130.0	± 9.6 %
		Y	5.58	67.73	16.81		130.0	
		Z	5.52	67.47	16.57		130.0	
10603- AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc duty cycle)	X	5.58	67.75	16.86	0.46	130.0	± 9.6 %
		Y	5.64	67.97	17.05		130.0	
		Z	5.58	67.72	16.82		130.0	
10604- AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc duty cycle)	X	5.46	67.44	16.69	0.46	130.0	± 9.6 %
		Y	5.49	67.56	16.83		130.0	
		Z	5.44	67.35	16.62		130.0	
10605- AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle)	X	5.50	67.54	16.74	0.46	130.0	± 9.6 %
		Y	5.57	67.81	16.96		130.0	
		Z	5.51	67.54	16.72		130.0	1
10606-	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle)	X	5.23	66.82	16.23	0.46	130.0	± 9.6 %
ААН								
AAB		Y	5.30	67.08	16.45		130.0	

10607- AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	X	4.52	65.90	15.85	0.46	130.0	± 9.6 %
		Y	4.61	66.24	16.14		130.0	
		Z	4.53	65.89	15.84		130.0	
10608- AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)	X	4.68	66.25	16.00	0.46	130.0	± 9.6 %
		Y	4.78	66.62	16.30		130.0	
		Z	4.69	66.26	16.00		130.0	
10609- AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle)	X	4.57	66.09	15.83	0.46	130.0	± 9.6 %
		Y	4.68	66.48	16.14		130.0	
10010		Z	4.59	66.09	15.82		130.0	
10610- AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle)	×	4.62	66.25	15.99	0.46	130.0	± 9.6 %
		Y	4.72	66.62	16.30		130.0	
40044		Z	4.64	66.25	15.99		130.0	
10611- AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle)	X	4.54	66.06	15.84	0.46	130.0	± 9.6 %
		Y	4.64	66.44	16.15		130.0	
40010		Z	4.55	66.06	15.83		130.0	
10612- AAB	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle)	×	4.53	66.19	15.88	0.46	130.0	± 9.6 %
		Y	4.65	66.61	16.21		130.0	
100/-		Z	4.56	66.20	15.87		130.0	
10613- AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle)	X	4.53	66.06	15.75	0.46	130.0	± 9.6 %
****		Y	4.65	66.48	16.09		130.0	
		Z	4.56	66.07	15.75		130.0	
10614- AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle)	X	4.49	66.22	15.97	0.46	130.0	± 9.6 %
		Y	4.59	66.63	16.29		130.0	
		Z	4.50	66.23	15.97		130.0	
10615- AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle)	X	4.53	65.91	15.63	0.46	130.0	± 9.6 %
		Y	4.65	66.31	15.96		130.0	
	······································	Z	4.55	65.91	15.62		130.0	
10616- AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle)	X	5.17	66.35	16.09	0.46	130.0	± 9.6 %
		Y	5.25	66.67	16.33		130.0	
		Z	5.18	66.35	16.08		130.0	
10617- AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle)	X	5.24	66.56	16.17	0.46	130.0	± 9.6 %
		Y	5.33	66.88	16.42		130.0	
		Z	5.25	66.57	16.16		130.0	
10618- AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle)	X	5.13	66.56	16.18	0,46	130.0	± 9.6 %
		Y	5.21	66.87	16.42		130.0	
		Z	5.14	66.55	16.16		130.0	
10619- AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle)	X	5.14	66.35	16.02	0.46	130.0	± 9.6 %
	· · · · · · · · · · · · · · · · · · ·	Y	5.22	66.67	16.27		130.0	
		Z	5.15	66.35	16.00		130.0	
10620- AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle)	X	5.22	66.39	16.09	0.46	130.0	±9.6 %
		Y	5.31	66.71	16.33		130.0	
		Z	5.24	66.39	16.07		130.0	
10621- AAB	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle)	X	5.23	66.51	16.27	0,46	130.0	±9,6 %
		Y	5.31	66.82	16.50		130.0	
		Z	5.24	66.52	16.25		130.0	
10622- AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle)	X	5.25	66.68	16.34	0.46	130.0	± 9.6 %
		Y	5.32	66.98	16.57		130.0	
		Z	5.25	66.68	16.33			

								+ 1
10623- AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc duty cycle)	X	5.12	66.18	15.96	0.46	130.0	± 9.6 %
		Y	5.21	66.54	16.23		130.0	
		Z	5.13	66.21	15.96		130.0	
10624- AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)	X	5.31	66.42	16.15	0.46	130.0	±9.6 %
		Y	5.39	66.73	16.39		130.0	
		Z	5.32	66.42	16.14		130.0	
10625- AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)	X	5.54	67.00	16.50	0.46	130.0	± 9.6 %
		Y	5.70	67.55	16.86		130.0	
		Z	5.60	67.16	16.56		130.0	
10626- AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)	X	5.49	66.43	16.07	0.46	130.0	±9.6 %
		Y	5.56	66.73	16.30		130.0	
		Z	5,49	66.44	16.06		130.0	
10627- AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)	X	5.74	67.06	16.36	0.46	130.0	± 9.6 %
		Y	5.80	67.32	16.56		130.0	
		Z	5.74	67.05	16.33		130.0	
10628- AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)	X	5.50	66.46	15.99	0.46	130.0	± 9.6 %
		Y	5.58	66.80	16.24		130.0	
		Z	5.51	66.49	15.98		130.0	
10629- AAB	IEEE 802.11ac WIFi (80MHz, MCS3, 90pc duty cycle)	X	5.59	66.58	16.04	0.46	130.0	± 9.6 %
		Y	5.66	66.87	16.26	1	130.0	
		Z	5.59	66.58	16.03		130.0	
10630- AAB	IEEE 802.11ac WIFI (80MHz, MCS4, 90pc duty cycle)	X	5.95	67.87	16.70	0.46	130.0	± 9.6 %
		Y	6.07	68.30	16.99		130.0	
		Z	5.99	67.96	16.72		130.0	
10631- AAB	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)	X	5.85	67.66	16.77	0.46	130.0	± 9.6 %
		Y	5.95	68.03	17.02		130.0	
		Z	5.87	67.71	16.78		130.0	
10632- AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)	X	5.71	67.13	16.53	0.46	130.0	± 9.6 %
		Y	5.76	67.35	16.70		130.0	
		Z	5.71	67.11	16.50		130.0	
10633- AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)	X	5.57	66.65	16.12	0.46	130.0	± 9.6 %
		Y	5.64	66.95	16.34		130.0	
······································		Z	5.57	66.65	16.10		130.0	
10634- AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)	X	5.54	66.65	16.17	0.46	130.0	± 9.6 %
		Y	5.62	66.97	16.40		130.0	1
		Z	5.55	66.67	16.16		130.0	ļ
10635- AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)	X	5.43	66.00	15.59	0.46	130.0	± 9.6 %
		Y	5.51	66.37	15.86		130.0	
		Z	5.44	66.03	15.58		130.0	
10636- AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)	X	5.92	66.82	16.19	0.46	130.0	± 9.6 %
		Y	5.98	67.08	16.38	<u> </u>	130.0	
		Z	5.92	66.82	16.16		130.0	<b> </b>
10637- AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	X	6.07	67.20	16.36	0.46	130.0	± 9.6 %
		Y	6.13	67.48	16.57		130.0	<u>ļ</u>
		Z	6.07	67.21	16.35		130.0	1
10638- AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)	X	6.07	67.17	16.32	0.46	130.0	± 9.6 %
		Y	6.13	67.45	16.53		130.0	
		Z	6.07	67.17	16.30		130.0	1

10639- AAC	IEEE 802.11ac WiFl (160MHz, MCS3, 90pc duty cycle)	X	6.03	67.08	16.32	0.46	130.0	± 9.6 %
		Y	6.10	67.37	16.53		130.0	
		Z	6.03	67.09	16.31	1	130.0	
10640- AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)	X	6.03	67.08	16.27	0.46	130.0	± 9.6 %
	***	Y	6.10	67.40	16.49		130.0	1
10041		Z	6.04	67.10	16.26		130.0	
10641- AAC	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)	X	6.11	67.09	16.29	0.46	130.0	± 9.6 %
·		Y	6.16	67.35	16.49		130.0	
10642-		Z	6.10	67.08	16.27		130.0	
AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)	X	6.12	67.25	16.54	0.46	130.0	± 9.6 %
		Y	6.18	67.52	16.73		130.0	
10643-	IEEE 802.11ac WiFi (160MHz, MCS7,	Z	6.12	67.26	16.52		130.0	
AAC	90pc duty cycle)	X	5.97	66.99	16.30	0.46	130.0	± 9.6 %
		Y	6.04	67.27	16.51		130.0	
10644-		Z	5.97	66.99	16.28		130.0	
10644- AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)	X	6.07	67.28	16.47	0.46	130.0	± 9.6 %
		Y	6.17	67.67	16.73	<u> </u>	130.0	
10645-		Z	6.09	67.34	16.48		130.0	
AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	X	6.22	67.39	16.49	0.46	130.0	± 9.6 %
		<u> </u>	6.35	67.86	16.79		130.0	
10646-		Z	6.25	67.47	16.51		130.0	
AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)	X	46.26	130.91	43.60	9.30	60.0	± 9.6 %
		Y	100.00	147.58	47.83		60.0	
40047		Z	58.34	134.03	44.02		60.0	
10647- AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7)	X	38.17	127.34	42.82	9.30	60.0	± 9.6 %
		Y	100.00	148.89	48.39		60.0	
10010		Z	50.85	131.86	43.65		60.0	
10648- AAA	CDMA2000 (1x Advanced)	X	0.53	61.12	8.14	0.00	150.0	± 9.6 %
		Y	0.61	62.66	9.68		150.0	
		Z	0.53	61.13	8.17		150.0	
10652- AAD	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	X	3.78	67.42	16.36	2.23	80.0	± 9.6 %
		Y	4.10	68,60	17.11		80.0	
		Z	3.87	67.58	16.44		80.0	
10653- AAD	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	X	4.33	66.88	16.68	2.23	80.0	± 9.6 %
· · · · · · · · · · · · · · · · · · ·		Y	4.58	67.74	17.23		80.0	
10051		Z	4.41	67.04	16.74		80.0	
10654- AAD	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	X	4.32	66.55	16.73	2.23	80.0	± 9.6 %
		Y	4.55	67.37	17.24		80.0	
40055		Z	4.40	66.72	16.78		80.0	
10655- AAE	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	X	4.39	66.51	16.77	2.23	80.0	± 9.6 %
		Y	4.61	67.34	17.28		80.0	
40050		Z	4.47	66.69	16.83		80.0	
10658- AAA	Pulse Waveform (200Hz, 10%)	Х	100.00	115.33	28.90	10.00	50.0	± 9.6 %
		Y	46.45	105.93	27.47		50.0	
40075		Z	36.14	101.41	25.87		50.0	
10659- AAA	Pulse Waveform (200Hz, 20%)	X	100.00	111.86	26.34	6.99	60.0	±9.6 %
		Y	100.00	113.84	27.67		60.0	
		Z	100.00	112.19	26,79		60.0	

#### December 11, 2018

10660- AAA	Pulse Waveform (200Hz, 40%)	X	100.00	109.38	23.97	3.98	80.0	± 9.6 %
/001		Y	100.00	112.06	25.50		80.0	
		Z	100.00	109.17	24.09		80.0	
10661- AAA	Pulse Waveform (200Hz, 60%)	X	100.00	108.23	22.30	2.22	100.0	± 9.6 %
		Y	100.00	112.70	24.51		100.0	
		Z	100.00	107.44	22.12		100.0	
10662- AAA	Pulse Waveform (200Hz, 80%)	X	100.00	104.63	19.32	0.97	120.0	± 9.6 %
,		Y	100.00	114.33	23.49		120.0	
		Z	100.00	102.50	18.52		120.0	
10670-	Bluetooth Low Energy	X	100.00	110.10	23.42	2.19	100.0	± 9.6 %
AAA			100.00	113.74	25.27		100.0	
		Ż	100.00	109.20	23.18		100.0	

<sup>E</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

#### Calibration Laboratory of Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





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Schweizerischer Kalibrierdienst Service suisse d'étalonnage Servizio svizzero di taratura

Swiss Calibration Service

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Client PC Test

Certificate No: EX3-7488\_Jan19

## **CALIBRATION CERTIFICATE**

Object	EX3DV4 - SN:7488	
Calibration procedure(s)	CALCAL-01 v9, CIA CAL-14 v5, CIA CAL-23 v5, CIA CAL-25.v7 Shov Calibration procedure for dosimetric E-field probes h106(2010	
Calibration date:	January 24, 2019	
	nts the traceability to national standards, which realize the physical units of measurements (SI). tainties with confidence probability are given on the following pages and are part of the certificate.	

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-18 (No. 217-02682)	Apr-19
DAE4	SN: 660	19-Dec-18 (No. DAE4-660_Dec18)	Dec-19
Reference Probe ES3DV2	SN: 3013	31-Dec-18 (No. ES3-3013_Dec18)	Dec-19
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-18)	In house check: Jun-20
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	de Ma
			and from the
Approved by:	Katja Pokovic	Technical Manager	20101
			Ande
			Issued: January 29, 2019

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

## **Calibration Laboratory of**

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





Schweizerischer Kalibrierdienst S

Service suisse d'étalonnage

Accreditation No.: SCS 0108

- С Servizio svizzero di taratura
- S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)

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## Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization §	9 rotation around an axis that is in the plane normal to probe axis (at measurement center),
	i.e., 9 = 0 is normal to probe axis
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

**Connector Angle** 

### Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, ", "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from handheld and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

## Methods Applied and Interpretation of Parameters:

- NORMx, y, z: Assessed for E-field polarization  $\vartheta = 0$  (f  $\leq 900$  MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E<sup>2</sup>-field uncertainty inside TSL (see below ConvF).
- NORM(f)x,y,z = NORMx,y,z \* frequency\_response (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCPx,y,z: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- PAR; PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,y,z: A, B, C, D are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters: Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORMx, y, z \* ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy): in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- Connector Angle: The angle is assessed using the information gained by determining the NORMX (no uncertainty required).

#### **Basic Calibration Parameters**

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm $(\mu V/(V/m)^2)^A$	0.45	0.49	0.50	± 10.1 %
DCP (mV) <sup>B</sup>	98.9	102.3	99.6	

#### **Calibration Results for Modulation Response**

UID	Communication System Name		A dB	B dBõV	С	D dB	VR mV	Max dev.	Max Unc <sup>E</sup> (k=2)
0	CW	X	0.00	0.00	1.00	0.00	149.5	± 2.7 %	±4.7 %
-		Y	0.00	0.00	1.00		140.8		
		Z	0.00	0.00	1.00		138.2		
10352-	Pulse Waveform (200Hz, 10%)	X	10.21	80.63	15.98	10.00	60.0	± 3.1 %	± 9.6 %
AAA		Y	5.90	74.67	14.18		60.0		
		Z	15.00	89.30	20.53		60.0		
10353-	Pulse Waveform (200Hz, 20%)	X	15.00	85.88	16.55	6.99	80.0	± 2.1 %	±9.6 %
AAA	,	Y	15.00	84.35	15.79		80.0		
		Z	15.00	92.51	21.01		80.0		
10354-	Pulse Waveform (200Hz, 40%)	X	15.00	90.08	17.19	3.98	95.0	± 1.3 %	± 9.6 %
AAA		Y	15.00	83.37	13.66		95.0		
		Z	15.00	104.27	25.33		95.0		
10355-	Pulse Waveform (200Hz, 60%)	X	15.00	97.36	19.30	2.22	120.0	± 1.2 %	± 9.6 %
AAA		Y	0.26	60.00	4.43		120.0	1	
		Z	15.00	117.38	29.81	]	120.0		
10387-	QPSK Waveform, 1 MHz	Х	0.51	60.28	7.04	0.00	150.0	± 3.3 %	± 9.6 %
AAA		Y	0.47	60.00	5.79		150.0		
		Z	0.61	61.09	8.42		150.0		
10388-	QPSK Waveform, 10 MHz	Х	2.29	69.54	16.64	0.00	150.0	± 1.1 %	± 9.6 %
AAA		Y	1.90	66.64	14.97		150.0		
		Z	2.23	68.54	16.09		150.0		
10396-	64-QAM Waveform, 100 kHz	Х	2.94	72.04	19.55	3.01	150.0	±0.7 %	± 9.6 %
AAA		Ý	2.49	68.13	17.71		150.0	[	
		Ż	3.35	73.33	20.07		150.0		
10399-	64-QAM Waveform, 40 MHz	X	3.54	67.80	16.20	0.00	150.0	± 2.2 %	± 9.6 %
AAA		Y	3.42	67.12	15.74	1	150.0	_	1
		Z	3,49	67.32	15.92		150.0		
10414-	WLAN CCDF, 64-QAM, 40MHz	Х	4.65	65.56	15.55	0.00	150.0	± 4.0 %	± 9.6 %
AAA		Y	4.74	65.87	15.68		150.0	-	
		Z	4.80	65.75	15.62		150.0		1

Note: For details on UID parameters see Appendix

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

<sup>A</sup> The uncertainties of Norm X,Y,Z do not affect the E<sup>2</sup>-field uncertainty inside TSL (see Pages 5 and 6).

<sup>B</sup> Numerical linearization parameter: uncertainty not required. <sup>E</sup> Uncertainty is determined using the max, deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

## Sensor Model Parameters

	C1 fF	C2 fF	α V <sup>-1</sup>	T1 ms.V⁻²	T2 ms.V <sup>−1</sup>	T3 ms	T4 V <sup>-2</sup>	T5 V <sup>-1</sup>	Т6
X	35.2	259.64	34.83	7.55	0.00	5.04	1.52	0.11	1.01
Y	34.3	261.80	36.90	6.01	0.21	5.06	0.00	0.41	1.01
Z	40.7	301.53	35.10	11.37	0.14	5.09	1.94	0.15	1.01

### **Other Probe Parameters**

Triangular
-129.2
enabled
disabled
337 mm
10 mm
9 mm
2.5 mm
1 mm
1 mm
1 mm
1.4 mm

f (MHz) <sup>C</sup>	Relative Permittivity <sup>F</sup>	Conductivity (S/m) <sup>F</sup>	ConvF X	ConvF Y	ConvF Z	Alpha <sup>G</sup>	Depth <sup>G</sup> (mm)	Unc (k=2)
750	41.9	0.89	10.77	10.77	10.77	0.56	0.80	± 12.0 %
835	41.5	0.90	10.37	10.37	10.37	0.40	0.93	± 12.0 %
1750	40.1	1.37	8.87	8.87	8.87	0.33	0.84	± 12.0 %
1900	40.0	1.40	8.53	8.53	8.53	0.27	0.84	± 12.0 %
2300	39.5	1.67	8.25	8.25	8.25	0.33	0.85	± 12.0 %
2450	39.2	1.80	7.86	7.86	7.86	0.34	0.90	± 12.0 %
2600	39.0	1.96	7.69	7.69	7.69	0.35	0.86	± 12.0 %
5250	35.9	4.71	5.35	5.35	5.35	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.70	4.70	4.70	0.40	1.80	± 13.1 %
5750	35.4	5.22	5.03	5.03	5.03	0.40	1.80	± 13.1 %

#### **Calibration Parameter Determined in Head Tissue Simulating Media**

<sup>C</sup> Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.

<sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters. <sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is

<sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

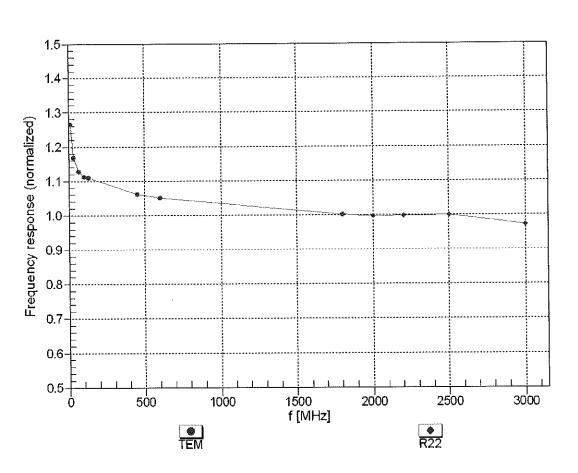
f (MHz) <sup>C</sup>	Relative Permittivity <sup>F</sup>	Conductivity (S/m) <sup>F</sup>	ConvF X	ConvF Y	ConvF Z	Alpha <sup>G</sup>	Depth <sup>G</sup> (mm)	Unc (k=2)
750	55.5	0.96	11.28	11.28	11.28	0.46	0.80	± 12.0 %
835	55.2	0.97	11.03	11.03	11.03	0.46	0.81	± 12.0 %
1750	53.4	1.49	8.68	8.68	8.68	0.38	0.88	± 12.0 %
1900	53.3	1.52	8.37	8.37	8.37	0.38	0.88	± 12.0 %
2300	52.9	1.81	8.21	8.21	8.21	0.42	0.84	± 12.0 %
2450	52.7	1.95	8.07	8.07	8.07	0.35	0.98	± 12.0 %
2600	52.5	2.16	7.94	7.94	7.94	0.25	0.95	± 12.0 %
5250	48.9	5.36	4.82	4.82	4.82	0.50	1.90	± 13.1 %
5600	48.5	5.77	4.09	4.09	4.09	0.50	1.90	± 13.1 %
5750	48.3	5.94	4.32	4.32	4.32	0.50	1.90	± 13.1 %

## Calibration Parameter Determined in Body Tissue Simulating Media

<sup>c</sup> Frequency validity above 300 MHz of  $\pm$  100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to  $\pm$  50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is  $\pm$  10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to  $\pm$  110 MHz. <sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to  $\pm$  10% if liquid compensation formula is applied to

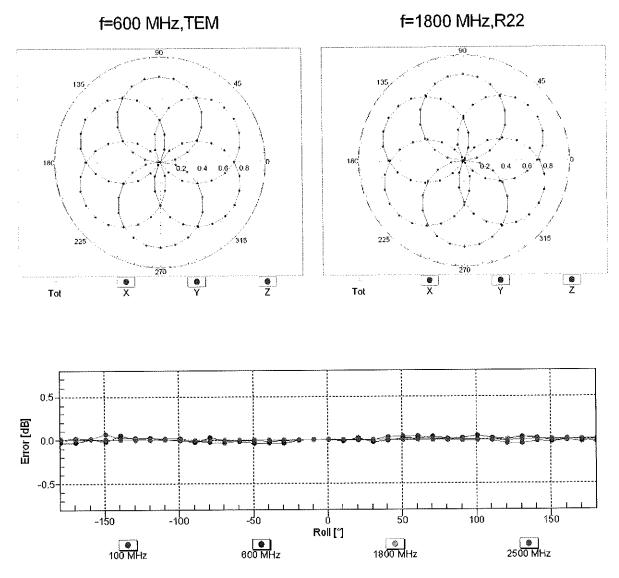
<sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\varepsilon$  and  $\sigma$ ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\varepsilon$  and  $\sigma$ ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters. <sup>6</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is

<sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.



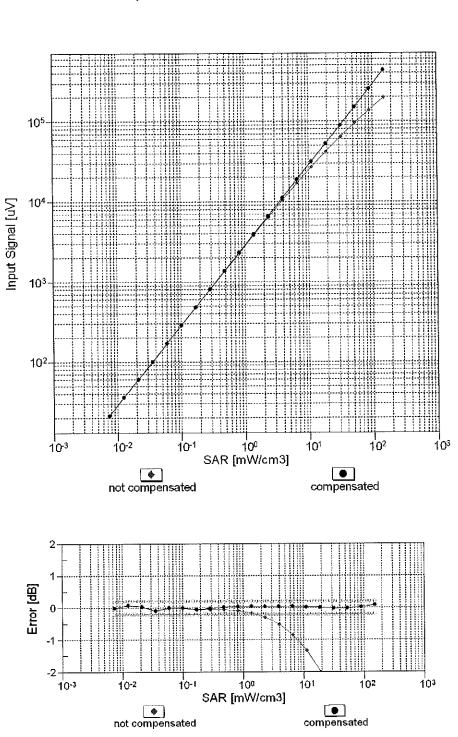
# Frequency Response of E-Field (TEM-Cell:ifi110 EXX, Waveguide: R22)

Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)



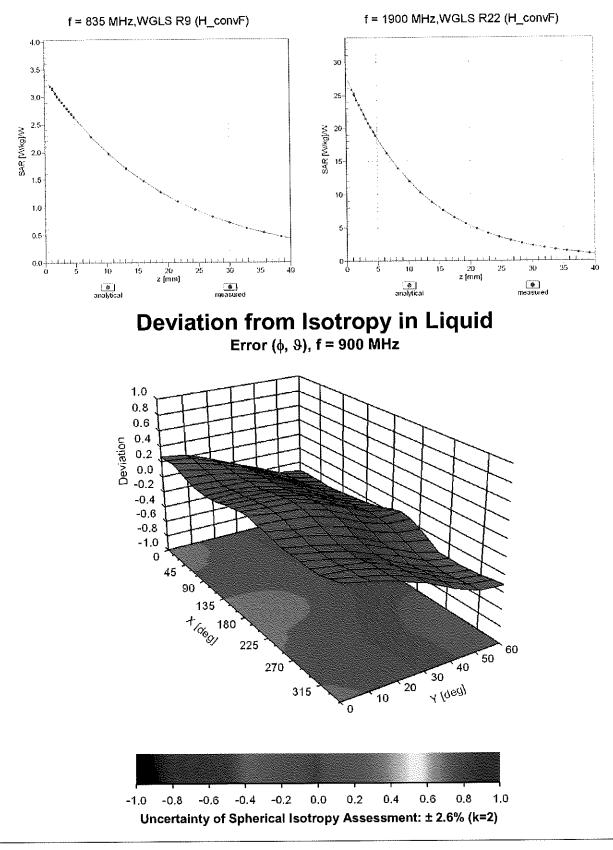
# Receiving Pattern ( $\phi$ ), $\vartheta = 0^{\circ}$

Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)



# Dynamic Range f(SAR<sub>head</sub>) (TEM cell , f<sub>eval</sub>= 1900 MHz)

Uncertainty of Linearity Assessment: ± 0.6% (k=2)



# **Conversion Factor Assessment**

## **Appendix: Modulation Calibration Parameters**

UID	Rev	Communication System Name	Group	PAR (dB)	Unc <sup>E</sup> (k=2)
0		CW	CW	0.00	±4.7 %
10010	CAA	SAR Validation (Square, 100ms, 10ms)	Test	10.00	± 9.6 %
10011	CAB	UMTS-FDD (WCDMA)	WCDMA	2.91	±9.6 %
10012	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	WLAN	1.87	± 9.6 %
10013	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	WLAN	9.46	± 9,6 %
10021	DAC	GSM-FDD (TDMA, GMSK)	GSM	9.39	± 9.6 %
10023	DAC	GPRS-FDD (TDMA, GMSK, TN 0)	GSM	9.57	± 9.6 %
10024	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	GSM	6.56	± 9.6 %
10025	DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	GSM	12.62	± 9.6 %
10026	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	GSM	9.55	± 9.6 %
10027	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	GSM	4.80	± 9.6 %
10028	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	GSM	3.55	± 9.6 %
10029	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	GSM	7.78	± 9.6 %
10030	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	Bluetooth	5.30	± 9.6 %
10031	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	Bluetooth	1.87	± 9.6 %
10032	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	Bluetooth	1.16	±9.6 %
10033	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	Bluetooth	7.74	± 9.6 %
10034	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	Bluetooth	4.53	± 9.6 %
10035		IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	Bluetooth	3.83	± 9.6 %
10036	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	Bluetooth	8.01	±9.6 %
10037	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	Bluetooth	4.77	±9.6 %
10038		IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	Bluetooth	4.10	± 9.6 %
10039	CAB	CDMA2000 (1xRTT, RC1)	CDMA2000	4.57	± 9.6 %
10042	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate)	AMPS	7.78	± 9.6 %
10044	CAA	IS-91/EIA/TIA-553 FDD (FDMA, FM)	AMPS	0.00	±9.6%
10048	CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	DECT	13.80	± 9.6 %
10049	CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	DECT	10.79	± 9.6 %
10056	CAA	UMTS-TDD (TD-SCDMA, 1.28 Mcps)	TD-SCDMA	11.01	± 9.6 %
10058	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	GSM	6.52	± 9.6 %
10059	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	WLAN	2.12	± 9.6 %
10060	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	WLAN	2.83	± 9.6 %
10061	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	WLAN	3.60	± 9.6 %
10062	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	WLAN	8.68	± 9.6 %
10063	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	WLAN	8.63	± 9.6 %
10064	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	WLAN	9.09	± 9.6 %
10065	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	WLAN	9.00	± 9.6 %
10066 10067		IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)	WLAN	9.38	± 9.6 %
	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)	WLAN	10.12	± 9.6 %
10068		IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	WLAN	10.24	± 9.6 %
10069 10071		IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	WLAN WLAN	10.56	± 9.6 %
	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)		9.83	± 9.6 %
10072 10073	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps) IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	WLAN	9.62	±9.6 % ±9.6 %
10073	CAB CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	WLAN WLAN	9.94	
10074	CAB	IEEE 802.11g WIFI 2.4 GHz (DSSS/OFDM, 24 Mpps)	WLAN	10.30	± 9.6 % ± 9.6 %
10075		IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 38 Mbps)	WLAN	10.77	
10078	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	WLAN	11.00	$\pm 9.6\%$
10077	CAB	CDMA2000 (1xRTT, RC3)	CDMA2000		$\pm 9.6\%$
10081		IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate)	AMPS	<u>3.97</u> 4.77	± 9.6 % ± 9.6 %
10082	DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	GSM	6.56	$\pm 9.6\%$ $\pm 9.6\%$
10090	CAB	UMTS-FDD (HSDPA)	WCDMA	3.98	± 9.6 %
10097		UMTS-FDD (HSUPA) UMTS-FDD (HSUPA, Subtest 2)	WCDMA	3.98	± 9.6 %
10098	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	GSM	9.55	$\pm 9.6\%$ $\pm 9.6\%$
10100					
		LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-FDD	5.67	$\pm 9.6\%$
10101 10102		LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10103		LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-TDD	9.29	± 9.6 %
10104	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-TDD	9.97	± 9.6 %
10105		LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-TDD	10.01	± 9.6 %
10108	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-FDD	5.80	± 9.6 %

10110         CAG         LTE-FDD         (SC-FDMA, 100%, RB, 5 MHz, QPSK)         LTE-FDD         5.75         ±           10111         CAG         LTE-FDD         (SC-FDMA, 100%, RB, 5 MHz, 4C-QAM)         LTE-FDD         6.44         ±           10112         CAG         LTE-FDD         (SC-FDMA, 100%, RB, 10 MHz, 4C-QAM)         LTE-FDD         6.59         ±           10113         CAG         LTE-FDD (SC-FDMA, 100%, RB, 5 MHz, 64-QAM)         WLAN         8.10         ±           10114         CAC         IEEE 802.11n (HT Greenfield, 13.5 Mbps, 64-QAM)         WLAN         8.16         ±           10116         CAC         IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)         WLAN         8.17         ±           10117         CAC         IEEE 802.11n (HT Mixed, 136 Mbps, 64-QAM)         WLAN         8.17         ±           10118         CAC         IEEE 802.11n (HT Mixed, 136 Mbps, 64-QAM)         WLAN         8.13         ±           10140         CAC         IEEE 802.11n (HT Mixed, 136 Mbps, 64-QAM)         WLAN         8.13         ±           10141         CAE         LTE-FDD (SC-FDMA, 100%, RB, 15 MHz, 16-QAM)         LTE-FDD         6.63         ±           10142         CAE         LTE-FDD (SC-FDMA, 100%, RB, 3 MHz, 64-QAM)	$\begin{array}{c} 9.6 \ \% \\$
10111         CAG         LTE-FDD         (SC-FDMA, 100%, RB, 5 MHz, 16-QAM)         LTE-FDD         6.44         ±           10112         CAG         LTE-FDD         (SC-FDMA, 100%, RB, 5 MHz, 64-QAM)         LTE-FDD         6.59         ±           10113         CAG         LTE-FDD         (SC-FDMA, 100%, RB, 5 MHz, 64-QAM)         LTE-FDD         6.52         ±           10114         CAG         LTE-FDD (SC-FDMA, 100%, RB, 5 MHz, 64-QAM)         WLAN         8.10         ±           10115         CAC         LEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)         WLAN         8.46         ±           10116         CAC         LEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)         WLAN         8.07         ±           10118         CAC         LEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)         WLAN         8.13         ±           10119         CAC         LEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)         WLAN         8.13         ±           10119         CAC         LTE-FDD (SC-FDMA, 100%, RB, 15 MHz, 64-QAM)         LTE-FDD         6.53         ±           10141         CAE         LTE-FDD (SC-FDMA, 100%, RB, 3 MHz, 16-QAM)         LTE-FDD         6.35         ±           10142         CAE         LTE-FDD (SC-FDMA, 100%, RB, 3 MHz, 16-QAM)	$\begin{array}{c} 9.6 \ \% \\$
10112         CAG         LTE-FDD         (SC-FDMA, 100% RB, 5 MHz, 64-QAM)         LTE-FDD         6.69         ±           10113         CAG         LTE-FDD         (SC-FDMA, 100% RB, 5 MHz, 64-QAM)         LTE-FDD         6.62         ±           10114         CAC         IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)         WLAN         8.16         ±           10116         CAC         IEEE 802.11n (HT Greenfield, 13.5 Mbps, 64-QAM)         WLAN         8.15         ±           10117         CAC         IEEE 802.11n (HT Mixed, 13.5 Mbps, 64-QAM)         WLAN         8.59         ±           10118         CAC         IEEE 802.11n (HT Mixed, 13.5 Mbps, 64-QAM)         WLAN         8.13         ±           10119         CAC         IEEE 802.11n (HT Mixed, 13.5 Mbps, 64-QAM)         WLAN         8.13         ±           10140         CAE         LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)         LTE-FDD         6.53         ±           10141         CAE         LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)         LTE-FDD         6.65         ±           10143         CAE         LTE-FDD (SC-FDMA, 100% RB, 14 MHz, QPSK)         LTE-FDD         6.65         ±           10144         CAE         LTE-FDD (SC-FDMA, 100% RB, 14 MHz, QPSK)         LTE-FDD <td><math display="block">\begin{array}{c} 9.6 \ \% \\</math></td>	$\begin{array}{c} 9.6 \ \% \\$
10113         CAG         LTE-FDD         6.62         ±           10114         CAC         IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)         WLAN         8.10         ±           10115         CAC         IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)         WLAN         8.46         ±           10116         CAC         IEEE 802.11n (HT Greenfield, 13.5 Mbps, 64-QAM)         WLAN         8.15         ±           10117         CAC         IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)         WLAN         8.15         ±           10118         CAC         IEEE 802.11n (HT Mixed, 13.5 Mbps, 64-QAM)         WLAN         8.13         ±           10119         CAC         IEEE 802.11n (HT Mixed, 13.5 Mbps, 64-QAM)         WLAN         8.13         ±           10140         CAE         LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)         LTE-FDD         6.5.73         ±           10141         CAE         LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)         LTE-FDD         6.5.73         ±           10142         CAE         LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)         LTE-FDD         6.65         ±           10142         CAE         LTE-FDD (SC-FDMA, 100% RB, 14 MHz, 0PSK)         LTE-FDD         6.66         ±           10145	$\begin{array}{c} 9.6 \ \% \\$
10114         CAC         IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)         WLAN         8.10         ±           10116         CAC         IEEE 802.11n (HT Greenfield, 13.5 Mbps, 16-QAM)         WLAN         8.16         ±           10116         CAC         IEEE 802.11n (HT Greenfield, 13.5 Mbps, 64-QAM)         WLAN         8.15         ±           10117         CAC         IEEE 802.11n (HT Mixed, 13.5 Mbps, 64-QAM)         WLAN         8.07         ±           10118         CAC         IEEE 802.11n (HT Mixed, 13.5 Mbps, 64-QAM)         WLAN         8.13         ±           10110         CAC         IEEE 802.11n (HT Mixed, 13.5 Mbps, 64-QAM)         WLAN         8.13         ±           10114         CAC         IEEE 802.11n (HT Mixed, 13.5 Mbps, 64-QAM)         WLAN         8.13         ±           10140         CAE         LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)         LTE-FDD         6.73         ±           10141         CAE         LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 04-QAM)         LTE-FDD         6.73         ±           10142         CAE         LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)         LTE-FDD         6.72         ±           10145         CAF         LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)         LTE-FDD         6.72	$\begin{array}{c} 9.6 \ \% \\$
10115         CAC         IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)         WLAN         8.46         ±           10116         CAC         IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)         WLAN         8.17         ±           10117         CAC         IEEE 802.11n (HT Mixed, 135 Mbps, BPSK)         WLAN         8.07         ±           10118         CAC         IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)         WLAN         8.15         ±           10119         CAC         IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)         WLAN         8.13         ±           10140         CAE         LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)         UTE-FDD         6.43         ±           10141         CAE         LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)         LTE-FDD         6.53         ±           10142         CAE         LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)         LTE-FDD         6.35         ±           10144         CAE         LTE-FDD (SC-FDMA, 100% RB, 14 MHz, 16-QAM)         LTE-FDD         6.65         ±           10144         CAF         LTE-FDD (SC-FDMA, 100% RB, 14 MHz, 16-QAM)         LTE-FDD         6.41         ±           10145         CAF         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-FDD         6.65 <t< td=""><td><math display="block">\begin{array}{c} 9.6 \ \% \\</math></td></t<>	$\begin{array}{c} 9.6 \ \% \\$
10116         CAC         IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)         WLAN         8.15         ±           10117         CAC         IEEE 802.11n (HT Mixed, 135 Mbps, BPSK)         WLAN         8.07         ±           10118         CAC         IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)         WLAN         8.59         ±           10119         CAC         IEEE 802.11n (HT Mixed, 136 Mbps, 64-QAM)         WLAN         8.13         ±           10110         CAC         IEEE 802.11n (HT Mixed, 136 Mbps, 64-QAM)         UTE-FDD         6.49         ±           10141         CAE         LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)         LTE-FDD         6.53         ±           10142         CAE         LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 0F-QAM)         LTE-FDD         6.53         ±           10143         CAE         LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 0F-QAM)         LTE-FDD         6.65         ±           10145         CAF         LTE-FDD (SC-FDMA, 100% RB, 14 MHz, 0F-SK)         LTE-FDD         6.42         ±           10146         CAF         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 0F-QAM)         LTE-FDD         6.42         ±           10147         CAF         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-FDD         6.42         ±	$\begin{array}{c} 9.6 \ \% \\$
10117         CAC         IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)         WLAN         8.07         ±           10118         CAC         IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)         WILAN         8.59         ±           10119         CAC         IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)         WILAN         8.13         ±           10140         CAE         LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)         LTE-FDD         6.49         ±           10141         CAE         LTE-FDD (SC-FDMA, 100% RB, 16 MHz, QFSK)         LTE-FDD         6.53         ±           10142         CAE         LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)         LTE-FDD         6.35         ±           10143         CAE         LTE-FDD (SC-FDMA, 100% RB, 14 MHz, QPSK)         LTE-FDD         6.35         ±           10144         CAE         LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)         LTE-FDD         6.41         ±           10145         CAF         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)         LTE-FDD         6.42         ±           10146         CAF         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)         LTE-FDD         6.42         ±           10147         CAF         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)         LTE-FDD         6.42         ±	$\begin{array}{c} 9.6 \ \% \\$
10118         CAC         IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)         WLAN         8.59         ±           10119         CAC         IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)         WLAN         8.13         ±           10140         CAE         LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 04-QAM)         LTE-FDD         6.49         ±           10141         CAE         LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 04-QAM)         LTE-FDD         6.53         ±           10142         CAE         LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 04-QAM)         LTE-FDD         6.35         ±           10144         CAE         LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 04-QAM)         LTE-FDD         6.65         ±           10145         CAF         LTE-FDD (SC-FDMA, 100% RB, 14 MHz, 64-QAM)         LTE-FDD         6.76         ±           10146         CAF         LTE-FDD (SC-FDMA, 100% RB, 14 MHz, 64-QAM)         LTE-FDD         6.72         ±           10147         CAE         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-FDD         6.60         ±           10147         CAE         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 04-QAM)         LTE-FDD         6.42         ±           10147         CAE         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-FDD         6.60	$\begin{array}{c} 9.6 \ \% \\$
10119         CAC         IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)         WLAN         8.13         ±           10140         CAE         LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)         LTE-FDD         6.49         ±           10141         CAE         LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QAM)         LTE-FDD         6.53         ±           10142         CAE         LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QAM)         LTE-FDD         6.53         ±           10143         CAE         LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QAM)         LTE-FDD         6.65         ±           10144         CAE         LTE-FDD (SC-FDMA, 100% RB, 14 MHz, QPSK)         LTE-FDD         6.66         ±           10145         CAF         LTE-FDD (SC-FDMA, 100% RB, 14 MHz, QPSK)         LTE-FDD         6.76         ±           10146         CAF         LTE-FDD (SC-FDMA, 100% RB, 14 MHz, QAM)         LTE-FDD         6.41         ±           10147         CAF         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)         LTE-FDD         6.42         ±           10149         CAE         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)         LTE-FDD         6.42         ±           10150         CAG         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)         LTE-FDD         6.42         ±	$\begin{array}{c} 9.6 \ \% \\$
10140         CAE         LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)         LTE-FDD         6.49         ±           10141         CAE         LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)         LTE-FDD         6.53         ±           10142         CAE         LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)         LTE-FDD         5.73         ±           10143         CAE         LTE-FDD (SC-FDMA, 100% RB, 3 MHz, G4-QAM)         LTE-FDD         6.65         ±           10144         CAE         LTE-FDD (SC-FDMA, 100% RB, 3 MHz, G4-QAM)         LTE-FDD         6.65         ±           10145         CAF         LTE-FDD (SC-FDMA, 100% RB, 14 MHz, G4-QAM)         LTE-FDD         6.76         ±           10146         CAF         LTE-FDD (SC-FDMA, 100% RB, 14 MHz, 64-QAM)         LTE-FDD         6.41         ±           10147         CAF         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-FDD         6.42         ±           10150         CAE         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)         LTE-FDD         6.60         ±           10151         CAG         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)         LTE-FDD         9.28         ±           10152         CAG         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)         LTE-FDD         9.27	9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %
10141         CAE         LTE-FDD         SC-FDMA, 100% RB, 15 MHz, 64-QAM)         LTE-FDD         6.53         ±           10142         CAE         LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)         LTE-FDD         5.73         ±           10143         CAE         LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)         LTE-FDD         6.65         ±           10144         CAE         LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)         LTE-FDD         6.65         ±           10145         CAF         LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)         LTE-FDD         6.67         ±           10146         CAF         LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)         LTE-FDD         6.41         ±           10147         CAF         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-FDD         6.42         ±           10150         CAE         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, G4-QAM)         LTE-FDD         6.42         ±           10151         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, G4-QAM)         LTE-FDD         6.42         ±           10152         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, G4-QAM)         LTE-FDD         9.92         ±           10154         CAG         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, G4-QAM)         LTE-FDD	9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %           9.6 %
10142         CAE         LTE-FDD         S.73         ±           10143         CAE         LTE-FDD         (SC-FDMA, 100% RB, 3 MHz, 16-QAM)         LTE-FDD         6.35         ±           10143         CAE         LTE-FDD         (SC-FDMA, 100% RB, 3 MHz, 16-QAM)         LTE-FDD         6.65         ±           10144         CAE         LTE-FDD         (SC-FDMA, 100% RB, 14 MHz, QPSK)         LTE-FDD         6.65         ±           10145         CAF         LTE-FDD         (SC-FDMA, 100% RB, 14 MHz, QPSK)         LTE-FDD         6.76         ±           10146         CAF         LTE-FDD (SC-FDMA, 100% RB, 14 MHz, 64-QAM)         LTE-FDD         6.72         ±           10147         CAF         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-FDD         6.42         ±           10150         CAE         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)         LTE-TDD         9.28         ±           10151         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, G4-QAM)         LTE-TDD         9.22         ±           10152         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, G4-QAM)         LTE-FDD         5.75         ±           10152         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)         LTE-FDD         5.75	9.6 % 9.6 %
10143         CAE         LTE-FDD         S.5         ±           10144         CAE         LTE-FDD         SC-FDMA, 100% RB, 3 MHz, 64-QAM)         LTE-FDD         S.65         ±           10144         CAF         LTE-FDD         SC-FDMA, 100% RB, 14 MHz, QPSK)         LTE-FDD         S.76         ±           10146         CAF         LTE-FDD         SC-FDMA, 100% RB, 14 MHz, QPSK)         LTE-FDD         S.76         ±           10146         CAF         LTE-FDD         SC-FDMA, 100% RB, 14 MHz, 16-QAM)         LTE-FDD         S.71         ±           10147         CAF         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-FDD         S.42         ±           10150         CAE         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-FDD         S.42         ±           10151         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-TDD         9.92         ±           10152         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-FDD         5.75         ±           10153         CAG         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 0PSK)         LTE-FDD         5.75         ±           10154         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 0PSK)         LTE-FDD         5.75	9.6 % 9.6 %
10144         CAE         LTE-FDD         (SC-FDMA, 100% RB, 3 MHz, 64-QAM)         LTE-FDD         6.65         ±           10145         CAF         LTE-FDD         (SC-FDMA, 100% RB, 1.4 MHz, QPSK)         LTE-FDD         5.76         ±           10146         CAF         LTE-FDD         (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)         LTE-FDD         6.41         ±           10147         CAF         LTE-FDD         (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)         LTE-FDD         6.42         ±           10149         CAE         LTE-FDD         (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-FDD         6.42         ±           10150         CAE         LTE-FDD         (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-FDD         6.60         ±           10151         CAG         LTE-TDD         (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-FDD         9.28         ±           10152         CAG         LTE-TDD         (SC-FDMA, 50% RB, 20 MHz, 0F-QAM)         LTE-FDD         9.92         ±           10152         CAG         LTE-FDD         (SC-FDMA, 50% RB, 20 MHz, 0F-QAM)         LTE-FDD         9.92         ±           10152         CAG         LTE-FDD         (SC-FDMA, 50% RB, 20 MHz, 0F-QAM)         LTE-FDD         9.92         ±	9.6 % 9.6 %
10145         CAF         LTE-FDD         (SC-FDMA, 100% RB, 1.4 MHz, QPSK)         LTE-FDD         5.76         ±           10146         CAF         LTE-FDD         (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)         LTE-FDD         6.41         ±           10147         CAF         LTE-FDD         (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)         LTE-FDD         6.72         ±           10149         CAE         LTE-FDD         (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-FDD         6.72         ±           10150         CAE         LTE-FDD         (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-FDD         6.60         ±           10151         CAG         LTE-TDD         (SC-FDMA, 50% RB, 20 MHz, 04-QAM)         LTE-TDD         9.28         ±           10152         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 04-QAM)         LTE-TDD         9.92         ±           10152         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 04-QAM)         LTE-TDD         9.92         ±           10153         CAG         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 04-QAM)         LTE-FDD         5.75         ±           10154         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 04-QAM)         LTE-FDD         5.79         ±           10155         CAG	9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 %
10146         CAF         LTE-FDD         (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)         LTE-FDD         6.41         ±           10147         CAF         LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)         LTE-FDD         6.72         ±           10149         CAE         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-FDD         6.72         ±           10150         CAE         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-FDD         6.60         ±           10151         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 04-QAM)         LTE-TDD         9.28         ±           10152         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-TDD         9.92         ±           10153         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 04-QAM)         LTE-TDD         9.92         ±           10154         CAG         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 04-QAM)         LTE-TDD         9.92         ±           10155         CAG         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 04-QAM)         LTE-FDD         5.75         ±           10155         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 04-QAM)         LTE-FDD         5.79         ±           10156         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)         LTE-FDD	9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 %
10147         CAF         LTE-FDD         (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)         LTE-FDD         6.72         ±           10149         CAE         LTE-FDD         (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-FDD         6.42         ±           10150         CAE         LTE-FDD         (SC-FDMA, 50% RB, 20 MHz, 64-QAM)         LTE-FDD         6.60         ±           10151         CAG         LTE-TDD         (SC-FDMA, 50% RB, 20 MHz, 64-QAM)         LTE-TDD         9.28         ±           10152         CAG         LTE-TDD         (SC-FDMA, 50% RB, 20 MHz, 64-QAM)         LTE-TDD         9.92         ±           10152         CAG         LTE-TDD         (SC-FDMA, 50% RB, 20 MHz, 64-QAM)         LTE-TDD         10.05         ±           10152         CAG         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)         LTE-FDD         5.75         ±           10155         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)         LTE-FDD         5.79         ±           10156         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)         LTE-FDD         6.62         ±           10157         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, G4-QAM)         LTE-FDD         6.82         ±           10158         CAG	9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 %
10149         CAE         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-FDD         6.42         ±           10150         CAE         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)         LTE-FDD         6.60         ±           10151         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)         LTE-TDD         9.28         ±           10152         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-TDD         9.92         ±           10153         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-TDD         9.92         ±           10154         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-TDD         9.92         ±           10154         CAG         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)         LTE-FDD         5.75         ±           10155         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)         LTE-FDD         6.43         ±           10156         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)         LTE-FDD         5.79         ±           10157         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, G4-QAM)         LTE-FDD         6.62         ±           10158         CAG         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)         LTE-FDD         6.62         ± <td>9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 %</td>	9.6 % 9.6 % 9.6 % 9.6 % 9.6 % 9.6 %
10150         CAE         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)         LTE-FDD         6.60         ±           10151         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)         LTE-TDD         9.28         ±           10152         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-TDD         9.92         ±           10153         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)         LTE-TDD         10.05         ±           10154         CAG         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)         LTE-FDD         5.75         ±           10155         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)         LTE-FDD         6.43         ±           10156         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)         LTE-FDD         6.49         ±           10157         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)         LTE-FDD         6.62         ±           10158         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)         LTE-FDD         6.62         ±           10160         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)         LTE-FDD         6.82         ±           10161         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)         LTE-FDD         6.84         ± <td>9.6 % 9.6 % 9.6 % 9.6 % 9.6 %</td>	9.6 % 9.6 % 9.6 % 9.6 % 9.6 %
10151         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)         LTE-TDD         9.28         ±           10152         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-TDD         9.92         ±           10153         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)         LTE-TDD         10.05         ±           10154         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)         LTE-FDD         5.75         ±           10155         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)         LTE-FDD         6.43         ±           10156         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, GPSK)         LTE-FDD         6.43         ±           10157         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)         LTE-FDD         6.49         ±           10158         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)         LTE-FDD         6.62         ±           10160         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)         LTE-FDD         6.62         ±           10161         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)         LTE-FDD         5.82         ±           10160         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)         LTE-FDD         6.43         ±<	9.6 % 9.6 % 9.6 % 9.6 % 9.6 %
10152         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-TDD         9.92         ±           10153         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)         LTE-TDD         10.05         ±           10154         CAG         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)         LTE-TDD         10.05         ±           10154         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)         LTE-FDD         5.75         ±           10155         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)         LTE-FDD         6.43         ±           10156         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)         LTE-FDD         6.49         ±           10157         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)         LTE-FDD         6.62         ±           10158         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)         LTE-FDD         6.62         ±           10159         CAG         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)         LTE-FDD         5.82         ±           10160         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, G4-QAM)         LTE-FDD         5.82         ±           10161         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)         LTE-FDD         6.43         ±	9.6 % 9.6 % 9.6 % 9.6 %
10153         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)         LTE-TDD         10.05         ±           10154         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)         LTE-FDD         5.75         ±           10155         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)         LTE-FDD         6.43         ±           10156         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)         LTE-FDD         5.79         ±           10157         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)         LTE-FDD         6.49         ±           10158         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)         LTE-FDD         6.62         ±           10159         CAG         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)         LTE-FDD         6.62         ±           10160         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)         LTE-FDD         6.82         ±           10161         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)         LTE-FDD         6.43         ±           10162         CAE         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)         LTE-FDD         6.84         ±           10166         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)         LTE-FDD         5.73         ±<	9.6 % 9.6 % 9.6 %
10154         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)         LTE-FDD         5.75         ±           10155         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)         LTE-FDD         6.43         ±           10156         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)         LTE-FDD         5.79         ±           10157         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)         LTE-FDD         6.49         ±           10158         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)         LTE-FDD         6.62         ±           10159         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)         LTE-FDD         6.62         ±           10160         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)         LTE-FDD         6.82         ±           10161         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)         LTE-FDD         6.43         ±           10162         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)         LTE-FDD         6.58         ±           10166         CAF         LTE-FDD (SC-FDMA, 50% RB, 14 MHz, 64-QAM)         LTE-FDD         5.46         ±           10167         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)         LTE-FDD         6.21         ± </td <td>9.6 % 9.6 %</td>	9.6 % 9.6 %
10155       CAG       LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)       LTE-FDD       6.43       ±         10156       CAG       LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)       LTE-FDD       5.79       ±         10157       CAG       LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)       LTE-FDD       6.49       ±         10158       CAG       LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)       LTE-FDD       6.62       ±         10159       CAG       LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)       LTE-FDD       6.62       ±         10160       CAE       LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)       LTE-FDD       5.82       ±         10161       CAE       LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)       LTE-FDD       6.43       ±         10162       CAE       LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)       LTE-FDD       6.43       ±         10162       CAE       LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)       LTE-FDD       6.58       ±         10166       CAF       LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)       LTE-FDD       5.46       ±         10167       CAF       LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)       LTE-FDD       6.79       ±         10168       CAF       LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	9.6 %
10156         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)         LTE-FDD         5.79         ±           10157         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)         LTE-FDD         6.49         ±           10158         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)         LTE-FDD         6.62         ±           10159         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)         LTE-FDD         6.62         ±           10160         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 04-QAM)         LTE-FDD         5.82         ±           10160         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 04-QAM)         LTE-FDD         6.43         ±           10161         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 04-QAM)         LTE-FDD         6.43         ±           10162         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 04-QAM)         LTE-FDD         6.58         ±           10166         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 04-QAM)         LTE-FDD         5.46         ±           10167         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 04-QAM)         LTE-FDD         6.21         ±           10168         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 04-QAM)         LTE-FDD         6.79	
10157         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)         LTE-FDD         6.49         ±           10158         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)         LTE-FDD         6.62         ±           10159         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)         LTE-FDD         6.62         ±           10159         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)         LTE-FDD         6.56         ±           10160         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)         LTE-FDD         5.82         ±           10161         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)         LTE-FDD         6.43         ±           10162         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)         LTE-FDD         6.58         ±           10162         CAE         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)         LTE-FDD         6.58         ±           10166         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)         LTE-FDD         5.46         ±           10167         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 04-QAM)         LTE-FDD         6.21         ±           10168         CAF         LTE-FDD (SC-FDMA, 10% RB, 20 MHz, QPSK)         LTE-FDD         5.73	
10158         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)         LTE-FDD         6.62         ±           10159         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)         LTE-FDD         6.56         ±           10160         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)         LTE-FDD         5.82         ±           10161         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)         LTE-FDD         6.43         ±           10162         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)         LTE-FDD         6.58         ±           10162         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)         LTE-FDD         6.58         ±           10166         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)         LTE-FDD         5.46         ±           10167         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)         LTE-FDD         6.21         ±           10168         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)         LTE-FDD         6.79         ±           10169         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-FDD         5.73         ±           10170         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)         LTE-FDD         6.52         ± </td <td>9.6 %</td>	9.6 %
10159         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)         LTE-FDD         6.56         ±           10160         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)         LTE-FDD         5.82         ±           10161         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)         LTE-FDD         6.43         ±           10162         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)         LTE-FDD         6.58         ±           10162         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)         LTE-FDD         6.58         ±           10166         CAF         LTE-FDD (SC-FDMA, 50% RB, 14 MHz, QPSK)         LTE-FDD         5.46         ±           10167         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, G4-QAM)         LTE-FDD         6.21         ±           10168         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)         LTE-FDD         6.79         ±           10169         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-FDD         5.73         ±           10170         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)         LTE-FDD         6.52         ±           10171         AAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-FDD         6.49         ±	9.6 %
10160         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)         LTE-FDD         5.82         ±           10161         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)         LTE-FDD         6.43         ±           10162         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)         LTE-FDD         6.58         ±           10162         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)         LTE-FDD         6.58         ±           10166         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)         LTE-FDD         5.46         ±           10167         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)         LTE-FDD         6.21         ±           10168         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)         LTE-FDD         6.79         ±           10169         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-FDD         5.73         ±           10170         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)         LTE-FDD         6.52         ±           10171         AAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)         LTE-FDD         6.49         ±           10172         CAG         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-FDD         9.21         ±	9.6 %
10161         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)         LTE-FDD         6.43         ±           10162         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)         LTE-FDD         6.58         ±           10162         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)         LTE-FDD         6.58         ±           10166         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)         LTE-FDD         5.46         ±           10167         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)         LTE-FDD         6.21         ±           10168         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)         LTE-FDD         6.79         ±           10169         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-FDD         5.73         ±           10170         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)         LTE-FDD         6.52         ±           10171         AAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)         LTE-FDD         6.49         ±           10172         CAG         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-FDD         9.21         ±	9.6 %
10162         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)         LTE-FDD         6.58         ±           10166         CAF         LTE-FDD (SC-FDMA, 50% RB, 14 MHz, QPSK)         LTE-FDD         5.46         ±           10167         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)         LTE-FDD         6.21         ±           10168         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)         LTE-FDD         6.79         ±           10169         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-FDD         5.73         ±           10170         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)         LTE-FDD         6.52         ±           10171         AAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)         LTE-FDD         6.49         ±           10172         CAG         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-FDD         9.21         ±	9.6 %
10166         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)         LTE-FDD         5.46         ±           10167         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)         LTE-FDD         6.21         ±           10168         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)         LTE-FDD         6.79         ±           10169         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-FDD         5.73         ±           10170         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)         LTE-FDD         6.52         ±           10171         AAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)         LTE-FDD         6.49         ±           10172         CAG         LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-TDD         9.21         ±	9.6 %
10167         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)         LTE-FDD         6.21         ±           10168         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)         LTE-FDD         6.79         ±           10169         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-FDD         5.73         ±           10170         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)         LTE-FDD         6.52         ±           10171         AAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)         LTE-FDD         6.49         ±           10172         CAG         LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-TDD         9.21         ±	9.6 %
10168         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)         LTE-FDD         6.79         ±           10169         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-FDD         5.73         ±           10170         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-FDD         6.52         ±           10171         AAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)         LTE-FDD         6.49         ±           10172         CAG         LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-TDD         9.21         ±	9.6 %
10169         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-FDD         5.73         ±           10169         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-FDD         5.73         ±           10170         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)         LTE-FDD         6.52         ±           10171         AAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)         LTE-FDD         6.49         ±           10172         CAG         LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-TDD         9.21         ±	9.6 %
10170         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)         LTE-FDD         6.52         ±           10171         AAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)         LTE-FDD         6.49         ±           10172         CAG         LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-TDD         9.21         ±	9.6 %
10171         AAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)         LTE-FDD         6.49         ±           10172         CAG         LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-TDD         9.21         ±	9.6 %
10172 CAG LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK) LTE-TDD 9.21 ±	9.6 %
	9.6 %
	9.6 %
	9.6 %
	9.6 %
	9.6 %
	9.6 %
	9.6 %
	9.6 %
	9.6 %
10181 CAE LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK) LTE-FDD 5.72 ±	9.6 %
	9.6 %
10183 AAD LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM) LTE-FDD 6.50 ±	9.6 %
10184 CAE LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK) LTE-FDD 5.73 ±	9.6 %
10185 CAE LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM) LTE-FDD 6.51 ±	9.6 %
10186 AAE LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM) LTE-FDD 6.50 ±	9.6 %
10187 CAF LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK) LTE-FDD 5.73 ±	9.6 %
10188 CAF LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM) LTE-FDD 6.52 ±	9.6 %
10189 AAF LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM) LTE-FDD 6.50 ±	
10193 CAC IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK) WLAN 8.09 ±	9.6 %
10194 CAC IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM) WLAN 8.12 ±	: 9.6 % : 9.6 %
	9.6 % 9.6 % 9.6 %
To too of the EEE open that the time of th	9.6 % 9.6 % 9.6 % 9.6 %
	9.6 % 9.6 % 9.6 % 9.6 % 9.6 %
	9.6 % 9.6 % 9.6 % 9.6 % 9.6 %
10219 CAC IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK) WLAN 8.03 ±	9.6 % 9.6 % 9.6 % 9.6 % 9.6 %

10220	CAC	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	WLAN	8.13	±9.6 %
10221	CAC	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	WLAN	8.27	± 9.6 %
10222	CAC	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	WLAN	8.06	± 9.6 %
10223	CAC	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	WLAN	8.48	± 9.6 %
10224	CAC	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	WLAN	8.08	± 9.6 %
10225	CAB	UMTS-FDD (HSPA+)	WCDMA	5.97	± 9.6 %
10226	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.49	±9.6 %
10227	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.26	±9.6 %
10228	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-TDD	9.22	± 9.6 %
10229	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-TDD	9.48	±9.6 %
10230	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10231	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-TDD	9.19	± 9.6 %
10232	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-TDD	9.48	±9.6 %
10233	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10234	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10235	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-TDD	9.48	±9.6 %
10236	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10237	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10238	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10239	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-TDD	10.25	±9.6 %
10240	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-TDD	9.21	±9.6 %
10241	CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.82	±9.6 %
10242	CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-TDD	9.86	±9.6 %
10243	CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-TDD	9.46	± 9.6 %
10244	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-TDD	10.06	± 9.6 %
10245	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-TDD	10.06	± 9.6 %
10246	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-TDD	9.30	± 9.6 %
10247	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-TDD	9.91	± 9.6 %
10248	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-TDD	10.09	±9.6 %
10249	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-TDD	9.29	±9.6 %
10250	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-TDD	9.81	± 9.6 %
10251	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-TDD	10.17	± 9.6 %
10252	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-TDD	9.24	± 9.6 %
10253	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-TDD	9.90	±9.6 %
10254	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-TDD	10.14	±9.6 %
10255	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-TDD	9.20	± 9.6 %
10256	CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.96	± 9.6 %
10257	CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.08	± 9.6 %
10258	CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-TDD	9.34	±9.6 %
10259	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-TDD	9.98	± 9.6 %
10260	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-TDD	9.97	± 9.6 %
10261	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-TDD	9.24	± 9.6 %
10262		LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-TDD	9.83	± 9.6 %
10263	CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-TDD	10.16	± 9.6 %
10264	CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-TDD	9,23	± 9.6 %
10265	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10266	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-TDD	10.02	± 9.6 %
10267	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-TDD	9.30	± 9.6 %
10268	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-TDD	10.06	± 9.6 %
10269	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-TDD	10.00	± 9.6 %
10200	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-TDD	9.58	± 9.6 %
10270	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)	WCDMA	4.87	± 9.6 %
10275	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	WCDMA	3.96	± 9.6 %
10270	CAA	PHS (QPSK)	PHS	11.81	± 9.6 %
10277	CAA	PHS (QPSK, BW 884MHz, Rolloff 0.5)	PHS	11.81	± 9.6 %
10270	CAA	PHS (QPSK, BW 884MHz, Rolloff 0.38)	PHS	12.18	± 9.6 %
10273	AAB	CDMA2000, RC1, SO55, Full Rate	CDMA2000	3.91	± 9.6 %
10291	AAB	CDMA2000, RC3, SO55, Full Rate	CDMA2000	3.46	± 9.6 %
10291	AAB	CDMA2000, RC3, SO33, Full Rate	CDMA2000	3.39	± 9.6 %
10292	AAB	CDMA2000, RC3, SO32, Full Rate	CDMA2000	3.50	± 9.6 %
10295	AAB	CDMA2000, RC3, SO3, Full Rate CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	CDMA2000 CDMA2000	12.49	±9.6%
10295	AAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-FDD	5.81	± 9.6 %
10297	AAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-FDD	5.72	$\pm 9.6\%$ $\pm 9.6\%$
10298	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-FDD	6.39	$\pm 9.6\%$ $\pm 9.6\%$
10233				ບ.ວອ	

10300	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-FDD	6.60	±9.6 %
10301	AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	WIMAX	12.03	±9.6 %
10302	AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3 CTRL symbols)	WIMAX	12.57	± 9.6 %
10303	AAA	IEEE 802.16e WiMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	WIMAX	12.52	±9.6 %
10304	AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	WIMAX	11.86	± 9.6 %
10305	ΑΑΑ	IEEE 802.16e WIMAX (31:15, 10ms, 10MHz, 64QAM, PUSC, 15 symbols)	WIMAX	15.24	± 9.6 %
10306	ΑΑΑ	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18 symbols)	WIMAX	14.67	± 9.6 %
10307	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18 symbols)	WIMAX	14.49	± 9.6 %
10308	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	WIMAX	14.46	±9.6 %
10309	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3, 18 symbols)	WIMAX	14.58	± 9.6 %
10310	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18 symbols)	WIMAX	14.57	± 9.6 %
10311	AAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-FDD	6.06	± 9.6 %
10313	AAA	IDEN 1:3	IDEN	10.51	± 9.6 %
10314	AAA	IDEN 1:6	IDEN	13.48	± 9.6 %
10315	AAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)	WLAN	1.71	±9.6 %
10316	AAB	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle)	WLAN	8.36	± 9.6 %
10317	AAC	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)	WLAN	8.36	± 9.6 %
10352	AAA	Pulse Waveform (200Hz, 10%)	Generic	10.00	± 9.6 %
10353	AAA	Pulse Waveform (200Hz, 20%)	Generic	6.99	± 9.6 %
10354	AAA	Pulse Waveform (200Hz, 40%)	Generic	3.98	±9.6%
10355	AAA	Pulse Waveform (200Hz, 60%)	Generic	2,22	±9.6 %
10356	AAA	Pulse Waveform (200Hz, 80%)	Generic Generic	0.97 5.10	± 9.6 % ± 9.6 %
10387 10388	AAA AAA	QPSK Waveform, 1 MHz QPSK Waveform, 10 MHz	Generic	5.22	$\pm 9.6\%$
10386		64-QAM Waveform, 100 kHz	Generic	6.27	± 9.6 %
10390	AAA	64-QAM Waveform, 100 KHz	Generic	6.27	± 9.6 %
10400	AAD	IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc duty cycle)	WLAN	8.37	± 9.6 %
10401	AAD	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc duty cycle)	WLAN	8.60	± 9.6 %
10402	AAD	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc duty cycle)	WLAN	8.53	± 9.6 %
10403	AAB	CDMA2000 (1xEV-DO, Rev. 0)	CDMA2000	3.76	± 9.6 %
10404	AAB	CDMA2000 (1xEV-DO, Rev. A)	CDMA2000	3.77	±9.6 %
10406	AAB	CDMA2000, RC3, SO32, SCH0, Full Rate	CDMA2000	5.22	± 9.6 %
10410	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9, Subframe Conf=4)	LTE-TDD	7.82	± 9.6 %
10414	AAA	WLAN CCDF, 64-QAM, 40MHz	Generic	8.54	± 9.6 %
10415	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	WLAN	1.54	± 9.6 %
10416	AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	± 9.6 %
10417	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	± 9.6 %
10418	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Long preambule)	WLAN	8.14	± 9.6 %
10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule)	WLAN	8.19	± 9.6 %
10422	AAB	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	WLAN	8.32	± 9.6 %
10423	AAB	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	WLAN	8.47	±9.6 %
10424	AAB	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	WLAN	8.40	±9.6 %
10425	AAB	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	WLAN	8.41	±9.6 %
10426	AAB	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	WLAN	8.45	± 9.6 %
10427	AAB	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	WLAN	8.41	± 9.6 %
10430	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	LTE-FDD	8.28	± 9.6 %
10431	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	LTE-FDD	8.38	± 9.6 %
10432	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	LTE-FDD	8.34	± 9.6 %
10433		LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	LTE-FDD	8.34	± 9.6 %
10434	AAA	W-CDMA (BS Test Model 1, 64 DPCH)	WCDMA	8.60	± 9.6 %
10435	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10447	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.56	± 9.6 %
10448	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	LTE-FDD	7.53	± 9.6 %
10449	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Cliping 44%)	LTE-FDD	7.51	± 9.6 %
10450	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7,48	±9.6 %

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10451	AAA	W CDMA (BS Toot Model 4, 64 DDOLL Officer 449()		7 50	
10451	AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)		7.59	± 9.6 %
10456		IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc duty cycle) UMTS-FDD (DC-HSDPA)	WLAN WCDMA	8.63 6.62	± 9.6 % ± 9.6 %
10457	AAA	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	CDMA2000	6.55	$\pm 9.6\%$ $\pm 9.6\%$
10459	AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	CDMA2000	8.25	$\pm 9.6\%$
10460	AAA	UMTS-FDD (WCDMA, AMR)	WCDMA	2.39	± 9.6 %
10461	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
		Subframe=2,3,4,7,8,9)	212 100	1102	
10462	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL	LTE-TDD	8.30	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10463	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL	LTE-TDD	8.56	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10464	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
40.405		Subframe=2,3,4,7,8,9)			
10465	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL	LTE-TDD	8.32	±9.6 %
10466	AAB	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL		0.57	1004
10400		Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	± 9.6 %
10467	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
10401		Subframe=2,3,4,7,8,9)		1.02	1 9.0 %
10468	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL	LTE-TDD	8.32	± 9.6 %
		Subframe=2,3,4,7,8,9)		0.02	
10469	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL	LTE-TDD	8.56	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10470	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL	LTE-TDD	7.82	±9.6 %
		Subframe=2,3,4,7,8,9)			
10471	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL	LTE-TDD	8.32	± 9.6 %
40.470		Subframe=2,3,4,7,8,9)			
10472	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL	LTE-TDD	8.57	± 9.6 %
10473	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
10475		Subframe=2,3,4,7,8,9)		1.02	19.0 %
10474	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL	LTE-TDD	8.32	± 9.6 %
10111	1	Subframe=2,3,4,7,8,9)		0.02	1 2 0.0 %
10475	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL	LTE-TDD	8.57	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10477	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL	LTE-TDD	8.32	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10478	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL	LTE-TDD	8.57	±9.6 %
40470		Subframe=2,3,4,7,8,9)			
10479	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL	LTE-TDD	7.74	±9.6 %
10480	AAA	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL	LTE-TDD	8.18	± 9.6 %
10400		Subframe=2,3,4,7,8,9)		0.10	± 9.0 %
10481	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL	LTE-TDD	8.45	± 9.6 %
		Subframe=2,3,4,7,8,9)		0.10	
10482	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL	LTE-TDD	7.71	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10483	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL	LTE-TDD	8.39	± 9.6 %
	<u> </u>	Subframe=2,3,4,7,8,9)			
10484	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL	LTE-TDD	8.47	± 9.6 %
40.40 7		Subframe=2,3,4,7,8,9)			
10485	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL	LTE-TDD	7.59	± 9.6 %
10486	AAE	Subframe=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL	LTE-TDD	8.38	± 9.6 %
10400		Subframe=2,3,4,7,8,9)		0.00	1 9.0 %
10487	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL	LTE-TDD	8.60	± 9.6 %
		Subframe=2,3,4,7,8,9)		5.00	
10488	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL	LTE-TDD	7.70	± 9.6 %
		Subframe=2,3,4,7,8,9)			
10489	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL	LTE-TDD	8.31	± 9.6 %
		Subframe=2,3,4,7,8,9)			ļ]
10490	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL	LTE-TDD	8.54	± 9.6 %
10404		Subframe=2,3,4,7,8,9)		7 7 7 1	
10491	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL	LTE-TDD	7.74	± 9.6 %
L	.1	Subframe=2,3,4,7,8,9)	l.	l	

10492	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.41	± 9.6 %
10493	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.55	±9.6 %
10494	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	±9.6 %
10495	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.37	±9.6 %
10496	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	±9.6 %
10497	AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.67	± 9.6 %
10498	AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.40	±9.6 %
10499	AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.68	± 9.6 %
10500	AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.67	± 9.6 %
10501	AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.44	± 9.6 %
10502	AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.52	± 9.6 %
10503	AAE	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.72	±9.6 %
10504	AAE	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.31	±9.6 %
10505	AAE	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	± 9.6 %
10506	AAE	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	±9.6%
10507	AAE	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.36	±9.6 %
10508	AAE	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.55	±9.6 %
10509	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.99	± 9.6 %
10510	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.49	± 9.6 %
10511	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.51	± 9.6 %
10512	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	±9.6 %
10513	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.42	± 9.6 %
10514	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.45	± 9,6 %
10515	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)	WLAN	1.58	± 9.6 %
10516	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)	WLAN	1.57	± 9.6 %
10517	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)	WLAN	1.58	± 9.6 %
10518	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)	WLAN	8.23	± 9.6 %
10519	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)	WLAN	8.39	± 9.6 %
10520	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)	WLAN	8.12	± 9.6 %
10521	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)	WLAN	7.97	± 9.6 %
10522	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)	WLAN	8.45	± 9.6 %
	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)	WLAN	8.08	± 9.6 %
10523	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)	WLAN	8.27	± 9.6 %
10524		IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)	WLAN	8.36	±9.6 %
10524 10525	AAB				
10524 10525 10526	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10524 10525 10526 10527	AAB AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)	WLAN WLAN	8.42 8.21	± 9.6 % ± 9.6 %
10524 10525 10526 10527 10528	AAB AAB AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)	WLAN WLAN WLAN	8.42 8.21 8.36	± 9.6 % ± 9.6 % ± 9.6 %
10524 10525 10526 10527 10528 10529	AAB AAB AAB AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)	WLAN WLAN WLAN WLAN	8.42 8.21 8.36 8.36	± 9.6 %         ± 9.6 %         ± 9.6 %         ± 9.6 %
10524           10525           10526           10527           10528           10529           10531	AAB AAB AAB AAB AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)	WLAN WLAN WLAN WLAN WLAN	8.42 8.21 8.36 8.36 8.43	± 9.6 %         ± 9.6 %         ± 9.6 %         ± 9.6 %         ± 9.6 %
10524 10525 10526 10527 10528 10529	AAB AAB AAB AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)	WLAN WLAN WLAN WLAN	8.42 8.21 8.36 8.36	± 9.6 %         ± 9.6 %         ± 9.6 %         ± 9.6 %

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10535			r		
	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle)	WLAN	8.45	±9.6 %
10536	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc duty cycle)	WLAN	8.32	± 9.6 %
10537	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)	WLAN	8.44	±9.6 %
10538	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc duty cycle)	WLAN	8.54	± 9.6 %
10540	AAB	IEEE 802.11ac WIFi (40MHz, MCS6, 99pc duty cycle)	WLAN	8.39	±9.6 %
10541	AAB	IEEE 802.11ac WIFi (40MHz, MCS7, 99pc duty cycle)	WLAN	8.46	± 9.6 %
10542	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)	WLAN	8.65	± 9.6 %
10543	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)	WLAN	8.65	± 9.6 %
10544	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)	WLAN	8.47	± 9.6 %
10545	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle)	WLAN	8.55	±9.6 %
10546	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)	WLAN	8.35	±9.6 %
10547	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)	WLAN	8.49	± 9.6 %
10548	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc duty cycle)	WLAN	8.37	±9.6 %
10550	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle)	WLAN	8,38	±9.6 %
10551	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc duty cycle)	WLAN	8.50	± 9.6 %
10552	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10553	AAB	IEEE 802.11ac WIFI (80MHz, MCS9, 99pc duty cycle)	WLAN	8.45	±9.6 %
10554	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc duty cycle)	WLAN	8.48	±9.6 %
10555	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc duty cycle)	WLAN	8.47	± 9.6 %
10556	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle)	WLAN	8.50	± 9.6 %
10557	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle)	WLAN	8.52	± 9.6 %
10558	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc duty cycle)	WLAN	8.61	± 9.6 %
10560	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc duty cycle)	WLAN	8.73	± 9.6 %
10561	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc duty cycle)	WLAN	8.56	± 9.6 %
10562	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc duty cycle)	WLAN	8.69	± 9.6 %
10563	AAC	IEEE 802.11ac WiFI (160MHz, MCS9, 99pc duty cycle)	WLAN	8.77	± 9.6 %
10563	AAC		WLAN	8.25	± 9.6 %
10364		IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty	VV LAIN	0,20	I 9.0 %
10565	AAA	cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty	WLAN	8.45	± 9.6 %
10365			VVLAIN	0.40	± 9.0 %
40500			WLAN	0.40	± 9.6 %
10566	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty	VVLAIN	8.13	I9.0 %
40507			360 0.01		106%
10567	AAA	IEEE 802.11g WIFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty	WLAN	8.00	± 9.6 %
40500			16/1 661	0.07	1000
10568	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty	WLAN	8.37	±9.6 %
40500	1			0.40	1001/
10569	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty	WLAN	8.10	± 9.6 %
40570				- 0.00	
10570	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty	WLAN	8.30	± 9.6 %
	1	cycle)			
40574				4.00	106%
10571	AAA	IEEE 802.11b WIFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)	WLAN	1.99	± 9.6 %
10572	AAA	IEEE 802.11b WIFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle) IEEE 802.11b WIFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	WLAN	1.99	± 9.6 %
10572 10573	AAA AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)	WLAN WLAN	1.99 1.98	± 9.6 % ± 9.6 %
10572 10573 10574	AAA AAA AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)	WLAN WLAN WLAN	1.99 1.98 1.98	± 9.6 %       ± 9.6 %       ± 9.6 %
10572 10573	AAA AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty	WLAN WLAN	1.99 1.98	± 9.6 % ± 9.6 %
10572 10573 10574 10575	AAA AAA AAA AAA	IÉEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN	1.99 1.98 1.98 8.59	± 9.6 %         ± 9.6 %         ± 9.6 %         ± 9.6 %
10572 10573 10574	AAA AAA AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty	WLAN WLAN WLAN	1.99 1.98 1.98	± 9.6 %       ± 9.6 %       ± 9.6 %
10572 10573 10574 10575 10576	AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN	1.99           1.98           1.98           8.59           8.60	± 9.6 %         ± 9.6 %         ± 9.6 %         ± 9.6 %
10572 10573 10574 10575	AAA AAA AAA AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty	WLAN WLAN WLAN WLAN	1.99 1.98 1.98 8.59	± 9.6 %         ± 9.6 %         ± 9.6 %         ± 9.6 %
10572           10573           10574           10575           10576           10577	AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN	1.99           1.98           1.98           8.59           8.60           8.70	± 9.6 %         ± 9.6 %         ± 9.6 %         ± 9.6 %         ± 9.6 %         ± 9.6 %
10572 10573 10574 10575 10576	AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA	IÉEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc dutyIEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty	WLAN WLAN WLAN WLAN	1.99           1.98           1.98           8.59           8.60	± 9.6 %         ± 9.6 %         ± 9.6 %         ± 9.6 %
10572           10573           10574           10575           10576           10577           10578	AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN WLAN	1.99           1.98           1.98           8.59           8.60           8.70           8.49	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10572 10573 10574 10575 10576 10577	AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA	IÉEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc dutyIEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty	WLAN WLAN WLAN WLAN WLAN	1.99           1.98           1.98           8.59           8.60           8.70	± 9.6 %         ± 9.6 %         ± 9.6 %         ± 9.6 %         ± 9.6 %         ± 9.6 %
10572           10573           10574           10575           10576           10577           10578           10579	AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN WLAN WLAN	1.99           1.98           1.98           8.59           8.60           8.70           8.49           8.36	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10572 10573 10574 10575 10576 10577 10578	AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty	WLAN WLAN WLAN WLAN WLAN WLAN	1.99           1.98           1.98           8.59           8.60           8.70           8.49	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10572           10573           10574           10575           10576           10577           10578           10579	AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	1.99           1.98           1.98           8.59           8.60           8.70           8.49           8.36           8.76	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10572           10573           10574           10575           10576           10577           10578           10579	AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty	WLAN WLAN WLAN WLAN WLAN WLAN WLAN	1.99           1.98           1.98           8.59           8.60           8.70           8.49           8.36	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10572           10573           10574           10575           10576           10577           10578           10579           10580	AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	1.99           1.98           1.98           8.59           8.60           8.70           8.49           8.36           8.76	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10572           10573           10574           10575           10576           10577           10578           10579           10580	AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA           AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	1.99           1.98           1.98           8.59           8.60           8.70           8.49           8.36           8.76	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10572           10573           10574           10575           10576           10577           10578           10579           10580           10581	AAA           AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	1.99           1.98           1.98           8.59           8.60           8.70           8.49           8.36           8.76	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10572           10573           10574           10575           10576           10577           10578           10579           10580           10581	AAA           AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty	WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	1.99           1.98           1.98           8.59           8.60           8.70           8.49           8.36           8.76	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \end{array}$
10572           10573           10574           10575           10576           10577           10578           10579           10580           10581           10583	AAA           AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	1.99           1.98           1.98           8.59           8.60           8.70           8.49           8.36           8.76           8.67	$\begin{array}{r} \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \pm 9.6 \% \\ \end{array}$
10572           10573           10574           10575           10576           10577           10578           10579           10580           10581           10582           10583	AAA         AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	1.99           1.98           1.98           8.59           8.60           8.70           8.49           8.36           8.76           8.35           8.67           8.59	$\begin{array}{c} \pm 9.6 \% \\$
10572           10573           10574           10575           10576           10577           10578           10579           10580           10581           10582	AAA         AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)	WLAN WLAN WLAN WLAN WLAN WLAN WLAN WLAN	1.99           1.98           1.98           8.59           8.60           8.70           8.49           8.36           8.76           8.35           8.67           8.59	± 9.6 %         ± 9.6 %         ± 9.6 %         ± 9.6 %         ± 9.6 %         ± 9.6 %         ± 9.6 %         ± 9.6 %         ± 9.6 %         ± 9.6 %         ± 9.6 %         ± 9.6 %

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10588	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)	WLAN	8.76	±9.6 %
10589	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)	WLAN	8.35	±9.6%
10590	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)	WLAN	8.67	±9.6%
10591	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle)	WLAN	8.63	± 9.6 %
10592	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10593	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle)	WLAN	8,64	± 9.6 %
10594	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle)	WLAN	8.74	±9.6%
10595	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle)	WLAN	8.74	±9.6 %
10596	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle)	WLAN	8.71	± 9.6 %
10597	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle)	WLAN	8.72	±9.6 %
10598	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle)	WLAN	8.50	± 9.6 %
10599	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle)	WLAN	8.79	±9.6%
10600	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle)	WLAN	8.88	± 9.6 %
10601	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle)	WLAN	8.82	±9.6%
10602	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle)	WLAN	8.94	±9.6%
10603	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc duty cycle)	WLAN	9.03	± 9.6 %
10604	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc duty cycle)	WLAN	8.76	± 9.6 %
10605	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle)	WLAN	8.97	± 9.6 %
10606	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10607	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	WLAN	8.64	± 9.6 %
10608	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10609	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)	WLAN	8.57	± 9.6 %
10610	AAB				
10610	AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle) IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle)	WLAN	8.78	$\pm 9.6\%$
			WLAN	8.70	± 9.6 %
10612	AAB	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10613	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle)	WLAN	8.94	± 9.6 %
10614	AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle)	WLAN	8.59	± 9.6 %
10615	AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10616	AAB	IEEE 802.11ac WIFI (40MHz, MCS0, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10617	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10618	AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle)	WLAN	8.58	±9.6%
10619	AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle)	WLAN	8.86	± 9.6 %
10620	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle)	WLAN	8.87	± 9.6 %
10621	AAB	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle)	WLAN	8.77	±9.6 %
10622	AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle)	WLAN	8.68	± 9.6 %
10623	AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10624	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)	WLAN	8.96	± 9.6 %
10625	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)	WLAN	8.96	± 9.6 %
10626	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)	WLAN	8.83	±9.6 %
10627	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)	WLAN	8.88	±9.6 %
10628	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)	WLAN	8.71	± 9.6 %
10629	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle)	WLAN	8.85	± 9.6 %
10630	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)	WLAN	8.72	± 9.6 %
10631	AAB	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10632	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10633	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10634	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)	WLAN	8.80	± 9.6 %
10635	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)	WLAN	8.81	$\pm 9.6\%$
10636	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	WLAN	8.83	
10637	AAC	IEEE 802.11ac WIFI (160MHz, MCS0, 90pc duty cycle)			$\pm 9.6\%$
10638	AAC	IEEE 802.11ac WiFI (160MHz, MCS1, 90pc duty cycle)	WLAN	8.79	± 9.6 %
			WLAN	8.86	± 9.6 %
10639	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)	WLAN	8.85	$\pm 9.6\%$
10640	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)	WLAN	8.98	± 9.6 %
10641	AAC	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)	WLAN	9.06	±9.6%
10642	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)	WLAN	9.06	±9.6%
10643	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)	WLAN	8.89	±9.6 %
10644	AAC	IEEE 802.11ac WiFI (160MHz, MCS8, 90pc duty cycle)	WLAN	9.05	±9.6%
10645	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	WLAN	9.11	±9.6 %
10646	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)	LTE-TDD	11.96	±9.6%
10647	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7)	LTE-TDD	11.96	±9.6 %
	AAA	CDMA2000 (1x Advanced)	CDMA2000	3.45	±9.6 %
10648				0.04	
10652	AAD	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.91	± 9.6 %
		LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%) LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD LTE-TDD	6.91 7.42	± 9.6 % ± 9.6 %

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January 24, 2019

10655	AAE	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.21	±9.6 %
10658	AAA	Pulse Waveform (200Hz, 10%)	Test	10.00	$\pm 9.6\%$
10659	AAA	Pulse Waveform (200Hz, 20%)	Test	6.99	±9.6%
10660	AAA	Pulse Waveform (200Hz, 40%)	Test	3.98	± 9.6 %
10661	AAA	Pulse Waveform (200Hz, 60%)	Test	2.22	$\pm 9.6\%$
10662	AAA	Pulse Waveform (200Hz, 80%)	Test	0.97	± 9.6 %
10670	AAA	Bluetooth Low Energy	Bluetooth	2.19	± 9.6 %

<sup>E</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

### Calibration Laboratory of

Client

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland

BC MRA



S Schweizerischer Kalibrierdienst
 Service suisse d'étalonnage
 Servizio svizzero di taratura
 Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS) The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

PC Test

Certificate No: EX3-7410\_Jul19

Accreditation No.: SCS 0108

# **CALIBRATION CERTIFICATE**

Object	EX3DV4 - SN:7410
Calibration procedure(s)	QA CAL-01.v9, QA CAL-14.v5, QA CAL-23.v5, QA CAL-25.v7 Calibration procedure for dosimetric E-field probes
Calibration date:	July 16, 2019
This calibration certificate doc The measurements and the ur	uments the traceability to national standards, which realize the physical units of measurements (SI). Incertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	03-Apr-19 (No. 217-02892/02893)	Apr-20
Power sensor NRP-Z91	SN: 103244	03-Apr-19 (No. 217-02892)	Apr-20
Power sensor NRP-Z91	SN: 103245	03-Apr-19 (No. 217-02893)	Apr-20
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-19 (No. 217-02894)	Apr-20
DAE4	SN: 660	19-Dec-18 (No. DAE4-660_Dec18)	Dec-19
Reference Probe ES3DV2	SN: 3013	31-Dec-18 (No. ES3-3013_Dec18)	Dec-19
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-18)	In house check: Jun-20
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-18)	In house check: Jun-20
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check; Oct-19

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	$\rightarrow - lb$
		ζ	-F-G-
Approved by:	Katja Pokovic	Technical Manager	V
			At 45
			Issued: July 16, 2019

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

## Calibration Laboratory of

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland



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  - Swiss Calibration Service

Accreditation No.: SCS 0108

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### Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization 9	$\vartheta$ rotation around an axis that is in the plane normal to probe axis (at measurement center),
	i.e., $\vartheta = 0$ is normal to probe axis
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

### Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, ", "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from handheld and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

### Methods Applied and Interpretation of Parameters:

- NORMx,y,z: Assessed for E-field polarization 9 = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E<sup>2</sup>-field uncertainty inside TSL (see below ConvF).
- NORM(f)x,y,z = NORMx,y,z \* frequency\_response (see Frequency Response Chart). This linearization is
  implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included
  in the stated uncertainty of ConvF.
- *DCPx,y,z*: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- PAR: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- *Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,y,z: A, B, C, D* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters: Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORMx,y,z \* ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy): in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- Connector Angle: The angle is assessed using the information gained by determining the NORMx (no uncertainty required).

#### **Basic Calibration Parameters**

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm (μV/(V/m) <sup>2</sup> ) <sup>A</sup>	0.41	0.47	0.43	± 10.1 %
DCP (mV) <sup>B</sup>	95.0	98.5	98.3	

#### **Calibration Results for Modulation Response**

UID	Communication System Name		A dB	B dBõV	C	D dB	VR mV	Max dev.	Max Unc <sup>E</sup> (k=2)
0	CW	X	0.00	0.00	1.00	0.00	143.3	± 3.3 %	± 4.7 %
		Y	0.00	0.00	1.00		136.3	1	
		Z	0.00	0.00	1.00		146.3	1	
10352-	Pulse Waveform (200Hz, 10%)	X	7.20	77.00	15.83	10.00	60.0	± 3.7 %	± 9,6 %
AAA		Y	15.00	89.41	20.45		60.0	1	
		Z	15.00	86.58	19,43		60.0	1	
10353-	Pulse Waveform (200Hz, 20%)	X	15.00	85.70	17.13	6.99	80.0	± 2.7 %	± 9.6 %
AAA		Y	15.00	94.26	21.82		80.0	1	
		Z	15.00	87.46	18.36		80.0	1	
10354-	Pulse Waveform (200Hz, 40%)	X	15.00	84.98	15.02	3.98	95.0	± 1.4 %	± 9.6 %
AAA		Y	15.00	105.63	25.93	1	95.0	1	
		Z	15.00	86.91	16.30		95.0		
10355-	Pulse Waveform (200Hz, 60%)	X	0.58	63.48	6.70	2.22	120.0	± 1.4 %	±9.6 %
AAA		Y	15.00	128.91	35.05		120.0		
		Z	1.67	69.27	9.07		120.0		
10387-	QPSK Waveform, 1 MHz	X	0.58	60.52	7.75	0.00	150.0	± 2.7 %	±9.6 %
AAA		Y	1.10	67.31	12.60		150.0		
		Z	0.65	60.71	8.42		150,0		
10388-	QPSK Waveform, 10 MHz	X	2.25	68.70	16.13	0.00	150.0	± 1.1 %	± 9.6 %
AAA		Y	2.69	71.62	17.77		150.0		
		Z	2.10	66.95	14.95		150.0		
10396-	64-QAM Waveform, 100 kHz	X	2.85	69.56	18.52	3.01	150.0	±0.7 %	± 9.6 %
AAA		Y	3.27	72.43	19.82		150.0		
		Z	2.96	69.30	18.13		150.0		
10399-	64-QAM Waveform, 40 MHz	X	3.51	67.28	15.99	0.00	150.0	± 2.2 %	± 9.6 %
AAA		Y	3.73	68.43	16.68		150.0		
		Z	3.45	66.65	15.48		150.0		
10414-	WLAN CCDF, 64-QAM, 40MHz	X	4.86	65.74	15.76	0.00	150.0	± 4.2 %	± 9.6 %
AAA		Y	5.02	66.29	16.07		150.0		
		Z	4.91	65.47	15.50		150.0		

Note: For details on UID parameters see Appendix

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

<sup>&</sup>lt;sup>A</sup> The uncertainties of Norm X,Y,Z do not affect the E<sup>2</sup>-field uncertainty inside TSL (see Pages 5 and 6). <sup>B</sup> Numerical linearization parameter: uncertainty not required. <sup>E</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

### **Sensor Model Parameters**

	C1 fF	C2 fF	a V <sup>-1</sup>	T1 ms.V <sup>-2</sup>	T2 ms.V⁻¹	T3 ms	T4 V <sup>-2</sup>	T5 V⁻1	Т6
Х	44.0	341.99	38.28	7.82	0.67	5.04	0.00	0.55	1.01
Y	48.3	362.63	36.17	12.06	0.12	5.10	0.87	0.38	1.01
Z	52.1	408.62	38.63	10.30	0.68	5.08	0.00	0.64	1.01

### **Other Probe Parameters**

Sensor Arrangement	Triangular
Connector Angle (°)	0.7
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

	<b>.</b>							
f (MHz) <sup>c</sup>	Relative Permittivity <sup>F</sup>	Conductivity (S/m) <sup>F</sup>	ConvF X	ConvF Y	ConvF Z	Alpha <sup>G</sup>	Depth <sup>G</sup> (mm)	Unc (k=2)
750	41.9	0.89	9.95	9.95	9.95	0.69	0.80	± 12.0 %
835	41.5	0.90	9.88	9.88	9.88	0.51	0.80	± 12.0 %
1750	40.1	1.37	8.46	8.46	8.46	0.33	0.86	± 12.0 %
1900	40.0	1.40	8.11	8.11	8.11	0.35	0.86	± 12.0 %
2300	39.5	1.67	7.91	7.91	7.91	0.34	0.90	± 12.0 %
2450	39.2	1.80	7.47	7.47	7.47	0.37	0.90	± 12.0 %
2600	39.0	1.96	7.33	7.33	7.33	0.39	0.90	± 12.0 %
5250	35.9	4.71	5.46	5.46	5.46	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.85	4.85	4.85	0.40	1.80	± 13.1 %
5750	35.4	5.22	5.05	5.05	5.05	0.40	1.80	± 13.1 %

#### Calibration Parameter Determined in Head Tissue Simulating Media

<sup>C</sup> Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.

<sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\varepsilon$  and  $\sigma$ ) can be relaxed to  $\pm$  10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\varepsilon$  and  $\sigma$ ) is restricted to  $\pm$  5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

 $^{6}$  Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

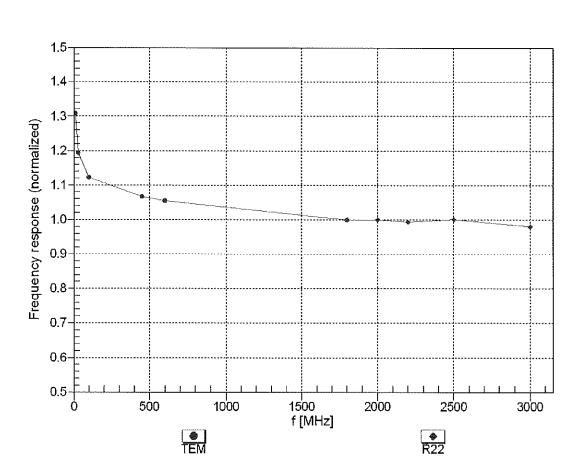
f (MHz) <sup>c</sup>	Relative Permittivity <sup>F</sup>	Conductivity (S/m) <sup>F</sup>	ConvF X	ConvF Y	ConvF Z	Alpha <sup>G</sup>	Depth <sup>G</sup> (mm)	Unc (k=2)
750	55.5	0.96	10.01	10.01	10.01	0.48	0.84	± 12.0 %
835	55.2	0.97	9.79	9.79	9.79	0.48	0.80	± 12.0 %
1750	53.4	1.49	8.08	8.08	8.08	0.38	0.86	± 12.0 %
1900	53.3	1.52	7.78	7.78	7.78	0.42	0.86	± 12.0 %
2300	52.9	1.81	7.68	7.68	7.68	0.43	0.90	± 12.0 %
2450	52.7	1.95	7.44	7.44	7.44	0.33	0.90	± 12.0 %
2600	52.5	2.16	7.43	7.43	7.43	0.33	0.80	± 12.0 %
5250	48.9	5.36	4.95	4.95	4.95	0.50	1.90	± 13.1 %
5600	48.5	5.77	4.42	4.42	4.42	0.50	1.90	± 13.1 %
5750	48.3	5.94	4.60	4.60	4.60	0.50	1.90	± 13.1 %

#### Calibration Parameter Determined in Body Tissue Simulating Media

<sup>C</sup> Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.

<sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\varepsilon$  and  $\sigma$ ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\varepsilon$  and  $\sigma$ ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

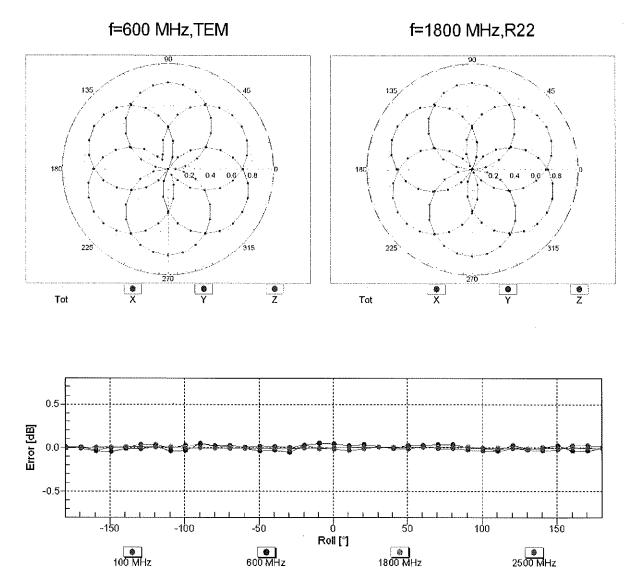
 $^{6}$  Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than  $\pm$  1% for frequencies below 3 GHz and below  $\pm$  2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.



# Frequency Response of E-Field (TEM-Cell:ifi110 EXX, Waveguide: R22)

Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

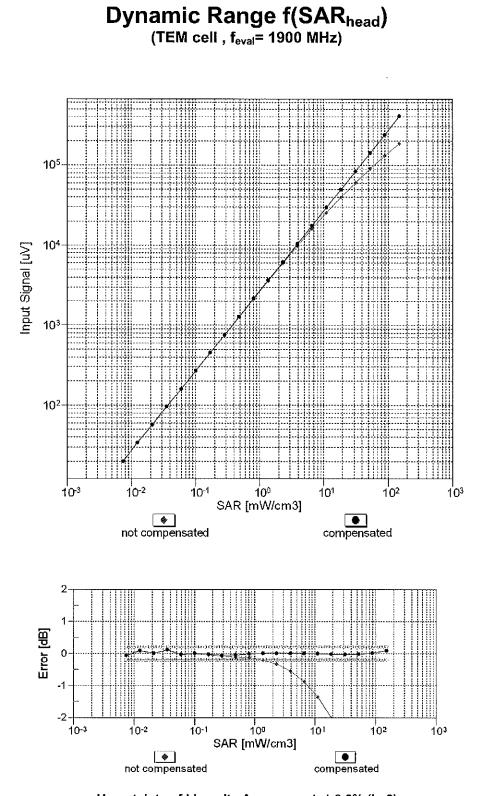
July 16, 2019



# Receiving Pattern ( $\phi$ ), $\vartheta = 0^{\circ}$

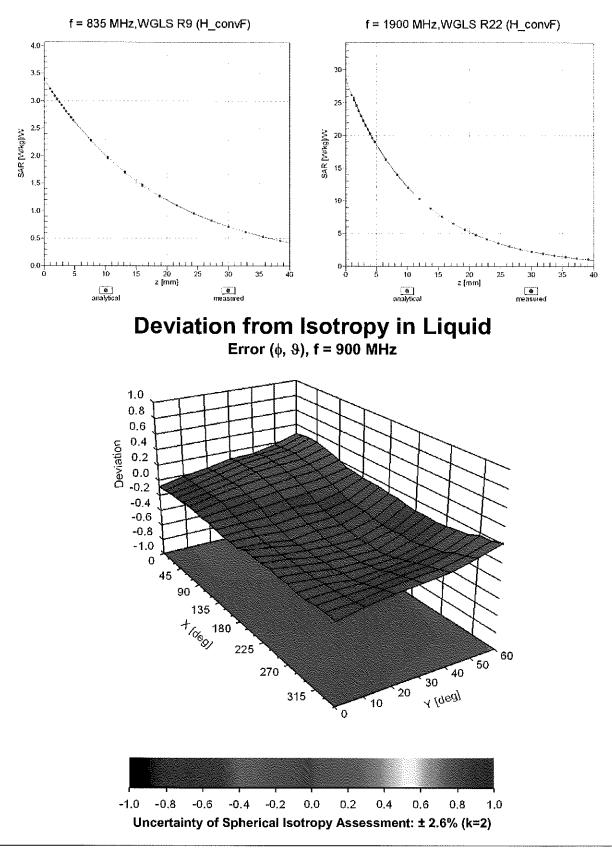
Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

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### Uncertainty of Linearity Assessment: ± 0.6% (k=2)

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# **Conversion Factor Assessment**

### **Appendix: Modulation Calibration Parameters**

UID	Rev	Communication System Name	Group	PAR	Unch
		_		(dB)	(k=2)
0		CW	CW	0.00	±4.7 %
10010	CAA	SAR Validation (Square, 100ms, 10ms)	Test	10.00	±9.6 %
10011	CAB	UMTS-FDD (WCDMA)	WCDMA	2.91	± 9.6 %
10012	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	WLAN	1.87	±9.6 %
10013	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	WLAN	9.46	±9.6 %
10021	DAC	GSM-FDD (TDMA, GMSK)	GSM	9.39	±9.6 %
10023	DAC	GPRS-FDD (TDMA, GMSK, TN 0)	GSM	9.57	± 9.6 %
10024	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	GSM	6.56	± 9.6 %
10025	DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	GSM	12.62	± 9.6 %
10026	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	GSM	9.55	±9.6 %
10027	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	GSM	4.80	± 9.6 %
10028	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	GSM	3.55	±9.6 %
10029	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	GSM	7.78	± 9.6 %
10030	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	Bluetooth	5.30	±9.6 %
10031	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	Bluetooth	1.87	±9.6 %
10032	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	Bluetooth	1.16	±96%
10033	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	Bluetooth	7.74	± 9.6 %
10034	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	Bluetooth	4.53	± 9.6 %
10035	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	Bluetooth	3.83	±9.6 %
10036	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	Bluetooth	8.01	±9.6 %
10037	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	Bluetooth	4.77	± 9.6 %
10038	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	Bluetooth	4.10	±9.6 %
10039	CAB	CDMA2000 (1xRTT, RC1)	CDMA2000	4.57	±9.6 %
10042	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate)	AMPS	7.78	± 9.6 %
10044	CAA	IS-91/EIA/TIA-553 FDD (FDMA, FM)	AMPS	0.00	± 9.6 %
10048	CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	DECT	13.80	± 9.6 %
10049	CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	DECT	10.79	± 9.6 %
10056	CAA	UMTS-TDD (TD-SCDMA, 1.28 Mcps)	TD-SCDMA	11.01	±9.6 %
10058	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	GSM	6.52	± 9.6 %
10059	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	WLAN	2.12	± 9.6 %
10060	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	WLAN	2.83	± 9.6 %
10061	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	WLAN	3.60	±9.6 %
10062	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	WLAN	8.68	± 9.6 %
10063	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	WLAN	8.63	±9.6 %
10064	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	WLAN	9.09	± 9.6 %
10065	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	WLAN	9.00	± 9.6 %
10066	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)	WLAN	9.38	± 9.6 %
10067	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)	WLAN	10.12	± 9.6 %
10068	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	WLAN	10.24	± 9.6 %
10069	CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	WLAN	10.56	± 9.6 %
10071	CAB	IEEE 802.11g WIFI 2.4 GHz (DSSS/OFDM, 9 Mbps)	WLAN	9.83	± 9.6 %
10072	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	WLAN	9.62	± 9.6 %
10072	CAB	IEEE 802.11g WIFI 2.4 GHz (DSSS/OFDM, 18 Mbps)	WLAN	9.94	± 9.6 %
10074	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	WLAN	10.30	± 9.6 %
10075	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)	WLAN	10.77	± 9.6 %
10076	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	WLAN	10.94	± 9.6 %
10077	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	WLAN	11.00	± 9.6 %
10081	CAB	CDMA2000 (1xRTT, RC3)	CDMA2000	3.97	±9.6 %
10082	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate)	AMPS	4.77	± 9.6 %
10090	DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	GSM	6.56	± 9.6 %
10097	CAB	UMTS-FDD (HSDPA)	WCDMA	3,98	±9.6 %
10098	CAB	UMTS-FDD (HSUPA, Subtest 2)	WCDMA	3.98	±9.6 %
10099	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	GSM	9.55	± 9.6 %
10100	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-FDD	5.67	± 9.6 %
10100	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
10101	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10102	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-TDD	9.29	± 9.6 %
	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-TDD	9.97	± 9.6 %
1 10104					
10104 10105	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-TDD	10.01	± 9.6 %

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10110         CAG         LTE-FDD         5.7.6         ±9.6 %           10111         CAG         LTE-FDD         6.7.4         ±9.6 %           10112         CAG         LTE-FDD         6.7.4         ±9.6 %           10112         CAG         LTE-FDD         6.7.4         ±9.6 %           10112         CAG         LTE-FDD         6.7.2         ±9.6 %           10114         CAC         LEEE 602.11n (HT Greenfield, 318 Mbps, BP-SK)         WLAN         8.4.6         ±9.6 %           10116         CAC         LEEE 602.11n (HT Greenfield, 61 Mbps, 16-GAM)         WLAN         8.4.6         ±9.6 %           10116         CAC         LEEE 602.11n (HT Moxed, 61 Mbps, 16-GAM)         WLAN         8.15         ±9.6 %           10116         CAC         LEEE 602.11n (HT Moxed, 61 Mbps, 16-GAM)         WLAN         8.15         ±9.6 %           10116         CAC         LEEE 602.11n (HT Moxed, 61 Mbps, 16-GAM)         UTE-FDD         6.63         ±9.6 %           10116         CAC         LEEE 602.11n (HT Moxed, 61 Mbps, 16-GAM)         LTE-FDD         6.73         ±9.6 %           10140         CAE         LTE-FDD (SC-FDM, 100% RB, 16 MHz, 46-GAM)         LTE-FDD         6.73         ±9.6 %           101	40100				-	
10111         CAG         LTE-FDD         6.49         19.6 %           10112         CAG         LTE-FDD (SC-FDMA, 100%, RB, 10 MHz, 64-OAM)         LTE-FDD         6.59         19.6 %           10113         CAG         LTE-FDD (SC-FDMA, 100%, RB, 10 MHz, 64-OAM)         LTE-FDD         6.50         19.6 %           10114         CAG         LTE-FDD (SC-FDMA, 100%, RB, 10 MHz, 64-OAM)         WLAN         8.46         19.6 %           10115         CAG         LEEE 602.11n (HT Greenfield, 31 Mbps, 64-OAM)         WLAN         8.46         19.6 %           10117         CAG         LEEE 602.11n (HT Mixed, 135 Mbps, 64-OAM)         WLAN         8.69         19.6 %           10118         CAG         LEEE 602.11n (HT Mixed, 135 Mbps, 64-OAM)         WLAN         8.69         19.6 %           10140         CAE         LTE-FDD (SC-FDMA, 100%, RB, 15 MHz, 16-OAM)         UTE-FDD         6.41         19.6 %           10141         CAE         LTE-FDD (SC-FDMA, 100%, RB, 13 MHz, 16-OAM)         LTE-FDD         5.73         19.6 %           10142         CAE         LTE-FDD (SC-FDMA, 100%, RB, 14 MHz, 16-OAM)         LTE-FDD         6.74         19.6 %           10142         CAE         LTE-FDD (SC-FDMA, 100%, RB, 14 MHz, 16-OAM)         LTE-FDD         6.72	10109	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	±9.6 %
19112         CAG         LTE-FDD         6.50         ±9.6 %           19113         CAG         LTE-FDD         6.52         ±9.6 %           19114         CAG         LEEE B02.1 fn (HT Greenfield, 13.6 Mbps, BPSK)         WLAN         8.16         ±9.6 %           19115         CAG         LEEE B02.1 fn (HT Greenfield, 13.6 Mbps, BP-CAM)         WLAN         8.16         ±9.6 %           19116         CAC         LEEE B02.1 fn (HT Meed, 81 Mbps, 16-CAM)         WLAN         8.16         ±9.6 %           19116         CAC         LEEE B02.1 fn (HT Meed, 81 Mbps, 16-CAM)         WLAN         8.13         ±9.6 %           19116         CAC         LEEE B02.1 fn (HT Meed, 81 Mbps, 16-CAM)         WLAN         8.13         ±9.6 %           19116         CAC         LEEE B02.1 fn (HT Meed, 81 Mbp, 16-CAM)         WLAN         8.13         ±9.6 %           19147         CAE         LTE-FDD (5C-FDMA, 100% RB, 15 MHz, 16-CAM)         LTE-FDD         6.53         ±9.6 %           19147         CAE         LTE-FDD (5C-FDMA, 100% RB, 14 MHz, 16-CAM)         LTE-FDD         6.57         ±9.6 %           19144         CAE         LTE-FDD (5C-FDMA, 100% RB, 14 MHz, 16-CAM)         LTE-FDD         6.62         ±9.6 %           19144         CAE			LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)		5.75	± 9.6 %
10113         CAG         LTE-FDD         672         1 = 6 + 70           10114         CAC         LEEE 602.11n (HT Greenfeld, 13 Mbps, 16-CAM)         WLAN         8.16         9.8 %,           10115         CAC         LEEE 602.11n (HT Greenfeld, 13 Mbps, 16-CAM)         WLAN         8.16         9.8 %,           10116         CAC         LEEE 602.11n (HT Mseed, 135 Mbps, 18-CAM)         WLAN         8.16         9.8 %,           10117         CAC         LEEE 602.11n (HT Mseed, 135 Mbps, 18-CAM)         WLAN         8.17         9.8 %,           10118         CAC         LEEE 602.11n (HT Mseed, 135 Mbps, 18-CAM)         WLAN         8.16         9.8 %,           10140         CAC         LEEE 602.11n (HT Mseed, 135 Mbps, 18-CAM)         WLAN         8.17         9.8 %,           10141         CAC         LEEF 602.57DM, 100%, RB, 15 MHz, 16-CAM)         LTE-FDD         6.53         19.6 %,           10142         CAE         LTE-FDD (SC-FDM, 100%, RB, 15 MHz, 16-CAM)         LTE-FDD         6.53         19.6 %,           10142         CAE         LTE-FDD (SC-FDM, 100%, RB, 14 MHz, 16-CAM)         LTE-FDD         6.36         19.6 %,           10142         CAE         LTE-FDD (SC-FDM, 400%, RB, 14 MHz, 16-CAM)         LTE-FDD         6.36         19.6 %		· • • • • • • • • • • • • • • • • • • •		LTE-FDD	6.44	± 9.6 %
10114         CAC         EEEE 802.11n (HT Greenfield, 31 Mpps, BPSK)         WLAN         8.40         19.85%           10115         CAC         EEEE 802.11n (HT Greenfield, 31 Mpps, BC-OAM)         WLAN         8.40         19.85%           10116         CAC         EEEE 802.11n (HT Greenfield, 135 Mbps, BC-OAM)         WLAN         8.07         2.96.5%           10116         CAC         EEEE 802.11n (HT Mixed, 81 Mbps, 16-OAM)         WLAN         8.13         2.96.5%           10116         CAC         EEEE 802.11n (HT Mixed, 81 Mbps, 16-OAM)         WLAN         8.13         2.96.5%           10140         CAC         EEEE 802.11n (HT Mixed, 81 Mbps, 16-OAM)         UTE+FDD         6.49         2.96.5%           10141         CAE         LTE+FDD (SC-FDMA, 100% RB, 3 MHz, 16-OAM)         UTE+FDD         6.57         3.96.5%           10142         CAE         LTE+FDD (SC-FDMA, 100% RB, 3 MHz, 16-OAM)         LTE+FDD         6.57         3.96.5%           10144         CAE         LTE+FDD (SC-FDMA, 100% RB, 3 MHz, 16-OAM)         LTE+FDD         6.65         3.96.5%           10145         CAF         LTE+FDD (SC-FDMA, 50% RB, 20 MHz, 16-OAM)         LTE+FDD (SC-FDMA, 50%         B.76         4.96.5%           10146         CAF         LTE+FDD (SC-FDMA, 50% RB, 20 MHz,			LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)		6.59	± 9.6 %
10116         CAC         LEEE 802.11n (HT Greenfield, 35 Mbps, 64-GAM)         WLAN         8.14         2.88 %           10117         CAC         LEEE 802.11n (HT Wared, 135 Mbps, 82-GAM)         WLAN         8.13         2.86 %           10118         CAC         LEEE 802.11n (HT Wared, 135 Mbps, 82-GAM)         WLAN         8.13         2.86 %           10119         CAC         LEEE 802.11n (HT Wared, 135 Mbps, 82-GAM)         WLAN         8.13         2.86 %           10140         CAC         LEEE 802.11n (HT Wared, 136 Mbps, 82-GAM)         WLAN         8.13         2.86 %           10141         CAC         LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-GAM)         UTE-FDD         6.33         2.86 %           10143         CAE         LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-GAM)         UTE-FDD         6.36         4.98 %           10144         CAE         LTE-FDD (SC-FDMA, 100% RB, 14 MHz, 0FSK)         LTE-FDD         6.76         4.98 %         4.98 %           10144         CAE         LTE-FDD (SC-FDMA, 100% RB, 12 MHz, 16-GAM)         LTE-FDD         6.71         3.98 %         4.98 %           10145         CAE         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-GAM)         LTE-FDD         6.72         4.86 %         5.96 %         5.96 %         5.96 %         5			LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-FDD	6.62	± 9.6 %
10110         CAC         LEE 802.11n (HT Greenfield, 135 Mbps, 84-CAM)         WI AN         8.15         18.8 %           10117         CAC         LEEE 802.11n (HT Mixed, 81 Mbps, 46-CAM)         WI AN         8.59         13.8 %           10118         CAC         LEEE 802.11n (HT Mixed, 81 Mbps, 46-CAM)         WI AN         8.59         13.8 %           10140         CAE         LTE-FDD (SC-FDMA, 100% FB; 15 MHz, 18-CAM)         LTE-FDD (6.49         8.3 %           10141         CAE         LTE-FDD (SC-FDMA, 100% FB; 15 MHz, 18-CAM)         LTE-FDD (6.53         9.8 %           10142         CAE         LTE-FDD (SC-FDMA, 100% FB; 14 MHz, 18-CAM)         LTE-FDD (6.57         9.8 %           10144         CAE         LTE-FDD (SC-FDMA, 100% FB; 14 MHz, 18-CAM)         LTE-FDD (6.57         9.8 %           10145         CAF         LTE-FDD (SC-FDMA, 100% FB; 14 MHz, 18-CAM)         LTE-FDD (6.67         9.8 %           10147         CAF         LTE-FDD (SC-FDMA, 100% FB; 14 MHz, 18-CAM)         LTE-FDD (6.67         9.8 %           10147         CAF         LTE-FDD (SC-FDMA, 100% FB; 14 MHz, 18-CAM)         LTE-FDD (6.67         9.8 %           10147         CAF         LTE-FDD (SC-FDMA, 50% FB; 20 MHz, 18-CAM)         LTE-FDD (6.67         9.8 %           10160         CAE				WLAN	8.10	± 9.6 %
10112         CAC         IEEE 802.11n (HT Mixed, 13.5 MBps, 8F-SA)         WUAN         8.007         2.80 SK           10118         CAC         IEEE 802.11n (HT Mixed, 136 Mbps, 64-OAM)         WUAN         8.103         8.90 SK           10140         CAC         IEEE 802.11n (HT Mixed, 136 Mbps, 64-OAM)         ULAN         8.13 SK           10140         CAE         ITE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-OAM)         ITE-FDD 6.53         9.6 %           10141         CAE         ITE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-OAM)         ITE-FDD 6.53         9.6 %           10142         CAE         ITE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-OAM)         ITE-FDD 6.53         9.6 %           10144         CAE         ITE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-OAM)         ITE-FDD 6.65         9.6 %           10145         CAF         ITE-FDD (SC-FDMA, 100% RB, 14 MHz, 16-OAM)         ITE-FDD 6.62         9.6 %           10147         CAF         ITE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-OAM)         ITE-FDD 6.62         9.6 %           10147         CAF         ITE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-OAM)         ITE-FDD 6.62         9.6 %           10147         CAF         ITE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-OAM)         ITE-FDD 6.62         9.6 %           10147         CAF         ITE-FDD (SC-FDMA, 50% RB			IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	WLAN	8.46	± 9.6 %
10118         CAC         IEEE 802.11n (HT Mixed, 81 Mbps, 16-CAM)         WLAN         8.59         ± 9.6 %           10119         CAC         IEEE 802.11n (HT Mixed, 135 Mbps, 64-CAM)         LTE-FDD         6.40         ± 9.6 %           10141         CAE         LTE-FDD         (53C-FDM, 109% RB, 15 MHz, 16-CAM)         LTE-FDD         6.53         ± 9.6 %           10142         CAE         LTE-FDD         (53C-FDM, 109% RB, 3 MHz, 26-CAM)         LTE-FDD         6.53         ± 9.6 %           10143         CAE         LTE-FDD         (53C-FDM, 109% RB, 3 MHz, 26-CAM)         LTE-FDD         6.65         ± 9.6 %           10144         CAE         LTE-FDD         (53C-FDM, 109% RB, 14 MHz, 0FSA)         LTE-FDD         6.66         ± 9.6 %           10146         CAF         LTE-FDD         (53C-FDM, 109% RB, 14 MHz, 0FSA)         LTE-FDD         6.62         ± 9.6 %           10147         CAF         LTE-FDD         (53C-FDM, 50% RB, 20 MHz, 0FAAM)         LTE-FDD         6.62         ± 9.6 %           10150         CAG         LTE-FDD         (53C-FDM, 50% RB, 20 MHz, 0FAAM)         LTE-FDD         6.62         ± 9.6 %           10151         CAG         LTE-FDD (SC-FDM, 50% RB, 20 MHz, 0FAAM)         LTE-FDD         9.62         ± 9.6 %	a second s		IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	WLAN	8.15	± 9.6 %
10118         CAC         IEEE 802.11n (HT Mixed, 313 Mbps, 46-CAM)         WLAN         8.59         ± 9.6 %           10119         CAC         IEEE 802.11n (HT Mixed, 313 Mbps, 46-CAM)         LTE-FDD         6.49         ± 9.6 %           10141         CAE         LTE-FDD         (5.57         ± 9.6 %           10142         CAE         LTE-FDD         (5.57         ± 9.6 %           10142         CAE         LTE-FDD         (5.57         ± 9.6 %           10142         CAE         LTE-FDD         (5.57         ± 9.6 %           10144         CAE         LTE-FDD         (5.57         ± 9.6 %           10144         CAE         LTE-FDD         (5.57         ± 9.6 %           10146         CAF         LTE-FDD         (5.67 MA, 50% RB, 20 MHz, 0°SK)         LTE-FDD         6.41         ± 9.6 %           10147         CAF         LTE-FDD         (5.57 MA, 50% RB, 20 MHz, 0°SK)         LTE-FDD         6.42         ± 9.6 %           10149         CAE         LTE-FDD         (5.67 MA, 50% RB, 20 MHz, 0°SK)         LTE-FDD         6.42         ± 9.6 %           10147         CAE         LTE-FDD         (5.67 MA, 50% RB, 20 MHz, 0°SK)         LTE-FDD         6.42         ± 9.6 % <tr< td=""><td>and the second s</td><td></td><td>IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)</td><td>WLAN</td><td>8.07</td><td></td></tr<>	and the second s		IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	WLAN	8.07	
10119         CAC         IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)         WLAN         8.13         ± 9.6 %.           10140         CAE         LTE-FDD         (6.57)         ± 9.6 %.           10141         CAE         LTE-FDD         (6.53)         ± 9.6 %.           10142         CAE         LTE-FDD         (6.53)         ± 9.6 %.           10143         CAE         LTE-FDD         (6.53)         ± 9.6 %.           10144         CAE         LTE-FDD         (6.56)         ± 9.6 %.           10144         CAE         LTE-FDD         (6.56)         ± 9.6 %.           10146         CAF         LTE-FDD         (6.57)         ± 9.6 %.           10146         CAF         LTE-FDD         (6.52)         ± 9.6 %.           10147         CAF         LTE-FDD         (6.52)         ± 9.6 %.           10149         CAE         LTE-FDD         (6.52)         ± 9.6 %.           10141         CAE         LTE-FDD         (6.22)         ± 9.6 %.           10151         CAG         LTE-FDD         (6.22)         ± 9.6 %.           10145         CAE         LTE-FDD         (6.72)         ± 9.6 %.           10152         CAG		CAC	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)			
10140         CAE         LTE-FDD         66.49         ± 9 6 %           10141         CAE         LTE-FDD         65.73         ± 9 6 %           10142         CAE         LTE-FDD         65.73         ± 9 6 %           10143         CAE         LTE-FDD         65.73         ± 9 6 %           10144         CAE         LTE-FDD         65.73         ± 9 6 %           10144         CAE         LTE-FDD         65.75         ± 9 6 %           10144         CAE         LTE-FDD         65.75         ± 9 6 %           10146         CAF         LTE-FDD         65.75         ± 9 6 %           10146         CAF         LTE-FDD         10 7 %         R8.14 MHz, 64-QAM)         LTE-FDD         6.62         ± 9 6 %           10147         CAE         LTE-FDD         10 7 %         R8.14 MHz, 64-QAM)         LTE-FDD         6.62         ± 9 6 %           10150         CAG         LTE-FDD         10 7 %         R8.20 MHz, 64-QAM)         LTE-FDD         5.75         ± 9 6 %           10151         CAG         LTE-FDD         10 7 %         R8.20 MHz, 16-QAM)         LTE-FDD         5.75         ± 9 6 %           10152         CAG         LTE-FDD <td></td> <td>CAC</td> <td>IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)</td> <td></td> <td></td> <td></td>		CAC	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)			
10141         CAE         LTE-FDD         65.3         = 59.6%           10142         CAE         LTE-FDD         65.3         = 59.6%           10143         CAE         LTE-FDD         65.3         = 59.6%           10144         CAE         LTE-FDD         65.3         # 96.%           10144         CAE         LTE-FDD         65.65         # 96.%           10144         CAE         LTE-FDD         65.76         ± 96.6%           10145         CAF         LTE-FDD         65.76         ± 96.6%           10146         CAF         LTE-FDD         65.72         ± 9.6 %           10147         CAF         LTE-FDD         (65.79M.A. 100% RB.1 4 MHz, 16-CAM)         LTE-FDD         6.42         ± 9.6 %           10149         CAE         LTE-FDD         (65.79M.A. 50% RB.2 0 MHz, 16-CAM)         LTE-FDD         6.42         ± 9.6 %           10151         CAG         LTE-FDD         (65.79M.A. 50% RB.2 0 MHz, 16-CAM)         LTE-FDD         5.72         ± 9.6 %           10152         CAG         LTE-FDD         (65.79M.A. 50% RB.2 0 MHz, 16-CAM)         LTE-FDD         5.73         ± 9.6 %           10156         CAG         LTE-FDD         (65.79M.A. 50% RB.2 0 M	10140	CAE				
10143         CAE         LITE-FDD         5.73         # 9.9 %           10143         CAE         LITE-FDD         65.73         # 9.9 %           10144         CAE         LITE-FDD         65.65         # 9.6 %           10145         CAF         LITE-FDD         65.76         # 9.6 %           10146         CAF         LITE-FDD         65.76         # 9.6 %           10146         CAF         LITE-FDD         65.77         # 9.6 %           10147         CAF         LITE-FDD         65.72         # 9.6 %           10149         CAE         LITE-FDD         65.72         # 9.6 %           10149         CAE         LITE-FDD         (65.70 M, 50% RB, 20 MHz, 04-CAM)         LITE-FDD         6.62         # 9.6 %           10151         CAG         LITE-FDD         (65.70 M, 50% RB, 20 MHz, 16-CAM)         LITE-FDD         9.02         # 9.6 %           10152         CAG         LITE-FDD         (65.70 M, 50% RB, 20 MHz, 16-CAM)         LITE-FDD         10.05 & 9.6 %           10153         CAG         LITE-FDD         (65.70 M, 50% RB, 10 MHz, 20 FSK)         LITE-FDD         5.79 & # 9.6 %           10155         CAG         LITE-FDD         (65.70 M, 50% RB, 5 MHz, 20 FSK)	10141	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)		· · · · · · · · · · · · · · · · · · ·	
10143         CAE         LTE-FDD         (56, 27)           10144         CAE         LTE-FDD         (56, 27)         (57)	10142	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)			
10144         CAE         LTE-FDD         6.65         9.9 %           10145         CAF         LTE-FDD         65.76         ± 9.6 %           10146         CAF         LTE-FDD         65.77         ± 9.6 %           10146         CAF         LTE-FDD         65.77         ± 9.6 %           10147         CAF         LTE-FDD         65.72         ± 9.6 %           10149         CAE         LTE-FDD         65.72         ± 9.6 %           10160         CAE         LTE-FDD         (65.70 MA, 50% RB, 20 MHz, 16-QAM)         LTE-FDD         6.60         ± 9.6 %           10151         CAG         LTE-TDD         (9.27 FDMA, 50% RB, 20 MHz, 40-QAM)         LTE-TDD         9.92         ± 9.6 %           10152         CAG         LTE-TDD         (9.5C-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-FDD         6.75         ± 9.6 %           10153         CAG         LTE-FDD         (5C-FDMA, 50% RB, 50 MHz, QPSK)         LTE-FDD         6.76         ± 9.6 %           10155         CAG         LTE-FDD         (5C-FDMA, 50% RB, 5 MHz, QPSK)         LTE-FDD         6.76         ± 9.6 %           10157         CAG         LTE-FDD         (5C-FDMA, 50% RB, 5 MHz, QPSK)         LTE-FDD         6.49 ± 9.6 %<	10143					
10146         CAF         LTE-FDD         (5.76         ±9.6 %           10146         CAF         LTE-FDD         (5.77         ±9.6 %           10147         CAF         LTE-FDD         (5.77         ±9.6 %           10149         CAF         LTE-FDD         (5.77         ±9.6 %           10149         CAF         LTE-FDD         (5.77         ±9.6 %           10151         CAG         LTE-TDD         (5.77         ±9.6 %           10152         CAG         LTE-TDD         (5.77         ±9.6 %           10153         CAG         LTE-TDD         (5.77         ±9.6 %           10154         CAG         LTE-TDD         (5.77         ±9.6 %           10155         CAG         LTE-TDD         (5.77         ±9.6 %           10156         CAG         LTE-FDD         (5.77         ±9.6 %           10156         CAG         LTE-FDD         (5.77         ±9.6 %           10157         CAG         LTE-FDD         (5.77         ±9.6 %           10157         CAG         LTE-FDD         (5.78         ±9.6 %           10156         CAG         LTE-FDD         (5.78         ±9.6 % <t< td=""><td>10144</td><td></td><td>LTE-FDD (SC-FDMA, 100% BB, 3 MHz, 64-OAM)</td><td></td><td></td><td></td></t<>	10144		LTE-FDD (SC-FDMA, 100% BB, 3 MHz, 64-OAM)			
10146         CAF         LTE-FDD         65.7         12.8         7           10147         CAF         LTE-FDD         65.7         12.8         6%           10149         CAE         LTE-FDD         65.7         19.6         6%         11.6         6%         19.6         6%         10.6         19.6         6%         11.6         6%         19.6         6%         11.6         6%         19.6         6%         11.6         6%         19.6         6%         11.6         6%         11.6         6%         11.6         6%         11.6         6%         11.6         6%         11.6         6%         11.6         6%         11.6         6%         11.6         6%         11.6	10145		LTE-EDD (SC-EDMA 100% BB 14 MHz OPSK)			
10147         CAF         LTE-FDD         SC-FDMA, 100% RB, 14 MHz, 16-GAM)         LTE-FDD         6.72         ±9.6 %           10149         CAE         LTE-FDD         (SC-FDMA, 50% RB, 20 MHz, 16-GAM)         LTE-FDD         6.42         ±9.6 %           10150         CAE         LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-GAM)         LTE-FDD         6.60         ±9.6 %           10151         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-GAM)         LTE-FDD         9.28         ±9.6 %           10152         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-GAM)         LTE-FDD         10.05         ±9.6 %           10154         CAG         LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-GAM)         LTE-FDD         5.76         ±9.6 %           10155         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 0PSK)         LTE-FDD         5.79         ±9.6 %           10157         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 0PSK)         LTE-FDD         6.43         ±9.6 %           10156         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 0-GAM)         LTE-FDD         6.42         ±9.6 %           10157         CAG         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 0-GAM)         LTE-FDD         6.43         ±9.6 %           10156         CAG         LTE-FDD (SC-FDMA, 50% R						
10149         CAE         LTE-FDD         (SC-FDMA, 50%, RB, 20 MHz, 16-QAM)         LTE-FDD         6.42         19.6 %           10150         CAE         LTE-FDD         (SC-FDMA, 50%, RB, 20 MHz, 04-QAM)         LTE-FDD         6.60         ±9.6 %           10151         CAG         LTE-TDD         (SC-FDMA, 50%, RB, 20 MHz, 16-QAM)         LTE-TDD         9.22         ±9.6 %           10152         CAG         LTE-TDD         (SC-FDMA, 50%, RB, 20 MHz, 16-QAM)         LTE-TDD         9.92         ±9.6 %           10154         CAG         LTE-TDD         (SC-FDMA, 50%, RB, 10 MHz, 04-QN)         LTE-FDD         6.75         ±9.6 %           10155         CAG         LTE-FDD         (SC-FDMA, 50%, RB, 5 MHz, 04-QAM)         LTE-FDD         6.43         ±9.6 %           10156         CAG         LTE-FDD         (SC-FDMA, 50%, RB, 5 MHz, 04-QAM)         LTE-FDD         6.62         ±9.6 %           10159         CAG         LTE-FDD         (SC-FDMA, 50%, RB, 15 MHz, 04-QAM)         LTE-FDD         6.56         ±9.6 %           10160         CAE         LTE-FDD         (SC-FDMA, 50%, RB, 15 MHz, 04-QAM)         LTE-FDD         6.56         ±9.6 %           10161         CAE         LTE-FDD         (SC-FDMA, 50%, RB, 16 MHz, 04-QAM)         LTE-FD						
10150         CAE         LTE-FDD         SC-FDMA, 50% RB, 20 MHz, GPSK)         LTE-FDD         6.66         ± 9.6 %           10151         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, GCAM)         LTE-TDD         9.28         ± 9.6 %           10152         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, GCAM)         LTE-TDD         10.05         ± 9.6 %           10153         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, G-GAM)         LTE-TDD         10.05         ± 9.6 %           10154         CAG         LTE-TDD (SC-FDMA, 50% RB, 50 MHz, G+GAM)         LTE-FDD         5.75         ± 9.6 %           10155         CAG         LTE-FDD (SC-FDMA, 50% RB, 50 MHz, G+GAM)         LTE-FDD         6.43         ± 9.6 %           10156         CAG         LTE-FDD (SC-FDMA, 50% RB, 50 MHz, G+GAM)         LTE-FDD         6.42         ± 9.6 %           10158         CAG         LTE-FDD (SC-FDMA, 50% RB, 50 MHz, G+GAM)         LTE-FDD         6.62         ± 9.6 %           10169         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, G+GAM)         LTE-FDD         6.82         ± 9.6 %           10161         CAE         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, G+GAM)         LTE-FDD         6.82         ± 9.6 %           10161         CAE         LTE-FDD (SC-FDMA, 50% RB, 14 MHz,			TE-EDD (SC-EDMA, 100% RB, 20 MHz, 16 OAM)			
10151       CAG       LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 60-AM)       LTE-TDD       9.28       ±0.6 %         10152       CAG       LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)       LTE-TDD       10.06       ±9.6 %         10154       CAG       LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)       LTE-FDD       5.75       ±9.6 %         10155       CAG       LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)       LTE-FDD       6.43       ±9.6 %         10156       CAG       LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)       LTE-FDD       6.49       ±9.6 %         10157       CAG       LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)       LTE-FDD       6.62       ±9.6 %         10158       CAG       LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)       LTE-FDD       6.62       ±9.6 %         10160       CAE       LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)       LTE-FDD       5.82       ±9.6 %         10161       CAE       LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)       LTE-FDD       6.43       ±9.6 %         10162       CAE       LTE-FDD (SC-FDMA, 50% RB, 14 MHz, 0PSK)       LTE-FDD       6.48       ±9.6 %         10162       CAE       LTE-FDD (SC-FDMA, 50% RB, 14 MHz, 0PSK)       LTE-FDD       6.48       ±9.6 %         10162       CAE			TE-EDD (SC-EDMA 50% PP 20 MUL- CA CAMA	1 · · · · · · · · · · · · · · · · · · ·		
10152         CAG         LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)         LTE-TDD         9.92         ± 9.6 %           10153         CAG         LTE-TDD (SC-FDMA, 50% RB, 10 MHz, Q-PSK)         LTE-FDD         5.7 ± 9.6 %           10155         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, Q-PSK)         LTE-FDD         5.7 ± 9.6 %           10156         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, Q-PSK)         LTE-FDD         5.7 ± 9.6 %           10157         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, Q-PSK)         LTE-FDD         5.6 ± 9.6 %           10158         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, Q-PSK)         LTE-FDD         6.62 ± 9.6 %           10158         CAG         LTE-FDD (SC-FDMA, 50% RB, 5 MHz, Q-GAM)         LTE-FDD         6.62 ± 9.6 %           10160         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)         LTE-FDD         6.43 ± 9.6 %           10161         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)         LTE-FDD         6.48 ± 9.6 %           10162         CAE         LTE-FDD (SC-FDMA, 50% RB, 14 MHz, QPSK)         LTE-FDD         6.48 ± 9.6 %           10166         CAF         LTE-FDD (SC-FDMA, 50% RB, 14 MHz, QPSK)         LTE-FDD         6.73 ± 9.6 %           10166         CAF         LTE-FDD (SC-FDMA, 17 KB, 20 MHz,			TE-TOD (00-10WA, 00% RD, 20 WH- 0000)			
10153         CAG         LTE-TDD (SC-FDMA, 50%, RB, 20 MHz, 64-0AM)         LTE-TDD         10.06         ±9.6 %           10154         CAG         LTE-FDD (SC-FDMA, 50%, RB, 10 MHz, QPSK)         LTE-FDD         6.75         ±9.6 %           10155         CAG         LTE-FDD (SC-FDMA, 50%, RB, 10 MHz, QPSK)         LTE-FDD         6.43         ±9.6 %           10156         CAG         LTE-FDD (SC-FDMA, 50%, RB, 10 MHz, 16-QAM)         LTE-FDD         6.43         ±9.6 %           10157         CAG         LTE-FDD (SC-FDMA, 50%, RB, 10 MHz, 64-QAM)         LTE-FDD         6.62         ±9.6 %           10160         CAG         LTE-FDD (SC-FDMA, 50%, RB, 15 MHz, 64-QAM)         LTE-FDD         5.82         ±9.6 %           10161         CAE         LTE-FDD (SC-FDMA, 50%, RB, 15 MHz, 64-QAM)         LTE-FDD         6.63         ±9.6 %           10162         CAE         LTE-FDD (SC-FDMA, 50%, RB, 15 MHz, 64-QAM)         LTE-FDD         6.43         ±9.6 %           10162         CAE         LTE-FDD (SC-FDMA, 50%, RB, 15 MHz, 64-QAM)         LTE-FDD         6.43         ±9.6 %           10162         CAE         LTE-FDD (SC-FDMA, 50%, RB, 14 MHz, 0FSK)         LTE-FDD         6.48         ±9.6 %           10162         CAF         LTE-FDD (SC-FDMA, 50%, RB, 14 MHz, 0FSK) <td></td> <td></td> <td>TETETED (SC EDMA 50% BB 20 MUL 40 CAME</td> <td></td> <td></td> <td></td>			TETETED (SC EDMA 50% BB 20 MUL 40 CAME			
10154         CAG         LTE-FDD         SC:FDMA, 50%, RB, 10 MHz, GPSK)         LTE-FDD         5.75         ± 9.6 %           10155         CAG         LTE-FDD (SC-FDMA, 50%, RB, 10 MHz, 16-QAM)         LTE-FDD         6.43         ± 9.6 %           10156         CAG         LTE-FDD (SC-FDMA, 50%, RB, 5 MHz, 16-QAM)         LTE-FDD         6.49         ± 9.6 %           10157         CAG         LTE-FDD (SC-FDMA, 50%, RB, 5 MHz, 16-QAM)         LTE-FDD         6.49         ± 9.6 %           10158         CAG         LTE-FDD (SC-FDMA, 50%, RB, 15 MHz, 64-QAM)         LTE-FDD         6.62         ± 9.6 %           10160         CAE         LTE-FDD (SC-FDMA, 50%, RB, 15 MHz, 64-QAM)         LTE-FDD         6.64         ± 9.6 %           10161         CAE         LTE-FDD (SC-FDMA, 50%, RB, 15 MHz, 64-QAM)         LTE-FDD         6.43         ± 9.6 %           10162         CAE         LTE-FDD (SC-FDMA, 50%, RB, 14 MHz, QPSK)         LTE-FDD         6.44         ± 9.6 %           10166         CAF         LTE-FDD (SC-FDMA, 50%, RB, 14 MHz, GP-QAM)         LTE-FDD         6.21         ± 9.6 %           10167         CAF         LTE-FDD (SC-FDMA, 178, 20 MHz, 64-QAM)         LTE-FDD         6.73         ± 9.6 %           10168         CAF         LTE-FDD (SC-FDMA, 50%,			LTE TOD (SO FDMA 50% RB, 20 MHZ, 16-QAM)			
10155         CAG         LTE-FDD         Sci 200, NHz, 16-QAM)         LTE-FDD         6.43         ± 8.6 %           10156         CAG         LTE-FDD (SC-FDMA, 50%, RB, 5 MHz, QPSK)         LTE-FDD         5.79         ± 9.6 %           10157         CAG         LTE-FDD (SC-FDMA, 50%, RB, 5 MHz, 16-QAM)         LTE-FDD         6.62         ± 9.6 %           10158         CAG         LTE-FDD (SC-FDMA, 50%, RB, 5 MHz, 16-QAM)         LTE-FDD         6.62         ± 9.6 %           10159         CAG         LTE-FDD (SC-FDMA, 50%, RB, 15 MHz, 16-QAM)         LTE-FDD         6.62         ± 9.6 %           10160         CAE         LTE-FDD (SC-FDMA, 50%, RB, 15 MHz, 16-QAM)         LTE-FDD         6.43         ± 9.6 %           10161         CAE         LTE-FDD (SC-FDMA, 50%, RB, 15 MHz, 16-QAM)         LTE-FDD         6.44         ± 9.6 %           10162         CAE         LTE-FDD (SC-FDMA, 50%, RB, 14 MHz, 16-QAM)         LTE-FDD         6.74         ± 9.6 %           10166         CAF         LTE-FDD (SC-FDMA, 50%, RB, 14 MHz, 16-QAM)         LTE-FDD         6.73         ± 9.6 %           10170         CAE         LTE-FDD (SC-FDMA, 17 MB, 20 MHz, 16-QAM)         LTE-FDD         6.73         ± 9.6 %           10171         CAG         LTE-FDD (SC-FDMA, 17 RB, 20 MHz,						
10156         CAG         LTE-FDD         SC.FDMA, 50%, RB, 5 MHz, QPSK)         LTE-FDD         5.79         ± 0.6 %           10157         CAG         LTE-FDD (SC-FDMA, 50%, RB, 5 MHz, 16-QAM)         LTE-FDD         6.49         ± 9.6 %           10158         CAG         LTE-FDD (SC-FDMA, 50%, RB, 5 MHz, 64-QAM)         LTE-FDD         6.62         ± 9.6 %           10160         CAE         LTE-FDD (SC-FDMA, 50%, RB, 15 MHz, QCAM)         LTE-FDD         5.82         ± 9.6 %           10161         CAE         LTE-FDD (SC-FDMA, 50%, RB, 15 MHz, QCAM)         LTE-FDD         6.43         ± 9.6 %           10162         CAE         LTE-FDD (SC-FDMA, 50%, RB, 14 MHz, QCSK)         LTE-FDD         6.43         ± 9.6 %           10166         CAF         LTE-FDD (SC-FDMA, 50%, RB, 14 MHz, QCSK)         LTE-FDD         6.42         ± 9.6 %           10167         CAE         LTE-FDD (SC-FDMA, 50%, RB, 14 MHz, QCSK)         LTE-FDD         6.79         ± 9.6 %           10168         CAF         LTE-FDD (SC-FDMA, 10%, 20% RB, 14 MHz, QCSK)         LTE-FDD         6.79         ± 9.6 %           10170         CAE         LTE-FDD (SC-FDMA, 10%, 20 MHz, QCSK)         LTE-FDD         6.73         ± 9.6 %           10171         CAE         LTE-FDD (SC-FDMA, 17 B, 20 MHz,			LIE-FUD (SU-FUMA, SU% KB, 10 MHZ, QPSK)		and the second se	
10157         CAG         LTE-FDD (SC-FDMA, 50% RB, 6 MHz, 16-QAM)         LTE-FDD         6.49         13.06 %           10158         CAG         LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)         LTE-FDD         6.62         19.6 %           10169         CAC         LTE-FDD (SC-FDMA, 50% RB, 55 MHz, 26-QAM)         LTE-FDD         6.56         19.6 %           10161         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 26-QAM)         LTE-FDD         6.58         19.6 %           10162         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)         LTE-FDD         6.58         19.6 %           10163         CAF         LTE-FDD (SC-FDMA, 50% RB, 14 MHz, 46-QAM)         LTE-FDD         6.46         19.6 %           10168         CAF         LTE-FDD (SC-FDMA, 50% RB, 14 MHz, 64-QAM)         LTE-FDD         6.41         19.6 %           10169         CAE         LTE-FDD (SC-FDMA, 10%, 20 MHz, 16-QAM)         LTE-FDD         5.73         19.6 %           10170         CAE         LTE-FDD (SC-FDMA, 178, 20 MHz, 64-QAM)         LTE-FDD         6.52         19.6 %           10171         AAE         LTE-FDD (SC-FDMA, 178, 20 MHz, 64-QAM)         LTE-FDD         6.52         19.6 %           10172         CAG         LTE-FDD (SC-FDMA, 178, 20 MHz, 64-QAM)         LT			LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)			
10158       CAG       LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)       LTE-FDD       6.62       ± 9.6 %         10159       CAG       LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)       LTE-FDD       6.56       ± 9.6 %         10160       CAE       LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)       LTE-FDD       6.43       ± 9.6 %         10161       CAE       LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)       LTE-FDD       6.43       ± 9.6 %         10162       CAE       LTE-FDD (SC-FDMA, 50% RB, 14 MHz, 0FSK)       LTE-FDD       6.43       ± 9.6 %         10166       CAF       LTE-FDD (SC-FDMA, 50% RB, 14 MHz, 0FSK)       LTE-FDD       6.79       ± 9.6 %         10168       CAF       LTE-FDD (SC-FDMA, 18, 20 MHz, 16-QAM)       LTE-FDD       6.79       ± 9.6 %         10170       CAE       LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)       LTE-FDD       6.52       ± 9.6 %         10171       CAG       LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)       LTE-FDD       6.49       ± 9.6 %         10172       CAG       LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)       LTE-FDD       6.49       ± 9.6 %         10172       CAG       LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)       LTE-FDD       9.21       ± 9.6 %         10176       CAG			LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)		5.79	
10159         CAG         LTE-FDD         6.56         ± 9.6 %           10160         CAE         LTE-FDD         (SC-FDMA, 50% RB, 15 MHz, QPSK)         LTE-FDD         5.82         ± 9.6 %           10161         CAE         LTE-FDD         (SC-FDMA, 50% RB, 15 MHz, 16-QAM)         LTE-FDD         6.43         ± 9.6 %           10162         CAE         LTE-FDD         (SC-FDMA, 50% RB, 15 MHz, 16-QAM)         LTE-FDD         6.43         ± 9.6 %           10166         CAF         LTE-FDD         (SC-FDMA, 50% RB, 14 MHz, QPSK)         LTE-FDD         6.21         ± 9.6 %           10169         CAF         LTE-FDD         (SC-FDMA, 50% RB, 14 MHz, QPSK)         LTE-FDD         6.79         ± 9.6 %           10169         CAE         LTE-FDD (SC-FDMA, 182, 20 MHz, 16-QAM)         LTE-FDD         6.73         ± 9.6 %           10170         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)         LTE-FDD         6.49         ± 9.6 %           10171         CAG         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)         LTE-FDD         9.48         ± 9.6 %           10172         CAG         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)         LTE-FDD         9.48         ± 9.6 %           10174         CAG         LTE-FDD (SC-FDMA, 1 RB, 10 M			LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)		6.49	
10160         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)         LTE-FDD         5.82         ± 9.6 %           10161         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)         LTE-FDD         6.43         ± 9.6 %           10162         CAE         LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 04-QAM)         LTE-FDD         6.54         ± 9.6 %           10166         CAF         LTE-FDD (SC-FDMA, 50% RB, 14 MHz, 04-QAM)         LTE-FDD         6.74         ± 9.6 %           10168         CAF         LTE-FDD (SC-FDMA, 18B, 20 MHz, 04-QAM)         LTE-FDD         6.71         ± 9.6 %           10170         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 04-QAM)         LTE-FDD         6.52         ± 9.6 %           10171         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 04-QAM)         LTE-FDD         6.49         ± 9.6 %           10172         CAG         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 04-QAM)         LTE-FDD         9.21         ± 9.6 %           10173         CAG         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)         LTE-FDD         9.21         ± 9.6 %           10174         CAG         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 04-QAM)         LTE-FDD         9.6 %           10176         CAG         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 04-QAM)         LTE-FDD			LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)		6.62	± 9.6 %
10161         CAE         LTE-FDD         6.43         ± 9.6 %           10162         CAE         LTE-FDD         6.43         ± 9.6 %           10162         CAE         LTE-FDD         6.58         ± 9.6 %           10166         CAF         LTE-FDD         (5.67)         ± 9.6 %           10167         CAF         LTE-FDD         (5.67)         ± 9.6 %           10168         CAF         LTE-FDD         (5.71)         ± 9.6 %           10168         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)         LTE-FDD         6.73         ± 9.6 %           10170         CAE         LTE-FDD (SC-FDMA, 178, 20 MHz, 0PSK)         LTE-FDD         6.73         ± 9.6 %           10170         CAE         LTE-FDD (SC-FDMA, 178, 20 MHz, 04-QAM)         LTE-FDD         6.49         ± 9.6 %           10171         AAE         LTE-FDD (SC-FDMA, 178, 20 MHz, 16-QAM)         LTE-FDD         9.44         ± 9.6 %           10172         CAG         LTE-FDD (SC-FDMA, 178, 20 MHz, 16-QAM)         LTE-FDD         9.44         ± 9.6 %           10174         CAG         LTE-FDD (SC-FDMA, 178, 20 MHz, 16-QAM)         LTE-FDD         5.72         ± 9.6 %           10175         CAG         LTE-FDD (SC-FDM			LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)		6.56	±9.6 %
10162         CAE         LTE-FDD         6.53         ± 9.6 %           10166         CAF         LTE-FDD         6.54         ± 9.6 %           10166         CAF         LTE-FDD         (5.46         ± 9.6 %           10167         CAF         LTE-FDD         (5.21         ± 9.6 %           10168         CAF         LTE-FDD         (5.21         ± 9.6 %           10168         CAF         LTE-FDD         (5.73         ± 9.6 %           10169         CAE         LTE-FDD         (5.73         ± 9.6 %           10170         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, G4-QAM)         LTE-FDD         6.52         ± 9.6 %           10171         AAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, G4-QAM)         LTE-FDD         6.49         ± 9.6 %           10172         CAG         LTE-TDD (SC-FDMA, 1 RB, 20 MHz, G4-QAM)         LTE-FDD         9.48         ± 9.6 %           10173         CAG         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, G4-QAM)         LTE-FDD         9.48         ± 9.6 %           10174         CAG         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, G4-QAM)         LTE-FDD         5.72         ± 9.6 %           10175         CAG         LTE-FDD (SC-FDMA, 1 RB, 10 MHz, G4-QAM)         LTE-FDD				LTE-FDD	5.82	
10162         CAE         LTE-FDD         6.58         ± 9.6 %           10166         CAF         LTE-FDD         6.46         ± 9.6 %           10167         CAF         LTE-FDD         6.46         ± 9.6 %           10168         CAF         LTE-FDD         6.21         ± 9.6 %           10169         CAF         LTE-FDD         6.79         ± 9.6 %           10169         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-FDD         6.73         ± 9.6 %           10170         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, G4-QAM)         LTE-FDD         6.44         ± 9.6 %           10171         AAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-TDD         9.21         ± 9.6 %           10172         CAG         LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-TDD         9.21         ± 9.6 %           10173         CAG         LTE-TDD (SC-FDMA, 1 RB, 20 MHz, G4-QAM)         LTE-TDD         10.25         ± 9.6 %           10174         CAG         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, G4-QAM)         LTE-FDD         5.72         ± 9.6 %           10175         CAG         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, GPSK)         LTE-FDD         5.72         ± 9.6 %           10176				LTE-FDD	6.43	± 9.6 %
10166       CAF       LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 0PSK)       LTE-FDD       6.46       ± 9.6 %         10167       CAF       LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)       LTE-FDD       6.79       ± 9.6 %         10168       CAF       LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)       LTE-FDD       6.79       ± 9.6 %         10170       CAE       LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)       LTE-FDD       6.52       ± 9.6 %         10171       AAE       LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)       LTE-FDD       6.48       ± 9.6 %         10172       CAG       LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)       LTE-FDD       9.21       ± 9.6 %         10173       CAG       LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)       LTE-FDD       9.48       ± 9.6 %         10173       CAG       LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 04-QAM)       LTE-FDD       9.48       ± 9.6 %         10175       CAG       LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 04-QAM)       LTE-FDD       5.72       ± 9.6 %         10176       CAG       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 04-QAM)       LTE-FDD       5.72       ± 9.6 %         10177       CAI       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 04-QAM)       LTE-FDD       5.73       ± 9.6 %         10178       CAG			LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-FDD	6.58	
10167         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)         LTE-FDD         6.21         ± 9.6 %           10168         CAF         LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)         LTE-FDD         6.73         ± 9.6 %           10170         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 0PSK)         LTE-FDD         6.52         ± 9.6 %           10171         AAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)         LTE-FDD         6.49         ± 9.6 %           10172         CAG         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)         LTE-FDD         9.21         ± 9.6 %           10173         CAG         LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)         LTE-FDD         9.21         ± 9.6 %           10174         CAG         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 04-QAM)         LTE-FDD         9.22         ± 9.6 %           10175         CAG         LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)         LTE-FDD         5.72         ± 9.6 %           10176         CAG         LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)         LTE-FDD         5.72         ± 9.6 %           10177         CAI         LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 04-QAM)         LTE-FDD         6.52         ± 9.6 %           10178         CAG         LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)         LTE			LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-FDD		
10168       CAF       LTE-FDD (SC-FDMA, 10% RB, 1.4 MHz, 64-QAM)       LTE-FDD       6.79       ± 9.6 %         10169       CAE       LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)       LTE-FDD       6.52       ± 9.6 %         10171       CAE       LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)       LTE-FDD       6.49       ± 9.6 %         10171       AAE       LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)       LTE-FDD       6.49       ± 9.6 %         10172       CAG       LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)       LTE-TDD       9.21       ± 9.6 %         10173       CAG       LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)       LTE-TDD       9.48       ± 9.6 %         10175       CAG       LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)       LTE-FDD       5.72       ± 9.6 %         10176       CAG       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)       LTE-FDD       5.73       ± 9.6 %         10176       CAG       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)       LTE-FDD       5.73       ± 9.6 %         10177       CAI       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)       LTE-FDD       6.52       ± 9.6 %         10179       CAG       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)       LTE-FDD       6.50       ± 9.6 %         10180       CAE       LT		CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-FDD		
10169         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-FDD         5.73         ± 9.6 %           10170         CAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)         LTE-FDD         6.52         ± 9.6 %           10171         AAE         LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-TDD         9.21         ± 9.6 %           10172         CAG         LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)         LTE-TDD         9.21         ± 9.6 %           10173         CAG         LTE-TDD (SC-FDMA, 1 RB, 20 MHz, G4-QAM)         LTE-TDD         9.48         ± 9.6 %           10174         CAG         LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)         LTE-FDD         5.72         ± 9.6 %           10175         CAG         LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)         LTE-FDD         5.73         ± 9.6 %           10176         CAG         LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)         LTE-FDD         5.73         ± 9.6 %           10177         CAG         LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QAM)         LTE-FDD         5.72         ± 9.6 %           10178         CAG         LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QAM)         LTE-FDD         6.52         ± 9.6 %           10179         CAG         LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QAM)         LTE-FDD         5.	10168	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-FDD		
10170       CAE       LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)       LTE-FDD       6.52       ± 9.6 %         10171       AAE       LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)       LTE-FDD       6.49       ± 9.6 %         10172       CAG       LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)       LTE-TDD       9.21       ± 9.6 %         10173       CAG       LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)       LTE-TDD       9.48       ± 9.6 %         10174       CAG       LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)       LTE-TDD       9.48       ± 9.6 %         10175       CAG       LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)       LTE-FDD       5.72       ± 9.6 %         10176       CAG       LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)       LTE-FDD       5.73       ± 9.6 %         10177       CAI       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)       LTE-FDD       5.73       ± 9.6 %         10178       CAG       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)       LTE-FDD       6.52       ± 9.6 %         10178       CAG       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)       LTE-FDD       6.50       ± 9.6 %         10180       CAG       LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)       LTE-FDD       6.52       ± 9.6 %         10182       CAE       LTE-FDD (S	10169	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	and the second se		
10171       AAE       LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)       LTE-FDD       6.49       ± 9.6 %         10172       CAG       LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)       LTE-TDD       9.21       ± 9.6 %         10173       CAG       LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)       LTE-TDD       9.48       ± 9.6 %         10174       CAG       LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)       LTE-TDD       10.25       ± 9.6 %         10175       CAG       LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)       LTE-FDD       5.72       ± 9.6 %         10176       CAG       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)       LTE-FDD       6.52       ± 9.6 %         10177       CAI       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)       LTE-FDD       6.52       ± 9.6 %         10178       CAG       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 04-QAM)       LTE-FDD       6.52       ± 9.6 %         10179       CAG       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 04-QAM)       LTE-FDD       6.50       ± 9.6 %         10180       CAE       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 04-QAM)       LTE-FDD       6.52       ± 9.6 %         10181       CAE       LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 04-QAM)       LTE-FDD       6.52       ± 9.6 %         10183       AAD       LTE	10170	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)			
10172       CAG       LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)       LTE-TDD       9.21       ± 9.6 %         10173       CAG       LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)       LTE-TDD       9.48       ± 9.6 %         10174       CAG       LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)       LTE-TDD       10.25       ± 9.6 %         10175       CAG       LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)       LTE-FDD       5.72       ± 9.6 %         10176       CAG       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)       LTE-FDD       6.52       ± 9.6 %         10177       CAI       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)       LTE-FDD       5.73       ± 9.6 %         10178       CAG       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)       LTE-FDD       6.52       ± 9.6 %         10178       CAG       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 04-QAM)       LTE-FDD       6.50       ± 9.6 %         10180       CAG       LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 0PSK)       LTE-FDD       6.50       ± 9.6 %         10181       CAE       LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 0PSK)       LTE-FDD       6.52       ± 9.6 %         10182       CAE       LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 0PSK)       LTE-FDD       6.52       ± 9.6 %         10182       CAE       LTE-FDD	10171	AAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)			
10173       CAG       LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)       LTE-TDD       9.48       ± 9.6 %         10174       CAG       LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)       LTE-TDD       10.25       ± 9.6 %         10175       CAG       LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)       LTE-FDD       5.72       ± 9.6 %         10176       CAG       LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)       LTE-FDD       5.73       ± 9.6 %         10177       CAI       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)       LTE-FDD       5.73       ± 9.6 %         10178       CAG       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)       LTE-FDD       6.52       ± 9.6 %         10179       CAG       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)       LTE-FDD       6.50       ± 9.6 %         10180       CAG       LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 20PSK)       LTE-FDD       5.72       ± 9.6 %         10181       CAE       LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)       LTE-FDD       5.72       ± 9.6 %         10183       AAD       LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 04-QAM)       LTE-FDD       6.50       ± 9.6 %         10183       CAE       LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 04-QAM)       LTE-FDD       6.51       ± 9.6 %         10184       CAE       LT	10172	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)			
10174       CAG       LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)       LTE-TDD       10.25       ± 9.6 %         10175       CAG       LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)       LTE-FDD       5.72       ± 9.6 %         10176       CAG       LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)       LTE-FDD       6.52       ± 9.6 %         10177       CAI       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)       LTE-FDD       6.52       ± 9.6 %         10178       CAG       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)       LTE-FDD       6.52       ± 9.6 %         10179       CAG       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)       LTE-FDD       6.50       ± 9.6 %         10180       CAG       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)       LTE-FDD       6.50       ± 9.6 %         10181       CAE       LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 0-QAM)       LTE-FDD       5.72       ± 9.6 %         10182       CAE       LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 0-QAM)       LTE-FDD       5.73       ± 9.6 %         10183       AAD       LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 0-QAM)       LTE-FDD       5.73       ± 9.6 %         10184       CAE       LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)       LTE-FDD       5.73       ± 9.6 %         10185       CAE       LTE-FDD (SC-	10173	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)			
10175         CAG         LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)         LTE-FDD         5.72         ± 9.6 %           10176         CAG         LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)         LTE-FDD         6.52         ± 9.6 %           10177         CAI         LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)         LTE-FDD         5.73         ± 9.6 %           10178         CAG         LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)         LTE-FDD         6.52         ± 9.6 %           10179         CAG         LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)         LTE-FDD         6.50         ± 9.6 %           10180         CAG         LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)         LTE-FDD         6.50         ± 9.6 %           10181         CAE         LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 04-QAM)         LTE-FDD         5.72         ± 9.6 %           10182         CAE         LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 04-QAM)         LTE-FDD         5.72         ± 9.6 %           10183         AAD         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)         LTE-FDD         5.73         ± 9.6 %           10184         CAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 04-QAM)         LTE-FDD         5.73         ± 9.6 %           10185         CAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 04-QAM)         LTE-FDD	10174	CAG				
10176         CAG         LTE-FDD         (SC-FDMA, 1 RB, 10 MHz, 16-QAM)         LTE-FDD         6.52         ± 9.6 %           10177         CAI         LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)         LTE-FDD         5.73         ± 9.6 %           10178         CAG         LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)         LTE-FDD         6.52         ± 9.6 %           10179         CAG         LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)         LTE-FDD         6.50         ± 9.6 %           10180         CAG         LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)         LTE-FDD         6.50         ± 9.6 %           10181         CAE         LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)         LTE-FDD         5.72         ± 9.6 %           10182         CAE         LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)         LTE-FDD         6.50         ± 9.6 %           10183         AAD         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)         LTE-FDD         6.51         ± 9.6 %           10184         CAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)         LTE-FDD         6.50         ± 9.6 %           10185         CAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)         LTE-FDD         6.51         ± 9.6 %           10186         AAE         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)         LTE-FD	10175	CAG				
10177       CAI       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)       LTE-FDD       5.73       ±9.6 %         10178       CAG       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)       LTE-FDD       6.52       ±9.6 %         10179       CAG       LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)       LTE-FDD       6.50       ±9.6 %         10180       CAG       LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)       LTE-FDD       6.50       ±9.6 %         10181       CAE       LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)       LTE-FDD       5.72       ±9.6 %         10182       CAE       LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)       LTE-FDD       6.52       ±9.6 %         10182       CAE       LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)       LTE-FDD       6.50       ±9.6 %         10183       AAD       LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)       LTE-FDD       5.73       ±9.6 %         10184       CAE       LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)       LTE-FDD       5.73       ±9.6 %         10185       CAE       LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)       LTE-FDD       5.73       ±9.6 %         10186       AAE       LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)       LTE-FDD       5.73       ±9.6 %         10187       CAF       LTE-FDD (SC-FDMA, 1 RB, 1						
10178         CAG         LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)         LTE-FDD         6.52         ± 9.6 %           10179         CAG         LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)         LTE-FDD         6.50         ± 9.6 %           10180         CAG         LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)         LTE-FDD         6.50         ± 9.6 %           10181         CAE         LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)         LTE-FDD         5.72         ± 9.6 %           10182         CAE         LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)         LTE-FDD         6.50         ± 9.6 %           10183         AAD         LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)         LTE-FDD         6.50         ± 9.6 %           10184         CAE         LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)         LTE-FDD         6.50         ± 9.6 %           10184         CAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)         LTE-FDD         5.73         ± 9.6 %           10185         CAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)         LTE-FDD         6.50         ± 9.6 %           10186         AAE         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)         LTE-FDD         5.73         ± 9.6 %           10187         CAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, G4-QAM)         LTE-FDD	jamma to containing and		LTE-FDD (SC-FDMA, 1 RB, 5 MHz, OPSK)			
10179         CAG         LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)         LTE-FDD         6.50         ± 9.6 %           10180         CAG         LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)         LTE-FDD         6.50         ± 9.6 %           10181         CAE         LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)         LTE-FDD         5.72         ± 9.6 %           10182         CAE         LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)         LTE-FDD         6.50         ± 9.6 %           10183         AAD         LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)         LTE-FDD         6.50         ± 9.6 %           10184         CAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)         LTE-FDD         5.73         ± 9.6 %           10185         CAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 0PSK)         LTE-FDD         5.73         ± 9.6 %           10186         AAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 0PSK)         LTE-FDD         6.50         ± 9.6 %           10186         CAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)         LTE-FDD         5.73         ± 9.6 %           10188         CAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)         LTE-FDD         5.73         ± 9.6 %           10188         CAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)         LTE-FDD			LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-0AM)			
10180         CAG         LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)         LTE-FDD         6.50         ± 9.6 %           10181         CAE         LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)         LTE-FDD         5.72         ± 9.6 %           10182         CAE         LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)         LTE-FDD         5.72         ± 9.6 %           10182         CAE         LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)         LTE-FDD         6.50         ± 9.6 %           10183         AAD         LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)         LTE-FDD         6.50         ± 9.6 %           10184         CAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)         LTE-FDD         5.73         ± 9.6 %           10185         CAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)         LTE-FDD         6.51         ± 9.6 %           10186         AAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)         LTE-FDD         6.50         ± 9.6 %           10187         CAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)         LTE-FDD         6.52         ± 9.6 %           10188         CAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)         LTE-FDD         6.52         ± 9.6 %           10189         AAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)         LTE-FDD <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
10181         CAE         LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)         LTE-FDD         5.72         ± 9.6 %           10182         CAE         LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)         LTE-FDD         6.52         ± 9.6 %           10183         AAD         LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)         LTE-FDD         6.50         ± 9.6 %           10184         CAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)         LTE-FDD         5.73         ± 9.6 %           10185         CAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)         LTE-FDD         5.73         ± 9.6 %           10186         AAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, G4-QAM)         LTE-FDD         6.51         ± 9.6 %           10186         AAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, G4-QAM)         LTE-FDD         6.50         ± 9.6 %           10187         CAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)         LTE-FDD         5.73         ± 9.6 %           10188         CAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, G4-QAM)         LTE-FDD         6.50         ± 9.6 %           10189         AAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)         LTE-FDD         6.50         ± 9.6 %           10193         CAC         IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)         WLAN </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
10182         CAE         LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)         LTE-FDD         6.52         ± 9.6 %           10183         AAD         LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)         LTE-FDD         6.50         ± 9.6 %           10184         CAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)         LTE-FDD         5.73         ± 9.6 %           10185         CAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)         LTE-FDD         5.73         ± 9.6 %           10186         AAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)         LTE-FDD         6.50         ± 9.6 %           10186         AAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)         LTE-FDD         6.50         ± 9.6 %           10187         CAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)         LTE-FDD         5.73         ± 9.6 %           10188         CAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)         LTE-FDD         6.52         ± 9.6 %           10189         AAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)         LTE-FDD         6.50         ± 9.6 %           10193         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, BPSK)         WLAN         8.09         ± 9.6 %           10194         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)         WLAN			1TE-EDD (SC-EDMA 1 RR 15 MHz ODCV)			
10183       AAD       LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)       LTE-FDD       6.50       ± 9.6 %         10184       CAE       LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)       LTE-FDD       5.73       ± 9.6 %         10185       CAE       LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)       LTE-FDD       5.73       ± 9.6 %         10185       CAE       LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)       LTE-FDD       6.51       ± 9.6 %         10186       AAE       LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)       LTE-FDD       6.50       ± 9.6 %         10187       CAF       LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)       LTE-FDD       5.73       ± 9.6 %         10188       CAF       LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)       LTE-FDD       6.52       ± 9.6 %         10189       AAF       LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, G4-QAM)       LTE-FDD       6.50       ± 9.6 %         10193       CAC       IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)       WLAN       8.09       ± 9.6 %         10194       CAC       IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)       WLAN       8.12       ± 9.6 %         10195       CAC       IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)       WLAN       8.12       ± 9.6 %         10196       CAC			$\frac{1}{1} = \frac{1}{100} \frac{1}$			
10184         CAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)         LTE-FDD         5.73         ± 9.6 %           10185         CAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)         LTE-FDD         6.51         ± 9.6 %           10186         AAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)         LTE-FDD         6.51         ± 9.6 %           10187         CAF         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)         LTE-FDD         6.50         ± 9.6 %           10188         CAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)         LTE-FDD         5.73         ± 9.6 %           10188         CAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)         LTE-FDD         6.52         ± 9.6 %           10189         AAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)         LTE-FDD         6.50         ± 9.6 %           10189         AAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)         LTE-FDD         6.50         ± 9.6 %           10193         CAC         IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)         WLAN         8.09         ± 9.6 %           10194         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)         WLAN         8.12         ± 9.6 %           10195         CAC         IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)         WLA						
10185         CAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)         LTE-FDD         6.51         ± 9.6 %           10186         AAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)         LTE-FDD         6.50         ± 9.6 %           10187         CAF         LTE-FDD (SC-FDMA, 1 RB, 14 MHz, QPSK)         LTE-FDD         6.50         ± 9.6 %           10188         CAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)         LTE-FDD         5.73         ± 9.6 %           10189         AAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)         LTE-FDD         6.50         ± 9.6 %           10189         AAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)         LTE-FDD         6.50         ± 9.6 %           10193         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, BPSK)         WLAN         8.09         ± 9.6 %           10194         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)         WLAN         8.12         ± 9.6 %           10195         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, BPSK)         WLAN         8.10         ± 9.6 %           10196         CAC         IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)         WLAN         8.10         ± 9.6 %           10197         CAC         IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)         WL						
10186         AAE         LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)         LTE-FDD         6.50         ± 9.6 %           10187         CAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)         LTE-FDD         6.50         ± 9.6 %           10188         CAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)         LTE-FDD         5.73         ± 9.6 %           10189         AAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)         LTE-FDD         6.50         ± 9.6 %           10193         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, BPSK)         WLAN         8.09         ± 9.6 %           10194         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)         WLAN         8.12         ± 9.6 %           10195         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)         WLAN         8.12         ± 9.6 %           10196         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)         WLAN         8.10         ± 9.6 %           10196         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, BPSK)         WLAN         8.10         ± 9.6 %           10196         CAC         IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)         WLAN         8.13         ± 9.6 %           10197         CAC         IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)						
10187         CAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)         LTE-FDD         5.73         ± 9.6 %           10188         CAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)         LTE-FDD         5.73         ± 9.6 %           10189         AAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)         LTE-FDD         6.52         ± 9.6 %           10193         CAC         IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)         WLAN         8.09         ± 9.6 %           10194         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, 16-QAM)         WLAN         8.12         ± 9.6 %           10195         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)         WLAN         8.12         ± 9.6 %           10196         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)         WLAN         8.10         ± 9.6 %           10196         CAC         IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)         WLAN         8.10         ± 9.6 %           10197         CAC         IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)         WLAN         8.13         ± 9.6 %           10198         CAC         IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)         WLAN         8.13         ± 9.6 %						
10188         CAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)         LTE-FDD         6.52         ± 9.6 %           10189         AAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)         LTE-FDD         6.52         ± 9.6 %           10193         CAC         IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)         WLAN         8.09         ± 9.6 %           10194         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, 16-QAM)         WLAN         8.12         ± 9.6 %           10195         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)         WLAN         8.12         ± 9.6 %           10196         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)         WLAN         8.11         ± 9.6 %           10196         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)         WLAN         8.10         ± 9.6 %           10196         CAC         IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)         WLAN         8.10         ± 9.6 %           10197         CAC         IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)         WLAN         8.13         ± 9.6 %           10198         CAC         IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)         WLAN         8.27         ± 9.6 %						
10189         AAF         LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)         LTE-FDD         6.50         ± 9.6 %           10193         CAC         IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)         WLAN         8.09         ± 9.6 %           10194         CAC         IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)         WLAN         8.12         ± 9.6 %           10195         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)         WLAN         8.12         ± 9.6 %           10196         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)         WLAN         8.11         ± 9.6 %           10196         CAC         IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)         WLAN         8.10         ± 9.6 %           10196         CAC         IEEE 802.11n (HT Mixed, 6.5 Mbps, 16-QAM)         WLAN         8.13         ± 9.6 %           10197         CAC         IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)         WLAN         8.13         ± 9.6 %           10198         CAC         IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)         WLAN         8.13         ± 9.6 %			LTE-FUD (SU-FUMA, 1 KB, 1.4 MHz, QPSK)			the second second second second second second second second second second second second second second second se
10193         CAC         IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)         WLAN         8.09         ± 9.6 %           10194         CAC         IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)         WLAN         8.12         ± 9.6 %           10195         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)         WLAN         8.12         ± 9.6 %           10196         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)         WLAN         8.21         ± 9.6 %           10196         CAC         IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)         WLAN         8.10         ± 9.6 %           10197         CAC         IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)         WLAN         8.13         ± 9.6 %           10198         CAC         IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)         WLAN         8.13         ± 9.6 %           10198         CAC         IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)         WLAN         8.27         ± 9.6 %			LTE-FDD (SC-FDMA, 1 KB, 1.4 MHz, 16-QAM)		******	
10194         CAC         IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)         WLAN         8.12         ± 9.6 %           10195         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)         WLAN         8.21         ± 9.6 %           10196         CAC         IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)         WLAN         8.10         ± 9.6 %           10197         CAC         IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)         WLAN         8.13         ± 9.6 %           10198         CAC         IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)         WLAN         8.13         ± 9.6 %           10198         CAC         IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)         WLAN         8.27         ± 9.6 %			LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)			± 9.6 %
10194         CAC         IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)         WLAN         8.12         ± 9.6 %           10195         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)         WLAN         8.21         ± 9.6 %           10196         CAC         IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)         WLAN         8.10         ± 9.6 %           10197         CAC         IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)         WLAN         8.13         ± 9.6 %           10198         CAC         IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)         WLAN         8.13         ± 9.6 %           10198         CAC         IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)         WLAN         8.27         ± 9.6 %			IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)		8.09	±9.6 %
10195         CAC         IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)         WLAN         8.21         ± 9.6 %           10196         CAC         IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)         WLAN         8.10         ± 9.6 %           10197         CAC         IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)         WLAN         8.13         ± 9.6 %           10198         CAC         IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)         WLAN         8.27         ± 9.6 %			IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	WLAN		
10196         CAC         IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)         WLAN         8.10         ± 9.6 %           10197         CAC         IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)         WLAN         8.13         ± 9.6 %           10198         CAC         IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)         WLAN         8.27         ± 9.6 %			IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	WLAN		
10197         CAC         IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)         WLAN         8.13         ± 9.6 %           10198         CAC         IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)         WLAN         8.27         ± 9.6 %			IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)			
10198 CAC IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM) WLAN 8.27 ± 9.6 %			IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)			
			IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)			
	10219	CAC	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	WLAN	8.03	± 9.6 %

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10220	CAC	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10221	CAC	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	WLAN	8.27	±9.6 %
10222	CAC	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	WLAN	8.06	$\pm 9.6\%$
10223	CAC	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	WLAN	8.48	± 9.6 % ± 9.6 %
10224	CAC	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	*****	8.08	
10225	CAB	UMTS-FDD (HSPA+)		5.97	± 9.6 %
10226	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.49	±9.6%
10227	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.26	± 9.6 %
10228	CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-TDD	9.22	± 9.6 %
10229	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10230	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10231	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-TDD	9.19	<u>±9.6 %</u> ±9.6 %
10232	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-TDD	9.48 10.25	
10233	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-TDD		± 9.6 %
10234	CAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-TDD	9.21	±9.6%
10235	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10236	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10237	CAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10238	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10239	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-TDD	10.25	$\pm 9.6\%$
10240	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-TDD	9.21	$\pm 9.6\%$
10241	CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.82	± 9.6 %
10242	CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-TDD	9.86	± 9.6 %
10243	CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-TDD	9.46	± 9.6 %
10244	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-TDD	10.06	$\pm 9.6\%$
10245	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-TDD	10.06	± 9.6 %
10246	CAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-TDD	9.30	±9.6%
10247	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-TDD	9.91	±9.6 %
10248	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-TDD	10.09	± 9.6 %
10249	CAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-TDD	9.29	± 9.6 %
10250	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-TDD	9.81	± 9.6 %
10251	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-TDD	10.17	± 9.6 %
10252	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-TDD	9.24	± 9.6 %
10253	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-TDD	9.90	± 9.6 %
10254	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-TDD	10.14	± 9.6 %
10255	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-TDD	9.20	± 9.6 %
10256	CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.96	± 9.6 %
10257	CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.08	± 9.6 %
10258	CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-TDD	9.34	± 9.6 %
10259	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-TDD	9.98	± 9.6 %
10260	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-TDD	9.97	± 9.6 %
10261	CAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-TDD	9.24	± 9.6 %
10262	CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-TDD	9.83	$\pm 9.6\%$
10263	CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-TDD	10.16	± 9.6 %
10264	CAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-TDD	9,23	± 9.6 %
10265	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10266	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-TDD	10.07	± 9.6 %
10267	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-TDD	9.30	± 9.6 %
10268	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-TDD	10.06	± 9.6 %
10269	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-TDD	10.13	± 9.6 %
10270	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-TDD	9.58	± 9.6 %
10274	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)	WCDMA	4.87	± 9.6 %
10275	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	WCDMA	3.96	± 9.6 %
10277	CAA	PHS (QPSK)	PHS	11.81	±9.6 %
10278	CAA	PHS (QPSK, BW 884MHz, Rolloff 0.5)	PHS	11.81	± 9.6 %
10279	CAA	PHS (QPSK, BW 884MHz, Rolloff 0.38)	PHS	12.18	± 9.6 %
10290	AAB	CDMA2000, RC1, SO55, Full Rate	CDMA2000	3.91	± 9.6 %
10291	AAB	CDMA2000, RC3, SO55, Full Rate	CDMA2000	3.46	±9.6%
10292	AAB	CDMA2000, RC3, SO32, Full Rate	CDMA2000	3.39	± 9.6 %
10293	AAB	CDMA2000, RC3, SO3, Full Rate	CDMA2000	3.50	± 9.6 %
10000	AAB	CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	CDMA2000	12.49	± 9.6 %
10295		LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-FDD	5.81	± 9.6 %
10295	AAD				
	AAD AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK) LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK) LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-FDD LTE-FDD	5.72 6.39	± 9.6 %

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10300	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10301	AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	WIMAX	12.03	± 9.6 %
10302	AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3 CTRL symbols)	WIMAX	12.57	± 9.6 %
10303	AAA	IEEE 802.16e WIMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	WiMAX	12.52	± 9.6 %
10304	AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	WIMAX	11.86	± 9.6 %
10305	AAA	IEEE 802.16e WIMAX (31:15, 10ms, 10MHz, 64QAM, PUSC, 15	WIMAX	15.24	± 9.6 %
10306	AAA	symbols) IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18	WiMAX	14.67	± 9.6 %
10307	AAA	symbols) IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18	WIMAX	14.49	± 9.6 %
10308	AAA	symbols) IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	10/:00/	44.40	
10309	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 16QAM, POSC)	WIMAX WIMAX	14.46 14.58	$\pm 9.6\%$
		symbols)	VVIIV/32	14.00	± 9.6 %
10310	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18 symbols)	WiMAX	14.57	± 9.6 %
10311	AAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-FDD	6.06	± 9.6 %
10313	AAA	IDEN 1:3	IDEN	10.51	± 9.6 %
10314	AAA	IDEN 1:6	IDEN	13.48	± 9.6 %
10315	AAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)	WLAN	1.71	± 9.6 %
10316	AAB	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle)	WLAN	8.36	± 9.6 %
10317	AAC	IEEE 802.11a WIFI 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)	WLAN	8.36	± 9.6 %
10352	AAA	Pulse Waveform (200Hz, 10%)	Generic	10.00	± 9.6 9
10353	AAA	Pulse Waveform (200Hz, 20%)	Generic	6.99	± 9.6 9
10354	AAA	Pulse Waveform (200Hz, 40%)	Generic	3.98	± 9.6 %
10355	AAA	Pulse Waveform (200Hz, 60%)	Generic	2.22	± 9.6 %
10356	AAA	Pulse Waveform (200Hz, 80%)	Generic	0.97	± 9.6 %
10387	AAA	QPSK Waveform, 1 MHz	Generic	5.10	± 9.6 %
10388	AAA	QPSK Waveform, 10 MHz	Generic	5.22	±9.6 %
10396	AAA	64-QAM Waveform, 100 kHz	Generic	6.27	± 9.6 %
10399	AAA	64-QAM Waveform, 40 MHz	Generic	6.27	±9.6 %
10400	AAD	IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc duty cycle)	WLAN	8.37	± 9.6 %
10401	AAD	IEEE 802.11ac WiFI (40MHz, 64-QAM, 99pc duty cycle)	WLAN	8.60	± 9.6 %
10402	AAD	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc duty cycle)	WLAN	8.53	± 9.6 %
10403	AAB	CDMA2000 (1xEV-DO, Rev. 0)	CDMA2000	3.76	± 9.6 %
10404	AAB	CDMA2000 (1xEV-DO, Rev. A)	CDMA2000	3.77	± 9.6 %
10406	AAB	CDMA2000, RC3, SO32, SCH0, Full Rate	CDMA2000	5.22	± 9.6 %
10410	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL	LTE-TDD	7.82	± 9.6 %
		Subframe=2,3,4,7,8,9, Subframe Conf=4)			
10414	AAA	WLAN CCDF, 64-QAM, 40MHz	Generic	8.54	± 9.6 %
10415	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	WLAN	1.54	± 9.6 %
10416	AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	±9.6 %
10417	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	± 9.6 %
10418	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Long preambule)	WLAN	8.14	± 9.6 %
10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule)	WLAN	8.19	± 9.6 %
10422	AAB	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	WLAN	8.32	± 9.6 %
10423	AAB	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	WLAN	8.47	± 9.6 %
10424	AAB	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	WLAN	8.40	± 9.6 %
10425	AAB	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	WLAN	8.41	± 9.6 %
10426	AAB	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	WLAN	8.45	± 9.6 %
10427	AAB	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	WLAN	8.41	± 9.6 %
10430	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	LTE-FDD	8.28	± 9.6 %
10431	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	LTE-FDD	8.38	± 9.6 %
10432	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	LTE-FDD	8.34	± 9.6 %
10433	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	LTE-FDD	8.34	± 9.6 %
10434	AAA	W-CDMA (BS Test Model 1, 64 DPCH)	WCDMA	8.60	± 9.6 %
10435	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10447	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.56	±9.6%
10448	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	LTE-FDD	7.53	± 9.6 %
10449	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Cliping 44%)	LTE-FDD	7.51	± 9.6 %
10450	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)			- 0.0 /

10451	AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	WCDMA	7.59	± 9.6 %
10456	AAB	IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc duty cycle)	WLAN	8.63	± 9.6 %
10457	AAA	UMTS-FDD (DC-HSDPA)	WCDMA	6.62	± 9.6 %
10458	AAA	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	CDMA2000	6.55	±9.6%
10459	AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	CDMA2000 WCDMA	8.25 2.39	±9.6 % ±9.6 %
10460	AAA	UMTS-FDD (WCDMA, AMR) LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL		7.82	$\pm 9.6\%$ $\pm 9.6\%$
10461	AAA	Subframe=2,3,4,7,8,9)		1.02	1 3.0 %
10462	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.30	±9.6 %
10463	AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.56	± 9.6 %
10464	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7,82	± 9.6 %
10465	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10466	AAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	±9.6 %
10467	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	±9.6 %
10468	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10469	AAE	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.56	± 9.6 %
10470	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10471	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10472	AAE	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Subframe=2.3.4.7.8.9)	LTE-TDD	8.57	± 9.6 %
10473	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Subframe=2.3.4.7.8.9)	LTE-TDD	7.82	± 9.6 %
10474	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10475	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	± 9.6 %
10477	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	± 9.6 %
10478	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	±9.6 %
10479	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	± 9.6 %
10480	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.18	± 9.6 %
10481	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.45	± 9.6 %
10482	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.71	± 9.6 %
10483	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.39	± 9.6 %
10484	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.47	± 9.6 %
10485	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.59	± 9.6 %
10486	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.38	± 9.6 %
10487	AAE	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.60	± 9.6 %
10488	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2.3.4.7.8.9)	LTE-TDD	7.70	± 9.6 %
10489	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.31	± 9.6 %
10490	AAE	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	± 9.6 %
10491	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	± 9.6 %

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10535         10536         10537         10538         10540         10541	AAB AAB AAB AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle) IEEE 802.11ac WiFi (40MHz, MCS2, 99pc duty cycle) IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)	WLAN WLAN WLAN	8.45 8.32	<u>±9.6 %</u> ±9.6 %
10537 10538 10540	AAB				
10538 10540				8.44	± 9.6 %
10540		IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)	WLAN	8.54	± 9.6 %
	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 95pc duty cycle)	WLAN	8.39	± 9.6 %
10041	AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc duty cycle)	WLAN	8.46	± 9.6 %
10542	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)	WLAN	8.65	± 9.6 %
10542	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)	WLAN	8.65	± 9.6 %
10545	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)	WLAN	8.47	± 9.6 %
10545	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle)	WLAN	8.55	± 9.6 %
10546	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)	WLAN	8,35	± 9.6 %
10540	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)	WLAN	8,49	± 9.6 %
10548	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc duty cycle)	WLAN	8.37	± 9.6 %
10550	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle)	WLAN	8.38	± 9.6 %
10551	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc duty cycle)	WLAN	8.50	± 9.6 %
10552	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10553	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10554	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc duty cycle)	WLAN	8.48	± 9.6 %
10555	AAC	IEEE 802.11ac Will (160MHz, MCS1, 99pc duty cycle)	WLAN	8.47	± 9.6 %
10556	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle)	WLAN	8.50	± 9.6 %
10557	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle)	WLAN	8.52	± 9.6 %
10558	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc duty cycle)	WLAN	8.61	± 9.6 %
10556	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc duty cycle)	WLAN	8.73	± 9.6 %
10561	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc duty cycle)	WLAN	8.56	± 9.6 %
10562	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc duty cycle)	WLAN	8.69	± 9.6 %
10563	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc duty cycle)	WLAN	8.77	± 9.6 %
10564	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty	WLAN	8.25	± 9.6 %
10304	~~~	cvcle)	VVL/IN	0.20	1 2 3.0 /0
10565	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10566	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycle)	WLAN	8.13	± 9.6 %
10567	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty cycle)	WLAN	8.00	± 9.6 %
10568	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty cvcle)	WLAN	8.37	± 9.6 %
10569	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty cycle)	WLAN	8.10	± 9.6 %
10570	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty cycle)	WLAN	8.30	± 9.6 %
10571	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)	WLAN	1.99	± 9.6 %
10572	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	WLAN	1.99	± 9.6 %
10573	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)	WLAN	1.98	± 9.6 %
10574	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)	WLAN	1.98	± 9.6 %
10575	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)	WLAN	8.59	± 9.6 %
10576	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)	WLAN	8.60	± 9.6 %
10577	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10578	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)	WLAN	8.49	± 9.6 %
10579	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)	WLAN	8.36	± 9.6 %
10580	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)	WLAN	8.76	± 9.6 %
10581	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)	WLAN	8.35	± 9.6 %
10582	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)	WLAN	8.67	± 9.6 %
10583	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)	WLAN	8.59	± 9.6 %
10584	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	WLAN	8.60	± 9.6 %
	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)	WLAN WLAN	8.70	<u>± 9.6 %</u> ± 9.6 %
10585 10586	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle)			

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40500	1				
10588	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)	WLAN	8.76	± 9.6 %
10589	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)	WLAN	8.35	± 9.6 %
10590	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)	WLAN	8.67	± 9.6 %
10591	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle)	WLAN	8.63	± 9.6 %
10592	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10593	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle)	WLAN	8.64	± 9.6 %
10594	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10595	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10596	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle)	WLAN	8.71	± 9.6 %
10597	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle)	WLAN	8.72	± 9.6 %
10598	AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle)	WLAN	8.50	± 9.6 %
10599	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10600	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle)	WLAN	8.88	±9.6 %
10601	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle)	WLAN	8.82	±9.6 %
10602	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle)	WLAN	8.94	±9.6 %
10603	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc duty cycle)	WLAN	9.03	± 9.6 %
10604	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc duty cycle)	WLAN	8.76	± 9.6 %
10605	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle)	WLAN	8.97	± 9.6 %
10606	AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10607	AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	WLAN	8.64	± 9.6 %
10608	AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10609	AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle)	WLAN	8.57	± 9.6 %
10610	AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle)	WLAN	8.78	± 9.6 %
10611	AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle)	WLAN	8.70	$\pm 9.6\%$ $\pm 9.6\%$
10612	AAB	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle)	WLAN	8.77	$\pm 9.6\%$ $\pm 9.6\%$
10613	AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle)	WLAN	8.94	
10614	AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle)	WLAN		± 9.6 %
10615	AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle)		8.59	± 9.6 %
10616	AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10617	AAB		WLAN	8.82	± 9.6 %
10618	AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle) IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10619	AAB		WLAN	8.58	± 9.6 %
10620		IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle)	WLAN	8.86	± 9.6 %
	AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle)	WLAN	8.87	± 9.6 %
10621	AAB	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle)	WLAN	8.77	± 9.6 %
10622	AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle)	WLAN	8.68	± 9.6 %
10623	AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10624	AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)	WLAN	8.96	± 9.6 %
10625	AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)	WLAN	8.96	±9.6 %
10626	AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)	WLAN	8.83	± 9,6 %
10627	AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)	WLAN	8.88	± 9.6 %
10628	AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)	WLAN	8.71	± 9.6 %
10629	AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle)	WLAN	8.85	± 9.6 %
10630	AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)	WLAN	8.72	±9.6 %
10631	AAB	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)	WLAN	8.81	±9.6 %
10632	AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)	WLAN	8.74	±9.6 %
10633	AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10634	AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)	WLAN	8.80	± 9.6 %
10635	AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10636	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10637	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	WLAN	8.79	± 9.6 %
10638	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)	WLAN	8.86	± 9.6 %
10639	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)	WLAN	8.85	± 9.6 %
10640	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)	WLAN	8.98	± 9.6 %
10641	AAC	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)	WLAN	9.06	± 9.6 %
10642	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)	WLAN	9.06	± 9.6 %
10643	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)	WLAN	8.89	± 9.6 %
10644	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)	WLAN	9.05	
10645	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	WLAN	9.05	± 9.6 %
10646	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)	LTE-TDD		± 9.6 %
10647	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7)		11.96	± 9.6 %
10648	AAA	CDMA2000 (1x Advanced)	LTE-TDD	11.96	±9.6 %
10652	AAD	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	CDMA2000	3.45	± 9.6 %
			LTE-TDD	6.91	± 9.6 %
	ΔΔΠ				
10653 10654	AAD AAD	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%) LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD LTE-TDD	7.42 6.96	±9.6 % ±9.6 %

40055		LTE TOD (OEDMA, OO MILE E TMO 4 Offening 449()		7.04	
10655	AAE	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD Test	7.21	±9.6 % ±9.6 %
10658 10659	AAA AAA	Pulse Waveform (200Hz, 10%) Pulse Waveform (200Hz, 20%)	Test	6.99	$\pm 9.6\%$
10659	AAA	Pulse Waveform (200Hz, 40%)	Test	3.98	± 9.6 %
10661	AAA	Pulse Waveform (200Hz, 40%)	Test	2.22	±9.6%
10662	AAA	Pulse Waveform (200Hz, 80%)	Test	0.97	± 9.6 %
10670	AAA	Bluetooth Low Energy	Bluetooth	2.19	± 9.6 %
10671	AAA	IEEE 802.11ax (20MHz, MCS0, 90pc duty cycle)	WLAN	9.09	± 9.6 %
10672	AAA	IEEE 802.11ax (20MHz, MCS1, 90pc duty cycle)	WLAN	8.57	±9.6 %
10673	AAA	IEEE 802.11ax (20MHz, MCS2, 90pc duty cycle)	WLAN	8.78	± 9.6 %
10674	AAA	IEEE 802.11ax (20MHz, MCS3, 90pc duty cycle)	WLAN	8.74	± 9.6 %
10675	AAA	IEEE 802.11ax (20MHz, MCS4, 90pc duty cycle)	WLAN	8.90	±9.6%
10676	AAA	IEEE 802.11ax (20MHz, MCS5, 90pc duty cycle)	WLAN	8.77	±9.6%
10677	AAA	IEEE 802.11ax (20MHz, MCS6, 90pc duty cycle)	WLAN	8.73	± 9.6 %
10678	AAA	IEEE 802.11ax (20MHz, MCS7, 90pc duty cycle)	WLAN	8.78	±9.6 %
10679	AAA	IEEE 802.11ax (20MHz, MCS8, 90pc duty cycle)	WLAN	8.89	± 9.6 %
10680	AAA	IEEE 802.11ax (20MHz, MCS9, 90pc duty cycle)	WLAN	8.80	±9.6 %
10681	AAA	IEEE 802.11ax (20MHz, MCS10, 90pc duty cycle)	WLAN	8.62	± 9.6 %
10682	AAA	IEEE 802.11ax (20MHz, MCS11, 90pc duty cycle)	WLAN	8.83	± 9.6 %
10683	AAA	IEEE 802.11ax (20MHz, MCS0, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10684		IEEE 802.11ax (20MHz, MCS1, 99pc duty cycle)	WLAN	8.26	±9.6 %
10685	AAA	IEEE 802.11ax (20MHz, MCS2, 99pc duty cycle)	WLAN	8.33	$\pm 9.6\%$
10686	AAA	IEEE 802.11ax (20MHz, MCS3, 99pc duty cycle)	WLAN	8.28	± 9.6 %
10687	AAA	IEEE 802.11ax (20MHz, MCS4, 99pc duty cycle)	WLAN	8.45	± 9.6 % ± 9.6 %
10688		IEEE 802.11ax (20MHz, MCS5, 99pc duty cycle)	WLAN WLAN	8.29	$\pm 9.6\%$ $\pm 9.6\%$
10689	AAA AAA	IEEE 802.11ax (20MHz, MCS6, 99pc duty cycle) IEEE 802.11ax (20MHz, MCS7, 99pc duty cycle)	WLAN	8.55	$\pm 9.6\%$ $\pm 9.6\%$
10690	AAA	IEEE 802.11ax (20MHz, MCS7, 99pc duty cycle)	WLAN	8.25	± 9.6 %
10692	AAA	IEEE 802.11ax (20MHz, MCS8, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10693	AAA	IEEE 802.11ax (20MHz, MCS3, 39pc duty cycle)	WLAN	8.25	± 9.6 %
10694	AAA	IEEE 802.11ax (20MHz, MCS11, 99pc duty cycle)	WLAN	8.57	±9.6%
10695	AAA	IEEE 802.11ax (20MHz, MCS0, 90pc duty cycle)	WLAN	8.78	±9.6 %
10696	AAA	IEEE 802.11ax (40MHz, MCS1, 90pc duty cycle)	WLAN	8.91	±9.6 %
10697	AAA	IEEE 802.11ax (40MHz, MCS2, 90pc duty cycle)	WLAN	8.61	± 9.6 %
10698	AAA	IEEE 802.11ax (40MHz, MCS3, 90pc duty cycle)	WLAN	8.89	± 9.6 %
10699	AAA	IEEE 802.11ax (40MHz, MCS4, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10700	AAA	IEEE 802.11ax (40MHz, MCS5, 90pc duty cycle)	WLAN	8.73	± 9.6 %
10701	AAA	IEEE 802.11ax (40MHz, MCS6, 90pc duty cycle)	WLAN	8.86	± 9.6 %
10702	AAA	IEEE 802.11ax (40MHz, MCS7, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10703	AAA	IEEE 802.11ax (40MHz, MCS8, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10704	AAA	IEEE 802.11ax (40MHz, MCS9, 90pc duty cycle)	WLAN	8.56	±9.6 %
10705	AAA	IEEE 802.11ax (40MHz, MCS10, 90pc duty cycle)	WLAN	8.69	±9.6%
10706	AAA	IEEE 802.11ax (40MHz, MCS11, 90pc duty cycle)	WLAN	8.66	± 9.6 %
10707	AAA	IEEE 802.11ax (40MHz, MCS0, 99pc duty cycle)	WLAN	8.32	± 9.6 %
10708	AAA	IEEE 802.11ax (40MHz, MCS1, 99pc duty cycle)	WLAN	8.55	± 9.6 %
10709	AAA	IEEE 802.11ax (40MHz, MCS2, 99pc duty cycle)	WLAN	8.33	± 9.6 %
10710		IEEE 802.11ax (40MHz, MCS3, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10711	AAA	IEEE 802.11ax (40MHz, MCS4, 99pc duty cycle)	WLAN	8.39	±9.6%
10712	AAA	IEEE 802.11ax (40MHz, MCS5, 99pc duty cycle) IEEE 802.11ax (40MHz, MCS6, 99pc duty cycle)	WLAN WLAN	8.67	<u>± 9.6 %</u> ± 9.6 %
10713		IEEE 802.11ax (40MHz, MCS6, 99pc duty cycle)	WLAN	8.26	$\pm 9.6\%$
10714	AAA AAA	IEEE 802.11ax (40MHz, MCS7, 99pc duty cycle)	WLAN	8.45	± 9.6 %
10715	AAA	IEEE 802.11ax (40MHz, MCS8, 99pc duty cycle)	WLAN	8.30	± 9.6 %
10716	AAA	IEEE 802.11ax (40MHz, MCS9, 99pc duty cycle)	WLAN	8.48	± 9.6 %
10717		IEEE 802.11ax (40MHz, MCS10, 99pc duty cycle)	WLAN	8.24	± 9.6 %
10719	AAA	IEEE 802.11ax (80MHz, MCS0, 90pc duty cycle)	WLAN	8.81	± 9.6 %
10713	AAA	IEEE 802.11ax (80MHz, MCS1, 90pc duty cycle)	WLAN	8.87	± 9.6 %
1	AAA	IEEE 802.11ax (80MHz, MCS2, 90pc duty cycle)	WLAN	8.76	± 9.6 %
10721				8.55	± 9.6 %
10721		I LEEE 802.11ax (80MHZ, MCS3, 90DC QUIV CVCIE)	WLAN	1 0.00	
10722	AAA	IEEE 802.11ax (80MHz, MCS3, 90pc duty cycle) IEEE 802.11ax (80MHz, MCS4, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10722 10723		IEEE 802.11ax (80MHz, MCS3, 90pc duty cycle) IEEE 802.11ax (80MHz, MCS4, 90pc duty cycle) IEEE 802.11ax (80MHz, MCS5, 90pc duty cycle)	WLAN WLAN		
10722	AAA AAA	IEEE 802.11ax (80MHz, MCS4, 90pc duty cycle)	WLAN	8.70	± 9.6 %
10722 10723 10724	AAA AAA AAA	IEEE 802.11ax (80MHz, MCS4, 90pc duty cycle) IEEE 802.11ax (80MHz, MCS5, 90pc duty cycle)	WLAN WLAN	8.70 8.90	± 9.6 % ± 9.6 %

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10728	AAA	IEEE 802.11ax (80MHz, MCS9, 90pc duty cycle)	WLAN	8.65	±9.6 %
10729	AAA	IEEE 802.11ax (80MHz, MCS10, 90pc duty cycle)	WLAN	8.64	± 9.6 %
10730	AAA	IEEE 802.11ax (80MHz, MCS11, 90pc duty cycle)	WLAN	8.67	± 9.6 %
10731	AAA	IEEE 802.11ax (80MHz, MCS0, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10732	AAA	IEEE 802.11ax (80MHz, MCS1, 99pc duty cycle)	WLAN	8.46	± 9.6 %
10733	AAA	IEEE 802.11ax (80MHz, MCS2, 99pc duty cycle)	WLAN	8.40	± 9.6 %
10734	AAA	IEEE 802.11ax (80MHz, MCS3, 99pc duty cycle)	WLAN	8.25	± 9.6 %
10735	AAA	IEEE 802.11ax (80MHz, MCS4, 99pc duty cycle)	WLAN	8.33	± 9.6 %
10736	AAA	IEEE 802.11ax (80MHz, MCS5, 99pc duty cycle)	WLAN	8.27	± 9.6 %
10737	AAA	IEEE 802.11ax (80MHz, MCS6, 99pc duty cycle)	WLAN	8.36	± 9.6 %
10738	AAA	IEEE 802.11ax (80MHz, MCS7, 99pc duty cycle)	WLAN	8.42	± 9.6 %
10739	AAA	IEEE 802.11ax (80MHz, MCS8, 99pc duty cycle)	WLAN	8.29	± 9.6 %
10740	AAA	IEEE 802.11ax (80MHz, MCS9, 99pc duty cycle)	WLAN	8.48	± 9.6 %
10741	AAA	IEEE 802.11ax (80MHz, MCS10, 99pc duty cycle)	WLAN	8.40	± 9.6 %
10742	AAA	IEEE 802.11ax (80MHz, MCS11, 99pc duty cycle)	WLAN	8.43	± 9.6 %
10743	AAA	IEEE 802.11ax (160MHz, MCS0, 90pc duty cycle)	WLAN	8.94	± 9.6 %
10744	AAA	IEEE 802.11ax (160MHz, MCS1, 90pc duty cycle)	WLAN	9.16	± 9.6 %
10745	AAA	IEEE 802.11ax (160MHz, MCS2, 90pc duty cycle)	WLAN	8.93	± 9.6 %
10746	AAA	IEEE 802.11ax (160MHz, MCS3, 90pc duty cycle)	WLAN	9.11	± 9.6 %
10747	AAA	IEEE 802.11ax (160MHz, MCS4, 90pc duty cycle)	WLAN	9.04	± 9.6 %
10748	AAA	IEEE 802.11ax (160MHz, MCS5, 90pc duty cycle)	WLAN	8.93	±9.6 %
10749	AAA	IEEE 802.11ax (160MHz, MCS6, 90pc duty cycle)	WLAN	8.90	± 9.6 %
10750	AAA	IEEE 802.11ax (160MHz, MCS7, 90pc duty cycle)	WLAN	8.79	±9.6 %
10751	AAA	IEEE 802.11ax (160MHz, MCS8, 90pc duty cycle)	WLAN	8.82	± 9.6 %
10752	AAA	IEEE 802.11ax (160MHz, MCS9, 90pc duty cycle)	WLAN	8.81	±9.6 %
10753	AAA	IEEE 802.11ax (160MHz, MCS10, 90pc duty cycle)	WLAN	9.00	±9.6 %
10754	AAA	IEEE 802.11ax (160MHz, MCS11, 90pc duty cycle)	WLAN	8.94	±9.6 %
10755	AAA	IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle)	WLAN	8.64	±9.6 %
10756	AAA	IEEE 802.11ax (160MHz, MCS1, 99pc duty cycle)	WLAN	8.77	±9.6 %
10757	AAA	IEEE 802.11ax (160MHz, MCS2, 99pc duty cycle)	WLAN	8.77	±9.6 %
10758	AAA	IEEE 802.11ax (160MHz, MCS3, 99pc duty cycle)	WLAN	8.69	± 9.6 %
10759	AAA	IEEE 802.11ax (160MHz, MCS4, 99pc duty cycle)	WLAN	8.58	±9.6 %
10760	AAA	IEEE 802.11ax (160MHz, MCS5, 99pc duty cycle)	WLAN	8.49	±9.6 %
10761	AAA	IEEE 802.11ax (160MHz, MCS6, 99pc duty cycle)	WLAN	8.58	±9.6 %
10762	AAA	IEEE 802.11ax (160MHz, MCS7, 99pc duty cycle)	WLAN	8.49	±9.6 %
10763	AAA	IEEE 802.11ax (160MHz, MCS8, 99pc duty cycle)	WLAN	8.53	± 9.6 %
10764	AAA	IEEE 802.11ax (160MHz, MCS9, 99pc duty cycle)	WLAN	8.54	± 9.6 %
10765	AAA	IEEE 802.11ax (160MHz, MCS10, 99pc duty cycle)	WLAN	8.54	± 9.6 %
10766	AAA	IEEE 802.11ax (160MHz, MCS11, 99pc duty cycle)	WLAN	8.51	± 9.6 %

<sup>E</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

### **Calibration Laboratory of** Schmid & Partner Engineering AG ...Zeughausstrasse 43, 8004 Zurich, Switzerland



Schweizerischer Kalibrierdienst Service suisse d'étalonnage Servizio svizzero di taratura - Swiss Calibration Service

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS) The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Client PC Test

Certificate No: D750V3-1003\_Jan18

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CALIBRATION	CERTIFICATE

Object	D750V3 - SN:10	03	
Calibration procedure(s)	QA CAL-05.v9 Calibration proce	edure for dipole validation kits abo	ove 700 MHz
Calibration date:	January 15, 201	3	BN 01-25-2018
This callbration certificate documents and the unce	ents the traceability to nat rtainties with confidence p	ional standards, which realize the physical un probability are given on the following pages an	d are part of the certificate
		ry facility: environment temperature (22 $\pm$ 3)°(	02106/2010
Calibration Equipment used (M&T			
Primary Slandards	ID#	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-17 (No. 217-02521/02522)	
Power sensor NRP-Z91	SN: 103244	04-Apr-17 (No. 217-02521)	Apr-18 Apr-18
Power sensor NRP-Z91	SN: 103245	04-Apr-17 (No. 217-02522)	Apr-18
Reference 20 dB Attenuator	SN: 5058 (20k)	07-Apr-17 (No. 217-02528)	Apr-18
Type-N mismatch combination	SN: 5047.2 / 06327	07-Apr-17 (No. 217-02529)	Apr-18
Reference Probe EX3DV4	SN: 7349	30-Dec-17 (No. EX3-7349_Dec17)	Dec-18
DAE4	SN: 601	26-Oct-17 (No. DAE4-601_Oct17)	Oct-18
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-16)	in house check: Oct-18
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-16)	In house check: Oci-18
Nelwork Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-17)	In house check: Oct-18
	Name	Function	Signature
Calibrated by:	Ləlf Klysner	Laboratory Technician	Seaf The
Approved by:	Katja Pokovic	Technical Manager	helly
This calibration certificate shall no	l be reproduced except in	full without written approval of the laboratory	Issued: January 15, 2018

ept in full without written approval of the laboratory.

Certificate No: D750V3-1003\_Jan18

### **Calibration Laboratory of**

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





Schweizerischer Kalibrierdienst Service suisse d'étalonnage Servizio svizzero dl taratura Swiss Calibration Service

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS) The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

### Glossary:

tissue simulating liquid sensitivity in TSL / NORM x,y,z not applicable or not measured
not applicable of not measured

### Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

### Additional Documentation:

e) DASY4/5 System Handbook

### Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL: The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss: These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured: SAR measured at the stated antenna input power.
- SAR normalized: SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

# **Measurement Conditions**

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DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = $5.0 \text{ mm}$	
Frequency	750 MHz ± 1 MHz	

Head TSL parameters The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.9	0.89 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.9 ± 6 %	0.90 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

### SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.10 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	8.28 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.37 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	5.42 W/kg ± 16.5 % (k=2)

# **Body TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.5	0.96 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	55.0 ± 6 %	0.96 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

### SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.15 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	8.58 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.43 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	5.71 W/kg ± 16.5 % (k=2)

# Appendix (Additional assessments outside the scope of SCS 0108)

## Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.8 Ω - 2.1 jΩ
Return Loss	- 27.6 dB

# Antenna Parameters with Body TSL

Impedance, transformed to feed point	49.2 Ω - 6.2 jΩ
Return Loss	- 24.0 dB

#### **General Antenna Parameters and Design**

Electrical Delay (one direction)	1.043 ns
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After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

#### Additional EUT Data

Manufactured by	SPEAG
Manufactured on	January 21, 2009

# Appendix (Additional assessments outside the scope of SCS 0108)

#### **Measurement Conditions**

DASY system configuration, as far as not given on page 1 and 3.

Phantom

SAM Head Phantom

For usage with cSAR3DV2-R/L

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# SAR result with SAM Head (Top)

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition		
SAR measured	250 mW input power	1.98 W/kg	
SAR for nominal Head TSL parameters	normalized to 1W	7.94 W/kg ± 17.5 % (k=2)	
SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition		
SAR measured	250 mW input power	1.33 W/kg	
SAR for nominal Head TSL parameters			

#### SAR result with SAM Head (Mouth)

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.05 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	8.22 W/kg ± 17.5 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.38 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	5.52 W/kg ± 16.9 % (k=2)

# SAR result with SAM Head (Neck)

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition		
SAR measured	250 mW input power	2.01 W/kg	
SAR for nominal Head TSL parameters	normalized to 1W	8.06 W/kg ± 17.5 % (k=2)	
SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition		
SAR measured	250 mW input power	1.38 W/kg	

# SAR result with SAM Head (Ear)

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition		
SAR measured	250 mW input power	1.67 W/kg	
SAR for nominal Head TSL parameters	normalized to 1W	6.70 W/kg ± 17.5 % (k=2)	
SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition		
SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL SAR measured	condition 250 mW input power	1.15 W/kg	

# **DASY5 Validation Report for Head TSL**

Date: 12.01.2018

Test Laboratory: SPEAG, Zurich, Switzerland

# DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN:1003

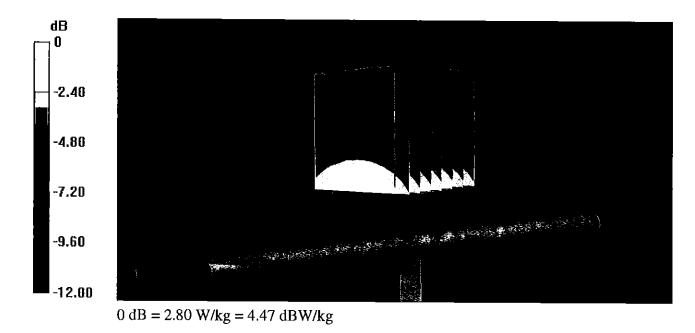
Communication System: UID 0 - CW; Frequency: 750 MHz Medium parameters used: f = 750 MHz;  $\sigma = 0.9$  S/m;  $\epsilon_r = 40.9$ ;  $\rho = 1000$  kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

#### DASY52 Configuration:

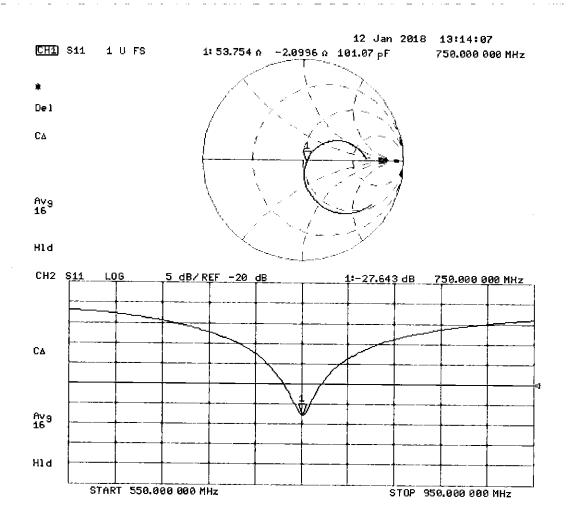
- Probe: EX3DV4 SN7349; ConvF(10.22, 10.22, 10.22); Calibrated: 30.12.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 4.9 (front); Type: QD 00L P49 AA; Serial: 1001
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

# Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 59.11 V/m; Power Drift = -0.04 dB Peak SAR (extrapolated) = 3.15 W/kg SAR(1 g) = 2.1 W/kg; SAR(10 g) = 1.37 W/kg Maximum value of SAR (measured) = 2.80 W/kg



# Impedance Measurement Plot for Head TSL



# **DASY5 Validation Report for Body TSL**

Date: 12.01.2018

Test Laboratory: SPEAG, Zurich, Switzerland

# DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN:1003

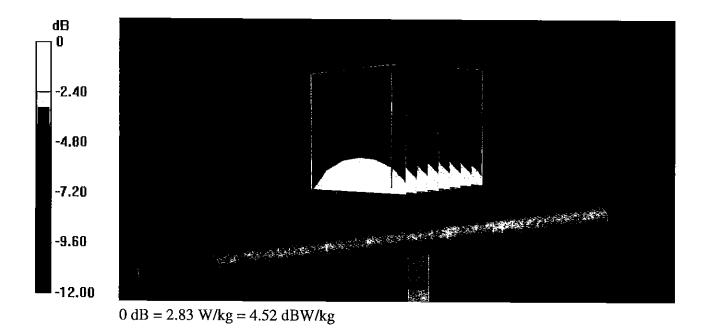
Communication System: UID 0 - CW; Frequency: 750 MHz Medium parameters used: f = 750 MHz;  $\sigma = 0.96$  S/m;  $\epsilon_r = 55$ ;  $\rho = 1000$  kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

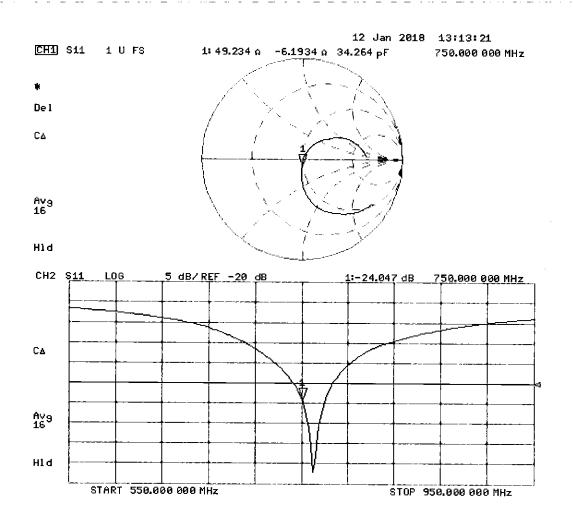
- Probe: EX3DV4 SN7349; ConvF(10.19, 10.19, 10.19); Calibrated: 30.12.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 4.9 (Back); Type: QD 00R P49 AA; Serial: 1005
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

# Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x8x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 57.31 V/m; Power Drift = -0.01 dB Peak SAR (extrapolated) = 3.17 W/kg SAR(1 g) = 2.15 W/kg; SAR(10 g) = 1.43 W/kg Maximum value of SAR (measured) = 2.83 W/kg



# Impedance Measurement Plot for Body TSL



Date: 15.01.2018

Test Laboratory: SPEAG, Zurich, Switzerland

# DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN:1003

Communication System: UID 0 - CW; Frequency: 750 MHz Medium parameters used: f = 750 MHz;  $\sigma = 0.9$  S/m;  $\varepsilon_r = 44.2$ ;  $\rho = 1000$  kg/m<sup>3</sup> Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

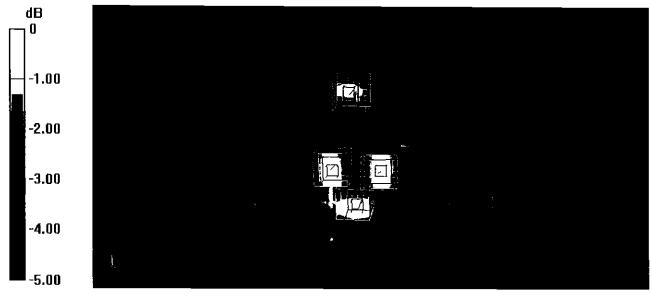
- Probe: EX3DV4 SN7349; ConvF(10.22, 10.22, 10.22); Calibrated: 30.12.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: SAM Head
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

SAM Head/Top/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 56.79 V/m; Power Drift = -0.01 dB Peak SAR (extrapolated) = 2.89 W/kg SAR(1 g) = 1.98 W/kg; SAR(10 g) = 1.33 W/kg Maximum value of SAR (measured) = 2.58 W/kg

SAM Head/Mouth/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 56.85 V/m; Power Drift = -0.06 dB Peak SAR (extrapolated) = 2.94 W/kg SAR(1 g) = 2.05 W/kg; SAR(10 g) = 1.38 W/kg Maximum value of SAR (measured) = 2.62 W/kg

SAM Head/Neck/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 56.29 V/m; Power Drift = 0.04 dB Peak SAR (extrapolated) = 2.78 W/kg SAR(1 g) = 2.01 W/kg; SAR(10 g) = 1.38 W/kg Maximum value of SAR (measured) = 2.56 W/kg

SAM Head/Ear/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 51.01 V/m; Power Drift = 0.02 dB Peak SAR (extrapolated) = 2.31 W/kg SAR(1 g) = 1.67 W/kg; SAR(10 g) = 1.15 W/kg Maximum value of SAR (measured) = 2.11 W/kg



0 dB = 2.58 W/kg = 4.12 dBW/kg



PCTEST ENGINEERING LABORATORY, INC. 7185 Oakland Mills Road, Columbia, MD 21046 USA Tel. +1.410.290.6652 / Fax +1.410.290.6654

http://www.pctest.com



# **Certification of Calibration**

Object

D750V3 - SN: 1003

Calibration procedure(s) Procedure for Calibration Extension for SAR Dipoles.

1/15/2019

Extension Calibration date:

Description:

SAR Validation Dipole at 750 MHz.

### Calibration Equipment used:

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	8753ES	S-Parameter Network Analyzer	2/8/2018	Annual	2/8/2019	US39170122
Agilent	N5182A	MXG Vector Signal Generator	4/18/2018	Annual	4/18/2019	MY47420800
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433971
Anritsu	MA2411B	Pulse Power Sensor	3/2/2018	Annual	3/2/2019	1207364
Anritsu	MA2411B	Pulse Power Sensor	3/2/2018	Annual	3/2/2019	1339018
Anritsu	ML2495A	Power Meter	10/21/2018	Annual	10/21/2019	941001
Control Company	4040	Therm./Clock/Humidity Monitor	3/31/2017	Biennial	3/31/2019	170232394
Control Company	4352	Ultra Long Stem Thermometer	5/2/2017	Biennial	5/2/2019	170330156
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	6/4/2018	Annual	6/4/2019	MY53401181
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Pasternack	PE2208-6	Bidirectional Coupler	CBT	N/A	CBT	N/A
Seekonk	NC-100	Torque Wrench	7/11/2018	Annual	7/11/2019	N/A
SPEAG	DAE4	Dasy Data Acquisition Electronics	10/3/2018	Annual	10/3/2019	1558
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/18/2018	Annual	6/18/2019	1334
SPEAG	DAK-3.5	Dielectric Assessment Kit	9/11/2018	Annual	9/11/2019	1091
SPEAG	EX3DV4	SAR Probe	8/23/2018	Annual	8/23/2019	7308
SPEAG	EX3DV4	SAR Probe	6/25/2018	Annual	6/25/2019	7409

Measurement Uncertainty =  $\pm 23\%$  (k=2)

	Name	Function	Signature
Calibrated By:	Brodie Halbfoster	Test Engineer	BRODIE HALBFOSTER
Approved By:	Kaitlin O'Keefe	Senior Technical Manager	XOK

Object:	Date Issued:	Page 1 of 4
D750V3 – SN: 1003	01/15/2019	Fage 1 01 4

# **DIPOLE CALIBRATION EXTENSION**

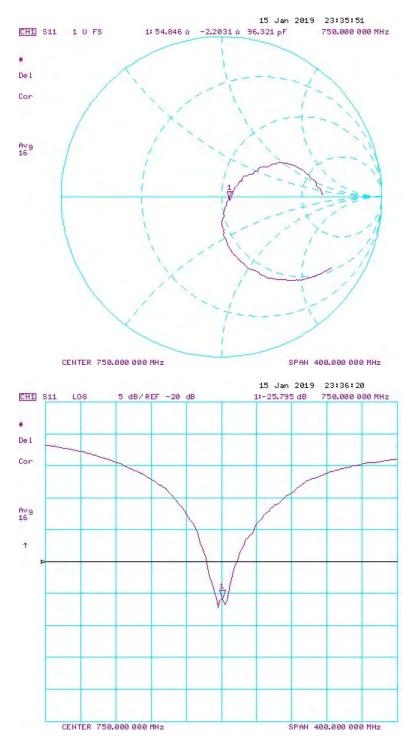
Per KDB 865664 D01, calibration intervals of up to three years may be considered for reference dipoles when it is demonstrated that the SAR target, impedance and return loss of a dipole have remained stable according to the following requirements:

- 1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
- 2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
- 3. The measurement of real or imaginary parts of impedance does not deviate more than  $5\Omega$  from the previous measurement.

The following dipole was checked to pass the above 3 requirements to have 2-year calibration period from the calibration date:

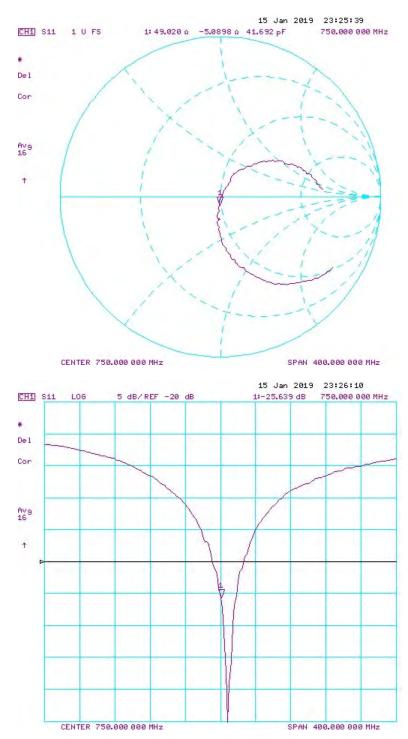
Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Head (1g) W/kg @ 23.0 dBm	Measured Head SAR (1g) W/kg @ 23.0 dBm		Certificate SAR Target Head (10g) W/kg @ 23.0 dBm	(40-) 10/0-0	Deviation 10g (%)	Certificate Impedance Head (Ohm) Real	Measured Impedance Head (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Head (Ohm) Imaginary	Measured Impedance Head (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Head (dB)	Measured Return Loss Head (dB)	Deviation (%)	PASS/FAIL
1/15/2018	1/15/2019	1.043	1.656	1.75	5.68%	1.08	1.15	6.09%	53.8	54.8	1	-2.1	-2.2	0.1	-27.6	-25.8	6.50%	PASS
Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Body (1g) W/kg @ 23.0 dBm	Measured Body SAR (1g) W/kg @ 23.0 dBm			(10a) W/ka	Deviation 10g (%)	Certificate Impedance Body (Ohm) Real	Measured Impedance Body (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Body (Ohm) Imaginary	Measured Impedance Body (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Body (dB)	Measured Return Loss Body (dB)	Deviation (%)	PASS/FAIL
1/15/2018	1/15/2019	1.043	1.716	1.84	7.23%	1.14	1.23	7.71%	49.2	49	0.2	-6.2	-5.1	1.1	-24	-25.6	-6.80%	PASS

Object:	Date Issued:	Page 2 of 4
D750V3 – SN: 1003	01/15/2019	Page 2 of 4



Impedance & Return-Loss Measurement Plot for Head TSL

Object:	Date Issued:	Dage 2 of 4
D750V3 – SN: 1003	01/15/2019	Page 3 of 4



Impedance & Return-Loss Measurement Plot for Body TSL

Object:	Date Issued:	Page 4 of 4
D750V3 – SN: 1003	01/15/2019	Page 4 of 4

#### Calibration Laboratory of Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst

- C Service suisse d'étalonnage
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- S Swiss Calibration Service

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS) The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Certificate No: D750V3-1161\_Oct18

#### Client PC Test

CALIBRATION CE	ERTIFICATE	1	
Object	D750V3 - SN:116	51	
Calibration procedure(s)	QA CAL-05.v10 Calibration proce	dure for dipole validation kits abo	ove 700 MHz
Calibration date:	October 19, 2018		BN 10-30-2018
		onal standards, which realize the physical ur robability are given on the following pages ar	its of measurements (SI).
All calibrations have been conducte	d in the closed laborato	y facility: environment temperature (22 ± 3)°	C and humidity < 70%.
Calibration Equipment used (M&TE	critical for calibration)		
Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-18 (No. 217-02682)	Apr-19
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-18 (No. 217-02683)	Apr-19
Reference Probe EX3DV4	SN: 7349	30-Dec-17 (No. EX3-7349_Dec17)	Dec-18
DAE4	SN: 601	04-Oct-18 (No. DAE4-601_Oct18)	Oct-19
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-18)	In house check: Oct-20
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19
	Name	Function	Signature
Calibrated by:	Manu Seitz	Laboratory Technician	Ait
Approved by:	Kalja Pokovic	Technical Manager	Ally
This calibration certificate shall not	he reproduced except in	full without written approval of the laborator	Issued: October 22, 2018

# **Calibration Laboratory of**

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





S

Schweizerischer Kalibrierdienst

- C Service suisse d'étalonnage
- Servizio svizzero di taratura
- S Swiss Calibration Service

Accreditat

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS) The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

#### Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

# Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

# Additional Documentation:

e) DASY4/5 System Handbook

# Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL: The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss: These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured: SAR measured at the stated antenna input power.
- SAR normalized: SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

#### **Measurement Conditions**

DASY system configuration, as far as not given on page 1.

·····		
DASY Version	DASY5	V52.10.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	750 MHz ± 1 MHz	

#### Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.9	0.89 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.8 ± 6 %	0.89 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	51 MF 24 54	

#### SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.02 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	8.03 W/kg ± 17.0 % (k=2)
SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.32 W/kg

#### **Body TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.5	0.96 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	55.1 ± 6 %	0.96 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

#### SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.11 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	8.43 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.39 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	5.55 W/kg ± 16.5 % (k=2)

# Appendix (Additional assessments outside the scope of SCS 0108)

#### Antenna Parameters with Head TSL

Impedance, transformed to feed point	55.6 Ω - 1.9 jΩ
Return Loss	- 25.0 dB

#### Antenna Parameters with Body TSL

Impedance, transformed to feed point	50.6 Ω - 4.2 jΩ
Return Loss	- 27.6 dB

#### **General Antenna Parameters and Design**

Liectical Delay (one direction)	Electrical Delay (one direction)	1.032 ns
---------------------------------	----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

#### Additional EUT Data

Manufactured by	SPEAG
Manufactured on	November 19, 2015

# **DASY5 Validation Report for Head TSL**

Date: 19.10.2018

Test Laboratory: SPEAG, Zurich, Switzerland

#### DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN:1161

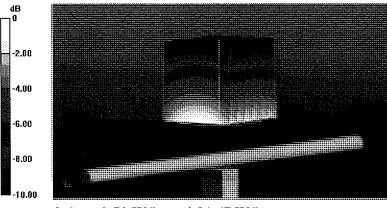
Communication System: UID 0 - CW; Frequency: 750 MHz Medium parameters used: f = 750 MHz;  $\sigma = 0.89$  S/m;  $\varepsilon_r = 40.8$ ;  $\rho = 1000$  kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

#### DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(10.22, 10.22, 10.22) @ 750 MHz; Calibrated: 30.12.2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.10.2018
- Phantom: Flat Phantom 4.9 (front); Type: QD 00L P49 AA; Serial: 1001
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

#### Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 58.51 V/m; Power Drift = -0.04 dB Peak SAR (extrapolated) = 3.04 W/kg SAR(1 g) = 2.02 W/kg; SAR(10 g) = 1.32 W/kg Maximum value of SAR (measured) = 2.70 W/kg



0 dB = 2.70 W/kg = 4.31 dBW/kg

Ch1: Start 550.000 MHz       Stop 950.000 MHz         10.00       10.00         5.00       1         0.00       1         5.00       1         10.00       1         5.00       1         10.00       1         5.00       1         10.00       1         5.00       1         10.00       1         10.00       1         10.00       1         10.00       1         10.00       1         10.00       1         10.00       1         10.00       1         10.00       1         10.00       1         25.00       1         25.00       1         30.00       1         35.00       1         40.00       Ch 1 Avg = 20         Ch1: Start 550.000 MHz       Stop 950.000 MHz	<u>Elle View Channel Sweep Cal</u> Ch 1 Avg = 20	bration Trace Scale Mark	1: 750.000000	30 pF -1.9896 Ω
5.00         7.1.730000000000000000000000000000000000				Stop 950.000 MHz
	5.00 0.00 -5.00 -10.00 -15.00 -20.00 -25.00 -35.00 -40.00 Ch 1 Avg = 20		> 1: 750.00000	

# **DASY5 Validation Report for Body TSL**

Date: 19.10.2018

Test Laboratory: SPEAG, Zurich, Switzerland

#### DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN:1161

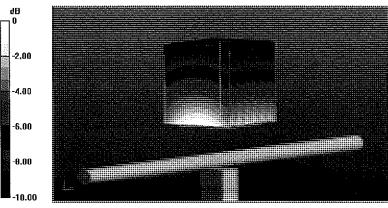
Communication System: UID 0 - CW; Frequency: 750 MHz Medium parameters used: f = 750 MHz;  $\sigma = 0.96$  S/m;  $\epsilon_r = 55.1$ ;  $\rho = 1000$  kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

#### DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(10.19, 10.19, 10.19) @ 750 MHz; Calibrated: 30.12.2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.10.2018
- Phantom: Flat Phantom 4.9 (Back); Type: QD 00R P49 AA; Serial: 1005
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

#### Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 57.57 V/m; Power Drift = -0.02 dB Peak SAR (extrapolated) = 3.18 W/kg SAR(1 g) = 2.11 W/kg; SAR(10 g) = 1.39 W/kg Maximum value of SAR (measured) = 2.83 W/kg



0 dB = 2.83 W/kg = 4.52 dBW/kg

# Impedance Measurement Plot for Body TSL

	ajibration <u>Trace Scale Mark</u>	er System Window Help 1: 750,000000 MH 51,109 g 2: 50,000000 MH	oF -4.1521 Ω
Ch 1 Avg = 20 Ch1: Start 550,000 MHz			8top 950.000 MHz
10.00     10.00       5.00		> 1: 750.00000 MH	12 -27.595 dB

# **Calibration Laboratory of**

PC Test

Client

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland

Accredited by the Swiss Accreditation Service (SAS) The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Certificate No: D835V2-4d132\_Jan19

# CALIBRATION CERTIFICATE

Object	D835V2 - SN:4d	<b>132</b> (1997) (19	(addited a state and second
	an an ann an an an an an an an an an an		BN V 02/06/2019
Calibration procedure(s)	QA CAL-05.v11		
	Calibration Proce	dure for SAR Validation Sources	s between 0.7-3 GHz
Calibration date:	January 22, 2019		
This calibration certificate documer	nts the traceability to nati	ional standards, which realize the physical ur	nits of measurements (SI).
The measurements and the uncerte	aintles with confidence p	robability are given on the following pages ar	nd are part of the certificate.
All calibrations have been conducte	ed in the closed laborato	ry facility: environment temperature (22 $\pm$ 3)°	C and humidity < 70%.
Calibration Equipment used (M&TE	critical for calibration)		
	1		
Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-18 (No. 217-02682)	Apr-19
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-18 (No. 217-02683)	Apr-19
Reference Probe EX3DV4	SN: 7349	31-Dec-18 (No. EX3-7349_Dec18)	Dec-19
DAE4	SN: 601	04-Oct-18 (No. DAE4-601_Oct18)	Oct-19
	l		
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-18)	In house check: Oct-20
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19
	Al	E a all	
	Name	Function	Signature
Calibrated by:	Leif Klysner	Laboratory Technician	Solth
			ayng
Approved by:	Katja Pokovic	Technical Manager	and the second
rippiorod bj.			El 45
			Issued: January 22, 2019
This calibration certificate shall not	be reproduced except in	n full without written approval of the laboratory	<i>y</i> .
		··	



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Accreditation No.: SCS 0108

S Swiss Calibration Service

# Calibration Laboratory of

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





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  - Servizio svizzero di taratura
- S Swiss Calibration Service

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS) The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

#### **Glossarv:**

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

# Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

# Additional Documentation:

e) DASY4/5 System Handbook

# Methods Applied and Interpretation of Parameters:

- Measurement Conditions: Further details are available from the Validation Report at the end • of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL: The dipole is mounted with the spacer to position its feed • point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss: These parameters are measured with the dipole • positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. • No uncertainty required.
- SAR measured: SAR measured at the stated antenna input power. •
- SAR normalized: SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the • nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

#### **Measurement Conditions**

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.10.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5.0 mm	
Frequency	835 MHz ± 1 MHz	

#### **Head TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.3 ± 6 %	0.92 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

#### SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.44 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	9.59 W/kg ± 17.0 % (k=2)
SAR averaged over 10 cm³ (10 g) of Head ⊤SL	condition	

SAR averaged over 10 cm° (10 g) of head  SL	condition	
SAR measured	250 mW input power	1,58 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	6.23 W/kg ± 16.5 % (k=2)

## **Body TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.6 ± 6 %	0.99 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

# SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.46 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	9.67 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.61 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	6.35 W/kg ± 16.5 % (k=2)

# Appendix (Additional assessments outside the scope of SCS 0108)

#### Antenna Parameters with Head TSL

Impedance, transformed to feed point	49.6 Ω - 3.6 jΩ
Return Loss	- 28.7 dB

#### Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.4 Ω - 6.2 jΩ
Return Loss	- 23.2 dB

#### **General Antenna Parameters and Design**

Electrical Delay (one direction)	1.387 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

#### Additional EUT Data

# Appendix (Additional assessments outside the scope of SCS 0108)

#### **Measurement Conditions**

DASY system configuration, as far as not given on page 1 and 3.

Phantom

SAM Head Phantom

For usage with cSAR3DV2-R/L

# SAR result with SAM Head (Top)

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.35 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	9.38 W/kg ± 17.5 % (k=2)
	······································	
SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.5 <b>7</b> W/kg

# SAR result with SAM Head (Mouth)

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.4 <b>7</b> W/kg
SAR for nominal Head TSL parameters	normalized to 1W	9.86 W/kg ± 17.5 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.65 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	6.58 W/kg ± 16.9 % (k=2)

# SAR result with SAM Head (Neck)

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.36 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	9.42 W/kg ± 17.5 % (k=2)
	1	
SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	

SAR measured	250 mW input power	1.60 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	6.38 W/kg ± 16.9 % (k=2)

### SAR result with SAM Head (Ear)

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.02 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	8.06 W/kg ± 17.5 % (k=2)
SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.36 W/kg

normalized to 1W

5.42 W/kg ± 16.9 % (k=2)

SAR for nominal Head TSL parameters

# **DASY5 Validation Report for Head TSL**

Date: 17.01.2019

Test Laboratory: SPEAG, Zurich, Switzerland

#### DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d132

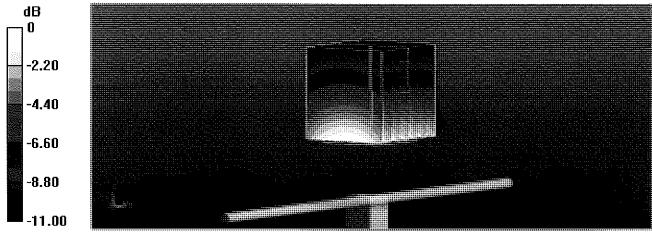
Communication System: UID 0 - CW; Frequency: 835 MHz Medium parameters used: f = 835 MHz;  $\sigma = 0.92$  S/m;  $\varepsilon_r = 41.3$ ;  $\rho = 1000$  kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

#### DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(10, 10, 10) @ 835 MHz; Calibrated: 31.12.2018
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.10.2018
- Phantom: Flat Phantom 4.9 (front); Type: QD 00L P49 AA; Serial: 1001
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

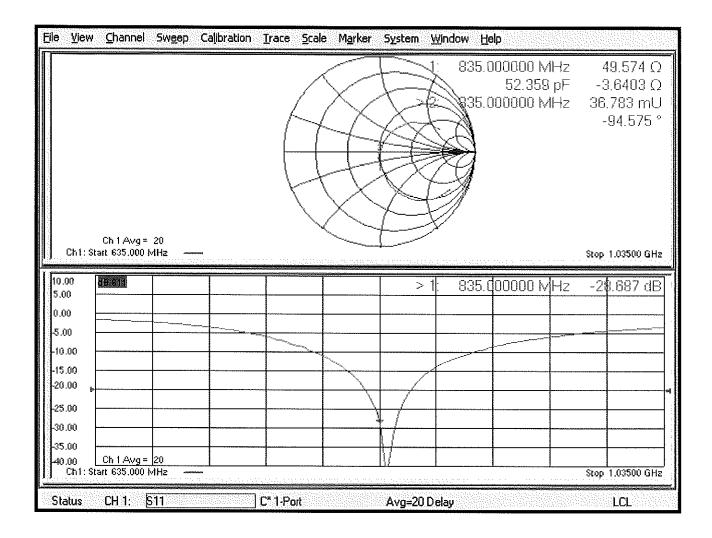
#### Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 34.24 V/m; Power Drift = -0.00 dB Peak SAR (extrapolated) = 3.73 W/kg SAR(1 g) = 2.44 W/kg; SAR(10 g) = 1.58 W/kg Maximum value of SAR (measured) = 3.28 W/kg



0 dB = 3.28 W/kg = 5.16 dBW/kg

# Impedance Measurement Plot for Head TSL



# **DASY5 Validation Report for Body TSL**

Date: 17.01.2019

Test Laboratory: SPEAG, Zurich, Switzerland

#### DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d132

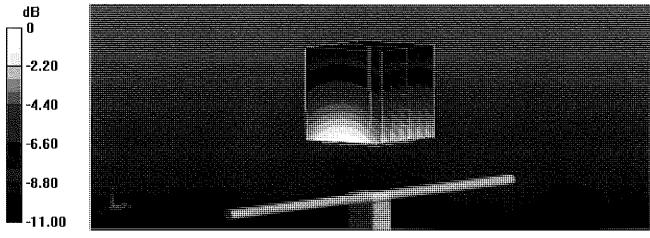
Communication System: UID 0 - CW; Frequency: 835 MHz Medium parameters used: f = 835 MHz;  $\sigma = 0.99$  S/m;  $\varepsilon_r = 54.6$ ;  $\rho = 1000$  kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

#### DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(10.15, 10.15, 10.15) @ 835 MHz; Calibrated: 31.12.2018
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.10.2018
- Phantom: Flat Phantom 4.9 (Back); Type: QD 00R P49 AA; Serial: 1005
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

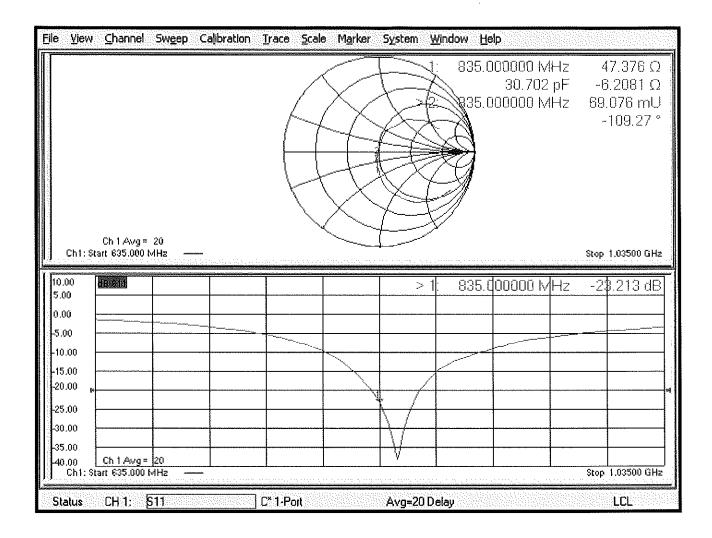
# Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 63.32 V/m; Power Drift = -0.07 dB Peak SAR (extrapolated) = 3.64 W/kg SAR(1 g) = 2.46 W/kg; SAR(10 g) = 1.61 W/kg Maximum value of SAR (measured) = 3.26 W/kg



0 dB = 3.26 W/kg = 5.13 dBW/kg

# Impedance Measurement Plot for Body TSL



# **DASY5 Validation Report for SAM Head**

Date: 22.01.2019

Test Laboratory: SPEAG, Zurich, Switzerland

#### DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d132

Communication System: UID 0 - CW; Frequency: 835 MHz Medium parameters used: f = 835 MHz;  $\sigma = 0.92$  S/m;  $\varepsilon_r = 44.4$ ;  $\rho = 1000$  kg/m<sup>3</sup> Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

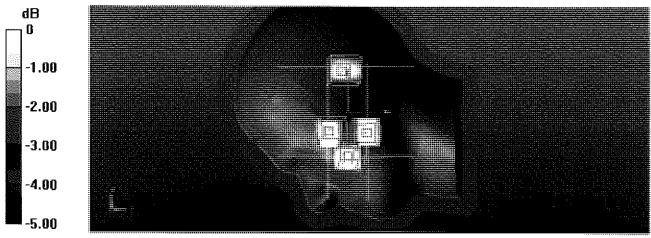
- Probe: EX3DV4 SN7349; ConvF(10, 10, 10) @ 835 MHz; Calibrated: 31.12.2018
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.10.2018
- Phantom: SAM Head
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

SAM/Head/Top/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 61.32 V/m; Power Drift = -0.04 dB Peak SAR (extrapolated) = 3.51 W/kg SAR(1 g) = 2.35 W/kg; SAR(10 g) = 1.57 W/kg Maximum value of SAR (measured) = 3.12 W/kg

SAM/Head/Mouth/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 62.25 V/m; Power Drift = 0.01 dB Peak SAR (extrapolated) = 3.67 W/kg SAR(1 g) = 2.47 W/kg; SAR(10 g) = 1.65 W/kg Maximum value of SAR (measured) = 3.24 W/kg

SAM/Head/Neck/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 60.69 V/m; Power Drift = 0.05 dB Peak SAR (extrapolated) = 3.43 W/kg SAR(1 g) = 2.36 W/kg; SAR(10 g) = 1.6 W/kg Maximum value of SAR (measured) = 3.08 W/kg

SAM/Head/Ear/Zoom Scan (8x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 55.79 V/m; Power Drift = 0.05 dB Peak SAR (extrapolated) = 2.94 W/kg SAR(1 g) = 2.02 W/kg; SAR(10 g) = 1.36 W/kg Maximum value of SAR (measured) = 2.62 W/kg



0 dB = 2.62 W/kg = 4.18 dBW/kg

#### **Calibration Laboratory of** Schmid & Partner **Engineering AG** Zeughausstrasse 43, 8004 Zurich, Switzerland



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# Accreditation No.: SCS 0108

Client PC Test Certificate No: D835V2-4d047 Mar19

# **CALIBRATION CERTIFICATE**

Object	D835V2 - SN:4d0	047	
Calibration procedure(s)	QA CAL-05.v11 Calibration Proce	dure for SAR Validation Source	s between 0.7-3 GHz
			gN ~
Calibration date:	March 13, 2019		BN~ 04-12-2019
The measurements and the uncerta	ainties with confidence p ed in the closed laborator	onal standards, which realize the physical ur robability are given on the following pages a ry facility: environment temperature (22 $\pm$ 3)°	nd are part of the certificate.
Calibration Equipment used (M&TE	critical for calibration)		
Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-18 (No. 217-02682)	Apr-19
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-18 (No. 217-02683)	Apr-19
Reference Probe EX3DV4	SN: 7349	31-Dec-18 (No. EX3-7349_Dec18)	Dec-19
DAE4	SN: 601	04-Oct-18 (No. DAE4-601_Oct18)	Oct-19
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	07-Oct-15 (in house check Feb-19)	In house check: Oct-20
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-18)	In house check: Oct-20
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19
	Name	Function	Signature
Calibrated by:	Manu Seitz	Laboratory Technician	- Ale
Approved by:	Katja Pokovic	Technical Manager	- Cliff
This calibration cortificate shall not	he reproduced except in	full without written approval of the Jahoraton	Issued: March 13, 2019

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Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





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- S Swiss Calibration Service

Accreditation No.: SCS 0108

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#### Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

# Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

# Additional Documentation:

e) DASY4/5 System Handbook

# Methods Applied and Interpretation of Parameters:

- Measurement Conditions: Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL: The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss: These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured: SAR measured at the stated antenna input power. •
- SAR normalized: SAR as measured, normalized to an input power of 1 W at the antenna • connector.
- SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

#### **Measurement Conditions**

DASY system configuration, as far as not given on page 1.

· · · · · · · · · · · · · · · · · · ·		
DASY Version	DASY5	V52.10.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	····
Frequency	835 MHz ± 1 MHz	

#### Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.9 ± 6 %	0.91 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

#### SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.37 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	9.42 W/kg ± 17.0 % (k=2)
		· · · ·
SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.54 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	6.13 W/kg ± 16.5 % (k=2)

#### **Body TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.3 ± 6 %	1.01 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	****	

# SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.45 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	9.47 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.61 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	6.27 W/kg ± 16.5 % (k=2)

# Appendix (Additional assessments outside the scope of SCS 0108)

#### **Antenna Parameters with Head TSL**

Impedance, transformed to feed point	51.4 Ω - 2.6 jΩ
Return Loss	- 30.7 dB

#### Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.8 Ω - 6.1 jΩ
Return Loss	- 22.9 dB

#### **General Antenna Parameters and Design**

y (one direction)	1.387 ns	

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

#### Additional EUT Data

Manufactured by	SPEAG
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# **DASY5 Validation Report for Head TSL**

Date: 13.03.2019

Test Laboratory: SPEAG, Zurich, Switzerland

#### DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d047

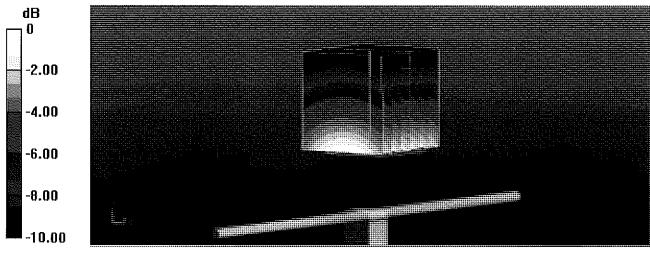
Communication System: UID 0 - CW; Frequency: 835 MHz Medium parameters used: f = 835 MHz;  $\sigma$  = 0.91 S/m;  $\epsilon_r$  = 41.9;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

#### DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(10, 10, 10) @ 835 MHz; Calibrated: 31.12.2018
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.10.2018
- Phantom: Flat Phantom 4.9 (front); Type: QD 00L P49 AA; Serial: 1001
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

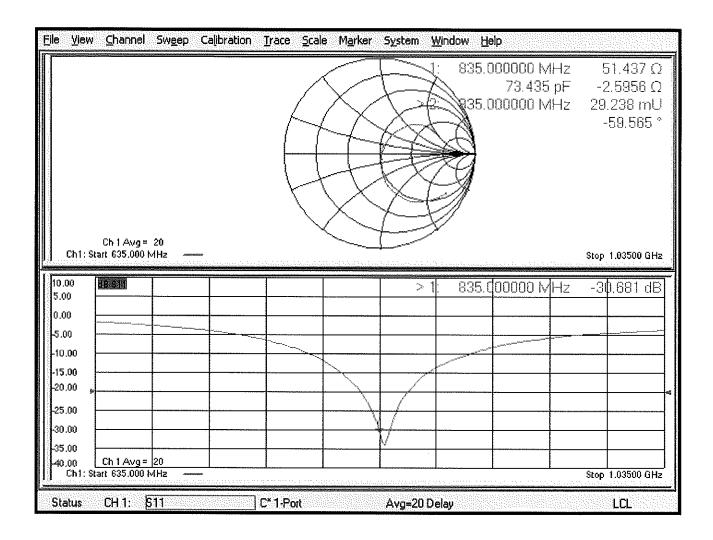
#### Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 62.48 V/m; Power Drift = -0.08 dB Peak SAR (extrapolated) = 3.60 W/kg SAR(1 g) = 2.37 W/kg; SAR(10 g) = 1.54 W/kg Maximum value of SAR (measured) = 3.18 W/kg



0 dB = 3.18 W/kg = 5.02 dBW/kg

# Impedance Measurement Plot for Head TSL



# **DASY5 Validation Report for Body TSL**

Date: 13.03.2019

Test Laboratory: SPEAG, Zurich, Switzerland

## DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d047

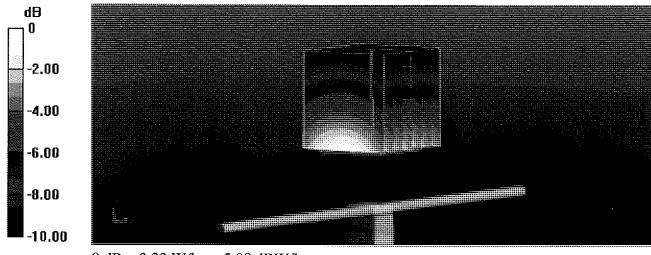
Communication System: UID 0 - CW; Frequency: 835 MHz Medium parameters used: f = 835 MHz;  $\sigma = 1.01$  S/m;  $\varepsilon_r = 54.3$ ;  $\rho = 1000$  kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

#### DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(10.15, 10.15, 10.15) @ 835 MHz; Calibrated: 31.12.2018
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.10.2018
- Phantom: Flat Phantom 4.9 (Back); Type: QD 00R P49 AA; Serial: 1005
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

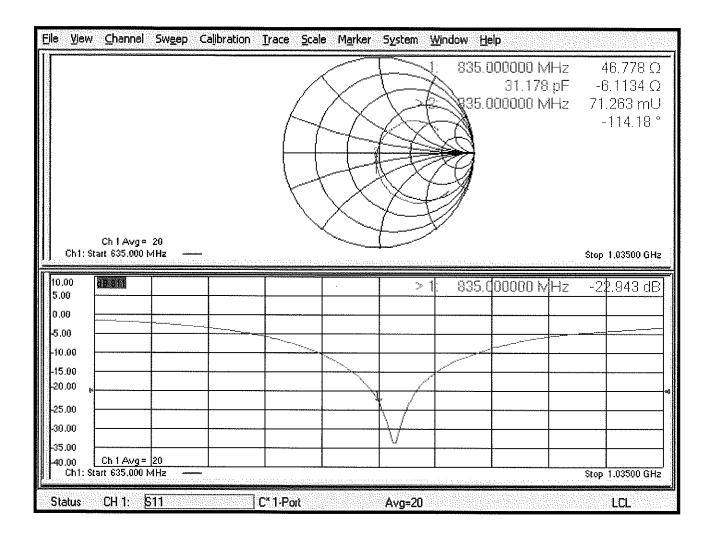
#### Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 60.49 V/m; Power Drift = -0.02 dB Peak SAR (extrapolated) = 3.58 W/kg SAR(1 g) = 2.45 W/kg; SAR(10 g) = 1.61 W/kg Maximum value of SAR (measured) = 3.23 W/kg



0 dB = 3.23 W/kg = 5.09 dBW/kg

# Impedance Measurement Plot for Body TSL



# **Calibration Laboratory of**

PC Test

Client

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland

Accredited by the Swiss Accreditation Service (SAS) The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

#### Certificate No: D1750V2-1150\_Oct18

#### CALIBRATION CERTIFICATE D1750V2 - SN:1150 Object Calibration procedure(s) QA CAL-05.v10 Calibration procedure for dipole validation kits above 700 MHz BN1 10/30/2018 October 22, 2018 Calibration date: This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate. All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%. Calibration Equipment used (M&TE critical for calibration) Cal Date (Certificate No.) 1D # Scheduled Calibration Primary Standards SN: 104778 04-Apr-18 (No. 217-02672/02673) Power meter NRP Apr-19 Power sensor NRP-Z91 SN: 103244 04-Apr-18 (No. 217-02672) Apr-19 Power sensor NRP-Z91 SN: 103245 04-Apr-18 (No. 217-02673) Apr-19 Reference 20 dB Attenuator SN: 5058 (20k) 04-Apr-18 (No. 217-02682) Apr-19 Type-N mismatch combination SN: 5047.2 / 06327 04-Apr-18 (No. 217-02683) Apr-19 Dec-18 Reference Probe EX3DV4 SN: 7349 30-Dec-17 (No. EX3-7349\_Dec17)

SN: 601 Oct-19 DAE4 04-Oct-18 (No. DAE4-601\_Oct18) Secondary Standards ID # Check Date (in house) Scheduled Check SN: GB37480704 07-Oct-15 (in house check Oct-18) In house check: Oct-20 Power meter EPM-442A Power sensor HP 8481A SN: US37292783 07-Oct-15 (in house check Oct-18) In house check: Oct-20 Power sensor HP 8481A SN: MY41092317 07-Oct-15 (in house check Oct-18) In house check: Oct-20 RF generator R&S SMT-06 SN: 100972 15-Jun-15 (in house check Oct-18) In house check: Oct-20 Network Analyzer Agilent E8358A SN: US41080477 31-Mar-14 (in house check Oct-18) In house check: Oct-19 Name

 Name
 Function
 Signature

 Calibrated by:
 Michael Weber
 Laboratory Technician
 Milling

 Approved by:
 Katja Pokovic
 Technical Manager
 Issued: October 22, 2018

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



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- Swiss Calibration Service

Accreditation No.: SCS 0108

# Calibration Laboratory of

Schmid & Partner **Engineering AG** Zeughausstrasse 43, 8004 Zurich, Switzerland





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- S Swiss Calibration Service

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS) The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

## **Glossary:**

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

# Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

# Additional Documentation:

e) DASY4/5 System Handbook

# Methods Applied and Interpretation of Parameters:

- Measurement Conditions: Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL: The dipole is mounted with the spacer to position its feed • point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss: These parameters are measured with the dipole ٠ positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay: One-way delay between the SMA connector and the antenna feed point. ٠ No uncertainty required.
- SAR measured: SAR measured at the stated antenna input power.
- SAR normalized: SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

#### **Measurement Conditions**

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.10.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1750 MHz ± 1 MHz	

#### Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.1	1.37 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	38.8 ± 6 %	1.33 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

## SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.02 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	36.5 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.76 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	19.2 W/kg ± 16.5 % (k=2)

# **Body TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.4	1.49 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.5 ± 6 %	1.46 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

#### SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.04 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	36.6 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	4.82 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	19.4 W/kg ± 16.5 % (k=2)

# Appendix (Additional assessments outside the scope of SCS 0108)

#### Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.9 Ω - 0.4 jΩ
Return Loss	- 40.1 dB

#### Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.6 Ω - 0.1 jΩ
Return Loss	- 29.2 dB

#### **General Antenna Parameters and Design**

Electrical Delay (one direction)	1.217 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

#### Additional EUT Data

Manufactured by	SPEAG
Manufactured on	April 10, 2015

## **DASY5 Validation Report for Head TSL**

Date: 22.10.2018

Test Laboratory: SPEAG, Zurich, Switzerland

#### DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1150

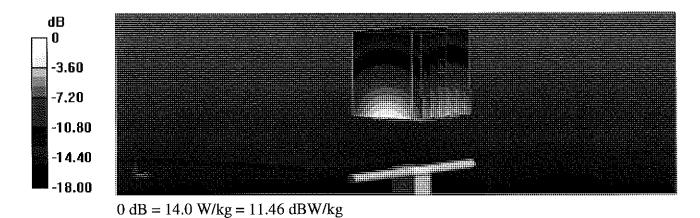
Communication System: UID 0 - CW; Frequency: 1750 MHz Medium parameters used: f = 1750 MHz;  $\sigma = 1.33$  S/m;  $\epsilon_r = 38.8$ ;  $\rho = 1000$  kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

#### DASY52 Configuration:

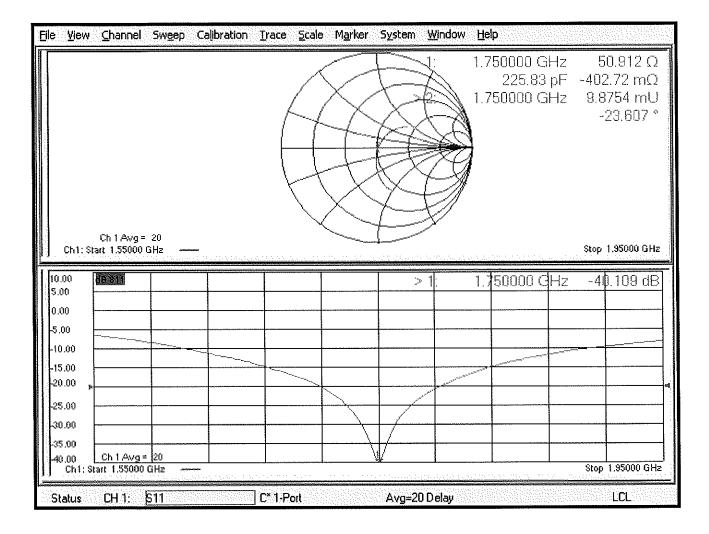
- Probe: EX3DV4 SN7349; ConvF(8.5, 8.5, 8.5) @ 1750 MHz; Calibrated: 30.12.2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electromics: DAE4 Sn601; Calibrated: 04.10.2018
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

#### Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 108.1 V/m; Power Drift = -0.09 dB Peak SAR (extrapolated) = 16.7 W/kg SAR(1 g) = 9.02 W/kg; SAR(10 g) = 4.76 W/kg Maximum value of SAR (measured) = 14.0 W/kg



## Impedance Measurement Plot for Head TSL



# **DASY5 Validation Report for Body TSL**

Date: 22.10.2018

Test Laboratory: SPEAG, Zurich, Switzerland

#### DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1150

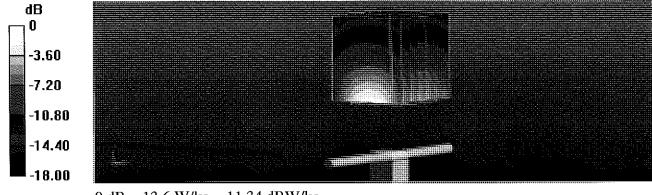
Communication System: UID 0 - CW; Frequency: 1750 MHz Medium parameters used: f = 1750 MHz;  $\sigma$  = 1.46 S/m;  $\epsilon_r$  = 53.5;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

#### DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(8.35, 8.35, 8.35) @ 1750 MHz; Calibrated: 30.12.2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.10.2018
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

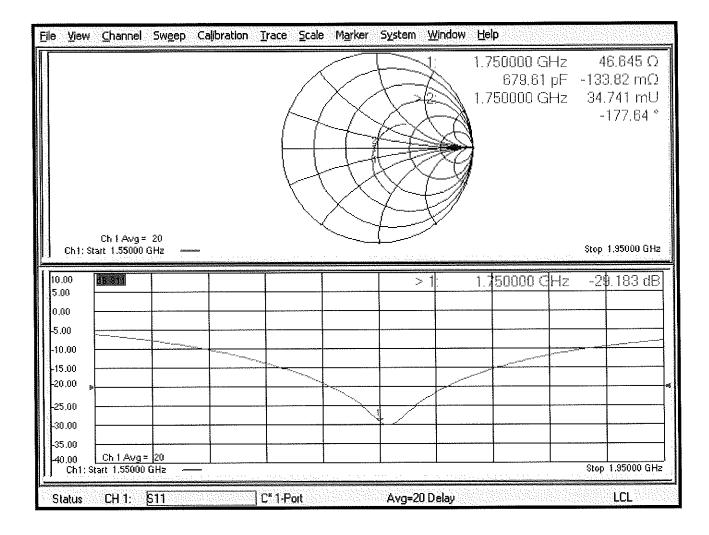
#### Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 102.1 V/m; Power Drift = -0.09 dB Peak SAR (extrapolated) = 16.0 W/kg SAR(1 g) = 9.04 W/kg; SAR(10 g) = 4.82 W/kg Maximum value of SAR (measured) = 13.6 W/kg



0 dB = 13.6 W/kg = 11.34 dBW/kg

# Impedance Measurement Plot for Body TSL



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# Accreditation No.: SCS 0108

Certificate No: D1750V2-1148\_May19

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# **CALIBRATION CERTIFICATE**

Object	D1750V2 - SN:1*	148	
Calibration procedure(s)	QA CAL-05.v11 Calibration Proce	dure for SAR Validation Sources	between 0.7-3 GHz BN <sup>V</sup> 05 <sup>-23-20</sup> 0
Calibration date:	May 15, 2019		05-23-20
The measurements and the uncerta	ainties with confidence p ed in the closed laborator	onal standards, which realize the physical uni robability are given on the following pages an ry facility: environment temperature (22 ± 3)°C	d are part of the certificate.
Calibration Equipment used (M&TE	critical for calibration)		
Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	03-Apr-19 (No. 217-02892/02893)	Apr-20
Power sensor NRP-Z91	SN: 103244	03-Apr-19 (No. 217-02892)	Apr-20
Power sensor NRP-Z91	SN: 103245	03-Apr-19 (No. 217-02893)	Apr-20
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-19 (No. 217-02894)	Apr-20
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-19 (No. 217-02895)	Apr-20
Reference Probe EX3DV4	SN: 7349	31-Dec-18 (No. EX3-7349_Dec18)	Dec-19
DAE4	SN: 601	30-Apr-19 (No. DAE4-601_Apr19)	Apr-20
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Feb-19)	In house check: Oct-20
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-18)	In house check: Oct-20
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19
	Name	Function	Signature
Calibrated by:	Leif Klysner	Laboratory Technician	Seef Align
Approved by:	Katja Pokovic	Technical Manager	fll
This calibration certificate shall not	he reproduced except in	full without written approval of the laboratory	lssued: May 15, 2019

# **Calibration Laboratory of**

Cleaser

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





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Accreditation No.: SCS 0108

Glossary:	
TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

# Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

# Additional Documentation:

e) DASY4/5 System Handbook

# Methods Applied and Interpretation of Parameters:

- Measurement Conditions: Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL: The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss: These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. • No uncertainty required.
- SAR measured: SAR measured at the stated antenna input power.
- SAR normalized: SAR as measured, normalized to an input power of 1 W at the antenna . connector.
- SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

# **Measurement Conditions**

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.10.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5.0 mm	
Frequency	1750 MHz ± 1 MHz	

#### Head TSL parameters

The following parameters and calculations were applied.

¥	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.1	1.37 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.0 ± 6 %	1.34 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

## SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.13 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	37.0 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.83 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	19.5 W/kg ± 16.5 % (k=2)

#### **Body TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.4	1.49 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.5 ± 6 %	1.47 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

#### SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.35 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	37.7 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	4.93 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	19.8 W/kg ± 16.5 % (k=2)

# Appendix (Additional assessments outside the scope of SCS 0108)

#### Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.4 Ω - 0.2 jΩ
Return Loss	- 37.0 dB

#### Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.4 Ω - 0.5 jΩ
Return Loss	- 31.4 dB

#### **General Antenna Parameters and Design**

Electrical Delay (one direction)	1.222 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

# Additional EUT Data

Manufactured by	SPEAG

# Appendix (Additional assessments outside the scope of SCS 0108)

#### **Measurement Conditions**

DASY system configuration, as far as not given on page 1 and 3.

Phantom	SAM Head Phantom	For usage with cSAR3DV2-R/L

# SAR result with SAM Head (Top)

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.38 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	37.9 W/kg ± 17.5 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.04 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	20.3 W/kg ± 16.9 % (k=2)

# SAR result with SAM Head (Mouth)

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.34 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	37.8 W/kg ± 17.5 % (k=2)
	· · · · · · · · · · · · · · · · · · ·	
SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL SAR measured	condition 250 mW input power	5.04 W/kg

# SAR result with SAM Head (Neck)

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.06 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	36.6 W/kg ± 17.5 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.95 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	19.9 W/kg ± 16.9 % (k=2)

#### SAR result with SAM Head (Ear)

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	7.11 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	28.7 W/kg ± 17.5 % (k=2)

SAR averaged over 10 cm $^3$ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	3.98 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	16.0 W/kg ± 16.9 % (k=2)

# **DASY5 Validation Report for Head TSL**

Date: 08.05.2019

Test Laboratory: SPEAG, Zurich, Switzerland

#### DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1148

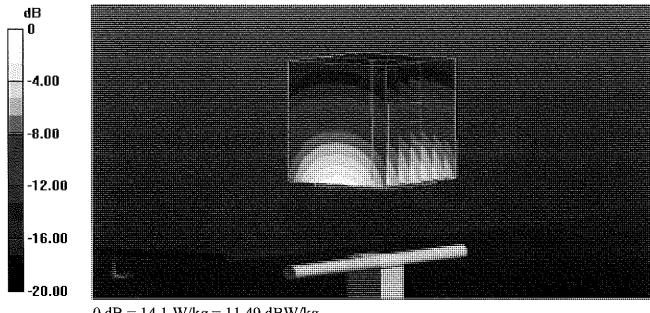
Communication System: UID 0 - CW; Frequency: 1750 MHz Medium parameters used: f = 1750 MHz;  $\sigma = 1.34$  S/m;  $\epsilon_r = 40$ ;  $\rho = 1000$  kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

#### DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(8.59, 8.59, 8.59) @ 1750 MHz; Calibrated: 31.12.2018
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.04.2019
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

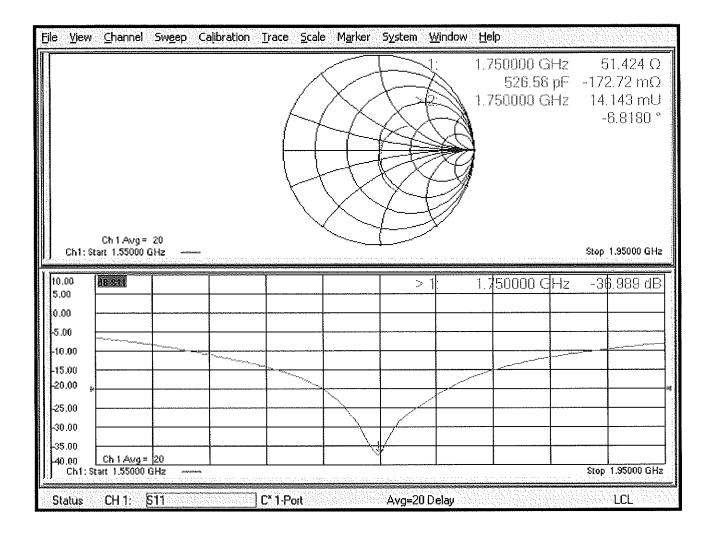
#### Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 107.8 V/m; Power Drift = -0.01 dB Peak SAR (extrapolated) = 16.7 W/kg SAR(1 g) = 9.13 W/kg; SAR(10 g) = 4.83 W/kg Maximum value of SAR (measured) = 14.1 W/kg



0 dB = 14.1 W/kg = 11.49 dBW/kg

# Impedance Measurement Plot for Head TSL



# **DASY5 Validation Report for Body TSL**

Date: 08.05.2019

Test Laboratory: SPEAG, Zurich, Switzerland

#### DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1148

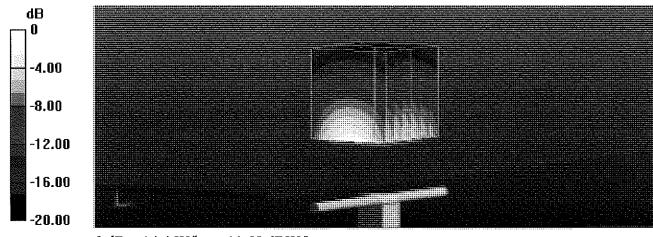
Communication System: UID 0 - CW; Frequency: 1750 MHz Medium parameters used: f = 1750 MHz;  $\sigma$  = 1.47 S/m;  $\epsilon_r$  = 53.5;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

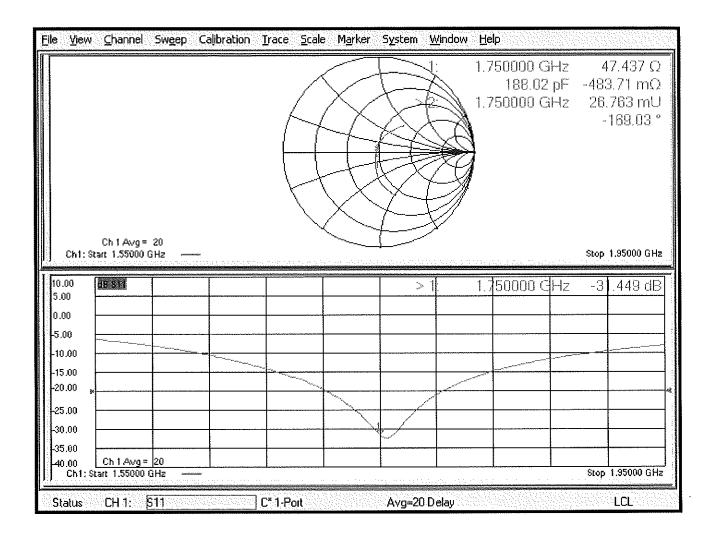
- Probe: EX3DV4 SN7349; ConvF(8.43, 8.43, 8.43) @ 1750 MHz; Calibrated: 31.12.2018
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.04.2019
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

#### Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 103.1 V/m; Power Drift = -0.04 dB Peak SAR (extrapolated) = 17.2 W/kg SAR(1 g) = 9.35 W/kg; SAR(10 g) = 4.93 W/kg Maximum value of SAR (measured) = 14.4 W/kg



0 dB = 14.4 W/kg = 11.58 dBW/kg



# **DASY5 Validation Report for SAM Head**

Date: 15.05.2019

Test Laboratory: SPEAG, Zurich, Switzerland

#### DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1148

Communication System: UID 0 - CW; Frequency: 1750 MHz Medium parameters used: f = 1750 MHz;  $\sigma$  = 1.37 S/m;  $\epsilon_r$  = 42.1;  $\rho$  = 1000 kg/m<sup>3</sup> Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

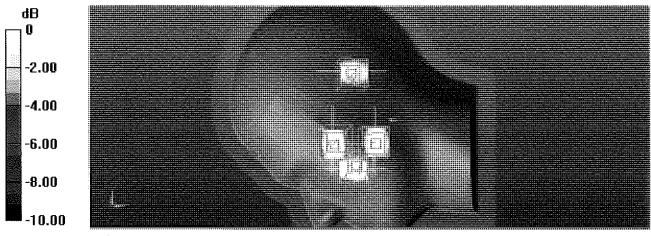
- Probe: EX3DV4 SN7349; ConvF(8.59, 8.59, 8.59) @ 1750 MHz; Calibrated: 31.12.2018
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.04.2019
- Phantom: SAM Head
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

SAM Head/Top/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 107.2 V/m; Power Drift = 0.01 dB Peak SAR (extrapolated) = 16.6 W/kg SAR(1 g) = 9.38 W/kg; SAR(10 g) = 5.04 W/kg Maximum value of SAR (measured) = 14.2 W/kg

SAM Head/Mouth/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 104.7 V/m; Power Drift = 0.02 dB Peak SAR (extrapolated) = 16.5 W/kg SAR(1 g) = 9.34 W/kg; SAR(10 g) = 5.04 W/kg Maximum value of SAR (measured) = 13.9 W/kg

SAM Head/Neck/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 103.3 V/m; Power Drift = 0.01 dB Peak SAR (extrapolated) = 15.5 W/kg SAR(1 g) = 9.06 W/kg; SAR(10 g) = 4.95 W/kg Maximum value of SAR (measured) = 13.1 W/kg

SAM Head/Ear/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 90.82 V/m; Power Drift = 0.02 dB Peak SAR (extrapolated) = 12.0 W/kg SAR(1 g) = 7.11 W/kg; SAR(10 g) = 3.98 W/kg Maximum value of SAR (measured) = 10.2 W/kg



0 dB = 10.2 W/kg = 10.09 dBW/kg

#### **Calibration Laboratory of** Schmid & Partner **Engineering AG** Zeughausstrasse 43, 8004 Zurich, Switzerland

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# Accreditation No.: SCS 0108

PC Test Client

Certificate N				

CALIBRATION	D1900V2 - SN:5d148 QA CAL-05.v11 Calibration Procedure for SAR Validation Sources between 0.7-3 GHz Van U February 21, 2019 s the traceability to national standards, which realize the physical units of measurements (SI). Inties with confidence probability are given on the following pages and are part of the certificate.
Object	D1900V2 - SN:5d148
Calibration procedure(s)	QA CAL-05.v11 Calibration Procedure for SAR Validation Sources between 0.7-3 GHz
Calibration date:	13N February 21, 2019
This calibration certificate docu The measurements and the un	ments the traceability to national standards, which realize the physical units of measurements (SI). certainties with confidence probability are given on the following pages and are part of the certificate.
All calibrations have been cond	lucted in the closed laboratory facility: environment temperature (22 $\pm$ 3)°C and humidity < 70%.
Calibration Equipment used (M	&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-18 (No. 217-02682)	Apr-19
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-18 (No. 217-02683)	Apr-19
Reference Probe EX3DV4	SN: 7349	31-Dec-18 (No. EX3-7349_Dec18)	Dec-19
DAE4	SN: 601	04-Oct-18 (No. DAE4-601_Oct18)	Oct-19
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	07-Oct-15 (in house check Feb-19)	In house check: Oct-20
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-18)	In house check: Oct-20
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19
	Name	Function	Signature
Calibrated by:	Manu Seltz	Laboratory Technician	and i
Approved by	14 D B 1 1	<u></u>	
Approved by:	Katja Pokovic	Technical Manager	J. C.U.S
			Issued: February 21, 2019
This calibration certificate shall not	be reproduced except in	full without written approval of the laboratory	

# **Calibration Laboratory of**

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





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#### Glossary:

TSL	tissue simulating liquid
IOL	<b>U</b>
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

# Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

# Additional Documentation:

e) DASY4/5 System Handbook

# Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL: The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss: These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured: SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Accreditation No.: SCS 0108

## **Measurement Conditions**

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.10.2	
Extrapolation	Advanced Extrapolation		
Phantom	Modular Flat Phantom		
Distance Dipole Center - TSL	10 mm	with Spacer	
Zoom Scan Resolution	dx, dy, dz = 5 mm		
Frequency	1900 MHz ± 1 MHz		

## Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.9 ± 6 %	1.38 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

## SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition		
SAR measured	250 mW input power	9.65 W/kg	
SAR for nominal Head TSL parameters	normalized to 1W	39.1 W/kg ± 17.0 % (k=2)	
SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition		
SAR measured	250 mW input power	5.05 W/kg	

#### **Body TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.6 ± 6 %	1.47 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

# SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.56 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	39.1 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.05 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	20.5 W/kg ± 16.5 % (k=2)

# Appendix (Additional assessments outside the scope of SCS 0108)

#### Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.8 Ω + 6.8 jΩ
Return Loss	- 23.2 dB

#### Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.4 Ω + 7.8 jΩ
Return Loss	- 21.9 dB

#### **General Antenna Parameters and Design**

Electrical Delay (one direction)	
	1.170 ns
	1370115

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

# Additional EUT Data

Manufactured by	SPEAG
	JEAG

# **DASY5 Validation Report for Head TSL**

Date: 21.02.2019

Test Laboratory: SPEAG, Zurich, Switzerland

# DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d148

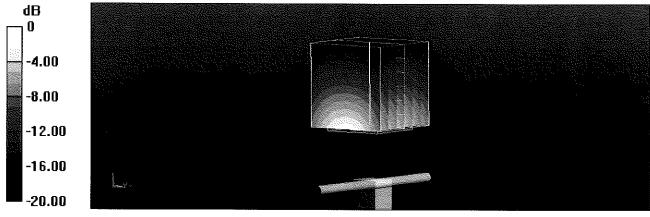
Communication System: UID 0 - CW; Frequency: 1900 MHz Medium parameters used: f = 1900 MHz;  $\sigma = 1.38$  S/m;  $\varepsilon_r = 40.9$ ;  $\rho = 1000$  kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

#### DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(8.26, 8.26, 8.26) @ 1900 MHz; Calibrated: 31.12.2018
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.10.2018
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

# Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 109.4 V/m; Power Drift = 0.01 dB Peak SAR (extrapolated) = 17.8 W/kg **SAR(1 g) = 9.65 W/kg; SAR(10 g) = 5.05 W/kg** Maximum value of SAR (measured) = 15.0 W/kg



0 dB = 15.0 W/kg = 11.76 dBW/kg

# Impedance Measurement Plot for Head TSL

<u>File Viev</u>	v <u>C</u> hannel Sw <u>e</u> e	ep Calibration <u>T</u> r	ace <u>S</u> cale M <u>a</u> r	'ker S <u>y</u> stem <u>Wi</u> ni	dow Help	
Ch1::	Ch 1 Awg = 20 Start 1.70000 GHz				1.900000 GHz 573.82 pH 1.900000 GHz	51.822 Ω 6.8503 Ω 69.458 mU 71.260 °
10.00 5.00 -5.00 -10.00 -15.00 -20.00 -25.00 -30.00 -35.00 -40.00 Ch1: 5	Ch 1 Avg = 20 3tart 1.70000 GHz				1.900000 GHz	-23.166 dB
Status	CH 1: <u>811</u>	C*-	1-Port	Avg=20 Delay		Stop 2.10000 GHz

# **DASY5 Validation Report for Body TSL**

Date: 21.02.2019

Test Laboratory: SPEAG, Zurich, Switzerland

# DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d148

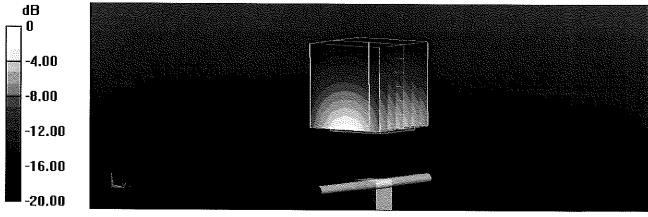
Communication System: UID 0 - CW; Frequency: 1900 MHz Medium parameters used: f = 1900 MHz;  $\sigma = 1.47$  S/m;  $\epsilon_r = 53.6$ ;  $\rho = 1000$  kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(8.23, 8.23, 8.23) @ 1900 MHz; Calibrated: 31.12.2018
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.10.2018
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

# Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 103.7 V/m; Power Drift = -0.03 dB Peak SAR (extrapolated) = 17.0 W/kg SAR(1 g) = 9.56 W/kg; SAR(10 g) = 5.05 W/kg Maximum value of SAR (measured) = 14.4 W/kg



0 dB = 14.4 W/kg = 11.58 dBW/kg

# Impedance Measurement Plot for Body TSL

File	View	<u>C</u> hannel	Sweep	Calibration	<u>Trace</u> <u>S</u> c.	ale M <u>a</u> rker	System	Window	Help			
		Ch1Avg=				XXX			1.900000 G 652.32 1.900000 G	pН	48.446 Ω 7.7874 Ω 80.412 mU 96.762 °	
		rt 1.70000 (					-4			s	top 2,10000 GHz	
10.0	no 16	THE REAL PROPERTY OF THE PROPERTY OF THE REAL PROPERTY OF THE REAL PROPERTY OF THE REAL PROPERTY OF THE REAL PROPERTY OF THE REAL PROPERTY OF THE REAL PROPERTY OF THE REAL PROPERTY OF THE REAL PROPERTY OF THE REAL PROPERTY OF THE REAL PROPERTY OF THE REAL PROPE	7			Contraction of the second second second second second second second second second second second second second s		The second second second second second second second second second second second second second second second se	The second second second second second second second second second second second second second second second s			
5.0 0.0 -5.0 -10. -15. -20. -25. -30. -35. -40. (		Ch 1 Awg = rt 1.70000 c	20 3Hz				>				-21.894 dB	

#### **Calibration Laboratory of** Schmid & Partner **Engineering AG**

Zeughausstrasse 43, 8004 Zurich, Switzerland

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Accreditation No.: SCS 0108

Client **PC Test**  Certificate No: D1900V2-5d149\_Oct18

# **CALIBRATION CERTIFICATE**

Object	D1900V2 - SN:50	1149	
Calibration procedure(s)	QA CAL-05.v10 Calibration proce	dure for dipole validation kits abo	
Calibration date:	October 23, 2018		BNV 10-30-2018
	•	onal standards, which realize the physical uni robability are given on the following pages and	
All calibrations have been conducte	ed in the closed laborato	y facility: environment temperature (22 $\pm$ 3)°C	c and humidity < 70%.
Calibration Equipment used (M&TE	E critical for calibration)		
Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-18 (No. 217-02682)	Apr-19
Type-N mismatch combination	SN: 5047,2 / 06327	04-Apr-18 (No. 217-02683)	Apr-19
Reference Probe EX3DV4	SN: 7349	30-Dec-17 (No. EX3-7349_Dec17)	Dec-18
DAE4	SN: 601	04-Oct-18 (No. DAE4-601_Oct18)	Oct-19
	1		
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-18)	In house check: Oct-20
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19
	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
			Q =
			an an an an an an an an an an an an an a
Approved by:	Katja Pokovic	Technical Manager	RIAL
			Issued: October 23, 2018
This calibration certificate shall not	be reproduced except in	I full without written approval of the laboratory.	

# **Calibration Laboratory of**

Schmid & Partner **Engineering AG** Zeughausstrasse 43, 8004 Zurich, Switzerland





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Accredited by the Swiss Accreditation Service (SAS) The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

# Glossarv:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

# Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

# Additional Documentation:

e) DASY4/5 System Handbook

# Methods Applied and Interpretation of Parameters:

- Measurement Conditions: Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL: The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss: These parameters are measured with the dipole • positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay: One-way delay between the SMA connector and the antenna feed point. • No uncertainty required.
- SAR measured: SAR measured at the stated antenna input power. •
- SAR normalized: SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the • nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Accreditation No.: SCS 0108

#### **Measurement Conditions**

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.10.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz ± 1 MHz	

#### Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.3 ± 6 %	1.40 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

# SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition		
SAR measured	250 mW input power	9.80 W/kg	
SAR for nominal Head TSL parameters	normalized to 1W	39.3 W/kg ± 17.0 % (k=2)	
SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition		
or a reading of the star (10 g) of field for	condition		
SAR measured	250 mW input power	5.11 W/kg	

#### **Body TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	52.9 ± 6 %	1.47 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

# SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.68 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	39.4 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.11 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	20.7 W/kg ± 16.5 % (k=2)

# Appendix (Additional assessments outside the scope of SCS 0108)

#### Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.9 Ω + 6.3 jΩ
Return Loss	- 23.4 dB

#### Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.5 Ω + 8.2 jΩ
Return Loss	- 21.5 dB

#### **General Antenna Parameters and Design**

Electrical Delay (one direction)	1.193 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

#### Additional EUT Data

Manufactured by	SPEAG
Manufactured on	March 11, 2011

# **DASY5 Validation Report for Head TSL**

Date: 23.10.2018

Test Laboratory: SPEAG, Zurich, Switzerland

# DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d149

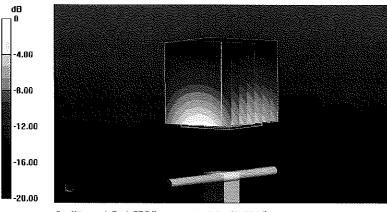
Communication System: UID 0 - CW; Frequency: 1900 MHz Medium parameters used: f = 1900 MHz;  $\sigma = 1.4$  S/m;  $\epsilon_r = 40.3$ ;  $\rho = 1000$  kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

#### DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(8.18, 8.18, 8.18) @ 1900 MHz; Calibrated: 30.12.2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.10.2018
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

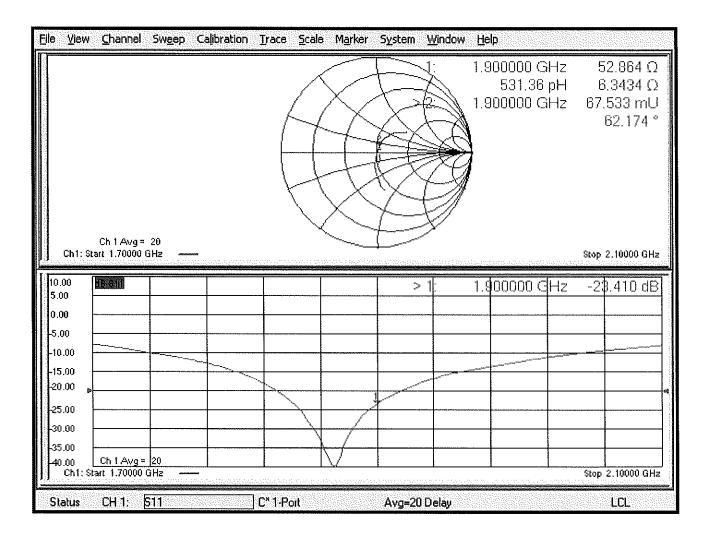
#### Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 110.0 V/m; Power Drift = -0.03 dB Peak SAR (extrapolated) = 18.5 W/kg **SAR(1 g) = 9.8 W/kg; SAR(10 g) = 5.11 W/kg** Maximum value of SAR (measured) = 15.4 W/kg



0 dB = 15.4 W/kg = 11.88 dBW/kg

# Impedance Measurement Plot for Head TSL



# **DASY5 Validation Report for Body TSL**

Date: 23.10.2018

Test Laboratory: SPEAG, Zurich, Switzerland

# DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d149

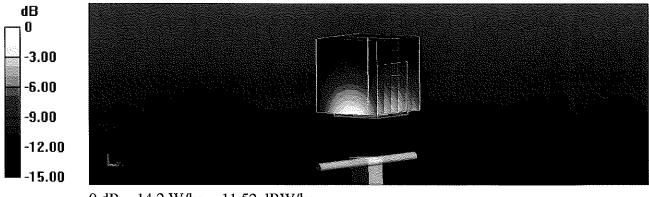
Communication System: UID 0 - CW; Frequency: 1900 MHz Medium parameters used: f = 1900 MHz;  $\sigma$  = 1.47 S/m;  $\epsilon_r$  = 52.9;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(8.15, 8.15, 8.15) @ 1900 MHz; Calibrated: 30.12.2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.10.2018
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

### Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 103.1 V/m; Power Drift = -0.03 dB Peak SAR (extrapolated) = 17.5 W/kg SAR(1 g) = 9.68 W/kg; SAR(10 g) = 5.11 W/kg Maximum value of SAR (measured) = 14.2 W/kg



0 dB = 14.2 W/kg = 11.52 dBW/kg

# Impedance Measurement Plot for Body TSL

<u>File V</u> iew	<u>Channel Swe</u> ep (	Calibration <u>T</u> race <u>S</u> cale M	arker System <u>W</u> indow <u>H</u> elp	
	Ch 1 Avg = 20		1: 1.90000 684. 1.900000	48 pH - 8.1713 Ω
Ch1: S	itart 1.70000 GHz			Stop 2.10000 GHz
10.00 5.00 -5.00 -10.00 -15.00 -20.00 -25.00 -30.00 -35.00 -40.00 Ch1: S	Ch 1 Avg = 20 tart 1.70000 GHz			CGHz -21.519 dB
Status	CH 1: 511	C* 1-Port	Avg=20 Delay	LCL

#### **Calibration Laboratory of** Schmid & Partner **Engineering AG** Zeughausstrasse 43, 8004 Zurich, Switzerland

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Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS) The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Certificate No: D2450V2-719\_Aug19

# **CALIBRATION CERTIFICATE**

Object	D2450V2 - SN:7	19	
Calibration procedure(s)	QA CAL-05.v11 Calibration Proce	dure for SAR Validation Sources b	etween 0.7-3 GHz
Calibration date:	August 14, 2019		BNW 68  20   20 9
		onal standards, which realize the physical units or robability are given on the following pages and a	
All calibrations have been conducte	ed in the closed laborato	ry facility: environment temperature (22 $\pm$ 3)°C a	nd humidity < 70%.
Calibration Equipment used (M&TE	E critical for calibration)		
Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	03-Apr-19 (No. 217-02892/02893)	Apr-20
Power sensor NRP-Z91	SN: 103244	03-Apr-19 (No. 217-02892)	Apr-20
Power sensor NRP-Z91	SN: 103245	03-Apr-19 (No. 217-02893)	Apr-20
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-19 (No. 217-02894)	Apr-20
Type-N mismatch combination	SN: 5047,2 / 06327	04-Apr-19 (No. 217-02895)	Apr-20
Reference Probe EX3DV4	SN: 7349	29-May-19 (No. EX3-7349_May19)	May-20
DAE4	SN: 601	30-Apr-19 (No. DAE4-601_Apr19)	Apr-20
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Feb-19)	In house check: Oct-20
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-18)	In house check: Oct-20
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19
Calibrated by:	Name Claudio Leubler	Function Laboratory Technician	Signature
Approved by:	Katja Pokovic	Technical Manager	tills
This calibration certificate shall not	be reproduced except in	full without written approval of the laboratory.	Issued: August 15, 2019

# **Calibration Laboratory of**

Schmid & Partner **Engineering AG** Zeughausstrasse 43, 8004 Zurich, Switzerland





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Accredited by the Swiss Accreditation Service (SAS) The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

#### Glossarv:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

### Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

### Additional Documentation:

e) DASY4/5 System Handbook

### Methods Applied and Interpretation of Parameters:

- Measurement Conditions: Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL: The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss: These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay: One-way delay between the SMA connector and the antenna feed point. • No uncertainty required.
- SAR measured: SAR measured at the stated antenna input power.
- SAR normalized: SAR as measured, normalized to an input power of 1 W at the antenna • connector.
- SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Accreditation No.: SCS 0108

### **Measurement Conditions**

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.10.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz ± 1 MHz	

### Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	37.8 ± 6 %	1.83 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

### SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.5 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	53.1 W/kg ± 17.0 % (k=2)
SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.25 W/kg

SAR measured	250 mW input power	6.25 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	24.7 W/kg ± 16.5 % (k=2)

#### **Body TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.7	<b>1</b> .95 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	50.8 ± 6 %	2.01 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

# SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	13.0 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	50.8 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.09 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	24.0 W/kg ± 16.5 % (k=2)

# Appendix (Additional assessments outside the scope of SCS 0108)

### Antenna Parameters with Head TSL

Impedance, transformed to feed point	54.6 Ω + 5.6 jΩ	
Return Loss	- 23.2 dB	

#### Antenna Parameters with Body TSL

Impedance, transformed to feed point	51.0 Ω + 8.4 jΩ	
Return Loss	- 21.6 dB	

### General Antenna Parameters and Design

Electrical Delay (one direction) 1.150 ns	

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

# Additional EUT Data

Manufactured by	SPEAG

# **DASY5 Validation Report for Head TSL**

Date: 14.08.2019

Test Laboratory: SPEAG, Zurich, Switzerland

### DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:719

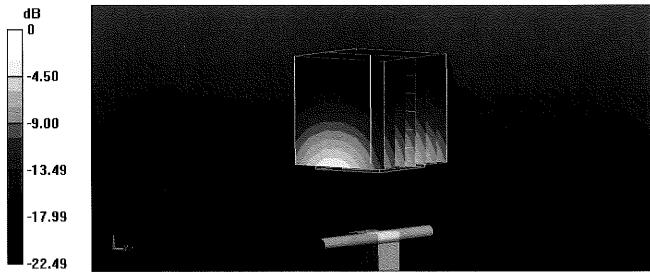
Communication System: UID 0 - CW; Frequency: 2450 MHz Medium parameters used: f = 2450 MHz;  $\sigma$  = 1.83 S/m;  $\epsilon_r$  = 37.8;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

#### DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(7.9, 7.9, 7.9) @ 2450 MHz; Calibrated: 29.05.2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.04.2019
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.2(1504); SEMCAD X 14.6.12(7470)

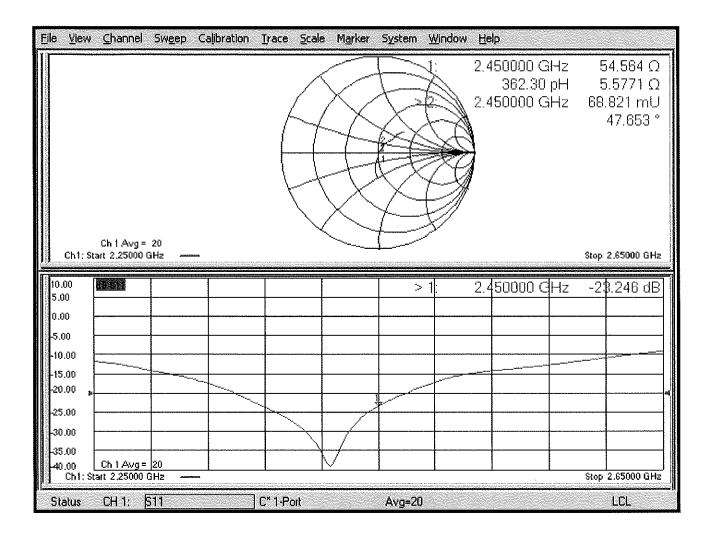
### Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 117.1 V/m; Power Drift = 0.07 dB Peak SAR (extrapolated) = 26.6 W/kg SAR(1 g) = 13.5 W/kg; SAR(10 g) = 6.25 W/kg Maximum value of SAR (measured) = 21.8 W/kg



0 dB = 21.8 W/kg = 13.38 dBW/kg

# Impedance Measurement Plot for Head TSL



# **DASY5 Validation Report for Body TSL**

Date: 14.08.2019

Test Laboratory: SPEAG, Zurich, Switzerland

#### DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:719

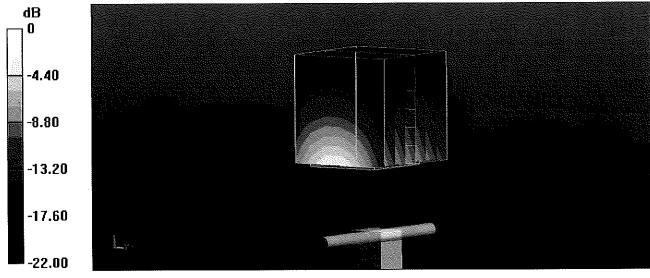
Communication System: UID 0 - CW; Frequency: 2450 MHz Medium parameters used: f = 2450 MHz;  $\sigma$  = 2.01 S/m;  $\epsilon_r$  = 50.8;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

#### DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(7.94, 7.94, 7.94) @ 2450 MHz; Calibrated: 29.05.2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.04.2019
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.2(1504); SEMCAD X 14.6.12(7470)

# Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 105.2 V/m; Power Drift = 0.03 dB Peak SAR (extrapolated) = 25.6 W/kg **SAR(1 g) = 13 W/kg; SAR(10 g) = 6.09 W/kg** Maximum value of SAR (measured) = 20.0 W/kg



0 dB = 20.0 W/kg = 13.01 dBW/kg

# Impedance Measurement Plot for Body TSL

<u>File V</u> iew	<u>C</u> hannel Sv	v <u>e</u> ep Calibratio	n <u>T</u> race <u>S</u> cale	Marker S <u>y</u> s	tem <u>W</u> indo	ow <u>H</u> elp			
Ch1: 3t2	Ch 1 Avg = 20 art 2.25000 GHz		A				0000 GHz 546.95 pH 0000 GHz	8 83. ,	1.000 Ω .4196 Ω 658 mU 78.464 °
	olouhe/weight duitestarie tugegotten ge	***************************************							
10.00					> 1;	2.45	60000 GHz	-2	.550 dB
10.00 5.00 0.00					> 1;	2.45	60000 GHz	-2	.550 dB
5.00 - 0.00 - -5.00 -					> 1;	2.45	0000 GHz	-2	.550 dB
5.00 - Q,00 -					> 1:	2.45	0000 GHz	-2	.550 dB
5.00 - 0.00 - -5.00 - -18.00 - -15.00 -					> 1:	2.45	0000 GHz	-2	.550 dB
5.00 - 0.00 - -5.00 - -10.00 - -15.00 -					> 1:	2.45	0000 GHz	-2	.550 dB
5.00 0.00 -5.00 -10.00 -15.00 -20.00 -25.00 -30.00 -35.00					> 1:	2.45	0000 GHz	-2	.550 dB
5.00 0.00 -5.00 -10.00 -15.00 -20.00 -25.00 -30.00 -35.00	Ch 1 Avg = 20 rart 2.25000 GHz				> 1:	2.45	0000 GHz		.550 dB

#### Calibration Laboratory of Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





SSchweizerlacher KallbrierdienstCService sulsse d'étalonnageSServizio svizzero di taraturaSSwiss Calibration Service

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS) The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Client PC Test

AI

Certificate No: D2450V2-797\_Sep17

Calibration date:	September 11, 20 s the traceability to nation inties with confidence put d in the closed laborator	dure for dipole validation kits about $017$ onal standards, which realize the physical un robability are given on the following pages are the physical unterpresent temperature ( $22 \pm 3$ ) of the following states of the physical s	10/03/2017 Extended PNV J/20/2018 Ills of measurements (SI). Ind are part of the certificate. Extended
This calibration certificate documents The measurements and the uncertain All calibrations have been conducted	s the traceability to nationate the second state of the second seco	ional standards, which realize the physical un robability are given on the following pages ar	
The measurements and the uncertain All calibrations have been conducted	nties with confidence p I in the closed laborator	robability are given on the following pages ar	
		ry facility: environment temperature (22 $\pm$ 3)°4	10/1/190
Calibration Equipment used (M&TE c	critical for calibration)		
Primary Standards	1D #	Cal Date (Certificate No.)	Scheduled Calibration
ower meler NRP	SN: 104778	04-Apr-17 (No. 217-02521/02522)	Apr-18
ower sensor NRP-Z91	SN: 103244	04-Apr-17 (No. 217-02521)	Apr-18
ower sensor NRP-Z91	SN: 103245	04-Apr-17 (No. 217-02522)	Apr-18
eference 20 dB Attenuator	SN: 5058 (20k)	07-Apr-17 (No. 217-02528)	Apr-18
ype-N mismatch combination	SN: 5047.2 / 06327	07-Apr-17 (No. 217-02529)	Apr-18
eference Probe EX3DV4	SN: 7349	31-May-17 (No. EX3-7349_May17)	May-18
DAE4	SN: 601	28-Mar-17 (No. DAE4-601_Mar17)	Mar-18
econdary Standards	ID#	Check Date (in house)	Scheduled Check
ower meter EPM-442A	SN: GB37480704	07-Oct-15 (In house check Oct-16)	In house check: Oct-18
1	SN: US37292783	07-Oct-15 (In house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: MY41092917	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
•	SN: 100972	15-Jun-15 (in house check Oct-16)	In house check: Oct-18
Vetwork Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-16)	In house check: Oct-17
	Name	Function	Signature
Calibrated by:	Michael Weber	Laboratory Technician	Mart
		·····	
Approved by:	Katja Pokovic	Technical Manager	Cliff
	, <sup>.</sup>	· · · · ·	

### **Calibration Laboratory of**

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





Schweizerlscher Kalibrierdienst S

- Service suisse d'étalonnage
- C Servizio svizzero di taratura
- S Swiss Calibration Service

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

#### Glossarv:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

## Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

### Additional Documentation:

e) DASY4/5 System Handbook

### Methods Applied and Interpretation of Parameters;

- Measurement Conditions: Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL: The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss: These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay: One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured: SAR measured at the stated antenna input power.
- SAR normalized: SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the ٠ nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

#### **Measurement Conditions**

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.10.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz ± 1 MHz	

# Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	37.8 ± 6 %	1.86 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

#### SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.5 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	52.7 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.28 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	24.8 W/kg ± 16.5 % (k=2)

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#### **Body TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.7	1.95 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	51.9 ± 6 %	2.04 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	18. 18. us ut	

### SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	13.1 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	51.1 W/kg ± 17.0 % (k≃2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.14 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	24.2 W/kg ± 16.5 % (k=2)

### Appendix (Additional assessments outside the scope of SCS 0108)

#### Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.8 Ω + 7.4 jΩ
Return Loss	~ 21.9 dB

#### Antenna Parameters with Body TSL

Impedance, transformed to feed point	49.7 Ω + 9.1 jΩ
Return Loss	- 20.9 dB

#### General Antenna Parameters and Design

Electrical Delay (one direction)	1.152 ns	

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

#### Additional EUT Data

Manufactured by	SPEAG
Manufactured on	January 24, 2006

### **DASY5 Validation Report for Head TSL**

Date: 11.09.2017

Test Laboratory: SPEAG, Zurich, Switzerland

#### DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 797

Communication System: UID 0 - CW; Frequency: 2450 MHz Medium parameters used: f = 2450 MHz;  $\sigma$  = 1.86 S/m;  $\epsilon_r$  = 37.8;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

#### DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(8.12, 8.12, 8.12); Calibrated: 31.05.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

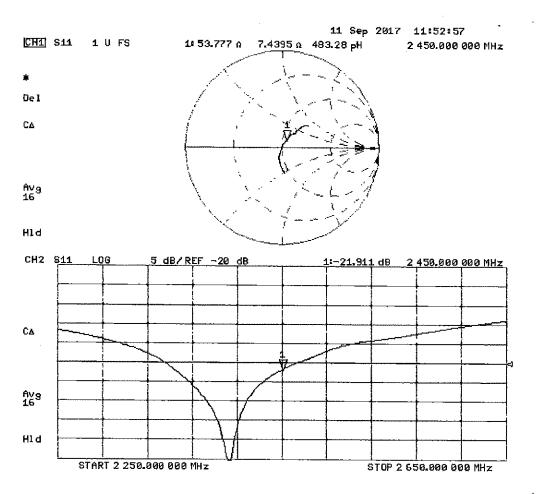
# Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 113.5 V/m; Power Drift = -0.08 dB Peak SAR (extrapolated) = 26.9 W/kg SAR(1 g) = 13.5 W/kg; SAR(10 g) = 6.28 W/kg Maximum value of SAR (measured) = 21.6 W/kg



#### 0 dB = 21.6 W/kg = 13.34 dBW/kg

Impedance Measurement Plot for Head TSL



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### **DASY5 Validation Report for Body TSL**

Date: 11.09.2017

Test Laboratory: SPEAG, Zurich, Switzerland

#### DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 797

Communication System: UID 0 - CW; Frequency: 2450 MHz Medium parameters used: f = 2450 MHz;  $\sigma$  = 2.04 S/m;  $\epsilon_r$  = 51.9;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

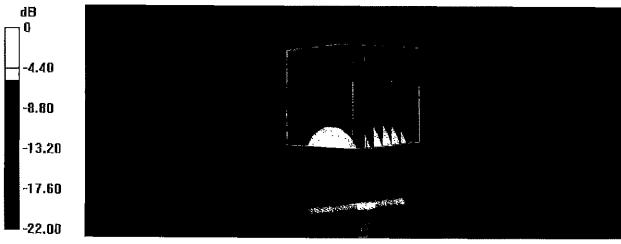
#### DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(8.1, 8.1, 8.1); Calibrated: 31.05.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

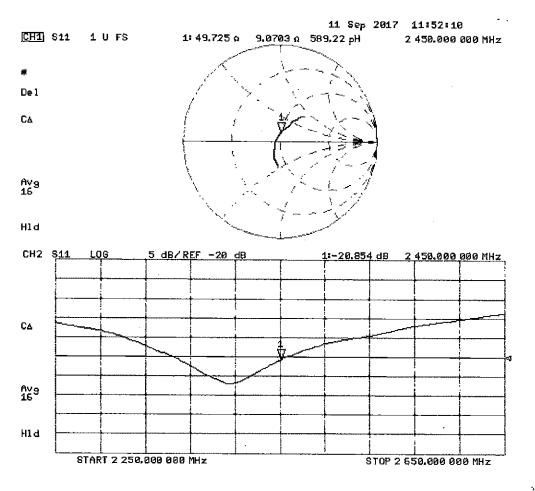
Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 105.4 V/m; Power Drift = -0.08 dB Peak SAR (extrapolated) = 25.6 W/kg SAR(1 g) = 13.1 W/kg; SAR(10 g) = 6.14 W/kg

Maximum value of SAR (measured) = 20.3 W/kg



 $0 \, dB = 20.3 \, W/kg = 13.07 \, dBW/kg$ 

Impedance Measurement Plot for Body TSL



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# **Certification of Calibration**

Object

PCTEST

D2450V2 - SN: 797

Calibration procedure(s) Procedure for Calibration Extension for SAR Dipoles.

Extended Calibration date: September 11, 2018

Description:

SAR Validation Dipole at 2450 MHz.

#### Calibration Equipment used:

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Control Company	4040	Therm./Clock/Humidity Monitor	3/31/2017	Biennial	3/31/2019	170232394
Control Company	4352	Ultra Long Stem Thermometer	5/2/2017	Biennial	5/2/2019	170330156
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433971
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Keysight	7720	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	6/4/2018	Annual	6/4/2019	MY53401181
Agilent	8753ES	S-Parameter Vector Network Analyzer	8/30/2018	Annuai	8/30/2019	MY40003841
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	СВТ	N/A
SPEAG	DAK-3,5	Dielectric Assessment Kit	5/15/2018	Annual	5/15/2019	1070
SPEAG	EX3DV4	SAR Probe	7/20/2018	Annual	7/20/2019	7410
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/11/2018	Annual	7/11/2019	1322
SPEAG	ES3DV3	SAR Probe	3/13/2018	Annual	3/13/2019	3319
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/7/2018	Annual	3/7/2019	1368
Anritsu	MA2411B	Puise Power Sensor	3/2/2018	Annual	3/2/2019	1207364
Anritsu	MA24118	Puise Power Sensor	3/2/2018	Annual	3/2/2019	1339018
Anritsu	ML2495A	Power Meter	10/22/2017	Annuəl	10/22/2018	1328004
Aglient	N5182A	MXG Vector Signal Generator	4/18/2018	Annual	4/18/2019	MY47420800
Seekonk	NC-100	Torque Wrench	7/11/2018	Annual	7/11/2019	N/A
MiniCircuits	VLF-6000+	Low Pass Filter	C8T	N/A	CBT	N/A
Narda	4014C-6	4 - 8 GHz SMA 6 dB Directional Coupler	CBT	N/A	СВТ	N/A

Note: CBT (Calibrated Before Testing). Prior to testing, the measurement paths containing a cable, amplifier, attenuator, coupler or filter were connected to a calibrated source (i.e. a signal generator) to determine the losses of the measurement path.

#### Measurement Uncertainty = $\pm 23\%$ (k=2)

	Name	Function	Signature
Calibrated By:	Brodie Halbfoster	Team Lead Engineer	BRODIE HALBFOSTER
Approved By:	Kaitlin O'Keefe	Senior Technical Manager	3KOK-

Object:	Date Issued:	Page 1 of 4
D2450V2 – SN: 797	09/11/2018	

# **DIPOLE CALIBRATION EXTENSION**

Per KDB 865664 D01, calibration intervals of up to three years may be considered for reference dipoles when it is demonstrated that the SAR target, impedance and return loss of a dipole have remained stable according to the following requirements:

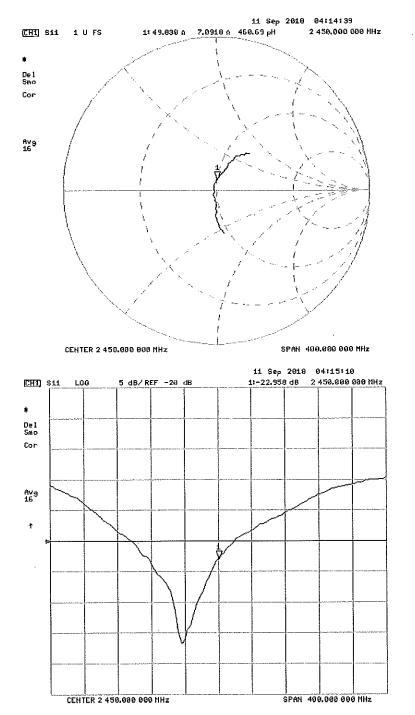
- 1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
- 2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
- 3. The measurement of real or imaginary parts of impedance does not deviate more than  $5\Omega$  from the previous measurement.

The following dipole was checked to pass the above 3 requirements to have 2-year calibration period from the calibration date:

Calibration Date	Extension Date		Certificate SAR Target Head (1g) W/kg @ 20.0 dBm			Certificate SAR Target Head (10g) W/kg @ 20.0 dBm	Head SAR		Certificate Impedance Head (Ohm) Real		Difference (Ohm) Real		Measured Impedance Head (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Head (dB)	Measured Return Loss Head (dB)	Deviation (%)	PASS/FAIL
9/11/2017	9/11/2018	1.152	5.27	5.52	4.74%	2.48	2.54	2.42%	53.8	49.8	4	7.4	7.1	0.3	-21.9	-23	-4.80%	PASS

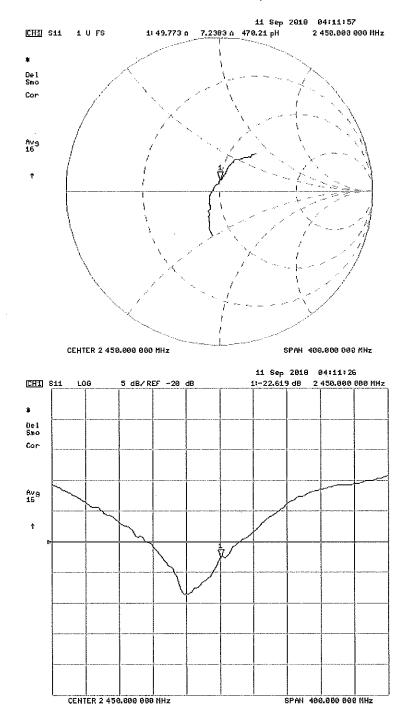
Calibration Date	Extension Date		Certificate SAR Target Body (1g) W/kg @ 20.0 dBm			Certificate SAR Target Body (10g) W/kg @ 20.0 dBm	(10a) W/ka @	Deviation 10g (%)	Certificate Impedance Body (Ohm) Real	Measured Impedance Body (Ohm) Real		Certificate Impedance Body (Ohm) Imaginary		Difference (Ohm) Imaginary	Certificate Return Loss Body (dB)	Measured Return Loss Body (dB)	Deviation (%)	PASS/FAIL
9/11/2017	9/11/2018	1.152	5.11	5.17	1.17%	2.42	2.37	-2.07%	49.7	49.8	0.1	9.1	7.2	1.9	-20.9	-22.6	-8.20%	PASS

Object:	Date Issued:	Dego 2 of 4
D2450V2 – SN: 797	09/11/2018	Page 2 of 4



Impedance & Return-Loss Measurement Plot for Head TSL

Object:	Date Issued:	Page 3 of 4
D2450V2 SN: 797	09/11/2018	



Impedance & Return-Loss Measurement Plot for Body TSL

Object:	Date Issued:	Page 4 of 4
D2450V2 – SN: 797	09/11/2018	



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# **Certification of Calibration**

Object

D2450V2 - SN: 797

Calibration procedure(s) Procedure for Calibration Extension for SAR Dipoles.

September 9, 2019

Extended Calibration date:

Description:

SAR Validation Dipole at 2450 MHz.

#### Calibration Equipment used:

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	8753ES	S-Parameter Network Analyzer	10/2/2018	Annual	10/2/2019	US39170118
Agilent	N5182A	MXG Vector Signal Generator	6/27/2019	Annual	6/27/2020	US46240505
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	343972
Anritsu	ML2495A	Power Meter	10/21/2018	Annual	10/21/2019	941001
Anritsu	MA2411B	Pulse Power Sensor	10/30/2018	Annual	10/30/2019	1207470
Anritsu	MA2411B	Pulse Power Sensor	11/20/2018	Annual	11/20/2019	1339007
Control Company	4040	Temperature / Humidity Monitor	2/28/2018	Biennial	2/28/2020	150761911
Control Company	4352	Ultra Long Stem Thermometer	2/28/2018	Biennial	2/28/2020	170330160
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	7/2/2019	Annual	7/2/2020	MY53401181
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	NC-100	Torque Wrench	5/23/2018	Biennial	5/23/2020	N/A
SPEAG	EX3DV4	SAR Probe	2/19/2019	Annual	2/19/2020	7417
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/13/2019	Annual	2/13/2020	665
SPEAG	EX3DV4	SAR Probe	7/15/2019	Annual	7/15/2020	7547
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/11/2019	Annual	7/11/2020	1323
SPEAG	DAK-3.5	Dielectric Assessment Kit	9/11/2018	Annual	9/11/2019	1091

Note: CBT (Calibrated Before Testing). Prior to testing, the measurement paths containing a cable, amplifier, attenuator, coupler or filter were connected to a calibrated source (i.e. a signal generator) to determine the losses of the measurement path.

#### Measurement Uncertainty = $\pm 23\%$ (k=2)

	Name	Function	Signature
Calibrated By:	Brodie Halbfoster	Team Lead Engineer	BRODIE HALBFOSTER
Approved By:	Kaitlin O'Keefe	Senior Technical Manager	ROK

Object:	Date Issued:	Daga 1 of 4
D2450V2 – SN: 797	09/9/2019	Page 1 of 4

# **DIPOLE CALIBRATION EXTENSION**

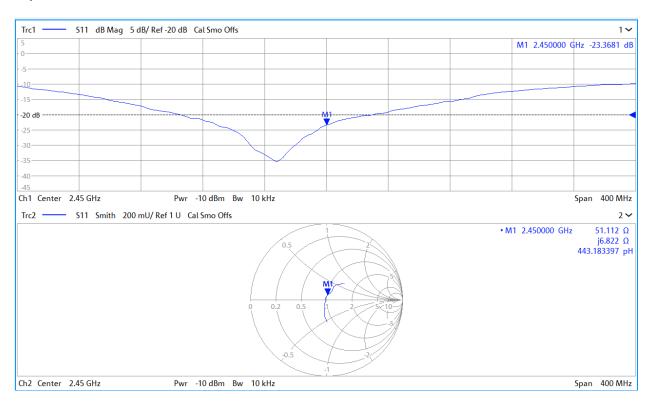
Per KDB 865664 D01, calibration intervals of up to three years may be considered for reference dipoles when it is demonstrated that the SAR target, impedance and return loss of a dipole have remained stable according to the following requirements:

- 1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
- 2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
- 3. The measurement of real or imaginary parts of impedance does not deviate more than  $5\Omega$  from the previous measurement.

The following dipole was checked to pass the above 3 requirements to have 2-year calibration period from the calibration date:

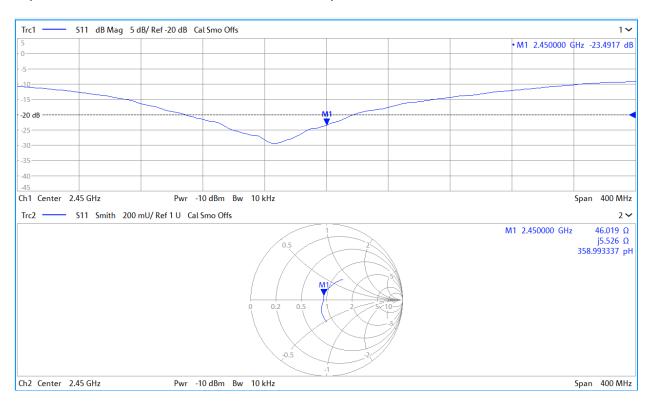
Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Head (1g) W/kg @ 20.0 dBm	Measured Head SAR (1g) W/kg @ 20.0 dBm	(96)	Certificate SAR Target Head (10g) W/kg @ 20.0 dBm	Measured Head SAR (10g) W/kg @ 20.0 dBm	Deviation 10g (%)	Certificate Impedance Head (Ohm) Real	Measured Impedance Head (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Head (Ohm) Imaginary	Measured Impedance Head (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Head (dB)	Measured Return Loss Head (dB)	Deviation (%)	PASS/FAIL
9/11/2017	9/9/2019	1.152	5.27	5.19	-1.52%	2.48	2.41	-2.82%	53.8	51.1	2.7	7.4	6.8	0.6	-21.9	-23.4	-6.70%	PASS
Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Certificate SAR Target Body (1g) W/kg @ 20.0 dBm	Measured Body SAR (1g) W/kg @ 20.0 dBm	(0/)	Certificate SAR Target Body (10g) W/kg @ 20.0 dBm	(40-) 1000-0	Deviation 10g (%)	Certificate Impedance Body (Ohm) Real	Measured Impedance Body (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Body (Ohm) Imaginary	Measured Impedance Body (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Body (dB)	Measured Return Loss Body (dB)	Deviation (%)	PASS/FAIL
9/11/2017	9/9/2019	1.152	5.11	5.17	1.17%	2.42	2.38	-1.65%	49.7	46	3.7	9.1	5.5	3.6	-20.9	-23.5	-12.40%	PASS

Object:	Date Issued:	Dogo 2 of 4
D2450V2 – SN: 797	09/9/2019	Page 2 of 4



#### Impedance & Return-Loss Measurement Plot for Head TSL

Object:	Date Issued:	Dogo 2 of 4
D2450V2 – SN: 797	09/9/2019	Page 3 of 4



### Impedance & Return-Loss Measurement Plot for Body TSL

Object:	Date Issued:	Dege 4 of 4
D2450V2 – SN: 797	09/9/2019	Page 4 of 4

# **Calibration Laboratory of**

PC Test

Client

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland



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Schweizerischer Kalibrierdienst Service suisse d'étalonnage Servizio svizzero di taratura

S Swiss Calibration Service

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS) The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Certificate No: D2450V2-981\_Aug18

# CALIBRATION CERTIFICATE

Object	D2450V2 - SN:98	31. · · ·	
Calibration procedure(s)	QA CAL-05.v10	·	
	Calibration proce	dure for dipole validation kits ab	ove 700 MHz
		· · · · · · · · · · · · · · · · · · ·	BNV 09-26/2012 BNV 08/10/201
	••••	the second second second second second second second second second second second second second second second s	09-06/2012
Calibration date:	August 16, 2018	· · · · · · ·	01-01-
			RNV
This calibration certificate docume	nts the traceability to pati	onal standards, which realize the physical un	08/10/24
The measurements and the uncert	ainties with contidence p	robobility or given an the falls in	
	andes with competice p	robability are given on the following pages a	nd are part of the certificate.
All calibrations have been conduct	and for the second second second second second second second second second second second second second second s	-	
An canonations have been conduct	ed in the closed laborator	y facility: environment temperature (22 $\pm$ 3)°	C and humidity < 70%.
Calibration Equipment used (M&TE	E critical for calibration)		
	1		
Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-18 (No. 217-02682)	Apr-19
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-18 (No. 217-02683)	Apr-19
Reference Probe EX3DV4	SN: 7349	30-Dec-17 (No. EX3-7349_Dec17)	Dec-18
DAE4	SN: 601	26-Oct-17 (No. DAE4-601_Oct17)	Oct-18
	•		
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-16)	
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-16)	In house check: Oct-18 In house check: Oct-18
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-16)	In house check: Oct-18
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-17)	In house check: Oct-18
			In nouse check, Ock-18
	Name	Function	Signature
Calibrated by:	Leif Klysner	Laboratory Technician	
	- 		Sel The
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Approved by:	Katja Pokovic	Technical Manager	111
			Coldan 1
	•	· · ·	
			included Automation Constant
			Issued: August 23, 2018

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

# Calibration Laboratory of

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





Schweizerischer Kalibrierdienst

S Service suisse d'étalonnage С

Servizio svizzero di taratura

S Swiss Calibration Service

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS) The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

### Glossarv:

TSL ConvF N/A	tissue simulating liquid sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

# Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

# Additional Documentation:

e) DASY4/5 System Handbook

# Methods Applied and Interpretation of Parameters:

- Measurement Conditions: Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL: The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss: These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay: One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured: SAR measured at the stated antenna input power.
- SAR normalized: SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

# **Measurement Conditions**

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5.0 mm	
Frequency	2450 MHz ± 1 MHz	

### Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	37.7 ± 6 %	1.86 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

# SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.4 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	52.3 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.20 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	24.4 W/kg ± 16.5 % (k=2)

# Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.7	1.95 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	51.8 ± 6 %	2.02 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

# SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	13.0 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	50.9 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.11 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	24.2 W/kg ± 16.5 % (k=2)

# Appendix (Additional assessments outside the scope of SCS 0108)

#### Antenna Parameters with Head TSL

Impedance, transformed to feed point	55.0 Ω + 2.3 jΩ
Return Loss	- 25.6 dB

#### Antenna Parameters with Body TSL

Impedance, transformed to feed point	50.2 Ω + 4.7 jΩ
Return Loss	- 26.6 dB

#### General Antenna Parameters and Design

Electrical Delay (one direction)	1.162 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

### Additional EUT Data

Manufactured by	SPEAG	
Manufactured on	December 30, 2014	

# Appendix (Additional assessments outside the scope of SCS 0108)

# **Measurement Conditions**

DASY system configuration, as far as not given on page 1 and 3.

Phantom		
Filantom	SAM Head Phantom	For usage with cSAR3DV2-R/L
		TO USAGE WILL COARSDVZ-R/L

# SAR result with SAM Head (Top)

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.6 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	54.0 W/kg ± 17.5 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.33 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	25.2 W/kg ± 16.9 % (k=2)

# SAR result with SAM Head (Mouth)

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.6 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	54.0 W/kg ± 17.5 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.35 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	25.3 W/kg ± 16.9 % (k=2)

# SAR result with SAM Head (Neck)

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	12.9 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	51.2 W/kg ± 17.5 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.11 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	24.4 W/kg ± 16.9 % (k=2)

# SAR result with SAM Head (Ear)

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	8.74 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	34.7 W/kg ± 17.5 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.40 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	17.5 W/kg ± 16.9 % (k=2)

# **DASY5 Validation Report for Head TSL**

Date: 13.08.2018

Test Laboratory: SPEAG, Zurich, Switzerland

# DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:981

Communication System: UID 0 - CW; Frequency: 2450 MHz Medium parameters used: f = 2450 MHz;  $\sigma$  = 1.86 S/m;  $\epsilon_r$  = 37.7;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

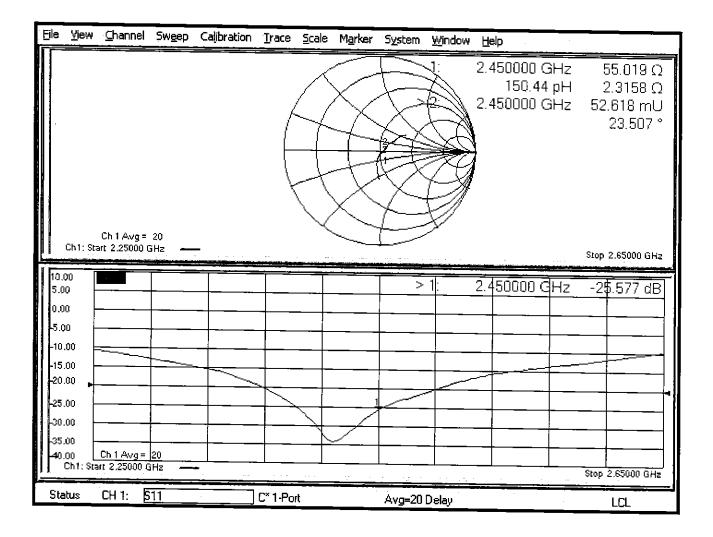
- Probe: EX3DV4 SN7349; ConvF(7.88, 7.88, 7.88) @ 2450 MHz; Calibrated: 30.12.2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.1(1476); SEMCAD X 14.6.11(7439)

# Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 116.6 V/m; Power Drift = -0.03 dB Peak SAR (extrapolated) = 26.7 W/kg SAR(1 g) = 13.4 W/kg; SAR(10 g) = 6.2 W/kg Maximum value of SAR (measured) = 22.1 W/kg



0 dB = 22.1 W/kg = 13.44 dBW/kg



# **DASY5 Validation Report for Body TSL**

Date: 13.08.2018

Test Laboratory: SPEAG, Zurich, Switzerland

# DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:981

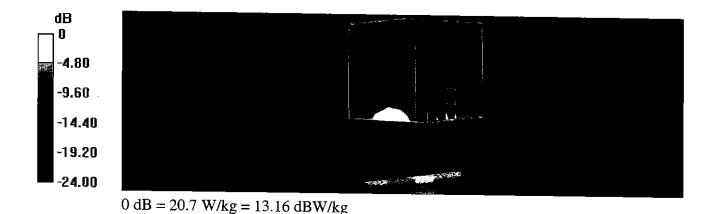
Communication System: UID 0 - CW; Frequency: 2450 MHz Medium parameters used: f = 2450 MHz;  $\sigma$  = 2.02 S/m;  $\epsilon_r$  = 51.8;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

#### DASY52 Configuration:

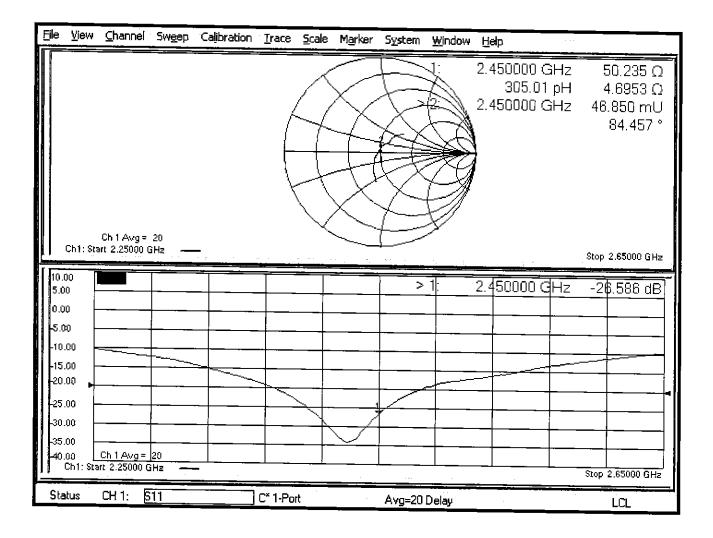
- Probe: EX3DV4 SN7349; ConvF(8.01, 8.01, 8.01) @ 2450 MHz; Calibrated: 30.12.2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.1(1476); SEMCAD X 14.6.11(7439)

# Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 107.0 V/m; Power Drift = -0.08 dB Peak SAR (extrapolated) = 25.3 W/kg SAR(1 g) = 13 W/kg; SAR(10 g) = 6.11 W/kg Maximum value of SAR (measured) = 20.7 W/kg



# Impedance Measurement Plot for Body TSL



Date: 16.08.2018

Test Laboratory: SPEAG, Zurich, Switzerland

# DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:981

Communication System: UID 0 - CW ; Frequency: 2450 MHz Medium parameters used: f = 2450 MHz;  $\sigma = 1.85$  S/m;  $\epsilon_r = 40.2$ ;  $\rho = 1000$  kg/m<sup>3</sup> Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

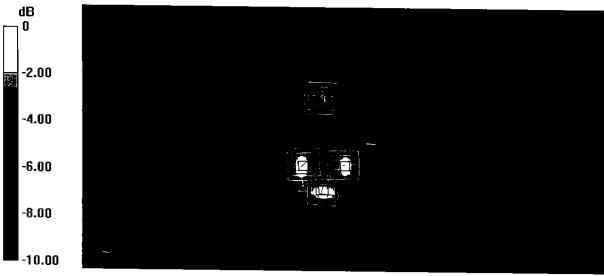
- Probe: EX3DV4 SN7349; ConvF(7.88, 7.88, 7.88) @ 2450 MHz; Calibrated: 30.12.2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: SAM Head
- DASY52 52.10.1(1476); SEMCAD X 14.6.11(7439)

SAM Head Top/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 116.2 V/m; Power Drift = 0.00 dB Peak SAR (extrapolated) = 26.4 W/kg SAR(1 g) = 13.6 W/kg; SAR(10 g) = 6.33 W/kg Maximum value of SAR (measured) = 22.0 W/kg

SAM Head Mouth/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 116.9 V/m; Power Drift = 0.01 dB Peak SAR (extrapolated) = 26.3 W/kg SAR(1 g) = 13.6 W/kg; SAR(10 g) = 6.35 W/kg Maximum value of SAR (measured) = 21.7 W/kg

SAM Head Neck/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 112.0 V/m; Power Drift = 0.03 dB Peak SAR (extrapolated) = 24.1 W/kg SAR(1 g) = 12.9 W/kg; SAR(10 g) = 6.11 W/kg Maximum value of SAR (measured) = 20.5 W/kg

SAM Head Ear/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 91.03 V/m; Power Drift = -0.01 dB Peak SAR (extrapolated) = 15.8 W/kg SAR(1 g) = 8.74 W/kg; SAR(10 g) = 4.4 W/kg Maximum value of SAR (measured) = 13.5 W/kg



0 dB = 22.0 W/kg = 13.42 dBW/kg



PCTEST ENGINEERING LABORATORY, INC. 7185 Oakland Mills Road, Columbia, MD 21046 USA Tel. +1.410.290.6652 / Fax +1.410.290.6654

http://www.pctest.com



# **Certification of Calibration**

Object

D2450V2 - SN: 981

08/09/2019

Calibration procedure(s)

Procedure for Calibration Extension for SAR Dipoles.

Calibration date:

Description:

SAR Validation Dipole at 2450 MHz.

### Calibration Equipment used:

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	8753ES	S-Parameter Network Analyzer	10/2/2018	Annual	10/2/2019	US39170118
Agilent	N5182A	MXG Vector Signal Generator	6/27/2019	Annual	6/27/2020	US46240505
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	343972
Anritsu	ML2495A	Power Meter	10/21/2018	Annual	10/21/2019	941001
Anritsu	MA2411B	Pulse Power Sensor	10/30/2018	Annual	10/30/2019	1207470
Anritsu	MA2411B	Pulse Power Sensor	11/20/2018	Annual	11/20/2019	1339007
Control Company	4040	Temperature / Humidity Monitor	2/28/2018	Biennial	2/28/2020	150761911
Control Company	4352	Ultra Long Stem Thermometer	2/28/2018	Biennial	2/28/2020	170330160
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	7/2/2019	Annual	7/2/2020	MY53401181
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	NC-100	Torque Wrench	5/23/2018	Biennial	5/23/2020	N/A
SPEAG	EX3DV4	SAR Probe	2/19/2019	Annual	2/19/2020	7417
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/13/2019	Annual	2/13/2020	665
SPEAG	EX3DV4	SAR Probe	7/15/2019	Annual	7/15/2020	7547
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/11/2019	Annual	7/11/2020	1323
SPEAG	DAK-3.5	Dielectric Assessment Kit	9/11/2018	Annual	9/11/2019	1091

Measurement Uncertainty = ±23% (k=2)

	Name	Function	Signature
Calibrated By:	Brodie Halbfoster	Test Engineer	BRODIE HALBFOSTER
Approved By:	Kaitlin O'Keefe	Senior Technical Manager	ROK

Object:	Date Issued:	Page 1 of 4
D2450V2 – SN: 981	08/09/2019	Page 1 of 4

# **DIPOLE CALIBRATION EXTENSION**

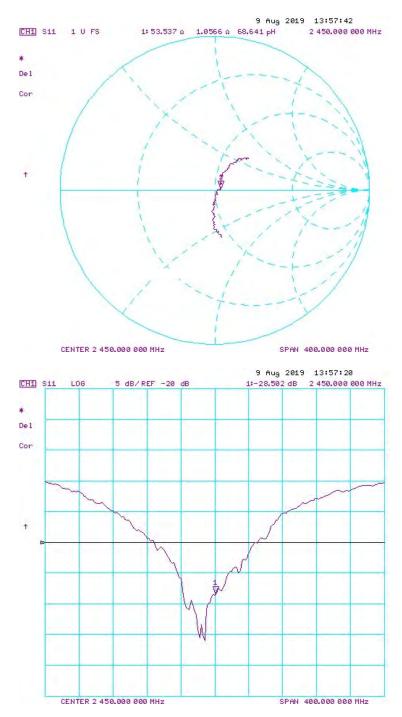
Per KDB 865664 D01, calibration intervals of up to three years may be considered for reference dipoles when it is demonstrated that the SAR target, impedance and return loss of a dipole have remained stable according to the following requirements:

- 1. The measured SAR does not deviate more than 10% from the target on the calibration certificate.
- 2. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
- 3. The measurement of real or imaginary parts of impedance does not deviate more than  $5\Omega$  from the previous measurement.

The following dipole was checked to pass the above 3 requirements to have 2-year calibration period from the calibration date:

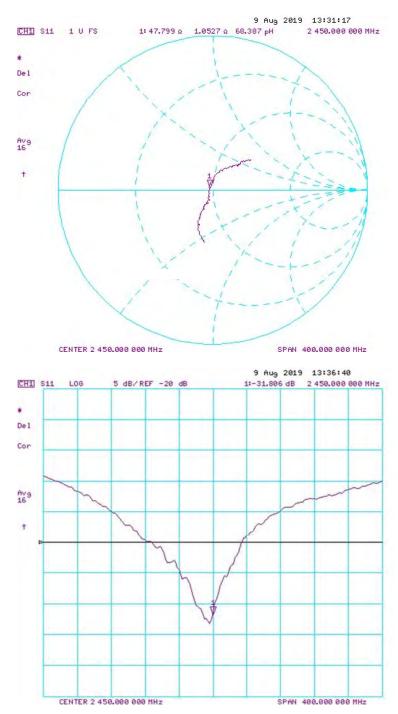
Calibration Date	Extension Date	Certificate Electrical Delay (ns)	Head (1g) W/kg @ 20.0 dBm	ubiii	(%)	dBm	(10g) W/kg @ 20.0 dBm		Head (Ohm) Real	Measured Impedance Head (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Head (Ohm) Imaginary	Measured Impedance Head (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Head (dB)	Head (dB)	Deviation (%)	
8/16/2018	8/9/2019	1.162	5.23	5.53	5.74%	2.44	2.56	4.92%	55	53.5	1.5	2.3	1.1	1.2	-25.6	-28.5	-11.30%	PASS
Calibration Date	Extension Date	Certificate Electrical Delay (ns)		Measured Body SAR (1g) W/kg @ 20.0 dBm	Deviation 1g (%)	Certificate SAR Target Body (10g) W/kg @ 20.0 dBm	Measured Body SAR (10g) W/kg @ 20.0 dBm	Deviation 10g (%)	Certificate Impedance Body (Ohm) Real	Measured Impedance Body (Ohm) Real	Difference (Ohm) Real	Certificate Impedance Body (Ohm) Imaginary	Measured Impedance Body (Ohm) Imaginary	Difference (Ohm) Imaginary	Certificate Return Loss Body (dB)	Measured Return Loss Body (dB)	Deviation (%)	PASS/FAIL
8/16/2018	8/9/2019	1.162	5.09	4.98	-2.16%	2.42	2.28	-5.79%	50.2	47.8	2.4	4.7	1.1	3.6	-26.6	-31.8	-19.60%	PASS

Object:	Date Issued:	Page 2 of 4
D2450V2 – SN: 981	08/09/2019	Page 2 of 4



Impedance & Return-Loss Measurement Plot for Head TSL

Object:	Date Issued:	Daga 2 of 4
D2450V2 – SN: 981	08/09/2019	Page 3 of 4



Impedance & Return-Loss Measurement Plot for Body TSL

Object:	Date Issued:	Daga 4 of 4
D2450V2 – SN: 981	08/09/2019	Page 4 of 4

#### **Calibration Laboratory of** Schmid & Partner **Engineering AG** Zeughausstrasse 43, 8004 Zurich, Switzerland



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#### Accreditation No.: SCS 0108

Client

lient PC Test		Certifi	cate No: D2600V2-1126_Aug19
ALIBRATION C	ERTIFICATE		
Dbject	D2600V2 - SN:1*	126	
Calibration procedure(s)	QA CAL-05.v11 Calibration Proce	dure for SAR Validation So	
Calibration date:	August 14, 2019		BNV 08/30/20
		onal standards, which realize the phy robability are given on the following p	
All calibrations have been conducte	ed in the closed laborato	ry facility: environment temperature (2	22 ± 3)°C and humidity < 70%.
Calibration Equipment used (M&TE	E critical for calibration)		
Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	03-Apr-19 (No. 217-02892/02893)	Apr-20
Power sensor NRP-Z91	SN: 103244	03-Apr-19 (No. 217-02892)	Apr-20
Power sensor NRP-Z91	SN: 103245	03-Apr-19 (No. 217-02893)	Apr-20
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-19 (No. 217-02894)	Apr-20
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-19 (No. 217-02895)	Apr-20
Reference Probe EX3DV4	SN: 7349	29-May-19 (No. EX3-7349_May19)	May-20
DAE4	SN: 601	30-Apr-19 (No. DAE4-601_Apr19)	Apr-20
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Feb-19	) In house check: Oct-20
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-18)	in house check: Oct-20
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-18)	In house check: Oct-20
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18	) In house check: Oct-19
	Name	Function	Signature_ (
Calibrated by:	Claudio Leubler	Laboratory Technician	
-			UCI
Approved by:	Katja Pokovic	Technical Manager	

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

LE I

# **Calibration Laboratory of**

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





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S Swiss Calibration Service

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS) The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

#### **Glossarv:**

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

# Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

# Additional Documentation:

e) DASY4/5 System Handbook

# Methods Applied and Interpretation of Parameters:

- Measurement Conditions: Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL: The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss: These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay: One-way delay between the SMA connector and the antenna feed point. • No uncertainty required.
- SAR measured: SAR measured at the stated antenna input power.
- SAR normalized: SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

#### **Measurement Conditions**

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.10.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2600 MHz ± 1 MHz	

# Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.0	1.96 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	37.3 ± 6 %	2.00 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

## SAR result with Head TSL

SAR averaged over 1 $cm^3$ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	14.4 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	56.5 W/kg ± 17.0 % (k=2)
SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.41 W/kg

#### **Body TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.5	2.16 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	50.4 ± 6 %	2.19 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

# SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	13.8 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	54.3 W/kg ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.14 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	24.3 W/kg ± 16.5 % (k=2)

# Appendix (Additional assessments outside the scope of SCS 0108)

### Antenna Parameters with Head TSL

Impedance, transformed to feed point	48.3 Ω - 7.2 jΩ
Return Loss	- 22.5 dB

#### Antenna Parameters with Body TSL

Impedance, transformed to feed point	45.3 Ω - 5.5 jΩ
Return Loss	- 22.4 dB

#### **General Antenna Parameters and Design**

Electrical Delay (one direction)	1.155 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

# Additional EUT Data

_		
	Manufactured by	SPEAG

# **DASY5 Validation Report for Head TSL**

Date: 14.08.2019

Test Laboratory: SPEAG, Zurich, Switzerland

#### DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN:1126

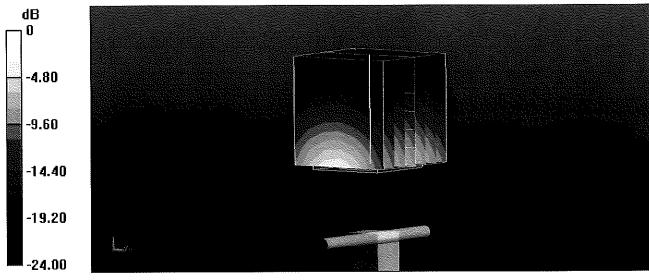
Communication System: UID 0 - CW; Frequency: 2600 MHz Medium parameters used: f = 2600 MHz;  $\sigma$  = 2 S/m;  $\epsilon_r$  = 37.3;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

#### DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(7.69, 7.69, 7.69) @ 2600 MHz; Calibrated: 29.05.2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.04.2019
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.2(1504); SEMCAD X 14.6.12(7470)

# Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 118.5 V/m; Power Drift = 0.07 dB Peak SAR (extrapolated) = 29.0 W/kg SAR(1 g) = 14.4 W/kg; SAR(10 g) = 6.41 W/kg Maximum value of SAR (measured) = 23.8 W/kg



0 dB = 23.8 W/kg = 13.77 dBW/kg

# Impedance Measurement Plot for Head TSL

<u>File View Channel Sweep</u>	Calibration Trace Scale M	arker System <u>W</u> indov	√ <u>H</u> elp	
Ch 1 Avg = 20			2.600000 GHz 8.4707 pF 2.600000 GHz	48.290 Ω -7.2265 Ω 75.350 mU -99.111 °
Ch1: Start 2.40000 GHz				Stop 2.80000 GHz
10.00 <b>19.01</b> 5.00 0.00		> 1;	2.800000 GHz	-22.458 dB
-5.00				
-10.00				Stop 2.80000 GHz

# **DASY5 Validation Report for Body TSL**

Date: 14.08.2019

Test Laboratory: SPEAG, Zurich, Switzerland

### DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN:1126

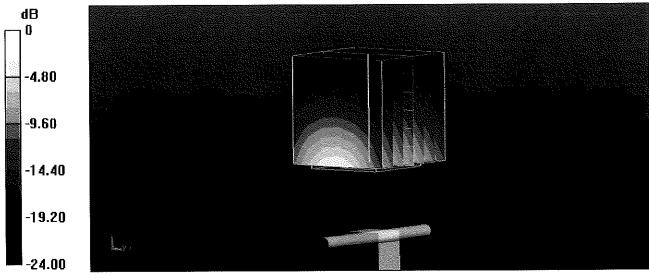
Communication System: UID 0 - CW; Frequency: 2600 MHz Medium parameters used: f = 2600 MHz;  $\sigma$  = 2.19 S/m;  $\epsilon_r$  = 50.4;  $\rho$  = 1000 kg/m<sup>3</sup> Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

#### DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(7.8, 7.8, 7.8) @ 2600 MHz; Calibrated: 29.05.2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.04.2019
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.2(1504); SEMCAD X 14.6.12(7470)

# Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 109.3 V/m; Power Drift = 0.09 dB Peak SAR (extrapolated) = 28.2 W/kg SAR(1 g) = 13.8 W/kg; SAR(10 g) = 6.14 W/kg Maximum value of SAR (measured) = 22.9 W/kg



0 dB = 22.9 W/kg = 13.60 dBW/kg

# Impedance Measurement Plot for Body TSL

<u>File V</u> iew	<u>C</u> hannel S	Sweep Ca	ibration <u>T</u>	race <u>S</u> cal	e M <u>a</u> rker	System \	<u>N</u> indow	<u>H</u> elp	Grant		
Ch1: S	Ch 1 Avg = 2 tart 2,40000 GH			A			$\mathcal{A}$	2.600000 G 11.131 2.600000 G	рF	-5. 76.1 -1	5.256 Ω 4993 Ω 115 mU 27.48 °
Sectors (1945) And (1945)	artaria antigana antigan da antigan da antigan da antigan da antigan da antigan da antigan da antigan da antig			The DOTT IS SO IN THE PARTY OF A 19		And the second se	054.000524/20234/00-0244	en er overlet en gen og en offerer en een		anadamanan padala	
10.00						> 1		2.000000	Hz	-22	.371 dB
10.00 5.00 0.00						> 1		2.600000 C	Hz	-22.	.371 dB
5.00 0.00 -5.00						> 1		2.800000 C	Hz	-22.	371 dB
5.00 0.00 -5.00 -10.00			······································					2.600000 C	Hz	-22.	371 dB
5.00 0.00 -5.00			······································					2.600000 C	Hz	-22.	371 dB
5.00 0.00 -5.00 -10.00 -15.00								2.600000 C	Hz	-22.	371 dB
5.00 0.00 -5.00 -10.00 -15.00 -20.00 -25.00 -30.00								2.600000 C	Hz	-22.	371 dB
5.00 0.00 -5.00 -10.00 -15.00 -20.00 -25.00 -30.00 -35.00 -40.00		0						2.600000 C	Hz		
5.00 0.00 -5.00 -10.00 -15.00 -20.00 -25.00 -30.00 -35.00 -40.00	Ch 1 Avg = 2 tart 2.40000 GF	0 12						2.600000 C			.371 dB



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 S Swiss Calibration Service

Issued: January 18, 2018

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS) The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

**CALIBRATION CERTIFICATE** 

Client PC Test

Certificate No: D5GHzV2-1057\_Jan18

Object	D5GHzV2 - SN:1	057	
Calibration procedure(s)	QA CAL-22.v2 Calibration proce	dure for dipole validation kits bet	ween 3-6 GHz
			BN
Calibration date:	January 16, 2018	3	01-25-2018
The measurements and the unce	rtaintles with confidence p	ional standards, which realize the physical un robability are given on the following pages ar	nd are part of the certificate. $02.06$
All calibrations have been conduc Calibration Equipment used (M&1		ry facility: environment temperature (22 $\pm$ 3)°(	C and humidity < 70%.
Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-17 (No. 217-02521/02522)	Apr-18
Power sensor NRP-Z91	SN: 103244	04-Apr-17 (No. 217-02521)	Apr-18
Power sensor NRP-Z91	SN: 103245	04-Apr-17 (No. 217-02522)	Apr-18
Reference 20 dB Atlenuator	SN: 5058 (20k)	07-Apr-17 (No. 217-02528)	Apr-18
Type-N mismatch combination	SN: 5047.2 / 06327	07-Apr-17 (No. 217-02529)	Apr-18
Reference Probe EX3DV4	SN: 3503	30-Dec-17 (No. EX3-3503_Dec17)	Dec-18
	••••	26-Oct-17 (No. DAE4-601_Oct17)	Oct-18
DAE4	SN: 601	20-00177 (NO. DAE4-001_0017)	
DAE4	SN: 601   ID #	/	
DAE4	1	Check Date (in house)	Scheduled Check
DAE4 Secondary Standards	1D #	Check Date (in house) 07-Oct-15 (in house check Oct-16)	Scheduled Check In house check: Oct-18
DAE4 Secondary Standards Power meter EPM-442A	ID # SN: GB37490704	Check Date (in house)	Scheduled Check In house check: Oct-18 In house check: Oct-18
DAE4 Secondary Standards Power meter EPM-442A Power sensor HP 8481A Power sensor HP 8481A	ID # SN: GB37480704 SN: US37292783	Check Date (in house) 07-Oct-15 (in house check Oct-16) 07-Oct-15 (in house check Oct-16)	Scheduled Check In house check: Oct-18
DAE4 Secondary Standards Power meter EPM-442A Power sensor HP 8481A	ID # SN: GB37480704 SN: US37292783 SN: MY41092317	Check Date (in house) 07-Oct-15 (in house check Oct-16) 07-Oct-15 (in house check Oct-16) 07-Oct-15 (in house check Oct-16)	Scheduled Check In house check: Oct-18 In house check: Oct-18 In house check: Oct-18
DAE4 Secondary Standards Power meter EPM-442A Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06 Network Analyzer HP 8753E	ID # SN: GB37480704 SN: US37292783 SN: MY41092317 SN: 100972 SN: US37390585 Name	Check Date (in house) 07-Oct-15 (in house check Oct-16) 07-Oct-15 (in house check Oct-16) 07-Oct-15 (in house check Oct-16) 15-Jun-15 (in house check Oct-16) 18-Oct-01 (in house check Oct-17) Function	Scheduled Check In house check: Oct-18 In house check: Oct-18 In house check: Oct-18 In house check: Oct-18 In house check: Oct-18
DAE4 Secondary Standards Power meter EPM-442A Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06	ID # SN: GB37480704 SN: US37292783 SN: MY41092317 SN: 100972 SN: US37390585	Check Date (in house) 07-Oct-15 (in house check Oct-16) 07-Oct-15 (in house check Oct-16) 07-Oct-15 (in house check Oct-16) 15-Jun-15 (in house check Oct-16) 18-Oct-01 (in house check Oct-17)	Scheduled Check In house check: Oct-18 In house check: Oct-18 In house check: Oct-18 In house check: Oct-18 In house check: Oct-18

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: D5GHzV2-1057\_Jan18

# **Calibration Laboratory of**

Schmid & Partner **Engineering AG** Zeughausstrasse 43, 8004 Zurich, Switzerland





Schweizerischer Kalibrierdienst

- S Service sulsse d'étalonnage
- С Servizio svizzero di taratura
- S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS) The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

# **Glossary:**

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

# **Calibration is Performed According to the Following Standards:**

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

# Additional Documentation:

e) DASY4/5 System Handbook

# Methods Applied and Interpretation of Parameters:

- Measurement Conditions: Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL: The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss: These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured: SAR measured at the stated antenna input power.
- SAR normalized: SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Accreditation No.: SCS 0108

# **Measurement Conditions**

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.10.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = $4.0$ mm, dz = $1.4$ mm	Graded Ratio = 1.4 (Z direction)
Frequency	5200 MHz ± 1 MHz 5250 MHz ± 1 MHz 5600 MHz ± 1 MHz 5750 MHz ± 1 MHz 5800 MHz ± 1 MHz	

Head TSL parameters at 5250 MHz The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.9	4.71 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	36.2 ± 6 %	4.55 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

# SAR result with Head TSL at 5250 MHz

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.91 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	79.2 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.28 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	22.8 W/kg ± 19.5 % (k=2)

# Head TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.5	5.07 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	35.8 ± 6 %	4.90 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

# SAR result with Head TSL at 5600 MHz

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.41 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	84.1 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.40 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	24.0 W/kg ± 19.5 % (k=2)

Head TSL parameters at 5750 MHz The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.4	5.22 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	35.5 ± 6 %	5.06 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

# SAR result with Head TSL at 5750 MHz

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.06 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	80.5 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.30 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.0 W/kg ± 19.5 % (k=2)

### Body TSL parameters at 5200 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	49.0	5.30 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	47.3 ± 6 %	5.41 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

# SAR result with Body TSL at 5200 MHz

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.36 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	73.1 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.06 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	20.4 W/kg ± 19.5 % (k=2)

#### Body TSL parameters at 5250 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.9	5.36 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	47.2 ± 6 %	5.48 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

# SAR result with Body TSL at 5250 MHz

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.64 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	75.9 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.13 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	21.1 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5600 MHz The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.5	5.77 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.6 ± 6 %	5.94 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

# SAR result with Body TSL at 5600 MHz

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	8.05 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	79.9 W/kg ± 19.9 % (k=2)
	1	

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.25 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	22.3 W/kg ± 19.5 % (k=2)

# Body TSL parameters at 5750 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.3	5.94 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.3 ± 6 %	6.15 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

# SAR result with Body TSL at 5750 MHz

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.72 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	76.7 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.14 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	21.2 W/kg ± 19.5 % (k=2)

# Body TSL parameters at 5800 MHz The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.2	6.00 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.2 ± 6 %	6.22 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

# SAR result with Body TSL at 5800 MHz

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.68 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	76.3 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.13 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	21.1 W/kg ± 19.5 % (k=2)

# Appendix (Additional assessments outside the scope of SCS 0108)

# Antenna Parameters with Head TSL at 5250 MHz

Impedance, transformed to feed point	50.0 Ω - 5.5 jΩ
Return Loss	- 25.2 dB

#### Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	54.7 Ω - 2.1 jΩ
Return Loss	- 26.2 dB

# Antenna Parameters with Head TSL at 5750 MHz

Impedance, transformed to feed point	52.7 Ω + 0.0 jΩ
Return Loss	- 31.5 dB

#### Antenna Parameters with Body TSL at 5200 MHz

Impedance, transformed to feed point	49.3 Ω - 6.7 ]Ω
Return Loss	- 23.4 dB

#### Antenna Parameters with Body TSL at 5250 MHz

Impedance, transformed to feed point	48.4 Ω - 3.9 jΩ
Return Loss	- 27.4 dB

#### Antenna Parameters with Body TSL at 5600 MHz

Impedance, transformed to feed point	55.3 Ω - 1.6 jΩ
Return Loss	- 25.6 dB

#### Antenna Parameters with Body TSL at 5750 MHz

Impedance, transformed to feed point	52.6 Ω + 1.1 jΩ
Return Loss	- 31.2 dB

#### Antenna Parameters with Body TSL at 5800 MHz

Impedance, transformed to feed point	51.8 Ω - 0.4 jΩ
Return Loss	- 34.9 dB

# General Antenna Parameters and Design

	Electrical Delay (one direction)	1.203 ns
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After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

# **Additional EUT Data**

Manufactured by	SPEAG
Manufactured on	November 27, 2006