FCC SAR Test Report

APPLICANT	: Lenovo (Shanghai) Electronics Technology Co., Ltd.
EQUIPMENT	: Portable Tablet Computer
BRAND NAME	: Lenovo
MODEL NAME	: Lenovo YT-X703X
FCC ID	: O57YTX703X
STANDARD	: FCC 47 CFR Part 2 (2.1093) ANSI/IEEE C95.1-1992 IEEE 1528-2013

We, SPORTON INTERNATIONAL (XI'AN) INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and had been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL (XI'AN) INC., the test report shall not be reproduced except in full.

Prepared by: Mark Qu / Manager

Approved by: Jones Tsai / Manager

Testing Laboratory 2804

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Table of Contents

Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA670415	Rev. 01	Initial issue of report	Aug. 05, 2016

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Lenovo (Shanghai) Electronics Technology Co., Ltd., Portable Tablet Computer, Lenovo YT-X703X** are as follows.

Equipment Class	Frequency Band		Highest SAR Summary Body 1g SAR (W/kg)	Highest Simultaneous Transmission 1g SAR (W/kg)
Licensed	GSM	GSM850	1.03	1.49
		GSM1900	0.67	
	WCDMA	Band V	1.19	
		Band IV	0.96	
		Band II	0.77	
	LTE	Band 12	0.67	
		Band 26	1.15	
		Band 4	0.65	
		Band 25	0.76	
		Band 30	0.63	
		Band 7	0.66	
		Band 41	0.60	
DTS	WLAN	2.4GHz WLAN	0.57	1.49
NII		5GHz WLAN	**1.34**	1.46
Date of Testing:			2016/07/15 ~ 2016/07/24	

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications.

2. Administration Data

Testing Laboratory	
Test Site	SPORTON INTERNATIONAL (XI'AN) INC.
Test Site Location	1F, Building A3, No. 39 Chuangye Rd., Xi'an Hi-tech Zone, Shanxi Province, P. R. C. TEL: +86-029-8860-8767 FAX: +86-029-8860-8791

Applicant	
Company Name	Lenovo(Shanghai) Electronics Technology Co., Ltd.
Address	NO.68 BUILDING, 199 FENJU RD, China (Shanghai) Pilot Free Trade Zone, 200131, CHINA

Manufacturer	
Company Name	Lenovo PC HK Limited
Address	23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong

3. Guidance Standard

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards:

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB 616217 D04 SAR for laptop and tablets v01r02
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05

4. Equipment Under Test (EUT) Information

4.1 General Information

Product Feature & Specification	
Equipment Name	Portable Tablet Computer
Brand Name	Lenovo
Model Name	Lenovo YT-X703X
FCC ID	O57YTX703X
IMEI Code	861688030008072
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WCDMA Band IV: 1712.4 MHz ~ 1752.6 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 30: 2305 MHz ~ 2315 MHz LTE Band 41: 2496 MHz ~ 2690 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5720 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Mode	· GSM/GPRS/EGPRS · RMC/AMR 12.2Kbps · HSDPA · HSUPA · HSPA+ (16QAM uplink is not supported) · LTE: QPSK, 16QAM · 802.11b/g/n HT20/HT40 · 802.11a/n/ac HT20/HT40/VHT20/VHT40/VHT80 · Bluetooth v3.0+EDR, Bluetooth v4.0 LE
HW Version	Lenovo Tablet YT-X703X
SW Version	YT-X703X_160914
GSM / (E)GPRS Transfer mode	Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network.
EUT Stage	Identical Prototype
Remark: 1. This device supports GRPS/EGPRS mode up to multi-slot class33. 2. This device does not support DTM operation. 3. This device has no voice function. 4. This device implanted proximity sensor function at Bottom Face and Edge 1. Power reduction will be implemented immediately for GSM850/1900, WCDMA Band V/IV/II, LTE Band 2/4/5/7/26/25/30/41.	

4.2 Component List

Note: there are two types of EUT, the details refer the following table. According to the difference, we evaluate it is not affect SAR distribution, so only choose sample 1 to perform SAR test.

Component	Sample 1	Sample 2
Battery	Sunwoda: L16D3K31 3.75 Vdc, 9300 mAh	SCUD: L16D3K31 3.75 Vdc, 9300 mAh
Rear Camera	Qtech: F5695AK	AVC: CCBFL05006
LCM+TP ASM	Ofilm：AUO 10.1 WQXGA IPS+10.1 inch GFF Direct bounding + S7813	GIS：Innolux 10.1 WQXGA IPS+10.1 inch GFF Direct bounding + S7813
DRAM	Samsung: K3QF4F40BM-FGCF	Hynix: H9CKNNNDATMUPR-NUH
EMMC	Samsung: KLMCG4JENB-B041	Toshiba: THGBMFG8C2LBAIL

4.3 General LTE SAR Test and Reporting Considerations

<table>
<tr><th colspan="2">Summarized necessary items addressed in KDB 941225 D05 v02r05</th></tr>
<tr><td>FCC ID</td><td>O57YTX703X</td></tr>
<tr><td>Equipment Name</td><td>Portable Tablet Computer</td></tr>
<tr><td>Operating Frequency Range of each LTE transmission band</td><td>LTE Band 2: 1850 MHz ~ 1910 MHz
LTE Band 4: 1710 MHz ~ 1755 MHz
LTE Band 5: 824 MHz ~ 849 MHz
LTE Band 7: 2500 MHz ~ 2570 MHz
LTE Band 12: 699 MHz ~ 716 MHz
LTE Band 17: 704 MHz ~ 716 MHz
LTE Band 25: 1850 MHz ~ 1915 MHz
LTE Band 26: 814 MHz ~ 849 MHz
LTE Band 30: 2305 MHz ~ 2315 MHz
LTE Band 41: 2496 MHz ~ 2690 MHz</td></tr>
<tr><td>Channel Bandwidth</td><td>LTE Band 2:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 4:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 5:1.4MHz, 3MHz, 5MHz, 10MHz
LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 12:1.4MHz, 3MHz, 5MHz, 10MHz
LTE Band 17: 5MHz, 10MHz
LTE Band 25:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz
LTE Band 30: 5MHz, 10MHz
LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz</td></tr>
<tr><td>uplink modulations used</td><td>QPSK, and 16QAM</td></tr>
<tr><td>LTE Voice / Data requirements</td><td>Data only</td></tr>
<tr><td>LTE MPR permanently built-in by design</td><td>Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3
<table>
<tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (RB)</th><th rowspan="2">MPR (dB)</th></tr>
<tr><th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr>
<tr><td>QPSK</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr>
</table></td></tr>
<tr><td>LTE A-MPR</td><td>In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)</td></tr>
<tr><td>Spectrum plots for RB configuration</td><td>A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.</td></tr>
<tr><td>Power reduction applied to satisfy SAR compliance</td><td>1. Yes, Proximity Sensor.
2. Power reduction will be active at GSM850/1900, WCDMA Band V/IV/II, LTE Band 2/4/5/7/26/25/30/41.</td></tr>
<tr><td>LTE Release</td><td>R10,Cat 6</td></tr>
<tr><td>CA Support</td><td>NO</td></tr>
</table>

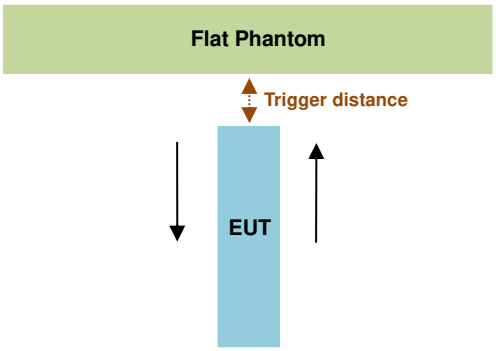
Transmission (H, M, L) channel numbers and frequencies in each LTE band												
LTE Band 2												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855	18675	1857.5	18700	1860
M	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905	19125	1902.5	19100	1900
LTE Band 4												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715	20025	1717.5	20050	1720
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750	20325	1747.5	20300	1745
LTE Band 5												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)				
L	20407	824.7	20415	825.5	20425	826.5	20450	829				
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5				
H	20643	848.3	20635	847.5	20625	846.5	20600	844				
LTE Band 7												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)				
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510				
M	21100	2535	21100	2535	21100	2535	21100	2535				
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560				
LTE Band 12												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)				
L	23017	699.7	23025	700.5	23035	701.5	23060	704				
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5				
H	23173	715.3	23165	714.5	23155	713.5	23130	711				
LTE Band 17												
	Bandwidth 5 MHz				Bandwidth 10 MHz							
	Channel #		Freq.(MHz)		Channel #		Freq. (MHz)					
L	23755		706.5		23780		709					
M	23790		710		23790		710					
H	23825		713.5		23800		711					
LTE Band 25												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26047	1850.7	26055	1851.5	26065	1852.5	26090	1855	26115	1857.5	26140	1860
M	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880
H	26683	1914.3	26675	1913.5	26665	1912.5	26640	1910	26615	1907.5	26590	1905
LTE Band 26												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz			
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)		
L	26697	814.7	26705	815.5	26715	816.5	26740	819	26765	821.5		
M	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5		
H	27033	848.3	27025	847.5	27015	846.5	26990	844	26965	841.5		

LTE Band 30								
	Bandwidth 5 MHz				Bandwidth 10 MHz			
	Channel #		Freq.(MHz)		Channel #		Freq.(MHz)	
L	27685		2307.5		27710		2310	
M	27710		2310					
H	27735		2312.5					
LTE Band 41								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	39675	2498.5	39700	2501	39725	2503.5	39750	2506
LM	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5
M	40620	2593	40620	2593	40620	2593	40620	2593
HM	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680

5. Proximity Sensor Triggering Test

<Proximity Sensor Triggering Distance (KDB 616217 D04 section 6.2)>:

Proximity sensor triggering distance testing was performed according to the procedures outlined in KDB 616217 D04 section 6.2, and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed. The details are illustrated in the exhibit "P-Sensor operational description", and the shortest triggering distances were reported and used for SAR assessment.
In the preliminary triggering distance testing, the tissue-equivalent medium for different frequency bands were used for verification; no other frequency bands tissue-equivalent medium was found to result in shortest triggering distance than that for 1900MHz, and the tissue-equivalent medium for 1900MHz was used for formal proximity sensor triggering testing.



Proximity Sensor Trigger Distance For Low frequency Ant. (mm)		
Position	Bottom Face	Edge 1
Minimum	28	18

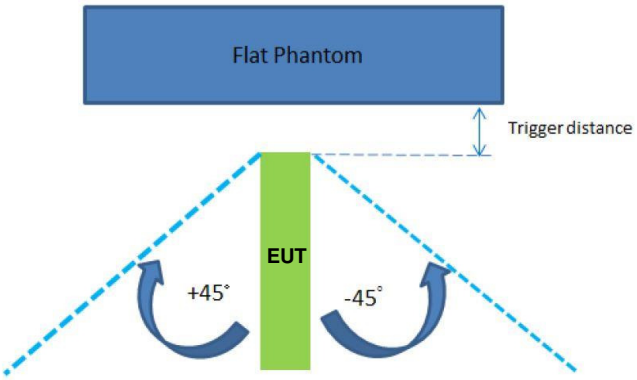
Proximity Sensor Trigger Distance For High frequency Ant. (mm)		
Position	Bottom Face	Edge 1
Minimum	20	16

<Proximity Sensor Triggering Coverage (KDB 616217 D04 section 6.3)>:

If a sensor is spatially offset from the antenna(s), it is necessary to verify sensor triggering for conditions where the antenna is next to the user but the sensor is laterally further away to ensure sensor coverage is sufficient for reducing the power to maintain compliance. For p-sensor coverage testing, the device is moved and "along the direction of maximum antenna and sensor offset".
Illustrated in the internal photo exhibit, although the senor is spatially offset, there is no trigger condition where the antenna is next to the user but the sensor is laterally further away, therefore proximity sensor coverage testing is not required.
This procedure is not required because antenna and sensor are collocated and the peak SAR location is overlapping with the sensor.

<Tablet Tilt angle influences to proximity sensor triggering (KDB 616217 D04 section 6.4)>:

The influence of table tilt angles to proximity sensor triggering was determined by positioning each tablet edge that contains a transmitting antenna, perpendicular to the flat phantom, at 16 mm separation.
Rotating the tablet around the edge next to the phantom in ≤ 10° increments until the tablet is ± 45° from the vertical position at 0°, and the maximum output power remains in the reduced mode.



The Sensor Trigger Distance (mm)	
Position	Edge 1
Minimum	16

Proximity sensor power reduction

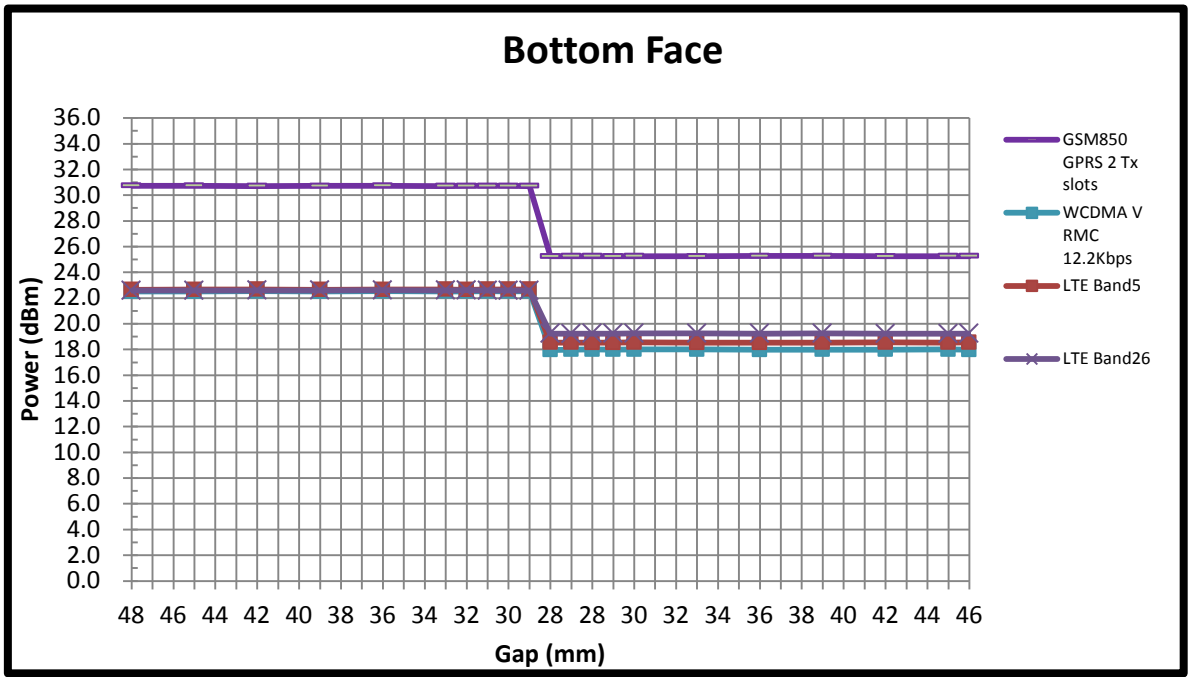
Exposure Position / wireless mode	Bottom Face(1)	Edge 1(1)	Edge 2	Edge 3	Edge 4
GSM850 GPRS (GMSK 1 Tx slot) - CS1	5.5 dB	5.5 dB	0 dB	0 dB	0 dB
GSM850 GPRS (GMSK 2 Tx slot) - CS1	5.5 dB	5.5 dB	0 dB	0 dB	0 dB
GSM850 GPRS (GMSK 3 Tx slot) - CS1	5.5 dB	5.5 dB	0 dB	0 dB	0 dB
GSM850 GPRS (GMSK 4 Tx slot) - CS1	5.5 dB	5.5 dB	0 dB	0 dB	0 dB
GSM850 EDGE (8PSK 1 Tx slot) - MCS5	1.0 dB	1.0 dB	0 dB	0 dB	0 dB
GSM850 EDGE (8PSK 2 Tx slot) - MCS5	1.0 dB	1.0 dB	0 dB	0 dB	0 dB
GSM850 EDGE (8PSK 3 Tx slot) - MCS5	1.0 dB	1.0 dB	0 dB	0 dB	0 dB
GSM850 EDGE (8PSK 4 Tx slot) - MCS5	1.0 dB	1.0 dB	0 dB	0 dB	0 dB
GSM1900 GPRS (GMSK 1 Tx slot) - CS1	3.5 dB	3.5 dB	0 dB	0 dB	0 dB
GSM1900 GPRS (GMSK 2 Tx slot) - CS1	3.5 dB	3.5 dB	0 dB	0 dB	0 dB
GSM1900 GPRS (GMSK 3 Tx slot) - CS1	3.5 dB	3.5 dB	0 dB	0 dB	0 dB
GSM1900 GPRS (GMSK 4 Tx slot) - CS1	3.5 dB	3.5 dB	0 dB	0 dB	0 dB
GSM1900 EDGE (8PSK 1 Tx slot) - MCS5	0 dB	0 dB	0 dB	0 dB	0 dB
GSM1900 EDGE (8PSK 2 Tx slot) - MCS5	0 dB	0 dB	0 dB	0 dB	0 dB
GSM1900 EDGE (8PSK 3 Tx slot) - MCS5	0 dB	0 dB	0 dB	0 dB	0 dB
GSM1900 EDGE (8PSK 4 Tx slot) - MCS5	0 dB	0 dB	0 dB	0 dB	0 dB
WCDMA Band V	4.0 dB	4.0 dB	0 dB	0 dB	0 dB
WCDMA Band II	6.0 dB	6.0 dB	0 dB	0 dB	0 dB
WCDMA Band IV	5.0 dB	5.0 dB	0 dB	0 dB	0 dB
LTE Band 2	6.0 dB	6.0 dB	0 dB	0 dB	0 dB
LTE Band 4	5.0 dB	5.0 dB	0 dB	0 dB	0 dB
LTE Band 5	4.0 dB	4.0 dB	0 dB	0 dB	0 dB
LTE Band 7	5.0 dB	5.0 dB	0 dB	0 dB	0 dB
LTE Band 25	6.0 dB	6.0 dB	0 dB	0 dB	0 dB
LTE Band 26	4.0 dB	4.0 dB	0 dB	0 dB	0 dB
LTE Band 30	5.5 dB	5.5 dB	0 dB	0 dB	0 dB
LTE Band 41	2.0 dB	2.0 dB	0 dB	0 dB	0 dB

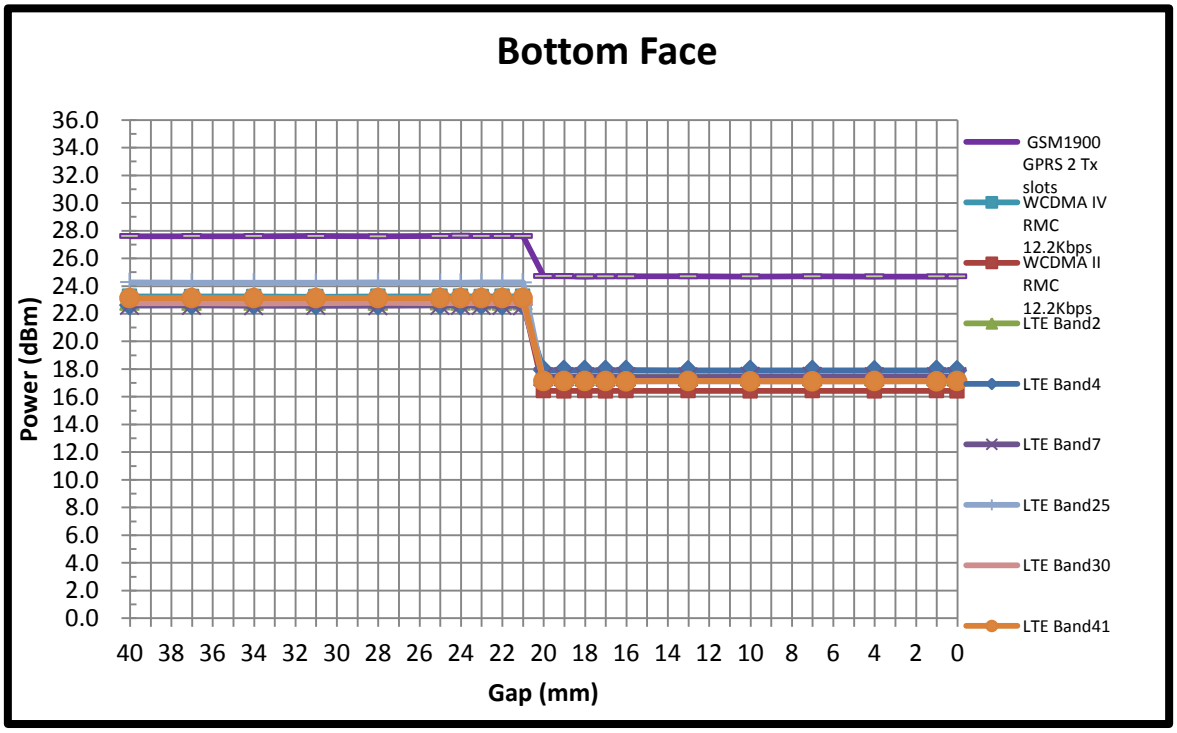
Remark:

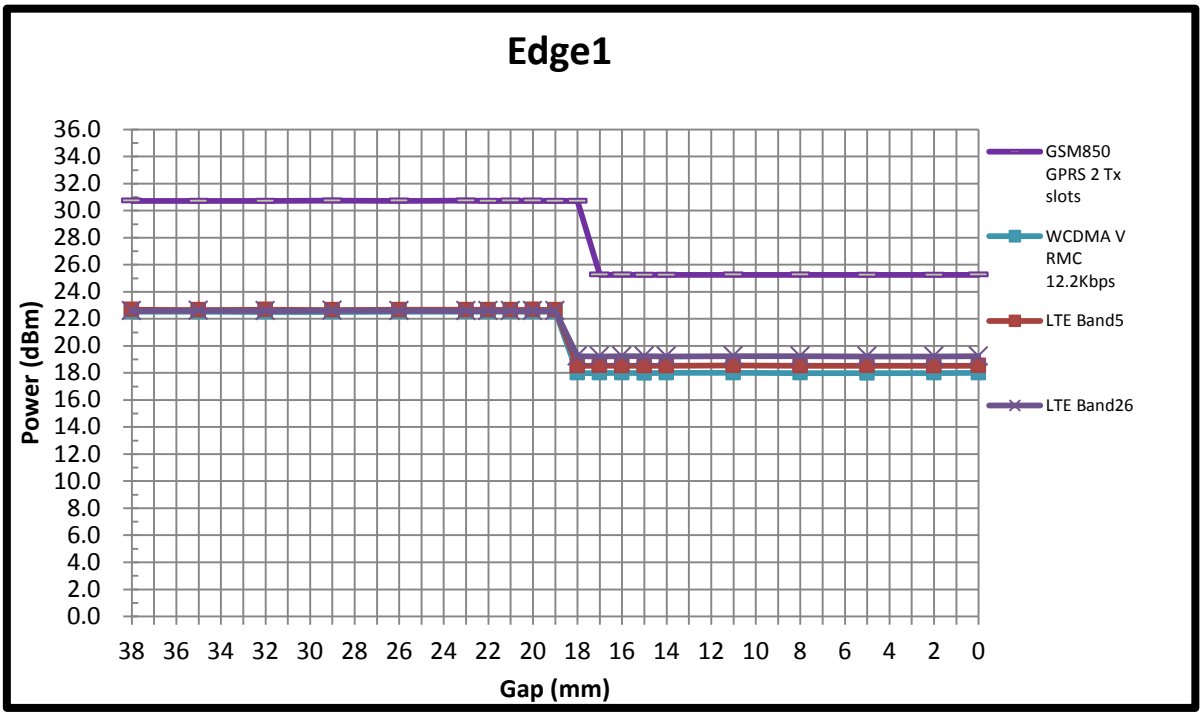
1. (1): Reduced maximum limit applied by activation of proximity sensor.
2. Power reduction is not applicable for WLAN and Bluetooth.
3. Proximity sensor disabled at EDGE1900, LTE BAND 12/17.
4. Tests were performed in accordance with KDB 616217 D04 section 6.1, 6.2, 6.3, 6.4 and 6.5 and compliant results are shown and described in exhibit “P-Sensor operational description
5. For verification of compliance of power reduction scheme, additional SAR testing with EUT transmitting at full RF power at a conservative trigger distance was performed:
   - Bottom Face: 10 mm
   - Edge1: 10 mm

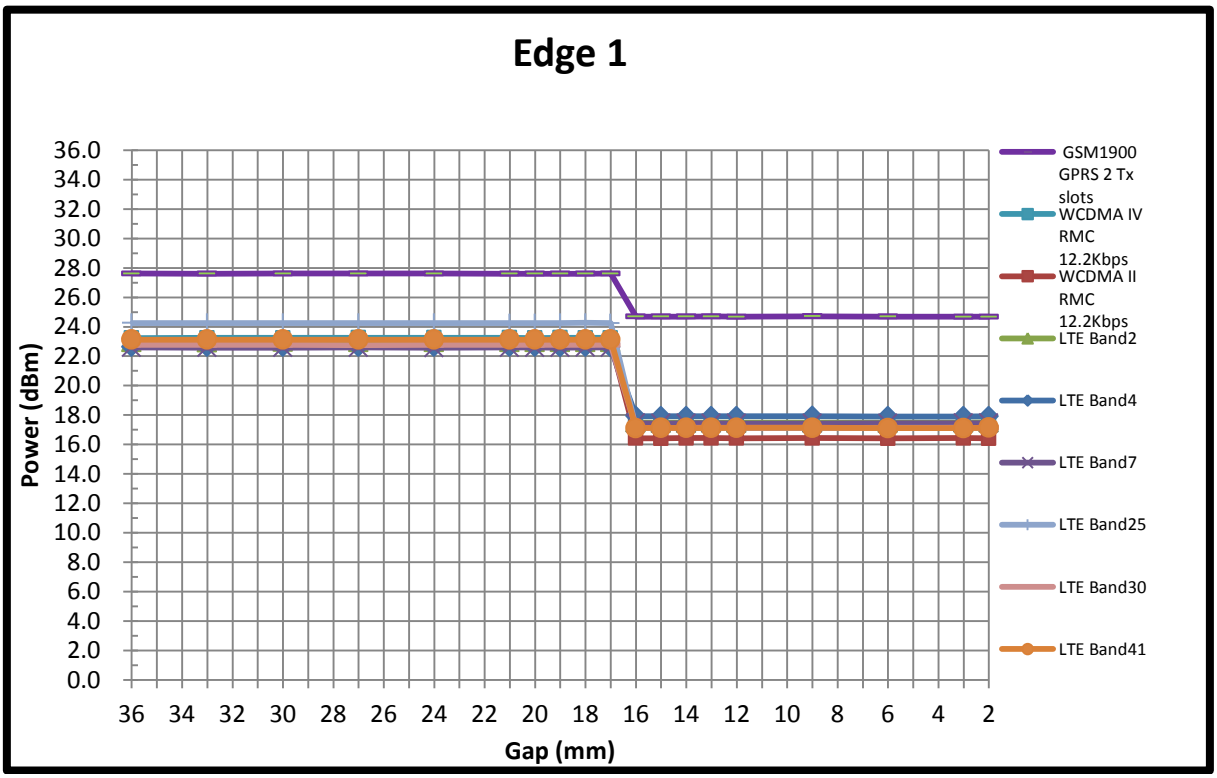
Power Measurement during Sensor Trigger distance testing

Band/Mode	Ch #	Measured power reduction (dBm)		Reduction Levels
		w/o power back-off	w/ power back-off	(dB)
GSM850 GPRS (GMSK 2 Tx slot)	189	32.39	27.37	5.02
GSM1900 GPRS (GMSK 2 Tx slot)	661	29.11	26.71	2.40
WCDMA Band V (RMC 12.2Kbps)	4182	22.48	17.95	4.53
WCDMA Band IV (RMC 12.2Kbps)	1413	23.02	17.36	5.66
WCDMA Band II (RMC 12.2Kbps)	9400	22.56	16.38	6.18
LTE Band 2 20MHz 1RB 49offset	18900	22.70	17.31	5.39
LTE Band 4 20MHz 1RB 49offset	20175	22.61	17.90	4.71
LTE Band 5 10MHz 1RB 25offset	20525	22.65	18.52	4.13
LTE Band 7 20MHz 1RB 49offset	21100	22.24	17.33	4.91
LTE Band 25 20MHz 1RB 49offset	26340	22.16	16.81	5.35
LTE Band 26 15MHz 1RB 37offset	26865	22.58	19.22	3.36
LTE Band 30 10MHz 1RB 25offset	27710	22.75	17.58	5.17
LTE Band 41 20MHz 1RB 49offset	40620	22.96	21.34	1.62


Bottom Face
Power (dBm)
36.0
34.0
32.0
30.0
28.0
26.0
24.0
22.0
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
48 46 44 42 40 38 36 34 32 30 28 28 30 32 34 36 38 40 42 44 46
Gap (mm)
GSM850 GPRS 2 Tx slots
WCDMA V RMC 12.2Kbps
LTE Band5
LTE Band26


Bottom Face
Power (dBm)
36.0
34.0
32.0
30.0
28.0
26.0
24.0
22.0
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
40 38 36 34 32 30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0
Gap (mm)
GSM1900 GPRS 2 Tx slots
WCDMA IV RMC 12.2Kbps
WCDMA II RMC 12.2Kbps
LTE Band2
LTE Band4
LTE Band7
LTE Band25
LTE Band30
LTE Band41


Edge1
Power (dBm)
36.0
34.0
32.0
30.0
28.0
26.0
24.0
22.0
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
38 36 34 32 30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0
Gap (mm)
GSM850 GPRS 2 Tx slots
WCDMA V RMC 12.2Kbps
LTE Band5
LTE Band26


Edge 1
Power (dBm)
36.0
34.0
32.0
30.0
28.0
26.0
24.0
22.0
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
36 34 32 30 28 26 24 22 20 18 16 14 12 10 8 6 4 2
Gap (mm)
GSM1900 GPRS 2 Tx slots
WCDMA IV RMC 12.2Kbps
WCDMA II RMC 12.2Kbps
LTE Band2
LTE Band4
LTE Band7
LTE Band25
LTE Band30
LTE Band41

6. RF Exposure Limits

6.1 Uncontrolled Environment

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

6.2 Controlled Environment

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. The exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Limits for Occupational/Controlled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.4	8.0	20.0

Limits for General Population/Uncontrolled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.08	1.6	4.0

1. Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

7. Specific Absorption Rate (SAR)

7.1 Introduction

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

7.2 SAR Definition

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). The equation description is as below:

$$\mathbf{SAR} = \frac{\mathbf{d}}{\mathbf{dt}}\left(\frac{\mathbf{dW}}{\mathbf{dm}}\right) = \frac{\mathbf{d}}{\mathbf{dt}}\left(\frac{\mathbf{dW}}{\boldsymbol{\rho}\mathbf{dv}}\right)$$

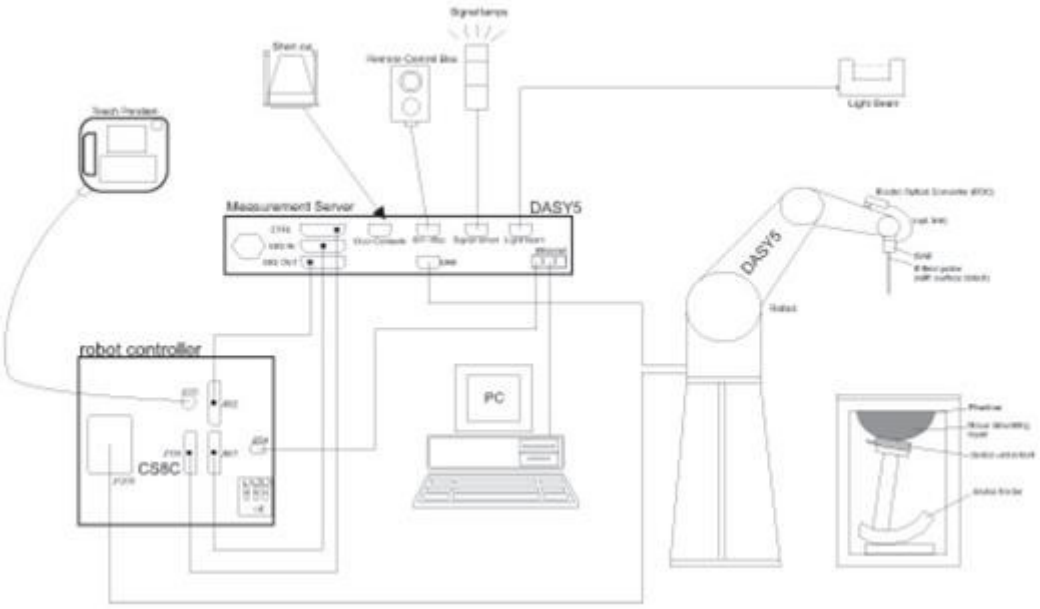
SAR is expressed in units of Watts per kilogram (W/kg)

$$\mathbf{SAR} = \frac{\boldsymbol{\sigma}|\mathbf{E}|^2}{\boldsymbol{\rho}}$$

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.

8. System Description and Setup

The DASY system used for performing compliance tests consists of the following items:



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP or Win7 and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

8.1 E-Field Probe

The SAR measurement is conducted with the dosimetric probe (manufactured by SPEAG).The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. This probe has a built in optical surface detection system to prevent from collision with phantom.

<EX3DV4 Probe>

Construction	Symmetric design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Frequency	10 MHz – >6 GHz Linearity: ±0.2 dB (30 MHz – 6 GHz)
Directivity	±0.3 dB in TSL (rotation around probe axis) ±0.5 dB in TSL (rotation normal to probe axis)
Dynamic Range	10 µW/g – >100 mW/g Linearity: ±0.2 dB (noise: typically <1 µW/g)
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 2.5 mm (body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm

8.2 Data Acquisition Electronics (DAE)

The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.

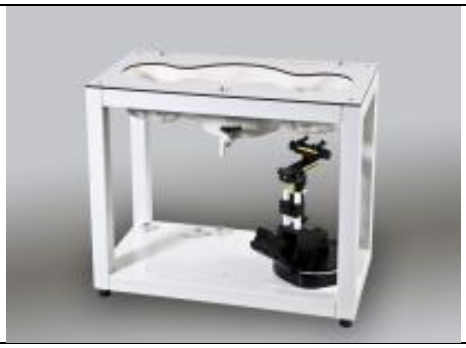
The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

Fig 5.1 Photo of DAE

8.3 Phantom

<SAM Twin Phantom>

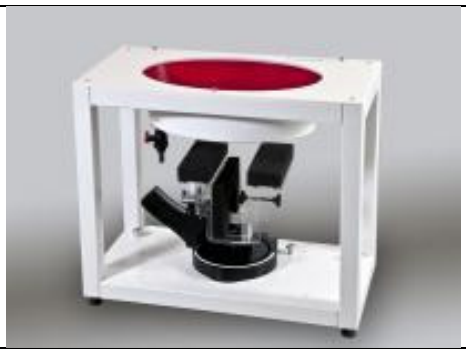
Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet
Measurement Areas	Left Hand, Right Hand, Flat Phantom



The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

<ELI Phantom>

Shell Thickness	2 ± 0.2 mm (sagging: <1%)
Filling Volume	Approx. 30 liters
Dimensions	Major ellipse axis: 600 mm Minor axis: 400 mm



The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

8.4 Device Holder

<Mounting Device for Hand-Held Transmitter>

In combination with the Twin SAM V5.0/V5.0c or ELI phantoms, the Mounting Device for Hand-Held Transmitters enables rotation of the mounted transmitter device to specified spherical coordinates. At the heads, the rotation axis is at the ear opening. Transmitter devices can be easily and accurately positioned according to IEC 62209-1, IEEE 1528, FCC, or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat). And upgrade kit to Mounting Device to enable easy mounting of wider devices like big smart-phones, e-books, small tablets, etc. It holds devices with width up to 140 mm.

Mounting Device for Hand-Held Transmitters

Mounting Device Adaptor for Wide-Phones

<Mounting Device for Laptops and other Body-Worn Transmitters>

The extension is lightweight and made of POM, acrylic glass and foam. It fits easily on the upper part of the mounting device in place of the phone positioned. The extension is fully compatible with the SAM Twin and ELI phantoms.

Mounting Device for Laptops

9. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

(a) For WWAN power measurement, use base station simulator to configure EUT WWAN transmission in conducted connection with RF cable, at maximum power in each supported wireless interface and frequency band.
(b) Read the WWAN RF power level from the base station simulator.
(c) For WLAN/BT power measurement, use engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power in each supported wireless interface and frequency band
(d) Connect EUT RF port through RF cable to the power meter, and measure WLAN/BT output power

<SAR measurement>

(a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power, in the highest power channel.
(b) Place the EUT in the positions as Appendix D demonstrates.
(c) Set scan area, grid size and other setting on the DASY software.
(d) Measure SAR results for the highest power channel on each testing position.
(e) Find out the largest SAR result on these testing positions of each band
(f) Measure SAR results for other channels in worst SAR testing position if the reported SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

(a) Power reference measurement
(b) Area scan
(c) Zoom scan
(d) Power drift measurement

9.1 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

The entire evaluation of the spatial peak values is performed within the post-processing engine (SEMCAD). The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

(a) Extraction of the measured data (grid and values) from the Zoom Scan
(b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
(c) Generation of a high-resolution mesh within the measured volume
(d) Interpolation of all measured values form the measurement grid to the high-resolution grid
(e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
(f) Calculation of the averaged SAR within masses of 1g and 10g

9.2 Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

9.3 Area Scan

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB0 is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.

Area scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

9.4 Zoom Scan

Zoom scans are used assess the peak spatial SAR values within a cubic averaging volume containing 1 gram and 10 gram of simulated tissue. The zoom scan measures points (refer to table below) within a cube shoes base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the zoom scan evaluates the averaged SAR for 1 gram and 10 gram and displays these values next to the job's label.

Zoom scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5·$\Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.

* When zoom scan is required and the *reported* SAR from the *area scan based 1-g SAR estimation* procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

9.5 Volume Scan Procedures

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

9.6 Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drifts more than 5%, the SAR will be retested.

10. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1087	2016/3/16	2017/3/15
SPEAG	835MHz System Validation Kit	D835V2	4d151	2016/3/16	2017/3/15
SPEAG	1750MHz System Validation Kit	D1750V2	1090	2016/3/22	2017/3/21
SPEAG	1900MHz System Validation Kit	D1900V2	5d170	2016/3/21	2017/3/20
SPEAG	2300MHz System Validation Kit	D2300V2	1006	2016/1/21	2017/1/20
SPEAG	2450MHz System Validation Kit	D2450V2	908	2016/3/18	2017/3/17
SPEAG	2600MHz System Validation Kit	D2600V2	1112	2015/8/27	2016/8/26
SPEAG	5GHz System Validation Kit	D5GHzV2	1167	2015/7/27	2016/7/26
SPEAG	Data Acquisition Electronics	DAE4	1358	2015/8/27	2016/8/26
SPEAG	Dosimetric E-Field Probe	EX3DV4	3935	2015/11/27	2016/11/26
SPEAG	SAM Twin Phantom	QD OVA 002 AA	TP-1201	NCR	NCR
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Agilent	Wireless Communication Test Set	E5515C	MY52102600	2015/12/8	2016/12/7
Anritus	Radio communication analyzer	MT8820C	6201074235	2015/10/15	2016/10/14
Agilent	ENA Series Network Analyzer	E5071C	MY46317418	2015/12/8	2016/12/7
Agilent	Dielectric Probe Kit	85070E	MY44300751	NCR	NCR
Anritsu	Power Senor	MA2411B	0917070	2016/1/20	2017/1/19
Anritsu	Power Meter	ML2495A	1005002	2016/1/20	2017/1/19
Anritsu	Power Sensor	MA2411B	1339206	2016/1/20	2017/1/19
Anritsu	Power Meter	ML2495A	1438004	2016/1/20	2017/1/19
Agilent	Signal Generator	N5181A	MY50145381	2016/1/12	2017/1/11
R&S	Spectrum Analyzer	FSV 7	101632	2015/12/8	2016/12/7
PASTERNACK	Dual Directional Coupler	PE2214-10	N/A	Note1	
ARRA	Power Divider	A3200-2	NA	Note1	
Agilent	Dual Directional Coupler	778D	50422	Note1	
mini-circuits	Amplifier	ZVE-3W-83+	162601250	Note1	
AR	Amplifier	5S1G4	342137	Note1	
Woken	Attenuation1	WK0602-XX	N/A	Note1	
PE	Attenuation2	PE7005-10	N/A	Note1	
PE	Attenuation3	PE7005-3	N/A	Note1	

General Note:

1. Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check source.

11. System Verification

11.1 Tissue Verification

The following tissue formulations are provided for reference only as some of the parameters have not been thoroughly verified. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation.

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (εr)
For Body								
750	51.7	47.2	0	0.9	0.1	0	0.96	55.5
835	50.8	48.2	0	0.9	0.1	0	0.97	55.2
1800, 1900, 2000	70.2	0	0	0.4	0	29.4	1.52	53.3
2450	68.6	0	0	0	0	31.4	1.95	52.7
2600	68.1	0	0	0.1	0	31.8	2.16	52.5

Simulating Liquid for 5GHz, Manufactured by SPEAG

Ingredients	(% by weight)
Water	64~78%
Mineral oil	11~18%
Emulsifiers	9~15%
Additives and Salt	2~3%

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Tissue Type	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
750	Body	22.6	0.977	53.883	0.96	55.50	1.77	-2.91	±5	2016/7/17
835	Body	22.5	0.977	54.466	0.97	55.20	0.72	-1.33	±5	2016/7/17
1750	Body	22.3	1.492	53.378	1.49	53.40	0.13	-0.04	±5	2016/7/17
1900	Body	22.5	1.530	55.281	1.52	53.30	0.66	3.72	±5	2016/7/16
2300	Body	22.6	1.749	51.991	1.81	52.90	-3.37	-1.72	±5	2016/7/15
2450	Body	22.6	1.983	51.159	1.95	52.70	1.69	-2.92	±5	2017/7/15
2600	Body	22.6	2.149	50.972	2.16	52.50	-0.51	-2.91	±5	2016/7/15
5250	Body	22.5	5.150	50.163	5.36	48.90	-3.92	2.58	±5	2016/7/24
5600	Body	22.5	5.664	49.482	5.77	48.50	-1.84	2.02	±5	2016/7/24
5750	Body	22.5	5.829	49.302	5.94	48.30	-1.87	2.07	±5	2016/7/24

11.2 System Performance Check Results

Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10 %. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion and the plots can be referred to Appendix A of this report.

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
2016/7/17	750	Body	250	D750V3-1087	EX3DV4 – SN3935	DAE4 Sn1358	2.28	8.64	9.12	5.56
2016/7/17	835	Body	250	D835V2-4d151	EX3DV4 – SN3935	DAE4 Sn1358	2.47	9.52	9.88	3.78
2016/7/17	1750	Body	250	D1750V2-1090	EX3DV4 – SN3935	DAE4 Sn1358	8.92	35.90	35.68	-0.61
2016/7/16	1900	Body	250	D1900V2-5d170	EX3DV4 – SN3935	DAE4 Sn1358	10.40	38.90	41.6	6.94
2016/7/15	2300	Body	250	D2300V2-1006	EX3DV4 – SN3935	DAE4 Sn1358	12.40	47.70	49.6	3.98
2017/7/15	2450	Body	250	D2450V2-908	EX3DV4 – SN3935	DAE4 Sn1358	13.40	50.40	53.6	6.35
2016/7/15	2600	Body	250	D2600V2-1112	EX3DV4 – SN3935	DAE4 Sn1358	13.70	57.20	54.8	-4.20
2016/7/24	5250	Body	100	D5GHzV2-1167	EX3DV4 – SN3935	DAE4 Sn1358	7.93	76.00	79.3	4.34
2016/7/24	5600	Body	100	D5GHzV2-1167	EX3DV4 – SN3935	DAE4 Sn1358	7.95	80.60	79.5	-1.36
2016/7/24	5750	Body	100	D5GHzV2-1167	EX3DV4 – SN3935	DAE4 Sn1358	6.91	75.60	69.1	-8.60

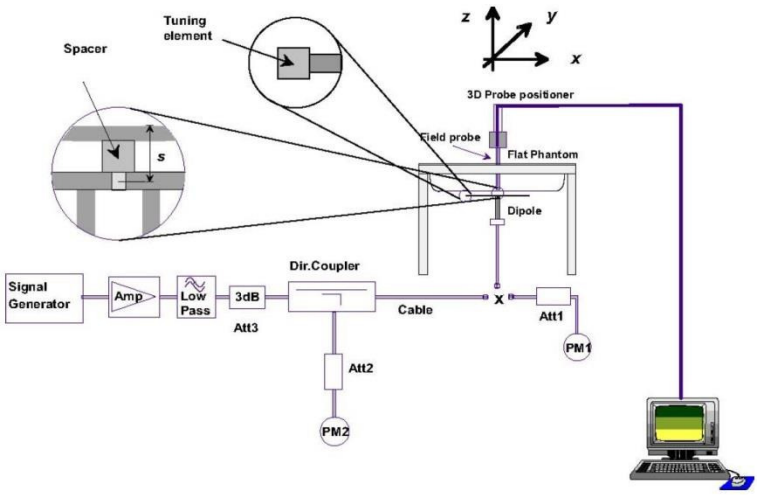


Fig 8.3.1 System Performance Check Setup

Fig 8.3.2 Setup Photo

12. RF Exposure Positions

12.1 SAR Testing for Tablet

This device can be used also in full sized tablet exposure conditions, due to its size. Per FCC KDB 616217, the back surface and edges of the tablet should be tested for SAR compliance with the tablet touching the phantom. The SAR exclusion threshold in KDB 447498 D01v06 can be applied to determine SAR test exclusion for adjacent edge configurations. The closest distance from the antenna to an adjacent tablet edge is used to determine if SAR testing is required for the adjacent edges, with the adjacent edge positioned against the phantom and the edge containing the antenna positioned perpendicular to the phantom.

13. Conducted RF Output Power (Unit: dBm)

<GSM Conducted Power>

1. Per KDB 447498 D01v06, the maximum output power channel is used for SAR testing and for further SAR test reduction.
2. Per KDB 941225 D01v03r01, for SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance, for modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested, therefore, the GPRS 2Tx slots modes was selected when EUT operating without power back-off, the GPRS 2Tx slots modes was selected when EUT operating with power back-off, according to the highest source-based time-averaged output power.

Maximum Average RF Power (Proximity Sensor Inactive)

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GPRS 1 Tx slot	32.32	32.39	**32.49**	33.00	23.32	23.39	23.49	24.00
GPRS 2 Tx slots	30.63	30.65	30.71	31.00	24.63	24.65	**24.71**	25.00
GPRS 3 Tx slots	28.63	28.28	28.30	29.00	24.37	24.02	24.04	24.74
GPRS 4 Tx slots	27.07	27.19	27.06	27.50	24.07	24.19	24.06	24.50
EDGE 1 Tx slot	26.87	26.88	26.89	27.00	17.87	17.88	17.89	18.00
EDGE 2 Tx slots	25.31	25.29	25.32	26.00	19.31	19.29	19.32	20.00
EDGE 3 Tx slots	23.21	23.21	23.24	24.00	18.95	18.95	18.98	19.74
EDGE 4 Tx slots	21.40	21.47	21.49	22.00	18.40	18.47	18.49	19.00

Remark: The frame-averaged power is linearly scaled the maximum burst averaged power over 8 time slots.
The calculated method are shown as below:
Frame-averaged power = Maximum burst averaged power (1 Tx Slot) - 9 dB
Frame-averaged power = Maximum burst averaged power (2 Tx Slots) - 6 dB
Frame-averaged power = Maximum burst averaged power (3 Tx Slots) - 4.26 dB
Frame-averaged power = Maximum burst averaged power (4 Tx Slots) - 3 dB

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GPRS 1 Tx slot	29.80	29.11	**30.13**	30.50	20.80	20.11	21.13	21.50
GPRS 2 Tx slots	27.59	27.51	27.55	28.50	**21.59**	21.51	21.55	22.50
GPRS 3 Tx slots	25.32	25.19	25.22	26.50	21.06	20.93	20.96	22.24
GPRS 4 Tx slots	24.12	24.07	24.01	24.50	21.12	21.07	21.01	21.50
EDGE 1 Tx slot	26.01	25.92	25.90	26.50	17.01	16.92	16.90	17.50
EDGE 2 Tx slots	24.14	23.92	23.84	24.50	18.14	17.92	17.84	18.50
EDGE 3 Tx slots	22.15	21.94	21.87	22.50	17.89	17.68	17.61	18.24
EDGE 4 Tx slots	19.92	19.76	19.63	20.50	16.92	16.76	16.63	17.50

Remark: The frame-averaged power is linearly scaled the maximum burst averaged power over 8 time slots.
The calculated method are shown as below:
Frame-averaged power = Maximum burst averaged power (1 Tx Slot) - 9 dB
Frame-averaged power = Maximum burst averaged power (2 Tx Slots) - 6 dB
Frame-averaged power = Maximum burst averaged power (3 Tx Slots) - 4.26 dB
Frame-averaged power = Maximum burst averaged power (4 Tx Slots) - 3 dB

Reduced Average RF Power (Proximity Sensor active)

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GPRS 1 Tx slot	27.45	27.37	**27.47**	27.50	18.45	18.37	18.47	18.50
GPRS 2 Tx slots	25.22	25.20	25.24	25.50	19.22	19.20	**19.24**	19.50
GPRS 3 Tx slots	23.20	23.18	23.49	23.50	18.94	18.92	19.23	19.24
GPRS 4 Tx slots	21.40	21.34	21.35	22.00	18.40	18.34	18.35	19.00
EDGE 1 Tx slot	25.87	25.88	25.89	26.00	16.87	16.88	16.89	17.00
EDGE 2 Tx slots	24.74	24.71	24.68	25.00	18.74	18.71	18.68	19.00
EDGE 3 Tx slots	22.66	22.62	22.56	23.00	18.40	18.36	18.30	18.74
EDGE 4 Tx slots	20.75	20.72	20.59	21.00	17.75	17.72	17.59	18.00

Remark: The frame-averaged power is linearly scaled the maximum burst averaged power over 8 time slots.
The calculated method are shown as below:
Frame-averaged power = Maximum burst averaged power (1 Tx Slot) - 9 dB
Frame-averaged power = Maximum burst averaged power (2 Tx Slots) - 6 dB
Frame-averaged power = Maximum burst averaged power (3 Tx Slots) - 4.26 dB
Frame-averaged power = Maximum burst averaged power (4 Tx Slots) - 3 dB

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GPRS 1 Tx slot	**26.83**	26.71	26.65	27.00	17.83	17.71	17.65	18.00
GPRS 2 Tx slots	24.68	24.67	24.64	25.00	**18.68**	18.67	18.64	19.00
GPRS 3 Tx slots	22.84	22.65	22.50	23.00	18.58	18.39	18.24	18.74
GPRS 4 Tx slots	20.82	20.65	20.39	21.00	17.82	17.65	17.39	18.00
EDGE 1 Tx slot	25.63	25.41	25.46	26.50	16.63	16.41	16.46	17.50
EDGE 2 Tx slots	24.47	24.34	24.23	24.50	18.47	18.34	18.23	18.50
EDGE 3 Tx slots	22.32	22.06	22.14	22.50	18.06	17.80	17.88	18.24
EDGE 4 Tx slots	20.12	20.41	20.49	20.50	17.12	17.41	17.49	17.50

Remark: The frame-averaged power is linearly scaled the maximum burst averaged power over 8 time slots.
The calculated method are shown as below:
Frame-averaged power = Maximum burst averaged power (1 Tx Slot) - 9 dB
Frame-averaged power = Maximum burst averaged power (2 Tx Slots) - 6 dB
Frame-averaged power = Maximum burst averaged power (3 Tx Slots) - 4.26 dB
Frame-averaged power = Maximum burst averaged power (4 Tx Slots) - 3 dB

<WCDMA Conducted Power>

1. The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
2. The procedures in KDB 941225 D01v03r01 are applied for 3GPP Rel. 6 HSPA to configure the device in the required sub-test mode(s) to determine SAR test exclusion.

A summary of these settings are illustrated below:

HSDPA Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting:
   i. Set Gain Factors (β_c and β_d) and parameters were set according to each
   ii. Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
   iii. Set RMC 12.2Kbps + HSDPA mode.
   iv. Set Cell Power = -86 dBm
   v. Set HS-DSCH Configuration Type to FRC (H-set 1, QPSK)
   vi. Select HSDPA Uplink Parameters
   vii. Set Delta ACK, Delta NACK and Delta CQI = 8
   viii. Set Ack-Nack Repetition Factor to 3
   ix. Set CQI Feedback Cycle (k) to 4 ms
   x. Set CQI Repetition Factor to 2
   xi. Power Ctrl Mode = All Up bits
d. The transmitted maximum output power was recorded.

Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 (Note 4)	15/15 (Note 4)	64	12/15 (Note 4)	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c.

Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and Δ_{NACK} = 30/15 with β_{hs} = 30/15 * β_c, and Δ_{CQI} = 24/15 with β_{hs} = 24/15 * β_c.

Note 3: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 4: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d = 15/15.

Setup Configuration

HSUPA Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting * :
   i. Call Configs = 5.2B, 5.9B, 5.10B, and 5.13.2B with QPSK
   ii. Set the Gain Factors (β_c and β_d) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.3, quoted from the TS 34.121
   iii. Set Cell Power = -86 dBm
   iv. Set Channel Type = 12.2k + HSPA
   v. Set UE Target Power
   vi. Power Ctrl Mode= Alternating bits
   vii. Set and observe the E-TFCI
   viii. Confirm that E-TFCI is equal to the target E-TFCI of 75 for sub-test 1, and other subtest's E-TFCI
d. The transmitted maximum output power was recorded.

Table C.11.1.3: β values for transmitter characteristics tests with HS-DPCCH and E-DCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (Note 5) (Note 6)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 6)	E-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed}1: 47/15 β_{ed}2: 47/15	4 4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15 (Note 4)	15/15 (Note 4)	64	15/15 (Note 4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c.
Note 2: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.
Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 10/15 and β_d = 15/15.
Note 4: For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 14/15 and β_d = 15/15.
Note 5: In case of testing by UE using E-DPDCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.
Note 6: β_{ed} can not be set directly, it is set by Absolute Grant Value.

Setup Configuration

<WCDMA Conducted Power>

General Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. If the maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA.

Maximum Average RF Power (Proximity Sensor Inactive)

Band		WCDMA Band II			Tune-up Limit (dBm)	WCDMA Band IV			Tune-up Limit (dBm)	WCDMA Band V			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	RMC 12.2Kbps	22.45	22.56	**22.92**	23.50	**23.23**	23.02	22.97	23.50	**22.51**	22.48	22.40	23.50
3GPP Rel 6	HSDPA Subtest-1	21.73	21.83	22.05	22.50	22.25	22.19	22.15	22.50	21.58	21.54	21.49	22.00
3GPP Rel 6	HSDPA Subtest-2	21.70	21.86	21.99	22.50	22.30	22.25	22.11	22.50	21.61	21.60	21.54	22.00
3GPP Rel 6	HSDPA Subtest-3	21.28	21.35	21.53	22.00	21.81	21.75	21.64	22.50	21.13	21.07	21.01	22.00
3GPP Rel 6	HSDPA Subtest-4	21.31	21.33	21.55	22.00	21.84	21.71	21.62	22.50	21.11	21.03	20.98	22.00
3GPP Rel 6	HSUPA Subtest-1	21.59	21.68	21.76	22.00	22.35	22.16	22.13	22.50	21.42	21.38	21.28	22.00
3GPP Rel 6	HSUPA Subtest-2	19.85	19.92	20.10	20.50	21.67	21.54	21.50	22.00	19.84	19.70	19.64	20.00
3GPP Rel 6	HSUPA Subtest-3	20.46	20.52	20.65	21.00	20.92	20.89	20.78	21.50	20.25	20.23	20.19	21.00
3GPP Rel 6	HSUPA Subtest-4	20.01	20.13	20.41	21.00	20.31	20.24	20.21	21.00	19.84	19.82	19.77	20.00
3GPP Rel 6	HSUPA Subtest-5	21.51	21.66	21.77	22.00	22.38	22.32	22.19	23.00	21.61	21.56	21.49	22.00

Reduced Average RF Power (Proximity Sensor active)

Band		WCDMA Band II			Tune-up Limit (dBm)	WCDMA Band IV			Tune-up Limit (dBm)	WCDMA Band V			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	RMC 12.2Kbps	16.28	16.38	**16.41**	17.50	**17.40**	17.36	17.19	18.50	**17.98**	17.95	17.97	19.50
3GPP Rel 6	HSDPA Subtest-1	15.54	15.65	15.72	16.00	15.74	15.60	15.46	16.00	17.24	17.00	17.22	18.00
3GPP Rel 6	HSDPA Subtest-2	15.49	15.68	15.71	16.00	15.71	15.66	15.43	16.00	17.29	17.02	17.23	18.00
3GPP Rel 6	HSDPA Subtest-3	15.09	15.17	15.23	16.00	15.18	15.16	15.04	16.00	16.58	16.51	17.56	18.00
3GPP Rel 6	HSDPA Subtest-4	15.18	15.15	15.19	16.00	15.21	15.12	15.01	16.00	16.42	16.48	17.54	18.00
3GPP Rel 6	HSUPA Subtest-1	15.43	15.50	15.61	16.00	15.62	15.51	15.34	16.00	16.92	16.81	16.91	17.50
3GPP Rel 6	HSUPA Subtest-2	13.65	13.74	13.77	14.00	14.95	14.90	14.85	15.50	16.27	15.16	16.25	17.00
3GPP Rel 6	HSUPA Subtest-3	14.28	14.34	14.41	15.00	14.38	14.28	14.19	15.00	15.74	15.68	15.71	16.00
3GPP Rel 6	HSUPA Subtest-4	13.85	13.95	14.03	15.00	13.71	13.63	13.52	14.00	15.52	15.44	15.49	16.00
3GPP Rel 6	HSUPA Subtest-5	15.38	15.48	15.52	16.00	15.77	15.71	15.66	16.00	17.16	17.09	17.14	18.00

<LTE Conducted Power>

General Note:

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B12 / B5 / B4 /B26 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
9. LTE band 2 / 17 / 5 SAR test was covered by Band 25 / 12 / 26; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
    a. the maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion
    b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band

Maximum Average RF Power (Proximity Sensor Inactive)

<LTE Band 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	22.16	22.41	22.56	23.50	0
20	QPSK	1	49	22.54	22.70	22.94		
20	QPSK	1	99	22.74	22.62	22.28		
20	QPSK	50	0	21.68	21.67	21.69	22.50	1
20	QPSK	50	24	21.58	21.56	21.60		
20	QPSK	50	50	21.63	21.55	21.56		
20	QPSK	100	0	21.60	21.54	21.87		
20	16QAM	1	0	21.67	21.42	21.43	22.50	1
20	16QAM	1	49	21.69	21.72	21.40		
20	16QAM	1	99	21.34	21.66	21.23		
20	16QAM	50	0	20.73	20.92	20.79	21.50	2
20	16QAM	50	24	20.79	20.67	20.61		
20	16QAM	50	50	20.66	20.65	20.77		
20	16QAM	100	0	20.56	20.65	20.67		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	22.39	22.71	22.76	23.50	0
15	QPSK	1	37	22.83	22.81	22.87		
15	QPSK	1	74	22.60	22.52	22.98		
15	QPSK	36	0	21.72	21.82	21.78	22.50	1
15	QPSK	36	20	21.68	21.69	21.61		
15	QPSK	36	39	21.63	21.66	21.54		
15	QPSK	75	0	21.64	21.63	21.65		
15	16QAM	1	0	21.45	21.63	21.17	22.50	1
15	16QAM	1	37	21.59	21.56	21.44		
15	16QAM	1	74	21.34	21.70	21.01		
15	16QAM	36	0	20.61	20.70	20.56	21.50	2
15	16QAM	36	20	20.66	20.59	20.70		
15	16QAM	36	39	20.60	20.57	20.63		
15	16QAM	75	0	20.72	20.71	20.74		

Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	22.39	22.32	22.45	23.50	0
10	QPSK	1	25	22.76	22.71	22.73		
10	QPSK	1	49	22.40	22.37	22.39		
10	QPSK	25	0	21.55	21.69	21.64	22.50	1
10	QPSK	25	12	21.71	21.72	21.85		
10	QPSK	25	25	21.56	21.60	21.60		
10	QPSK	50	0	21.61	21.65	21.30		
10	16QAM	1	0	21.35	21.35	21.00	22.50	1
10	16QAM	1	25	21.40	21.49	21.62		
10	16QAM	1	49	21.56	21.40	21.46		
10	16QAM	25	0	20.59	20.72	20.73	21.50	2
10	16QAM	25	12	20.76	20.82	20.60		
10	16QAM	25	25	20.60	20.63	20.69		
10	16QAM	50	0	20.67	20.71	20.67		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	22.26	22.18	22.37	23.50	0
5	QPSK	1	12	22.79	22.58	22.74		
5	QPSK	1	24	22.41	22.14	22.29		
5	QPSK	12	0	21.49	21.64	21.54	22.50	1
5	QPSK	12	7	21.68	21.71	21.43		
5	QPSK	12	13	21.60	21.56	21.28		
5	QPSK	25	0	21.65	21.61	21.59		
5	16QAM	1	0	21.46	22.15	21.43	22.50	1
5	16QAM	1	12	21.66	21.77	21.54		
5	16QAM	1	24	21.22	21.09	21.31		
5	16QAM	12	0	20.44	20.51	20.15	21.50	2
5	16QAM	12	7	20.58	20.57	20.20		
5	16QAM	12	13	20.67	20.53	20.22		
5	16QAM	25	0	20.61	20.65	20.40		

Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	22.50	22.75	22.37	23.50	0
3	QPSK	1	8	22.51	22.40	22.39		
3	QPSK	1	14	22.56	22.53	22.43		
3	QPSK	8	0	21.49	21.75	21.33	22.50	1
3	QPSK	8	4	21.56	21.58	21.37		
3	QPSK	8	7	21.51	21.67	21.48		
3	QPSK	15	0	21.41	21.60	21.40		
3	16QAM	1	0	21.50	21.31	21.42	22.50	1
3	16QAM	1	8	21.24	22.11	21.41		
3	16QAM	1	14	21.21	21.65	21.34		
3	16QAM	8	0	20.26	20.38	20.57	21.50	2
3	16QAM	8	4	20.33	20.72	20.58		
3	16QAM	8	7	20.64	20.82	20.58		
3	16QAM	15	0	20.67	20.51	20.52		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	22.52	22.69	22.51	23.50	0
1.4	QPSK	1	3	22.59	22.39	22.73		
1.4	QPSK	1	5	22.40	22.29	22.66		
1.4	QPSK	3	0	22.59	22.83	22.64		
1.4	QPSK	3	1	22.81	22.78	22.61		
1.4	QPSK	3	3	22.80	22.91	22.82		
1.4	QPSK	6	0	21.64	21.91	21.54	22.50	1
1.4	16QAM	1	0	21.19	21.08	21.10	22.50	1
1.4	16QAM	1	3	21.63	21.43	21.08		
1.4	16QAM	1	5	21.21	21.03	21.00		
1.4	16QAM	3	0	21.73	21.54	21.57		
1.4	16QAM	3	1	21.76	21.89	21.79		
1.4	16QAM	3	3	21.74	21.77	21.79		
1.4	16QAM	6	0	20.49	20.52	20.52	21.50	2

<LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	22.54	22.37	22.59	23.50	0
20	QPSK	1	49	22.84	22.61	22.85		
20	QPSK	1	99	22.41	22.07	22.30		
20	QPSK	50	0	21.54	21.55	21.58	22.50	1
20	QPSK	50	24	21.52	21.56	21.54		
20	QPSK	50	50	21.55	21.54	21.52		
20	QPSK	100	0	21.53	21.56	21.58		
20	16QAM	1	0	21.58	21.62	21.52	22.50	1
20	16QAM	1	49	21.67	21.34	21.33		
20	16QAM	1	99	21.32	21.08	21.21		
20	16QAM	50	0	20.76	20.69	20.68	21.50	2
20	16QAM	50	24	20.65	20.66	20.61		
20	16QAM	50	50	20.65	20.52	20.60		
20	16QAM	100	0	20.69	20.64	20.55		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	22.67	22.66	22.65	23.50	0
15	QPSK	1	37	22.97	22.78	22.99		
15	QPSK	1	74	22.72	22.21	22.38		
15	QPSK	36	0	21.72	21.62	21.61	22.50	1
15	QPSK	36	20	21.76	21.58	21.60		
15	QPSK	36	39	21.71	21.52	21.63		
15	QPSK	75	0	21.75	21.60	21.54		
15	16QAM	1	0	21.84	21.69	21.68	22.50	1
15	16QAM	1	37	21.80	21.71	21.50		
15	16QAM	1	74	21.52	21.38	21.47		
15	16QAM	36	0	20.74	20.65	20.64	21.50	2
15	16QAM	36	20	20.69	20.53	20.67		
15	16QAM	36	39	20.65	20.50	20.58		
15	16QAM	75	0	20.80	20.57	20.69		

Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	22.63	22.37	22.34	23.50	0
10	QPSK	1	25	22.65	22.82	22.74		
10	QPSK	1	49	22.45	22.33	22.39		
10	QPSK	25	0	21.88	21.62	21.57	22.50	1
10	QPSK	25	12	21.78	21.54	21.58		
10	QPSK	25	25	21.70	21.56	21.54		
10	QPSK	50	0	21.70	21.55	21.52		
10	16QAM	1	0	21.50	20.92	21.01	22.50	1
10	16QAM	1	25	21.53	21.37	21.13		
10	16QAM	1	49	21.06	20.82	20.88		
10	16QAM	25	0	20.87	20.65	20.61	21.50	2
10	16QAM	25	12	21.09	20.76	20.63		
10	16QAM	25	25	20.72	20.80	20.48		
10	16QAM	50	0	20.64	20.64	20.50		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	22.43	22.58	22.21	23.50	0
5	QPSK	1	12	23.00	22.84	22.84		
5	QPSK	1	24	22.33	22.21	22.33		
5	QPSK	12	0	21.87	21.61	21.50	22.50	1
5	QPSK	12	7	21.85	21.58	21.55		
5	QPSK	12	13	21.77	21.54	21.52		
5	QPSK	25	0	21.82	21.59	21.55		
5	16QAM	1	0	21.43	21.30	21.13	22.50	1
5	16QAM	1	12	21.80	21.47	21.27		
5	16QAM	1	24	21.40	21.08	21.18		
5	16QAM	12	0	20.83	20.59	20.57	21.50	2
5	16QAM	12	7	20.80	20.75	20.61		
5	16QAM	12	13	20.82	20.51	20.44		
5	16QAM	25	0	21.08	20.34	20.61		

Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	22.71	22.39	22.09	23.50	0
3	QPSK	1	8	22.86	22.38	22.16		
3	QPSK	1	14	22.88	22.46	22.45		
3	QPSK	8	0	21.84	21.64	21.42	22.50	1
3	QPSK	8	4	21.73	21.60	21.40		
3	QPSK	8	7	21.83	21.61	21.44		
3	QPSK	15	0	21.82	21.63	21.44		
3	16QAM	1	0	22.07	21.32	21.10	22.50	1
3	16QAM	1	8	21.92	21.22	21.15		
3	16QAM	1	14	21.63	21.20	21.13		
3	16QAM	8	0	20.91	20.66	20.14	21.50	2
3	16QAM	8	4	21.02	20.50	20.18		
3	16QAM	8	7	21.12	20.63	20.47		
3	16QAM	15	0	20.88	20.61	20.58		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	22.88	22.79	22.66	23.50	0
1.4	QPSK	1	3	22.88	22.84	22.69		
1.4	QPSK	1	5	22.96	22.75	22.51		
1.4	QPSK	3	0	23.13	22.81	22.60		
1.4	QPSK	3	1	23.11	22.95	22.86		
1.4	QPSK	3	3	23.10	22.81	22.68		
1.4	QPSK	6	0	21.99	21.69	21.53	22.50	1
1.4	16QAM	1	0	21.84	21.58	21.36	22.50	1
1.4	16QAM	1	3	21.87	21.67	21.51		
1.4	16QAM	1	5	21.78	21.56	21.23		
1.4	16QAM	3	0	21.93	21.74	21.79		
1.4	16QAM	3	1	22.10	21.78	21.76		
1.4	16QAM	3	3	22.02	21.71	21.40		
1.4	16QAM	6	0	20.77	20.73	20.56	21.50	2

<LTE Band 5>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20450	20525	20600		
Frequency (MHz)				829	836.5	844		
10	QPSK	1	0	22.31	22.24	22.39	23.50	0
10	QPSK	1	25	22.62	22.65	22.60		
10	QPSK	1	49	22.31	22.17	22.30		
10	QPSK	25	0	21.61	21.64	21.58	22.50	1
10	QPSK	25	12	21.69	21.68	21.62		
10	QPSK	25	25	21.60	21.59	21.60		
10	QPSK	50	0	21.73	21.64	21.61		
10	16QAM	1	0	21.31	21.35	21.38	22.50	1
10	16QAM	1	25	21.47	21.56	21.51		
10	16QAM	1	49	21.28	21.35	21.22		
10	16QAM	25	0	20.66	20.58	20.63	21.50	2
10	16QAM	25	12	20.70	20.71	20.56		
10	16QAM	25	25	20.85	20.87	20.63		
10	16QAM	50	0	20.76	20.64	20.67		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	22.11	22.14	22.12	23.50	0
5	QPSK	1	12	22.65	22.85	22.80		
5	QPSK	1	24	22.05	22.34	22.09		
5	QPSK	12	0	21.54	21.71	21.49	22.50	1
5	QPSK	12	7	21.60	21.66	21.60		
5	QPSK	12	13	21.61	21.55	21.58		
5	QPSK	25	0	21.64	21.63	21.59		
5	16QAM	1	0	21.32	21.23	21.24	22.50	1
5	16QAM	1	12	21.25	21.57	21.12		
5	16QAM	1	24	21.17	21.34	21.11		
5	16QAM	12	0	20.43	20.69	20.63	21.50	2
5	16QAM	12	7	20.47	20.65	20.53		
5	16QAM	12	13	20.56	20.69	20.43		
5	16QAM	25	0	20.64	20.58	20.63		

Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	22.19	22.40	22.19	23.50	0
3	QPSK	1	8	22.38	22.25	22.21		
3	QPSK	1	14	22.39	22.32	22.30		
3	QPSK	8	0	21.73	21.63	21.57	22.50	1
3	QPSK	8	4	21.63	21.65	21.65		
3	QPSK	8	7	21.59	21.62	21.47		
3	QPSK	15	0	21.68	21.64	21.63		
3	16QAM	1	0	21.38	21.47	21.40	22.50	1
3	16QAM	1	8	21.24	21.33	21.13		
3	16QAM	1	14	21.41	21.57	21.32		
3	16QAM	8	0	20.63	20.64	20.65	21.50	2
3	16QAM	8	4	20.73	20.85	20.72		
3	16QAM	8	7	20.61	20.71	20.66		
3	16QAM	15	0	20.62	20.60	20.57		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	22.56	22.47	22.42	23.50	0
1.4	QPSK	1	3	22.61	22.54	22.41		
1.4	QPSK	1	5	22.54	22.49	22.41		
1.4	QPSK	3	0	22.70	22.49	22.43		
1.4	QPSK	3	1	22.60	22.68	22.59		
1.4	QPSK	3	3	22.78	22.79	22.44		
1.4	QPSK	6	0	21.54	21.51	21.43	22.50	1
1.4	16QAM	1	0	21.44	21.37	21.30	22.50	1
1.4	16QAM	1	3	21.66	21.51	21.40		
1.4	16QAM	1	5	21.50	21.43	21.32		
1.4	16QAM	3	0	21.65	21.67	21.50		
1.4	16QAM	3	1	21.68	21.65	21.45		
1.4	16QAM	3	3	21.65	21.61	21.39		
1.4	16QAM	6	0	20.56	20.54	20.22	21.50	2

<LTE Band 7>

BW [MHz]	Modulation	RB Size	RB Offset	Measured Power			Tune-up limit (dBm)	MPR (dB)
Channel				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	21.82	22.07	22.08	23.50	0
20	QPSK	1	49	22.57	22.24	22.51		
20	QPSK	1	99	22.21	22.31	22.40		
20	QPSK	50	0	21.55	21.27	21.46	22.50	1
20	QPSK	50	24	21.25	21.20	21.39		
20	QPSK	50	50	21.25	21.27	21.53		
20	QPSK	100	0	21.25	21.17	21.18		
20	16QAM	1	0	20.99	20.97	21.20	22.50	1
20	16QAM	1	49	21.05	21.04	21.28		
20	16QAM	1	99	21.02	21.01	21.26		
20	16QAM	50	0	20.44	20.43	20.47	21.50	2
20	16QAM	50	24	20.40	20.36	20.49		
20	16QAM	50	50	20.41	20.43	20.42		
20	16QAM	100	0	20.25	20.21	20.41		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	22.27	22.19	22.37	23.50	0
15	QPSK	1	37	22.54	22.22	22.47		
15	QPSK	1	74	22.55	22.47	22.59		
15	QPSK	36	0	21.32	21.37	21.48	22.50	1
15	QPSK	36	20	21.38	21.29	21.56		
15	QPSK	36	39	21.43	21.31	21.65		
15	QPSK	75	0	21.34	21.28	21.50		
15	16QAM	1	0	21.24	21.30	21.33	22.50	1
15	16QAM	1	37	21.45	21.09	21.38		
15	16QAM	1	74	21.15	21.12	21.53		
15	16QAM	36	0	20.44	20.38	20.54	21.50	2
15	16QAM	36	20	20.30	20.36	20.54		
15	16QAM	36	39	20.44	20.40	20.59		
15	16QAM	75	0	20.55	20.39	20.51		

Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	22.08	22.07	22.40	23.50	0
10	QPSK	1	25	22.54	22.48	22.57		
10	QPSK	1	49	22.25	22.33	22.67		
10	QPSK	25	0	21.35	21.36	21.55	22.50	1
10	QPSK	25	12	21.32	21.24	21.57		
10	QPSK	25	25	21.38	21.31	21.58		
10	QPSK	50	0	21.35	21.28	21.55		
10	16QAM	1	0	21.14	21.22	21.40	22.50	1
10	16QAM	1	25	21.33	21.31	21.68		
10	16QAM	1	49	21.13	21.11	21.53		
10	16QAM	25	0	20.58	20.47	20.68	21.50	2
10	16QAM	25	12	20.36	20.42	20.65		
10	16QAM	25	25	20.32	20.41	20.68		
10	16QAM	50	0	20.38	20.41	20.64		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	21.91	21.99	22.48	23.50	0
5	QPSK	1	12	22.57	22.52	22.62		
5	QPSK	1	24	22.12	22.31	22.27		
5	QPSK	12	0	21.40	21.34	21.49	22.50	1
5	QPSK	12	7	21.40	21.20	21.52		
5	QPSK	12	13	21.41	21.27	21.61		
5	QPSK	25	0	21.30	21.27	21.58		
5	16QAM	1	0	21.37	21.12	21.38	22.50	1
5	16QAM	1	12	21.12	21.04	21.34		
5	16QAM	1	24	21.06	21.06	21.47		
5	16QAM	12	0	20.38	20.46	20.57	21.50	2
5	16QAM	12	7	20.56	20.36	20.52		
5	16QAM	12	13	20.36	20.32	20.60		
5	16QAM	25	0	20.36	20.29	20.54		

<LTE Band 12>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23060	23095	23130		
Frequency (MHz)				704	707.5	711		
10	QPSK	1	0	22.21	22.40	22.42	23.50	0
10	QPSK	1	25	22.63	22.89	22.94		
10	QPSK	1	49	22.50	22.69	22.57		
10	QPSK	25	0	21.56	21.53	21.67	22.50	1
10	QPSK	25	12	21.59	21.65	21.65		
10	QPSK	25	25	21.65	21.64	21.61		
10	QPSK	50	0	21.67	21.61	21.71		
10	16QAM	1	0	21.19	21.18	20.96	22.50	1
10	16QAM	1	25	21.50	21.55	21.49		
10	16QAM	1	49	21.37	21.49	21.29		
10	16QAM	25	0	20.67	20.61	20.72	21.50	2
10	16QAM	25	12	20.59	20.73	20.70		
10	16QAM	25	25	20.73	20.70	20.66		
10	16QAM	50	0	20.79	20.68	20.76		
Channel				23035	23095	23155	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	22.13	22.25	22.48	23.50	0
5	QPSK	1	12	22.71	23.11	22.78		
5	QPSK	1	24	22.32	22.97	22.41		
5	QPSK	12	0	21.43	21.69	21.72	22.50	1
5	QPSK	12	7	21.55	21.77	21.67		
5	QPSK	12	13	21.57	21.74	21.56		
5	QPSK	25	0	21.58	21.57	21.62		
5	16QAM	1	0	21.19	21.13	21.45	22.50	1
5	16QAM	1	12	21.27	21.58	21.42		
5	16QAM	1	24	21.22	21.36	21.29		
5	16QAM	12	0	20.57	20.87	20.78	21.50	2
5	16QAM	12	7	20.70	20.75	20.77		
5	16QAM	12	13	20.40	20.79	20.63		
5	16QAM	25	0	20.65	20.63	20.84		

Channel				23025	23095	23165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	22.45	22.56	22.87	23.50	0
3	QPSK	1	8	22.54	22.55	22.81		
3	QPSK	1	14	22.49	22.94	22.45		
3	QPSK	8	0	21.53	21.78	21.63	22.50	1
3	QPSK	8	4	21.51	21.77	21.64		
3	QPSK	8	7	21.51	21.78	21.67		
3	QPSK	15	0	21.46	21.67	21.70		
3	16QAM	1	0	21.29	21.39	21.33	22.50	1
3	16QAM	1	8	21.12	21.35	21.34		
3	16QAM	1	14	21.41	21.50	20.81		
3	16QAM	8	0	20.60	20.75	20.73	21.50	2
3	16QAM	8	4	20.74	20.94	20.65		
3	16QAM	8	7	20.77	20.87	20.74		
3	16QAM	15	0	20.81	20.72	20.77		
Channel				23017	23095	23173	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	22.63	22.74	22.62	23.50	0
1.4	QPSK	1	3	22.72	22.81	22.69		
1.4	QPSK	1	5	22.69	22.69	22.69		
1.4	QPSK	3	0	22.68	22.86	22.96		
1.4	QPSK	3	1	22.71	23.04	22.91		
1.4	QPSK	3	3	22.88	22.98	22.96		
1.4	QPSK	6	0	21.56	21.67	21.65	22.50	1
1.4	16QAM	1	0	21.61	21.39	21.53	22.50	1
1.4	16QAM	1	3	21.55	21.59	21.66		
1.4	16QAM	1	5	21.32	21.48	21.49		
1.4	16QAM	3	0	21.55	21.71	21.62		
1.4	16QAM	3	1	21.53	21.69	21.61		
1.4	16QAM	3	3	21.54	21.91	21.63		
1.4	16QAM	6	0	20.63	20.79	20.74	21.50	2

<LTE Band 17>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23780	23790	23800		
Frequency (MHz)				709	710	711		
10	QPSK	1	0	22.09	22.04	21.98	23.50	0
10	QPSK	1	25	22.28	22.15	22.29		
10	QPSK	1	49	22.25	22.03	22.03		
10	QPSK	25	0	21.36	21.18	21.22	22.50	1
10	QPSK	25	12	21.26	21.18	21.21		
10	QPSK	25	25	21.25	21.22	21.21		
10	QPSK	50	0	21.26	21.20	21.18		
10	16QAM	1	0	20.97	20.89	20.89	22.50	1
10	16QAM	1	25	21.25	21.09	21.17		
10	16QAM	1	49	21.03	20.95	20.81		
10	16QAM	25	0	20.52	20.31	20.33	21.50	2
10	16QAM	25	12	20.39	20.41	20.33		
10	16QAM	25	25	20.27	20.24	20.38		
10	16QAM	50	0	20.26	20.29	20.14		
Channel				23755	23790	23825	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	22.01	21.84	21.85	23.50	0
5	QPSK	1	12	22.46	22.21	22.19		
5	QPSK	1	24	22.11	22.30	21.85		
5	QPSK	12	0	21.23	21.20	21.11	22.50	1
5	QPSK	12	7	21.28	21.19	21.24		
5	QPSK	12	13	21.23	21.11	21.14		
5	QPSK	25	0	21.23	21.19	21.24		
5	16QAM	1	0	20.97	20.72	20.84	22.50	1
5	16QAM	1	12	20.64	21.25	21.21		
5	16QAM	1	24	20.86	20.93	20.87		
5	16QAM	12	0	20.24	20.14	19.99	21.50	2
5	16QAM	12	7	20.34	20.33	20.18		
5	16QAM	12	13	20.26	20.15	20.20		
5	16QAM	25	0	20.20	20.02	20.17		

<LTE Band 25>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26140	26340	26590		
Frequency (MHz)				1860	1880	1905		
20	QPSK	1	0	22.05	21.87	21.90	23.50	0
20	QPSK	1	49	22.10	22.16	22.24		
20	QPSK	1	99	21.92	21.95	21.97		
20	QPSK	50	0	21.19	20.97	21.15	22.50	1
20	QPSK	50	24	21.20	21.01	21.28		
20	QPSK	50	50	21.06	20.92	21.19		
20	QPSK	100	0	21.14	21.00	21.30		
20	16QAM	1	0	21.04	20.87	20.94	22.50	1
20	16QAM	1	49	20.74	20.72	20.93		
20	16QAM	1	99	20.60	20.82	21.17		
20	16QAM	50	0	20.33	19.96	20.21	21.50	2
20	16QAM	50	24	20.16	19.95	20.34		
20	16QAM	50	50	20.10	19.96	20.27		
20	16QAM	100	0	20.17	19.93	20.27		
Channel				26115	26340	26615	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1907.5		
15	QPSK	1	0	22.43	22.10	22.35	23.50	0
15	QPSK	1	37	22.37	22.14	22.22		
15	QPSK	1	74	22.06	22.08	22.08		
15	QPSK	36	0	21.26	21.00	21.17	22.50	1
15	QPSK	36	20	21.25	20.97	21.24		
15	QPSK	36	39	21.14	20.97	21.26		
15	QPSK	75	0	21.29	21.01	21.29		
15	16QAM	1	0	20.99	20.84	21.04	22.50	1
15	16QAM	1	37	20.97	20.74	20.97		
15	16QAM	1	74	20.81	20.78	21.18		
15	16QAM	36	0	20.26	19.91	20.13	21.50	2
15	16QAM	36	20	20.25	19.98	20.21		
15	16QAM	36	39	20.05	19.94	20.27		
15	16QAM	75	0	20.30	20.08	20.39		

Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1910		
10	QPSK	1	0	22.24	21.90	22.20	23.50	0
10	QPSK	1	25	22.61	22.30	22.64		
10	QPSK	1	49	22.25	22.08	22.25		
10	QPSK	25	0	21.42	21.19	21.27	22.50	1
10	QPSK	25	12	21.44	21.15	21.45		
10	QPSK	25	25	21.33	21.16	21.42		
10	QPSK	50	0	21.44	21.18	21.44		
10	16QAM	1	0	20.71	20.93	21.19	22.50	1
10	16QAM	1	25	21.39	21.10	21.60		
10	16QAM	1	49	21.06	20.96	21.25		
10	16QAM	25	0	20.60	20.37	20.18	21.50	2
10	16QAM	25	12	20.44	20.06	20.51		
10	16QAM	25	25	20.33	20.33	20.45		
10	16QAM	50	0	20.43	20.08	20.44		
Channel				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1912.5		
5	QPSK	1	0	22.06	21.77	22.23	23.50	0
5	QPSK	1	12	22.70	22.46	22.47		
5	QPSK	1	24	22.25	21.83	22.13		
5	QPSK	12	0	21.43	21.13	21.36	22.50	1
5	QPSK	12	7	21.36	21.19	21.42		
5	QPSK	12	13	21.43	21.12	21.42		
5	QPSK	25	0	21.40	21.10	21.48		
5	16QAM	1	0	21.01	21.19	21.55	22.50	1
5	16QAM	1	12	20.97	21.17	21.21		
5	16QAM	1	24	21.15	20.90	21.12		
5	16QAM	12	0	20.52	20.09	20.46	21.50	2
5	16QAM	12	7	20.46	20.18	20.47		
5	16QAM	12	13	20.52	20.24	20.25		
5	16QAM	25	0	20.47	20.14	20.25		

Channel				26055	26340	26675	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1913.5		
3	QPSK	1	0	22.25	22.02	22.39	23.50	0
3	QPSK	1	8	22.27	21.91	22.50		
3	QPSK	1	14	22.33	21.87	22.13		
3	QPSK	8	0	21.39	21.24	21.35	22.50	1
3	QPSK	8	4	21.29	21.14	21.34		
3	QPSK	8	7	21.51	21.19	21.36		
3	QPSK	15	0	21.48	21.10	21.30		
3	16QAM	1	0	21.12	20.96	21.18	22.50	1
3	16QAM	1	8	20.74	20.85	21.02		
3	16QAM	1	14	21.24	21.00	21.29		
3	16QAM	8	0	20.47	20.22	20.75	21.50	2
3	16QAM	8	4	20.41	20.23	20.53		
3	16QAM	8	7	20.52	20.21	20.14		
3	16QAM	15	0	20.39	20.29	20.43		
Channel				26047	26340	26683	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1914.3		
1.4	QPSK	1	0	22.55	22.38	22.38	23.50	0
1.4	QPSK	1	3	22.61	22.42	22.59		
1.4	QPSK	1	5	22.64	22.40	22.38		
1.4	QPSK	3	0	22.74	22.47	22.62		
1.4	QPSK	3	1	22.82	22.66	22.59		
1.4	QPSK	3	3	22.55	22.41	22.53		
1.4	QPSK	6	0	21.57	21.29	21.38	22.50	1
1.4	16QAM	1	0	21.49	20.95	21.30	22.50	1
1.4	16QAM	1	3	21.57	21.32	21.34		
1.4	16QAM	1	5	21.46	21.04	21.11		
1.4	16QAM	3	0	21.57	21.22	21.51		
1.4	16QAM	3	1	21.61	21.30	21.20		
1.4	16QAM	3	3	21.63	21.32	21.67		
1.4	16QAM	6	0	20.49	20.23	20.21	21.50	2

<LTE Band 26>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26765	26865	26965		
Frequency (MHz)				821.5	831.5	841.5		
15	QPSK	1	0	22.45	22.25	22.30	23.50	0
15	QPSK	1	37	22.59	22.58	22.50		
15	QPSK	1	74	22.39	22.35	22.27		
15	QPSK	36	0	21.42	21.37	21.28	22.50	1
15	QPSK	36	20	21.43	21.34	21.32		
15	QPSK	36	39	21.40	21.35	21.25		
15	QPSK	75	0	21.42	21.30	21.29		
15	16QAM	1	0	21.20	21.15	21.10	22.50	1
15	16QAM	1	37	21.48	21.22	21.08		
15	16QAM	1	74	21.22	21.07	21.02		
15	16QAM	36	0	20.41	20.52	20.43	21.50	2
15	16QAM	36	20	20.43	20.46	20.39		
15	16QAM	36	39	20.40	20.32	20.31		
15	16QAM	75	0	20.45	20.41	20.23		
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	22.10	22.13	22.17	23.50	0
10	QPSK	1	25	22.50	22.54	22.43		
10	QPSK	1	49	22.13	22.23	22.04		
10	QPSK	25	0	21.34	21.34	21.32	22.50	1
10	QPSK	25	12	21.38	21.37	21.29		
10	QPSK	25	25	21.33	21.34	21.31		
10	QPSK	50	0	21.35	21.36	21.26		
10	16QAM	1	0	21.16	20.98	21.08	22.50	1
10	16QAM	1	25	21.34	21.33	21.26		
10	16QAM	1	49	21.17	21.10	21.04		
10	16QAM	25	0	20.42	20.40	20.38	21.50	2
10	16QAM	25	12	20.50	20.74	20.59		
10	16QAM	25	25	20.58	20.39	20.37		
10	16QAM	50	0	20.50	20.42	20.29		

Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	21.98	22.00	21.85	23.50	0
5	QPSK	1	12	22.71	22.66	22.60		
5	QPSK	1	24	22.21	22.15	21.98		
5	QPSK	12	0	21.39	21.41	21.26	22.50	1
5	QPSK	12	7	21.34	21.35	21.32		
5	QPSK	12	13	21.40	21.37	21.26		
5	QPSK	25	0	21.31	21.25	21.25		
5	16QAM	1	0	20.89	20.99	21.00	22.50	1
5	16QAM	1	12	21.48	21.07	21.44		
5	16QAM	1	24	20.99	21.00	20.98		
5	16QAM	12	0	20.33	20.30	20.21	21.50	2
5	16QAM	12	7	20.40	20.52	20.43		
5	16QAM	12	13	20.54	20.53	20.27		
5	16QAM	25	0	20.58	20.41	20.25		
Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	22.22	22.16	22.34	23.50	0
3	QPSK	1	8	22.39	22.21	21.95		
3	QPSK	1	14	22.34	22.26	22.24		
3	QPSK	8	0	21.39	21.45	21.32	22.50	1
3	QPSK	8	4	21.31	21.36	21.29		
3	QPSK	8	7	21.39	21.40	21.33		
3	QPSK	15	0	21.43	21.31	21.29		
3	16QAM	1	0	21.22	21.11	21.03	22.50	1
3	16QAM	1	8	21.09	21.00	20.96		
3	16QAM	1	14	21.12	21.12	21.01		
3	16QAM	8	0	20.50	20.44	20.36	21.50	2
3	16QAM	8	4	20.52	20.41	20.39		
3	16QAM	8	7	20.61	20.51	20.34		
3	16QAM	15	0	20.47	20.15	20.32		

Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	22.38	22.39	22.25	23.50	0
1.4	QPSK	1	3	22.47	22.39	22.29		
1.4	QPSK	1	5	22.44	22.38	22.24		
1.4	QPSK	3	0	22.44	22.56	22.26		
1.4	QPSK	3	1	22.55	22.65	22.42		
1.4	QPSK	3	3	22.39	22.51	22.36		
1.4	QPSK	6	0	21.37	21.27	21.18	22.50	1
1.4	16QAM	1	0	21.53	21.12	20.97	22.50	1
1.4	16QAM	1	3	21.69	21.24	21.19		
1.4	16QAM	1	5	21.05	21.09	21.04		
1.4	16QAM	3	0	21.40	21.33	21.25		
1.4	16QAM	3	1	21.40	21.37	21.29		
1.4	16QAM	3	3	21.36	21.32	21.23		
1.4	16QAM	6	0	20.23	20.25	20.17	21.50	2

<LTE Band 30>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				27710				
Frequency (MHz)				2310				
10	QPSK	1	0	22.50			23.50	0
10	QPSK	1	25	22.75				
10	QPSK	1	49	22.50				
10	QPSK	25	0	21.69			22.50	1
10	QPSK	25	12	21.68				
10	QPSK	25	25	21.62				
10	QPSK	50	0	21.72				
10	16QAM	1	0	21.51			22.50	1
10	16QAM	1	25	21.66				
10	16QAM	1	49	21.54				
10	16QAM	25	0	20.86			21.50	2
10	16QAM	25	12	21.02				
10	16QAM	25	25	20.87				
10	16QAM	50	0	20.86				
Channel				27685	27710	27735	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2307.5	2310	2312.5		
5	QPSK	1	0	22.66	22.29	22.25	23.50	0
5	QPSK	1	12	23.10	22.92	22.54		
5	QPSK	1	24	22.55	22.26	22.35		
5	QPSK	12	0	21.64	21.70	21.59	22.50	1
5	QPSK	12	7	21.69	21.78	21.64		
5	QPSK	12	13	21.61	21.66	21.63		
5	QPSK	25	0	21.74	21.68	21.64		
5	16QAM	1	0	21.50	21.34	21.29	22.50	1
5	16QAM	1	12	21.75	21.68	21.56		
5	16QAM	1	24	21.40	21.32	21.24		
5	16QAM	12	0	20.55	20.71	20.65	21.50	2
5	16QAM	12	7	20.82	20.83	20.61		
5	16QAM	12	13	20.85	20.59	20.55		
5	16QAM	25	0	20.60	20.77	20.64		

Reduced Average RF Power (Proximity Sensor active)

<LTE Band 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	17.06	17.42	17.07	17.50	0
20	QPSK	1	49	17.25	17.31	17.47		
20	QPSK	1	99	17.14	17.20	17.06		
20	QPSK	50	0	16.04	16.15	16.23	16.50	1
20	QPSK	50	24	16.10	16.12	15.88		
20	QPSK	50	50	16.07	16.01	15.88		
20	QPSK	100	0	16.09	16.04	15.95		
20	16QAM	1	0	15.78	16.00	15.94	16.50	1
20	16QAM	1	49	16.03	16.09	16.06		
20	16QAM	1	99	15.95	15.81	15.82		
20	16QAM	50	0	15.20	14.98	15.02	15.50	2
20	16QAM	50	24	15.25	14.99	14.97		
20	16QAM	50	50	15.24	14.92	14.99		
20	16QAM	100	0	15.33	14.99	14.98		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	17.12	17.15	16.99	17.50	0
15	QPSK	1	37	17.42	17.32	17.18		
15	QPSK	1	74	17.18	17.04	17.07		
15	QPSK	36	0	15.98	15.97	15.84	16.50	1
15	QPSK	36	20	16.06	15.96	15.85		
15	QPSK	36	39	16.07	15.97	15.85		
15	QPSK	75	0	16.06	15.99	15.80		
15	16QAM	1	0	15.93	15.96	15.84	16.50	1
15	16QAM	1	37	16.16	16.15	15.94		
15	16QAM	1	74	15.95	15.77	15.80		
15	16QAM	36	0	15.07	15.07	14.89	15.50	2
15	16QAM	36	20	15.15	15.07	14.95		
15	16QAM	36	39	15.11	15.06	14.86		
15	16QAM	75	0	15.16	15.06	14.93		

Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	16.99	17.09	17.08	17.50	0
10	QPSK	1	25	17.18	17.14	16.99		
10	QPSK	1	49	17.14	17.03	17.04		
10	QPSK	25	0	15.87	16.01	15.80	16.50	1
10	QPSK	25	12	16.01	15.99	15.81		
10	QPSK	25	25	16.01	15.99	15.90		
10	QPSK	50	0	15.91	16.01	15.82		
10	16QAM	1	0	15.82	15.95	15.81	16.50	1
10	16QAM	1	25	15.99	15.96	15.93		
10	16QAM	1	49	15.89	15.73	15.80		
10	16QAM	25	0	14.90	15.07	14.91	15.50	2
10	16QAM	25	12	15.11	15.10	14.93		
10	16QAM	25	25	15.09	15.09	14.95		
10	16QAM	50	0	15.02	15.10	14.93		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	16.86	16.99	16.84	17.50	0
5	QPSK	1	12	17.17	17.24	17.19		
5	QPSK	1	24	16.94	17.00	16.94		
5	QPSK	12	0	15.86	15.95	15.93	16.50	1
5	QPSK	12	7	15.86	15.97	15.98		
5	QPSK	12	13	15.92	15.98	15.93		
5	QPSK	25	0	15.83	15.97	15.98		
5	16QAM	1	0	15.66	15.74	15.68	16.50	1
5	16QAM	1	12	15.98	16.08	16.14		
5	16QAM	1	24	15.68	15.84	15.82		
5	16QAM	12	0	14.94	15.09	14.97	15.50	2
5	16QAM	12	7	15.00	15.03	15.14		
5	16QAM	12	13	15.06	14.90	14.90		
5	16QAM	25	0	14.98	15.06	15.00		

Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	17.38	17.34	17.40	17.50	0
3	QPSK	1	8	17.31	17.31	17.38		
3	QPSK	1	14	17.42	17.34	17.43		
3	QPSK	8	0	16.39	16.40	16.36	16.50	1
3	QPSK	8	4	16.42	16.48	16.37		
3	QPSK	8	7	16.36	16.43	16.42		
3	QPSK	15	0	16.44	16.41	16.43		
3	16QAM	1	0	16.25	16.43	16.25	16.50	1
3	16QAM	1	8	16.25	16.24	16.25		
3	16QAM	1	14	16.14	16.37	16.29		
3	16QAM	8	0	15.49	15.49	15.42	15.50	2
3	16QAM	8	4	15.37	15.32	15.41		
3	16QAM	8	7	15.47	15.35	15.40		
3	16QAM	15	0	15.31	15.33	15.47		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	17.20	17.29	17.06	17.50	0
1.4	QPSK	1	3	17.32	17.25	17.27		
1.4	QPSK	1	5	17.11	17.21	17.18		
1.4	QPSK	3	0	17.04	17.32	17.21		
1.4	QPSK	3	1	17.16	17.35	17.30		
1.4	QPSK	3	3	17.13	17.32	17.21		
1.4	QPSK	6	0	16.10	16.22	16.19	16.50	1
1.4	16QAM	1	0	15.85	16.13	16.12	16.50	1
1.4	16QAM	1	3	16.08	16.25	16.26		
1.4	16QAM	1	5	15.92	16.07	16.08		
1.4	16QAM	3	0	16.18	16.29	16.24		
1.4	16QAM	3	1	16.17	16.34	16.29		
1.4	16QAM	3	3	16.21	16.29	16.26		
1.4	16QAM	6	0	15.21	15.23	15.24	15.50	2

<LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	17.86	17.89	17.95	18.50	0
20	QPSK	1	49	17.84	17.90	17.96		
20	QPSK	1	99	17.79	17.78	17.93		
20	QPSK	50	0	16.84	16.86	16.96	17.50	1
20	QPSK	50	24	16.75	16.77	16.90		
20	QPSK	50	50	16.77	16.76	16.95		
20	QPSK	100	0	16.82	16.79	16.90		
20	16QAM	1	0	16.74	16.77	16.72	17.50	1
20	16QAM	1	49	16.78	16.80	16.81		
20	16QAM	1	99	16.61	16.65	16.72		
20	16QAM	50	0	15.82	15.83	15.92	16.50	2
20	16QAM	50	24	15.77	15.76	15.91		
20	16QAM	50	50	15.71	15.72	15.93		
20	16QAM	100	0	15.79	15.78	15.88		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	17.87	17.81	17.93	18.50	0
15	QPSK	1	37	18.01	18.04	18.11		
15	QPSK	1	74	17.78	17.69	17.92		
15	QPSK	36	0	16.82	16.80	16.90	17.50	1
15	QPSK	36	20	16.82	16.74	16.94		
15	QPSK	36	39	16.78	16.73	16.91		
15	QPSK	75	0	16.79	16.80	16.98		
15	16QAM	1	0	16.82	16.56	16.75	17.50	1
15	16QAM	1	37	16.82	16.80	17.02		
15	16QAM	1	74	16.68	16.37	16.67		
15	16QAM	36	0	15.80	15.77	15.85	16.50	2
15	16QAM	36	20	15.77	15.72	15.95		
15	16QAM	36	39	15.74	15.69	15.92		
15	16QAM	75	0	15.76	15.73	15.97		

Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	17.88	17.82	17.98	18.50	0
10	QPSK	1	25	17.81	17.84	18.02		
10	QPSK	1	49	17.77	17.69	17.97		
10	QPSK	25	0	16.84	16.81	16.96	17.50	1
10	QPSK	25	12	16.83	16.77	16.98		
10	QPSK	25	25	16.78	16.71	16.96		
10	QPSK	50	0	16.78	16.73	17.01		
10	16QAM	1	0	16.72	16.64	16.67	17.50	1
10	16QAM	1	25	16.74	16.76	16.85		
10	16QAM	1	49	16.56	16.58	16.75		
10	16QAM	25	0	15.80	15.77	15.98	16.50	2
10	16QAM	25	12	15.76	15.71	15.98		
10	16QAM	25	25	15.73	15.75	15.93		
10	16QAM	50	0	15.73	15.76	15.96		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	17.66	17.70	17.86	18.50	0
5	QPSK	1	12	17.92	18.01	18.06		
5	QPSK	1	24	17.63	17.63	17.80		
5	QPSK	12	0	16.73	16.77	16.88	17.50	1
5	QPSK	12	7	16.76	16.74	16.91		
5	QPSK	12	13	16.71	16.72	16.89		
5	QPSK	25	0	16.72	16.72	16.91		
5	16QAM	1	0	16.39	16.53	16.57	17.50	1
5	16QAM	1	12	16.69	16.82	16.86		
5	16QAM	1	24	16.39	16.54	16.59		
5	16QAM	12	0	15.54	15.71	15.79	16.50	2
5	16QAM	12	7	15.71	15.87	15.92		
5	16QAM	12	13	15.53	15.92	15.85		
5	16QAM	25	0	15.66	15.73	15.89		

Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	17.74	17.70	17.75	18.50	0
3	QPSK	1	8	17.68	17.72	17.73		
3	QPSK	1	14	17.72	17.72	17.70		
3	QPSK	8	0	16.78	16.80	16.84	17.50	1
3	QPSK	8	4	16.80	16.77	16.82		
3	QPSK	8	7	16.78	16.79	16.83		
3	QPSK	15	0	16.79	16.78	16.75		
3	16QAM	1	0	16.59	16.57	16.69	17.50	1
3	16QAM	1	8	16.58	16.46	16.65		
3	16QAM	1	14	16.59	16.50	16.61		
3	16QAM	8	0	15.68	15.78	15.76	16.50	2
3	16QAM	8	4	15.74	15.72	15.84		
3	16QAM	8	7	15.72	15.75	15.79		
3	16QAM	15	0	15.68	15.75	15.74		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	17.56	17.75	17.77	18.50	0
1.4	QPSK	1	3	17.69	17.90	17.81		
1.4	QPSK	1	5	17.60	17.79	17.69		
1.4	QPSK	3	0	17.62	17.74	17.72		
1.4	QPSK	3	1	17.73	17.77	17.77		
1.4	QPSK	3	3	17.66	17.76	17.82		
1.4	QPSK	6	0	16.68	16.79	16.82	17.50	1
1.4	16QAM	1	0	16.53	16.53	16.63	17.50	1
1.4	16QAM	1	3	16.69	16.74	16.82		
1.4	16QAM	1	5	16.53	16.61	16.68		
1.4	16QAM	3	0	16.74	16.85	16.89		
1.4	16QAM	3	1	16.74	16.88	16.95		
1.4	16QAM	3	3	16.77	16.83	16.85		
1.4	16QAM	6	0	15.72	15.72	15.80	16.50	2

<LTE Band 5>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20450	20525	20600		
Frequency (MHz)				829	836.5	844		
10	QPSK	1	0	18.18	18.19	18.50	19.50	0
10	QPSK	1	25	18.53	18.52	18.63		
10	QPSK	1	49	18.18	18.23	18.46		
10	QPSK	25	0	17.46	17.43	17.40	18.50	1
10	QPSK	25	12	17.43	17.42	17.38		
10	QPSK	25	25	17.43	17.37	17.37		
10	QPSK	50	0	17.40	17.41	17.40		
10	16QAM	1	0	17.57	17.30	17.22	18.50	1
10	16QAM	1	25	17.15	17.42	17.39		
10	16QAM	1	49	17.22	17.11	17.16		
10	16QAM	25	0	16.40	16.28	16.30	17.50	2
10	16QAM	25	12	16.30	16.35	16.28		
10	16QAM	25	25	16.57	16.30	16.27		
10	16QAM	50	0	16.35	16.33	16.33		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	18.52	18.55	18.53	19.50	0
5	QPSK	1	12	18.72	18.66	18.82		
5	QPSK	1	24	18.49	18.46	18.39		
5	QPSK	12	0	17.47	17.40	17.47	18.50	1
5	QPSK	12	7	17.53	17.42	17.54		
5	QPSK	12	13	17.50	17.43	17.36		
5	QPSK	25	0	17.53	17.39	17.38		
5	16QAM	1	0	17.19	17.23	17.21	18.50	1
5	16QAM	1	12	17.60	17.37	17.54		
5	16QAM	1	24	17.23	17.05	17.17		
5	16QAM	12	0	16.35	16.30	16.42	17.50	2
5	16QAM	12	7	16.27	16.37	16.53		
5	16QAM	12	13	16.28	16.28	16.33		
5	16QAM	25	0	16.44	16.32	16.26		

Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	18.58	18.51	18.59	19.50	0
3	QPSK	1	8	18.58	18.50	18.42		
3	QPSK	1	14	18.57	18.49	18.49		
3	QPSK	8	0	17.58	17.46	17.56	18.50	1
3	QPSK	8	4	17.52	17.47	17.45		
3	QPSK	8	7	17.56	17.49	17.41		
3	QPSK	15	0	17.54	17.48	17.39		
3	16QAM	1	0	17.26	17.15	17.25	18.50	1
3	16QAM	1	8	17.27	17.18	17.24		
3	16QAM	1	14	17.24	17.22	17.16		
3	16QAM	8	0	16.45	16.34	16.41	17.50	2
3	16QAM	8	4	16.38	16.37	16.32		
3	16QAM	8	7	16.42	16.33	16.28		
3	16QAM	15	0	16.42	16.33	16.30		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	18.62	18.57	18.48	19.50	0
1.4	QPSK	1	3	18.65	18.56	18.49		
1.4	QPSK	1	5	18.62	18.37	18.44		
1.4	QPSK	3	0	18.68	18.45	18.51		
1.4	QPSK	3	1	18.70	18.44	18.57		
1.4	QPSK	3	3	18.67	18.52	18.57		
1.4	QPSK	6	0	17.56	17.46	17.46	18.50	1
1.4	16QAM	1	0	17.34	17.32	17.23	18.50	1
1.4	16QAM	1	3	17.55	17.34	17.37		
1.4	16QAM	1	5	17.37	17.22	17.35		
1.4	16QAM	3	0	17.59	17.46	17.53		
1.4	16QAM	3	1	17.58	17.56	17.50		
1.4	16QAM	3	3	17.45	17.44	17.42		
1.4	16QAM	6	0	16.42	16.36	16.34	17.50	2

<LTE Band 7>

BW [MHz]	Modulation	RB Size	RB Offset	Measured Power			Tune-up limit (dBm)	MPR (dB)
Channel				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	17.40	16.98	16.82	18.50	0
20	QPSK	1	49	17.42	17.33	17.41		
20	QPSK	1	99	17.08	16.80	16.89		
20	QPSK	50	0	16.27	15.91	15.83	17.50	1
20	QPSK	50	24	16.26	15.88	15.69		
20	QPSK	50	50	16.06	15.88	15.80		
20	QPSK	100	0	16.18	15.91	15.73		
20	16QAM	1	0	16.19	15.67	15.58	17.50	1
20	16QAM	1	49	16.04	15.89	15.63		
20	16QAM	1	99	15.88	15.67	15.68		
20	16QAM	50	0	15.20	14.84	14.78	16.50	2
20	16QAM	50	24	15.25	14.83	14.70		
20	16QAM	50	50	15.30	14.88	14.75		
20	16QAM	100	0	15.32	14.88	14.75		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	17.47	16.97	16.91	18.50	0
15	QPSK	1	37	17.45	17.25	17.06		
15	QPSK	1	74	17.08	16.96	16.91		
15	QPSK	36	0	16.19	15.92	15.79	17.50	1
15	QPSK	36	20	16.12	15.91	15.78		
15	QPSK	36	39	16.15	15.90	15.85		
15	QPSK	75	0	16.13	15.94	15.84		
15	16QAM	1	0	16.17	15.79	15.67	17.50	1
15	16QAM	1	37	16.29	15.83	15.83		
15	16QAM	1	74	15.94	15.82	15.67		
15	16QAM	36	0	15.09	14.84	14.76	16.50	2
15	16QAM	36	20	15.10	14.86	14.81		
15	16QAM	36	39	15.09	14.85	14.81		
15	16QAM	75	0	15.11	14.86	14.77		

Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	17.75	17.45	17.48	18.50	0
10	QPSK	1	25	17.77	17.47	17.53		
10	QPSK	1	49	17.69	17.53	17.52		
10	QPSK	25	0	16.60	16.44	16.43	17.50	1
10	QPSK	25	12	16.65	16.45	16.46		
10	QPSK	25	25	16.65	16.46	16.49		
10	QPSK	50	0	16.54	16.46	16.44		
10	16QAM	1	0	16.53	16.24	16.19	17.50	1
10	16QAM	1	25	16.50	16.33	16.28		
10	16QAM	1	49	16.46	16.23	16.30		
10	16QAM	25	0	15.55	15.36	14.74	16.50	2
10	16QAM	25	12	15.55	15.29	15.45		
10	16QAM	25	25	15.56	15.32	15.53		
10	16QAM	50	0	15.47	15.34	15.38		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	17.77	17.30	17.50	18.50	0
5	QPSK	1	12	17.67	17.63	16.89		
5	QPSK	1	24	17.57	17.36	16.62		
5	QPSK	12	0	16.71	16.43	16.44	17.50	1
5	QPSK	12	7	16.79	16.49	16.35		
5	QPSK	12	13	16.65	16.50	15.66		
5	QPSK	25	0	16.60	16.48	15.72		
5	16QAM	1	0	16.73	16.24	16.25	17.50	1
5	16QAM	1	12	16.71	16.50	15.72		
5	16QAM	1	24	16.44	16.06	15.52		
5	16QAM	12	0	15.58	15.38	14.62	16.50	2
5	16QAM	12	7	15.73	15.34	15.10		
5	16QAM	12	13	15.52	14.67	15.10		
5	16QAM	25	0	15.57	14.75	14.68		

<LTE Band 25>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26140	26340	26590		
Frequency (MHz)				1860	1880	1905		
20	QPSK	1	0	17.06	16.90	16.94	17.50	0
20	QPSK	1	49	17.10	16.81	17.11		
20	QPSK	1	99	16.76	16.75	17.00		
20	QPSK	50	0	15.89	15.70	15.89	16.50	1
20	QPSK	50	24	15.90	15.75	15.93		
20	QPSK	50	50	15.88	15.68	15.92		
20	QPSK	100	0	15.86	15.76	16.02		
20	16QAM	1	0	15.82	15.65	15.74	16.50	1
20	16QAM	1	49	15.84	15.65	16.02		
20	16QAM	1	99	15.50	15.56	15.84		
20	16QAM	50	0	14.91	14.67	14.83	15.50	2
20	16QAM	50	24	14.76	14.65	14.90		
20	16QAM	50	50	14.75	14.65	14.89		
20	16QAM	100	0	14.81	14.65	14.91		
Channel				26115	26340	26615	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1907.5		
15	QPSK	1	0	17.15	16.88	17.03	17.50	0
15	QPSK	1	37	17.22	17.00	17.20		
15	QPSK	1	74	16.92	16.75	17.04		
15	QPSK	36	0	16.04	15.74	16.01	16.50	1
15	QPSK	36	20	15.96	15.70	15.99		
15	QPSK	36	39	15.92	15.70	16.00		
15	QPSK	75	0	15.94	15.75	15.98		
15	16QAM	1	0	15.94	15.79	15.89	16.50	1
15	16QAM	1	37	16.07	15.87	16.12		
15	16QAM	1	74	15.68	15.62	15.79		
15	16QAM	36	0	14.94	14.70	14.90	15.50	2
15	16QAM	36	20	14.84	14.69	14.91		
15	16QAM	36	39	14.81	14.69	14.89		
15	16QAM	75	0	14.84	14.71	14.90		

Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1910		
10	QPSK	1	0	17.18	16.80	16.99	17.50	0
10	QPSK	1	25	17.11	16.72	17.02		
10	QPSK	1	49	16.98	16.77	17.04		
10	QPSK	25	0	16.07	15.74	15.92	16.50	1
10	QPSK	25	12	16.04	15.71	15.93		
10	QPSK	25	25	15.97	15.71	15.92		
10	QPSK	50	0	16.06	15.73	15.92		
10	16QAM	1	0	15.77	15.58	15.72	16.50	1
10	16QAM	1	25	15.99	15.68	16.03		
10	16QAM	1	49	15.73	15.45	15.83		
10	16QAM	25	0	14.95	14.67	14.82	15.50	2
10	16QAM	25	12	14.99	14.71	14.84		
10	16QAM	25	25	14.80	14.65	14.85		
10	16QAM	50	0	14.95	14.66	14.85		
Channel				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1912.5		
5	QPSK	1	0	17.00	16.59	16.85	17.50	0
5	QPSK	1	12	17.24	16.87	17.16		
5	QPSK	1	24	16.90	16.59	16.89		
5	QPSK	12	0	16.03	15.63	15.90	16.50	1
5	QPSK	12	7	15.98	15.72	15.92		
5	QPSK	12	13	15.94	15.66	15.90		
5	QPSK	25	0	16.00	15.66	15.93		
5	16QAM	1	0	15.73	15.32	15.63	16.50	1
5	16QAM	1	12	15.99	15.69	15.97		
5	16QAM	1	24	15.74	15.34	15.68		
5	16QAM	12	0	15.07	14.74	14.66	15.50	2
5	16QAM	12	7	14.82	14.53	14.81		
5	16QAM	12	13	14.97	14.57	14.80		
5	16QAM	25	0	14.95	14.61	14.80		

Channel				26055	26340	26675	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1913.5		
3	QPSK	1	0	16.98	16.63	16.91	17.50	0
3	QPSK	1	8	16.99	16.64	16.85		
3	QPSK	1	14	17.00	16.67	16.91		
3	QPSK	8	0	16.02	15.68	15.94	16.50	1
3	QPSK	8	4	15.98	15.71	15.92		
3	QPSK	8	7	15.99	15.70	15.94		
3	QPSK	15	0	16.03	15.68	15.89		
3	16QAM	1	0	15.85	15.49	15.79	16.50	1
3	16QAM	1	8	15.73	15.50	15.61		
3	16QAM	1	14	15.84	15.44	15.73		
3	16QAM	8	0	14.98	14.64	14.84	15.50	2
3	16QAM	8	4	14.92	14.56	14.81		
3	16QAM	8	7	14.99	14.61	14.80		
3	16QAM	15	0	14.94	14.60	14.82		
Channel				26047	26340	26683	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1914.3		
1.4	QPSK	1	0	17.02	16.66	16.88	17.50	0
1.4	QPSK	1	3	17.18	16.76	16.89		
1.4	QPSK	1	5	16.98	16.66	16.82		
1.4	QPSK	3	0	17.01	16.66	16.79		
1.4	QPSK	3	1	17.06	16.70	16.85		
1.4	QPSK	3	3	17.04	16.62	16.82		
1.4	QPSK	6	0	16.02	15.70	15.80	16.50	1
1.4	16QAM	1	0	15.83	15.50	15.67	16.50	1
1.4	16QAM	1	3	15.95	15.74	15.76		
1.4	16QAM	1	5	15.84	15.50	15.65		
1.4	16QAM	3	0	16.12	15.64	15.85		
1.4	16QAM	3	1	16.10	15.71	15.88		
1.4	16QAM	3	3	15.99	15.67	15.80		
1.4	16QAM	6	0	14.91	14.61	14.72	15.50	2

<LTE Band 26>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26765	26865	26965		
Frequency (MHz)				821.5	831.5	841.5		
15	QPSK	1	0	18.94	19.01	19.04	19.50	0
15	QPSK	1	37	19.27	19.22	19.25		
15	QPSK	1	74	18.99	19.01	19.01		
15	QPSK	36	0	17.86	17.91	17.95	18.50	1
15	QPSK	36	20	17.99	17.92	17.94		
15	QPSK	36	39	17.81	17.98	17.94		
15	QPSK	75	0	17.80	17.92	17.92		
15	16QAM	1	0	17.61	17.88	17.84	18.50	1
15	16QAM	1	37	18.01	18.00	18.10		
15	16QAM	1	74	17.77	17.89	17.79		
15	16QAM	36	0	16.69	16.87	16.92	17.50	2
15	16QAM	36	20	16.83	16.80	16.90		
15	16QAM	36	39	16.82	16.95	16.88		
15	16QAM	75	0	16.89	16.82	16.88		
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	18.99	19.05	19.02	19.50	0
10	QPSK	1	25	19.01	19.06	19.04		
10	QPSK	1	49	19.03	19.05	19.00		
10	QPSK	25	0	17.94	17.94	17.97	18.50	1
10	QPSK	25	12	17.91	17.96	17.93		
10	QPSK	25	25	18.00	18.04	17.94		
10	QPSK	50	0	17.92	17.95	17.94		
10	16QAM	1	0	17.83	17.84	17.79	18.50	1
10	16QAM	1	25	17.80	17.92	17.78		
10	16QAM	1	49	17.95	17.85	17.86		
10	16QAM	25	0	16.80	16.82	16.86	17.50	2
10	16QAM	25	12	16.78	16.81	16.87		
10	16QAM	25	25	16.92	16.89	16.88		
10	16QAM	50	0	16.80	16.81	16.85		

Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	18.86	18.79	18.81	19.50	0
5	QPSK	1	12	19.15	19.06	19.09		
5	QPSK	1	24	18.88	18.87	18.82		
5	QPSK	12	0	17.91	17.81	17.87	18.50	1
5	QPSK	12	7	17.93	17.87	17.89		
5	QPSK	12	13	17.90	17.83	17.83		
5	QPSK	25	0	17.91	17.83	17.85		
5	16QAM	1	0	17.53	17.60	17.57	18.50	1
5	16QAM	1	12	17.85	17.91	17.90		
5	16QAM	1	24	17.60	17.72	17.49		
5	16QAM	12	0	16.75	16.78	16.88	17.50	2
5	16QAM	12	7	16.70	16.90	16.72		
5	16QAM	12	13	16.92	16.81	16.78		
5	16QAM	25	0	16.75	16.74	16.80		
Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	18.78	18.74	18.85	19.50	0
3	QPSK	1	8	18.79	18.80	18.79		
3	QPSK	1	14	18.83	18.79	18.79		
3	QPSK	8	0	17.80	17.85	17.85	18.50	1
3	QPSK	8	4	17.79	17.77	17.85		
3	QPSK	8	7	17.82	17.81	17.84		
3	QPSK	15	0	17.80	17.75	17.79		
3	16QAM	1	0	17.59	17.57	17.58	18.50	1
3	16QAM	1	8	17.58	17.61	17.60		
3	16QAM	1	14	17.62	17.63	17.67		
3	16QAM	8	0	16.67	16.68	16.81	17.50	2
3	16QAM	8	4	16.63	16.68	16.73		
3	16QAM	8	7	16.69	16.72	16.72		
3	16QAM	15	0	16.65	16.70	16.75		

Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	18.64	18.54	18.61	19.50	0
1.4	QPSK	1	3	18.70	18.69	18.66		
1.4	QPSK	1	5	18.57	18.52	18.57		
1.4	QPSK	3	0	18.56	18.56	18.59		
1.4	QPSK	3	1	18.62	18.60	18.62		
1.4	QPSK	3	3	18.59	18.54	18.58		
1.4	QPSK	6	0	17.59	17.57	17.63	18.50	1
1.4	16QAM	1	0	17.44	17.47	17.45	18.50	1
1.4	16QAM	1	3	17.63	17.59	17.62		
1.4	16QAM	1	5	17.39	17.38	17.43		
1.4	16QAM	3	0	17.65	17.58	17.67		
1.4	16QAM	3	1	17.57	17.59	17.65		
1.4	16QAM	3	3	17.62	17.61	17.60		
1.4	16QAM	6	0	16.44	16.43	16.50	17.50	2

<LTE Band 30>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				27710				
Frequency (MHz)				2310				
10	QPSK	1	0	17.50			18.00	0
10	QPSK	1	25	17.58				
10	QPSK	1	49	17.26				
10	QPSK	25	0	16.25			17.00	1
10	QPSK	25	12	16.12				
10	QPSK	25	25	16.20				
10	QPSK	50	0	16.27				
10	16QAM	1	0	16.14			17.00	1
10	16QAM	1	25	16.16				
10	16QAM	1	49	16.18				
10	16QAM	25	0	15.30			16.00	2
10	16QAM	25	12	15.16				
10	16QAM	25	25	15.04				
10	16QAM	50	0	15.33				
Channel				27685	27710	27735	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2307.5	2310	2312.5		
5	QPSK	1	0	17.33	17.32	17.28	18.00	0
5	QPSK	1	12	17.49	17.57	17.53		
5	QPSK	1	24	17.25	17.30	17.26		
5	QPSK	12	0	16.31	16.38	16.32	17.00	1
5	QPSK	12	7	16.38	16.34	16.30		
5	QPSK	12	13	16.28	16.31	16.36		
5	QPSK	25	0	16.37	16.36	16.36		
5	16QAM	1	0	16.12	16.06	16.05	17.00	1
5	16QAM	1	12	16.33	16.29	16.46		
5	16QAM	1	24	16.10	16.06	16.08		
5	16QAM	12	0	15.37	15.28	15.42	16.00	2
5	16QAM	12	7	15.34	15.33	15.33		
5	16QAM	12	13	15.42	15.34	15.17		
5	16QAM	25	0	15.27	15.34	15.27		

<TDD LTE SAR Measurement>

TDD LTE configuration setup for SAR measurement

SAR was tested with a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by 3GPP.

a. 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations

b. "special subframe S" contains both uplink and downlink transmissions, it has been taken into consideration to determine the transmission duty factor according to the worst case uplink and downlink cyclic prefix requirements for UpPTS

c. Establishing connections with base station simulators ensure a consistent means for testing SAR and recommended for evaluating SAR. The Anritsu MT8820C (firmware: #22.52#004) was used for LTE output power measurements and SAR testing.

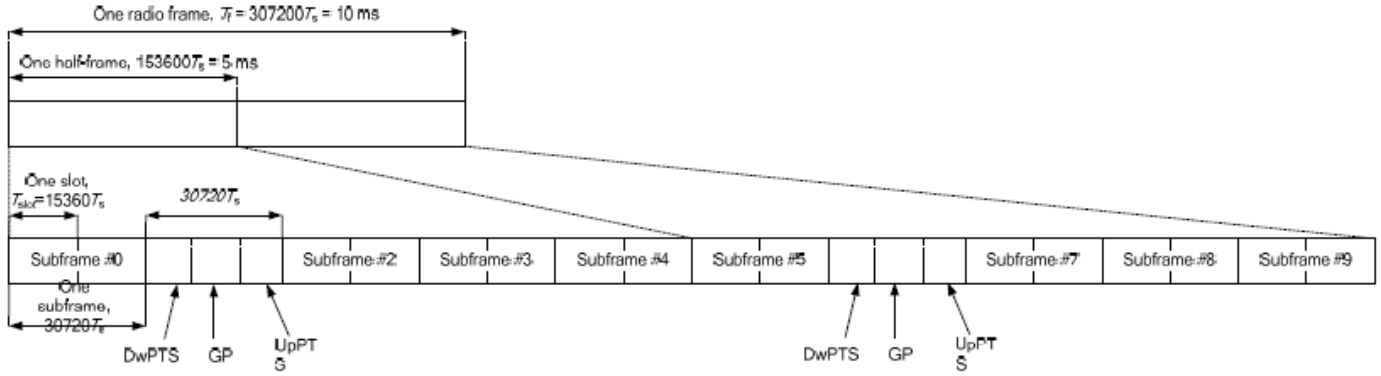


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

Table 4.2-2: Uplink-downlink configurations.

Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number									
		0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	U	U	D	S	U	U	U
1	5 ms	D	S	U	U	D	D	S	U	U	D
2	5 ms	D	S	U	D	D	D	S	U	D	D
3	10 ms	D	S	U	U	U	D	D	D	D	D
4	10 ms	D	S	U	U	D	D	D	D	D	D
5	10 ms	D	S	U	D	D	D	D	D	D	D
6	5 ms	D	S	U	U	U	D	S	U	U	D

Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$	$7680 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21952 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$			$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$20480 \cdot T_s$		
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$		
8	$24144 \cdot T_s$			-	-	-
9	$13168 \cdot T_s$			-	-	-

Special subframe (30720·T_s): Normal cyclic prefix in downlink (UpPTS)			
	Special subframe configuration	**Normal cyclic prefix in uplink**	**Extended cyclic prefix in uplink**
Uplink duty factor in one special subframe	**0~4**	7.13%	8.33%
	5~9	14.3%	16.7%

Special subframe(30720·T_s): Extended cyclic prefix in downlink (UpPTS)			
	Special subframe configuration	**Normal cyclic prefix in uplink**	**Extended cyclic prefix in uplink**
Uplink duty factor in one special subframe	**0~3**	7.13%	8.33%
	4~7	14.3%	16.7%

The highest duty factor is resulted from:

i. Uplink-downlink configuration: 0. In a half-frame consisted of 5 subfames, uplink operation is in 3 uplink subframes and 1 special subframe.

ii. special subframe configuration: 5-9 for normal cyclic prefix in downlink, 4-7 for extended cyclic prefix in downlink

iii. for special subframe with extended cyclic prefix in uplink, the total uplink duty factor in one half-frame is: (3+0.167)/5 = 63.3%

iv. for special subframe with normal cyclic prefix in uplink, the total uplink duty factor in one half-frame is: (3+0.143)/5 = 62.9%

v. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The scaled TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.

Maximum Average RF Power (Proximity Sensor Inactive)

<LTE Band 41>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				39750	40185	40620	41055	41490		
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
20	QPSK	1	0	22.57	22.68	22.70	22.95	22.85	23.50	0
20	QPSK	1	49	22.62	22.91	22.96	23.05	23.13		
20	QPSK	1	99	22.47	22.70	22.57	22.90	22.76		
20	QPSK	50	0	21.86	21.97	21.90	22.11	22.17	22.50	1
20	QPSK	50	24	21.82	21.87	21.88	22.05	22.08		
20	QPSK	50	50	21.65	21.90	21.85	22.12	21.94		
20	QPSK	100	0	21.74	21.88	21.91	22.05	22.07		
20	16QAM	1	0	21.47	21.50	21.73	21.81	21.86	22.50	1
20	16QAM	1	49	21.66	21.68	22.01	22.07	22.01		
20	16QAM	1	99	21.21	21.50	21.66	21.74	21.86		
20	16QAM	50	0	20.75	20.96	21.01	20.99	21.11	21.50	2
20	16QAM	50	24	20.73	20.86	20.99	21.12	21.17		
20	16QAM	50	50	20.71	20.83	20.84	21.11	21.08		
20	16QAM	100	0	20.80	20.96	21.04	21.03	21.20		
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	22.54	22.49	22.61	22.94	23.06	23.50	0
15	QPSK	1	37	22.67	22.71	23.14	23.12	23.03		
15	QPSK	1	74	22.20	22.67	22.82	22.78	22.97		
15	QPSK	36	0	21.54	21.72	21.87	22.04	22.18	22.50	1
15	QPSK	36	20	21.39	21.75	21.93	22.05	21.99		
15	QPSK	36	39	21.35	21.73	21.98	22.07	22.04		
15	QPSK	75	0	21.43	21.69	21.95	22.06	21.94		
15	16QAM	1	0	21.15	21.47	21.74	21.90	21.87	22.50	1
15	16QAM	1	37	21.37	21.43	21.86	21.92	21.80		
15	16QAM	1	74	21.00	21.45	21.77	21.74	21.69		
15	16QAM	36	0	20.66	20.72	20.86	20.97	21.13	21.50	2
15	16QAM	36	20	20.61	20.75	21.03	21.13	21.05		
15	16QAM	36	39	20.53	20.81	20.98	21.14	21.22		
15	16QAM	75	0	20.56	20.77	20.92	21.11	21.20		

Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	22.77	22.68	22.80	23.07	23.12	23.50	0
10	QPSK	1	25	22.58	22.62	22.98	22.82	23.04		
10	QPSK	1	49	22.54	22.59	22.69	22.96	22.86		
10	QPSK	25	0	21.84	21.79	21.90	22.03	22.01	22.50	1
10	QPSK	25	12	21.82	21.86	21.93	22.01	22.06		
10	QPSK	25	25	21.81	21.79	21.94	22.08	22.00		
10	QPSK	50	0	21.83	21.86	21.96	22.11	22.03		
10	16QAM	1	0	21.70	21.64	21.91	21.90	21.99	22.50	1
10	16QAM	1	25	21.83	21.79	22.11	21.93	22.05		
10	16QAM	1	49	21.54	21.57	21.82	21.84	21.89		
10	16QAM	25	0	20.88	20.80	21.28	21.02	21.32	21.50	2
10	16QAM	25	12	21.20	20.85	21.33	21.36	21.26		
10	16QAM	25	25	21.12	21.06	21.32	21.01	21.35		
10	16QAM	50	0	20.80	20.80	21.01	20.97	21.29		
Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5		
5	QPSK	1	0	22.57	22.70	22.63	22.64	22.68	23.50	0
5	QPSK	1	12	22.69	22.95	23.05	23.10	23.03		
5	QPSK	1	24	22.68	22.67	22.80	22.78	22.88		
5	QPSK	12	0	21.86	21.84	21.90	22.05	21.86	22.50	1
5	QPSK	12	7	21.85	21.90	21.97	22.16	21.99		
5	QPSK	12	13	21.81	21.85	21.95	22.04	21.95		
5	QPSK	25	0	21.80	21.82	21.98	21.97	21.93		
5	16QAM	1	0	21.53	21.40	21.63	21.74	21.66	22.50	1
5	16QAM	1	12	21.61	21.67	21.83	21.96	21.82		
5	16QAM	1	24	21.46	21.41	21.73	21.80	21.77		
5	16QAM	12	0	21.04	21.00	21.05	20.97	21.11	21.50	2
5	16QAM	12	7	21.10	21.14	21.21	21.27	21.20		
5	16QAM	12	13	20.99	21.00	21.14	21.00	21.13		
5	16QAM	25	0	21.27	21.14	21.30	21.07	21.26		

Reduced Average RF Power (Proximity Sensor active)

<LTE Band 41>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				39750	40185	40620	41055	41490		
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
20	QPSK	1	0	21.41	21.14	21.09	21.30	21.46	21.50	0
20	QPSK	1	49	21.43	21.39	21.34	21.47	21.49		
20	QPSK	1	99	21.22	21.15	21.17	21.38	21.42		
20	QPSK	50	0	20.48	20.44	20.29	20.44	20.49	20.50	1
20	QPSK	50	24	20.45	20.31	20.31	20.46	20.47		
20	QPSK	50	50	20.47	20.25	20.32	20.41	20.48		
20	QPSK	100	0	20.46	20.37	20.30	20.47	20.48		
20	16QAM	1	0	20.47	20.22	20.13	20.28	20.45	20.50	1
20	16QAM	1	49	20.48	20.37	20.50	20.43	20.43		
20	16QAM	1	99	20.27	20.23	20.25	20.41	20.44		
20	16QAM	50	0	19.48	19.45	19.24	19.41	19.36	19.50	2
20	16QAM	50	24	19.47	19.32	19.30	19.37	19.40		
20	16QAM	50	50	19.45	19.36	19.32	19.40	19.44		
20	16QAM	100	0	19.46	19.45	19.24	19.39	19.39		
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	21.12	21.00	21.06	21.11	21.28	21.50	0
15	QPSK	1	37	21.46	21.45	21.36	21.49	21.40		
15	QPSK	1	74	21.02	20.91	21.06	21.18	21.35		
15	QPSK	36	0	20.30	20.11	20.12	20.15	20.35	20.50	1
15	QPSK	36	20	20.25	20.16	20.10	20.17	20.33		
15	QPSK	36	39	20.23	20.04	20.03	20.15	20.33		
15	QPSK	75	0	20.31	20.13	20.06	20.14	20.37		
15	16QAM	1	0	20.24	20.04	19.91	20.07	20.33	20.50	1
15	16QAM	1	37	20.40	20.16	20.21	20.42	20.45		
15	16QAM	1	74	20.18	19.93	20.01	20.15	20.37		
15	16QAM	36	0	19.39	19.07	18.96	19.08	19.20	19.50	2
15	16QAM	36	20	19.35	19.11	19.00	19.10	19.19		
15	16QAM	36	39	19.29	19.07	19.00	19.10	19.21		
15	16QAM	75	0	19.34	19.11	19.00	19.10	19.20		

Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	21.24	20.92	21.02	21.27	21.35	21.50	0
10	QPSK	1	25	21.34	20.98	21.22	21.31	21.44		
10	QPSK	1	49	21.22	20.89	21.13	21.27	21.39		
10	QPSK	25	0	20.48	20.12	20.27	20.39	20.33	20.50	1
10	QPSK	25	12	20.47	20.16	20.20	20.34	20.38		
10	QPSK	25	25	20.39	20.05	20.16	20.37	20.39		
10	QPSK	50	0	20.48	20.14	20.16	20.31	20.36		
10	16QAM	1	0	20.39	20.15	20.18	20.36	20.30	20.50	1
10	16QAM	1	25	20.45	20.06	20.22	20.27	20.48		
10	16QAM	1	49	20.30	20.06	20.07	20.29	20.39		
10	16QAM	25	0	19.45	19.16	19.09	19.11	19.27	19.50	2
10	16QAM	25	12	19.50	19.18	19.02	19.10	19.30		
10	16QAM	25	25	19.45	19.12	19.19	19.27	19.28		
10	16QAM	50	0	19.45	19.20	19.22	19.25	19.29		
Channel				39675	40148	40620	41093	41565	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2545.8	2593	2640.30	2687.5		
5	QPSK	1	0	21.19	20.82	20.95	21.15	21.00	21.50	0
5	QPSK	1	12	21.41	21.31	21.27	21.48	21.17		
5	QPSK	1	24	21.18	20.90	21.04	21.22	21.11		
5	QPSK	12	0	20.44	20.21	20.18	20.36	20.21	20.50	1
5	QPSK	12	7	20.45	20.24	20.21	20.45	20.12		
5	QPSK	12	13	20.42	20.15	20.18	20.38	20.14		
5	QPSK	25	0	20.44	20.13	20.36	20.41	20.33		
5	16QAM	1	0	20.32	20.02	20.09	20.30	20.10	20.50	1
5	16QAM	1	12	20.42	20.28	20.34	20.43	20.35		
5	16QAM	1	24	20.30	19.95	20.04	20.23	20.11		
5	16QAM	12	0	19.43	19.20	19.35	19.38	19.33	19.50	2
5	16QAM	12	7	19.45	19.28	19.13	19.41	19.23		
5	16QAM	12	13	19.50	19.17	19.18	19.26	19.28		
5	16QAM	25	0	19.47	19.23	19.15	19.31	19.32		

<WLAN Conducted Power>

General Note:

1. Per KDB 248227 D01v02r02, SAR test reduction is determined according to 802.11 transmission mode configurations and certain exposure conditions with multiple test positions. In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements. For OFDM, in both 2.4 and 5 GHz bands, an initial test configuration must be determined for each standalone and aggregated frequency band, according to the transmission mode configuration with the highest maximum output power specified for production units to perform SAR measurements. If the same highest maximum output power applies to different combinations of channel bandwidths, modulations and data rates, additional procedures are applied to determine which test configurations require SAR measurement. When applicable, an initial test position may be applied to reduce the number of SAR measurements required for next to the ear, UMPC mini-tablet or hotspot mode configurations with multiple test positions.
2. For 2.4 GHz 802.11b DSSS, either the initial test position procedure for multiple exposure test positions or the DSSS procedure for fixed exposure position is applied; these are mutually exclusive. For 2.4 GHz and 5 GHz OFDM configurations, the initial test configuration is applied to measure SAR using either the initial test position procedure for multiple exposure test position configurations or the initial test configuration procedures for fixed exposure test conditions. Based on the reported SAR of the measured configurations and maximum output power of the transmission mode configurations that are not included in the initial test configuration, the subsequent test configuration and initial test position procedures are applied to determine if SAR measurements are required for the remaining OFDM transmission configurations. In general, the number of test channels that require SAR measurement is minimized based on maximum output power measured for the test sample(s).
3. For OFDM transmission configurations in the 2.4 GHz and 5 GHz bands, When the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel for each frequency band.
4. DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures.18 The initial test position procedure is described in the following:
    a. When the reported SAR of the initial test position is ≤ 0.4 W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band.
    b. When the reported SAR of the test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is ≤ 0.8 W/kg or all required test position are tested.
    c. For all positions/configurations, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.

<2.4GHz WLAN>

	Mode	Channel	Frequency (MHz)	Data Rate	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b	CH 1	2412	1Mbps	15.67	17.00	98.01
		CH 6	2437		16.38	17.00	
		CH 11	2462		**16.85**	17.00	
	802.11g	CH 1	2412	6Mbps	13.50	15.00	87.01
		CH 6	2437		14.13	15.00	
		CH 11	2462		14.35	15.00	
	802.11n-HT20	CH 1	2412	MCS0	13.37	15.00	86.25
		CH 6	2437		14.20	15.00	
		CH 11	2462		14.37	15.00	
	802.11n-HT40	CH 3	2422	MCS0	12.85	14.00	76.47
		CH 6	2437		13.81	14.00	
		CH 9	2452		12.81	14.00	

<5GHz WLAN>

	Mode	Channel	Frequency (MHz)	Data Rate	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a	CH 36	5180	6Mbps	**11.36**	11.50	95.46
		CH 40	5200		11.02	11.50	
		CH 44	5220		10.80	11.50	
		CH 48	5240		10.62	11.50	
	802.11n-HT20	CH 36	5180	MCS0	10.30	10.50	86.75
		CH 40	5200		9.89	10.50	
		CH 44	5220		9.60	10.50	
		CH 48	5240		9.58	10.50	
	802.11n-HT40	CH 38	5190	MCS0	10.14	10.50	76.17
		CH 46	5230		9.73	10.50	
	802.11ac-VHT20	CH 36	5180	MCS0	10.10	10.50	83.37
		CH 40	5200		9.89	10.50	
		CH 44	5220		9.48	10.50	
		CH 48	5240		9.78	10.50	
	802.11ac-VHT40	CH 38	5190	MCS0	10.23	10.50	70.92
		CH 46	5230		10.04	10.50	
	802.11ac-VHT80	CH 42	5210	MCS0	10.10	10.50	55.16

	Mode	Channel	Frequency (MHz)	Data Rate	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a	CH 52	5260	6Mbps	10.67	11.50	95.46
		CH 56	5280		10.64	11.50	
		CH 60	5300		10.71	11.50	
		CH 64	5320		**10.95**	11.50	
	802.11n-HT20	CH 52	5260	MCS0	9.51	10.50	86.75
		CH 56	5280		9.63	10.50	
		CH 60	5300		9.54	10.50	
		CH 64	5320		9.67	10.50	
	802.11n-HT40	CH 54	5270	MCS0	9.34	10.50	76.17
		CH 62	5310		9.49	10.50	
	802.11ac-VHT20	CH 52	5260	MCS0	9.77	10.50	83.37
		CH 56	5280		9.73	10.50	
		CH 60	5300		9.61	10.50	
		CH 64	5320		9.67	10.50	
	802.11ac-VHT40	CH 54	5270	MCS0	9.80	10.50	70.92
		CH 62	5310		9.85	10.50	
	802.11ac-VHT80	CH 58	5290	MCS0	9.73	10.50	55.16

	Mode	Channel	Frequency (MHz)	Data Rate	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a	CH 100	5500	6Mbps	10.65	11.50	95.46
		CH 116	5580		11.06	11.50	
		CH 124	5620		**11.41**	11.50	
		CH 132	5660		10.95	11.50	
		CH 140	5700		10.97	11.50	
		CH 144	5720		11.05	11.50	
	802.11n-HT20	CH 100	5500	MCS0	9.46	10.50	86.75
		CH 116	5580		9.57	10.50	
		CH 124	5620		9.97	10.50	
		CH 132	5660		9.33	10.50	
		CH 140	5700		9.45	10.50	
		CH 144	5720		9.37	10.50	
	802.11n-HT40	CH 102	5510	MCS0	9.73	10.50	76.17
		CH 110	5550		9.60	10.50	
		CH 126	5630		10.23	10.50	
		CH 134	5670		9.37	10.50	
		CH 142	5710		9.40	10.50	
	802.11ac-VHT20	CH 100	5500	MCS0	9.41	10.50	83.37
		CH 116	5580		9.51	10.50	
		CH 124	5620		10.11	10.50	
		CH 132	5660		9.58	10.50	
		CH 140	5700		9.64	10.50	
		CH 144	5720		9.33	10.50	
	802.11ac-VHT40	CH 102	5510	MCS0	10.14	10.50	70.92
		CH 110	5550		9.94	10.50	
		CH 126	5630		10.34	10.50	
		CH 134	5670		9.60	10.50	
		CH 142	5710		9.77	10.50	
	802.11ac-VHT80	CH 106	5530	MCS0	9.96	10.50	55.16
		CH 122	5610		10.19	10.50	
		CH 138	5690		9.44	10.50	

	Mode	Channel	Frequency (MHz)	Data Rate	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a	CH 149	5745	MCS0	10.71	11.50	95.46
		CH 157	5785		11.13	11.50	
		CH 165	5825		**11.34**	11.50	
	802.11n-HT20	CH 149	5745	MCS0	8.66	10.50	86.75
		CH 157	5785		9.70	10.50	
		CH 165	5825		9.76	10.50	
	802.11n-HT40	CH 151	5755	MCS0	9.66	10.50	76.17
		CH 159	5795		10.34	10.50	
	802.11ac-VHT20	CH 149	5745	MCS0	8.77	10.50	83.37
		CH 157	5785		9.71	10.50	
		CH 165	5825		9.94	10.50	
	802.11ac-VHT40	CH 151	5755	MCS0	9.67	10.50	70.92
		CH 159	5795		10.32	10.50	
	802.11ac-VHT80	CH 155	5775	MCS0	10.00	10.50	55.16

<2.4GHz Bluetooth>

General Note:
For 2.4GHz Bluetooth SAR testing was selected 1Mbps, due to its highest average power.

Mode	Channel	Frequency (MHz)	Average power (dBm)		
			1Mbps	2Mbps	3Mbps
v3.0 with EDR	CH 00	2402	7.08	5.67	5.82
	CH 39	2441	5.56	3.80	4.11
	CH 78	2480	**7.19**	5.14	5.49
Tune-up Limit			7.50	6.00	6.00

Mode	Channel	Frequency (MHz)	Average power (dBm)
			GFSK
v4.0 with LE	CH 00	2402	**-1.81**
	CH 19	2440	-3.70
	CH 39	2480	-2.51
Tune-up Limit			-1.00

14. Antenna Location

Back View

Diagonal: 301 mm

The separation distance for antenna to edge:

Antenna	To Edge1 (mm)	To Edge2 (mm)	To Edge3 (mm)	To Edge4 (mm)
WWAN Low-Band Antenna	2	26	233	110
WWAN High-Band Antenna	2	84	233	68
Bluetooth & WLAN Antenna	239	118	2	38

General Note:

1. The below table, when the distance is < 50 mm exclusion threshold is "Ratio", when the distance is > 50 mm exclusion threshold is "mW"
2. Maximum power is the source-based time-average power and represents the maximum RF output power among production units
3. Per KDB 447498 D01v06, for larger devices, the test separation distance of adjacent edge configuration is determined by the closest separation between the antenna and the user.
4. Per KDB 447498 D01v06, standalone SAR test exclusion threshold is applied; If the test separation distance is < 5mm, 5mm is used to determine SAR exclusion threshold.
5. Per KDB 447498 D01v06, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:
   [(*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)] ·[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR
   - f(GHz) is the RF channel transmit frequency in GHz
   - Power and distance are rounded to the nearest mW and mm before calculation
   - The result is rounded to one decimal place for comparison
6. Per KDB 447498 D01v06, at 100 MHz to 6 GHz and for *test separation distances* > 50 mm, the SAR test exclusion threshold is determined according to the following
   a) [Threshold at 50 mm in step 1) + (test separation distance - 50 mm)·(f(MHz)/150)] mW, at 100 MHz to 1500 MHz
   b) [Threshold at 50 mm in step 1) + (test separation distance - 50 mm)·10] mW at > 1500 MHz and ≤ 6 GHz

	Wireless Interface	GPRS 850 2TX slot	GPRS 1900 2TX slot	WCDMA Band V	WCDMA Band IV	WCDMA Band II	LTE Band 12	LTE Band 26	LTE Band 4	LTE Band 30	LTE Band 25	LTE Band 7	LTE Band 41
Exposure Position	Calculated Frequency	848MHz	1909MHz	846MHz	1750MHz	1907MHz	715MHz	848MHz	1754MHz	1909MHz	1914MHz	2570MHz	2688MHz
	Maximum power (dBm)	25	22.5	23.50	23.50	23.50	23.50	23.50	23.50	23.50	23.50	23.50	23.50
	Maximum rated power(mW)	316.0	178.0	224.0	224.0	224.0	224.0	224.0	224.0	224.0	224.0	224.0	224.0
Bottom Face	Separation distance(mm)	5.0											
	exclusion threshold	58.2	49.2	41.2	59.3	61.9	37.9	41.3	59.3	61.9	62.0	71.8	73.5
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Edge 1	Separation distance(mm)	5.0											
	exclusion threshold	58.2	49.2	41.2	59.3	61.9	37.9	41.3	59.3	61.9	62.0	71.8	73.5
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Edge 2	Separation distance(mm)	26.0	84.0	26.0	84.0	84.0	26.0	26.0	84.0	84.0	84.0	84.0	84.0
	exclusion threshold	11.2	9.5	7.9	11.4	11.9	7.3	7.9	11.4	11.9	11.9	13.8	14.1
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Edge 3	Separation distance(mm)	233.0											
	exclusion threshold	1197.0	1939.0	1195.0	1943.0	1939.0	1050.0	1197.0	1943.0	1939.0	1938.0	1924.0	1921.0
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No
Edge 4	Separation distance(mm)	110.0	68.0	110.0	68.0	68.0	110.0	110.0	68.0	68.0	68.0	68.0	68.0
	exclusion threshold	502.0	709.0	501.0	713.0	709.0	463.0	502.0	713.0	709.0	708.0	694.0	691.0
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No

Exposure Position	Wireless Interface	BT	2.4GHz WLAN	5GHz WLAN
	Calculated Frequency	2480MHz	2462MHz	5825MHz
	Maximum power (dBm)	7.5	17	11.5
	Maximum rated power(mW)	6.0	50.0	14.0
Bottom Face	Separation distance(mm)	5.0	5.0	5.0
	exclusion threshold	1.9	15.7	6.8
	Testing required?	No	Yes	Yes
Edge 1	Separation distance(mm)	239.0	239.0	239.0
	exclusion threshold	1985.0	1986.0	1952.0
	Testing required?	No	No	No
Edge 2	Separation distance(mm)	118.0	118.0	118.0
	exclusion threshold	775.0	776.0	742.0
	Testing required?	No	No	No
Edge 3	Separation distance(mm)	5.0	5.0	5.0
	exclusion threshold	1.9	15.7	6.8
	Testing required?	No	Yes	Yes
Edge 4	Separation distance(mm)	38.0	38.0	38.0
	exclusion threshold	0.3	2.1	0.9
	Testing required?	No	No	No

15. SAR Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
   c. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
   d. For WLAN: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
   e. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The Reported TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
   - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
   - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
   - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.

Tablet Note:

1. For the exposure positions that proximity sensor power reduction is applied for SAR compliance, additional SAR testing with EUT transmitting full power in normal mode was performed; 10mm for bottom face, 10mm for edge1.

GSM Note:

1. Per KDB 941225 D01v03r01, for SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance, for modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested, therefore, the GPRS 2Tx slots modes was selected when EUT operating without power back-off, the GPRS 2Tx slots modes was selected when EUT operating with power back-off, according to the highest source-based time-averaged output power.

UMTS Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”.
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. If the maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA.

LTE Note:

1. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
2. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
4. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
5. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B12 / B5 / B4/B26 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
7. LTE band 2 / 17 / 5 SAR test was covered by Band 25 / 12 / 26; according to TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. The maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion.
   b. The channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band.

WLAN Note:

1. Per KDB 248227 D01v02r02, for 2.4GHz 802.11g/n SAR testing is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.
2. Per KDB 248227 D01v02r02, for U-NII-1 Head and Body-worn SAR testing is not required when the U-NII-2A band highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band.
3. When the reported SAR of the test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is ≤ 0.8 W/kg or all required test position are tested.
4. For all positions / configurations, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions / configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.
5. During SAR testing the WLAN transmission was verified using a spectrum analyzer.

15.1 Body SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Sensor	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS (2 Tx slots)	Bottom Face	10	Sensor off	251	848.8	30.71	31	1.069	0.07	0.546	0.584
	GSM850	GPRS (2 Tx slots)	Edge 1	10	Sensor off	251	848.8	30.71	31	1.069	-0.01	0.313	0.335
	GSM850	GPRS (2 Tx slots)	Edge 2	0	Sensor off	251	848.8	30.71	31	1.069	-0.08	0.129	0.138
01	GSM850	GPRS (2 Tx slots)	Bottom Face	0	Sensor on	251	848.8	25.24	25.5	1.062	0.08	0.966	**1.026**
	GSM850	GPRS (2 Tx slots)	Edge 1	0	Sensor on	251	848.8	25.24	25.5	1.062	-0.08	0.449	0.477
	GSM850	GPRS (2 Tx slots)	Bottom Face	0	Sensor on	128	824.2	25.22	25.5	1.067	0.16	0.867	0.925
	GSM850	GPRS (2 Tx slots)	Bottom Face	0	Sensor on	189	836.4	25.20	25.5	1.072	0.08	0.903	0.968
	GSM1900	GPRS (2 Tx slots)	Bottom Face	10	Sensor off	512	1850.2	27.59	28.5	1.233	-0.06	0.245	0.302
	GSM1900	GPRS (2 Tx slots)	Edge 1	10	Sensor off	512	1850.2	27.59	28.5	1.233	-0.04	0.240	0.296
	GSM1900	GPRS (2 Tx slots)	Edge 2	0	Sensor off	512	1850.2	27.59	28.5	1.233	-0.01	0.183	0.226
02	GSM1900	GPRS (2 Tx slots)	Bottom Face	0	Sensor on	512	1850.2	24.68	25	1.076	0.1	0.625	**0.673**
	GSM1900	GPRS (2 Tx slots)	Edge 1	0	Sensor on	512	1850.2	24.68	25	1.076	0.07	0.548	0.590

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Sensor	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA Band V	RMC 12.2Kbps	Bottom Face	10	Sensor off	4132	826.4	22.51	23.5	1.256	0.09	0.425	0.534
	WCDMA Band V	RMC 12.2Kbps	Edge 1	10	Sensor off	4132	826.4	22.51	23.5	1.256	-0.01	0.254	0.319
	WCDMA Band V	RMC 12.2Kbps	Edge 2	0	Sensor off	4132	826.4	22.51	23.5	1.256	-0.04	0.101	0.127
	WCDMA Band V	RMC 12.2Kbps	Bottom Face	0	Sensor on	4132	826.4	17.98	19.5	1.419	0.02	0.776	1.101
	WCDMA Band V	RMC 12.2Kbps	Edge 1	0	Sensor on	4132	826.4	17.98	19.5	1.419	0.02	0.368	0.522
	WCDMA Band V	RMC 12.2Kbps	Bottom Face	0	Sensor on	4182	836.4	17.95	19.5	1.429	0.06	0.822	1.175
03	WCDMA Band V	RMC 12.2Kbps	Bottom Face	0	Sensor on	4233	846.6	17.97	19.5	1.422	0.15	0.836	**1.189**
	WCDMA Band IV	RMC 12.2Kbps	Bottom Face	10	Sensor off	1312	1712.4	23.23	23.5	1.064	-0.08	0.515	0.548
	WCDMA Band IV	RMC 12.2Kbps	Edge 1	10	Sensor off	1312	1712.4	23.23	23.5	1.064	0.04	0.497	0.529
	WCDMA Band IV	RMC 12.2Kbps	Edge 2	0	Sensor off	1312	1712.4	23.23	23.5	1.064	-0.07	0.198	0.211
	WCDMA Band IV	RMC 12.2Kbps	Bottom Face	0	Sensor on	1312	1712.4	17.4	18.5	1.288	0.08	0.679	0.875
	WCDMA Band IV	RMC 12.2Kbps	Edge 1	0	Sensor on	1312	1712.4	17.4	18.5	1.288	0.03	0.558	0.719
	WCDMA Band IV	RMC 12.2Kbps	Bottom Face	0	Sensor on	1413	1732.6	17.36	18.5	1.300	0.03	0.664	0.863
04	WCDMA Band IV	RMC 12.2Kbps	Bottom Face	0	Sensor on	1513	1752.6	17.19	18.5	1.352	0.03	0.712	**0.963**
	WCDMA Band II	RMC 12.2Kbps	Bottom Face	10	Sensor off	9538	1907.6	22.92	23.5	1.143	-0.02	0.665	0.760
05	WCDMA Band II	RMC 12.2Kbps	Edge 1	10	Sensor off	9538	1907.6	22.92	23.5	1.143	0.03	0.672	**0.768**
	WCDMA Band II	RMC 12.2Kbps	Edge 2	0	Sensor off	9538	1907.6	22.92	23.5	1.143	0.04	0.484	0.553
	WCDMA Band II	RMC 12.2Kbps	Bottom Face	0	Sensor on	9538	1907.6	16.41	17.5	1.285	0.01	0.510	0.655
	WCDMA Band II	RMC 12.2Kbps	Edge 1	0	Sensor on	9538	1907.6	16.41	17.5	1.285	0.15	0.571	0.734

<LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Sensor	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
06	LTE Band 12	10M	QPSK	1RB	25offset	Bottom Face	0	Sensor off	23095	707.5	22.89	23.5	1.151	0.06	0.582	**0.670**
	LTE Band 12	10M	QPSK	1RB	25offset	Edge 1	0	Sensor off	23095	707.5	22.89	23.5	1.151	0.03	0.286	0.329
	LTE Band 12	10M	QPSK	1RB	25offset	Edge 2	0	Sensor off	23095	707.5	22.89	23.5	1.151	0.01	0.015	0.017
	LTE Band 12	10M	QPSK	25RB	0offset	Bottom Face	0	Sensor off	23095	707.5	21.53	22.5	1.250	0.08	0.429	0.536
	LTE Band 12	10M	QPSK	25RB	0offset	Edge 1	0	Sensor off	23095	707.5	21.53	22.5	1.250	0.07	0.224	0.280
	LTE Band 12	10M	QPSK	25RB	0offset	Edge 2	0	Sensor off	23095	707.5	21.53	22.5	1.250	-0.08	0.011	0.014
	LTE Band 26	15M	QPSK	1RB	37offset	Bottom Face	10	Sensor off	26865	831.5	22.58	23.5	1.236	0.09	0.388	0.480
	LTE Band 26	15M	QPSK	1RB	37offset	Edge 1	10	Sensor off	26865	831.5	22.58	23.5	1.236	-0.13	0.239	0.295
	LTE Band 26	15M	QPSK	1RB	37offset	Edge 2	0	Sensor off	26865	831.5	22.58	23.5	1.236	0.02	0.092	0.114
	LTE Band 26	15M	QPSK	36RB	20offset	Bottom Face	10	Sensor off	26865	831.5	21.34	22.5	1.306	0.08	0.300	0.392
	LTE Band 26	15M	QPSK	36RB	20offset	Edge 1	10	Sensor off	26865	831.5	21.34	22.5	1.306	-0.03	0.195	0.255
	LTE Band 26	15M	QPSK	36RB	20offset	Edge 2	0	Sensor off	26865	831.5	21.34	22.5	1.306	-0.09	0.075	0.098
07	LTE Band 26	15M	QPSK	1RB	37offset	Bottom Face	0	Sensor on	26865	831.5	19.22	19.5	1.067	0.08	1.080	**1.152**
	LTE Band 26	15M	QPSK	1RB	37offset	Edge 1	0	Sensor on	26865	831.5	19.22	19.5	1.067	-0.01	0.528	0.563
	LTE Band 26	15M	QPSK	36RB	20offset	Bottom Face	0	Sensor on	26865	831.5	17.92	18.5	1.143	0.07	0.812	0.928
	LTE Band 26	15M	QPSK	36RB	20offset	Edge 1	0	Sensor on	26865	831.5	17.92	18.5	1.143	-0.01	0.396	0.453
	LTE Band 26	15M	QPSK	75RB	0offset	Bottom Face	0	Sensor on	26865	831.5	17.92	18.5	1.143	0.18	0.816	0.933
	LTE Band 4	20M	QPSK	1RB	49offset	Bottom Face	10	Sensor off	20175	1732.5	22.61	23.5	1.227	-0.11	0.402	0.493
	LTE Band 4	20M	QPSK	1RB	49offset	Edge 1	10	Sensor off	20175	1732.5	22.61	23.5	1.227	0.11	0.402	0.493
	LTE Band 4	20M	QPSK	1RB	49offset	Edge 2	0	Sensor off	20175	1732.5	22.61	23.5	1.227	-0.16	0.211	0.259
	LTE Band 4	20M	QPSK	50RB	0offset	Bottom Face	10	Sensor off	20175	1732.5	21.55	22.5	1.245	-0.03	0.352	0.438
	LTE Band 4	20M	QPSK	50RB	0offset	Edge 1	10	Sensor off	20175	1732.5	21.55	22.5	1.245	0.04	0.351	0.437
	LTE Band 4	20M	QPSK	50RB	0offset	Edge 2	0	Sensor off	20175	1732.5	21.55	22.5	1.245	-0.02	0.152	0.189
08	LTE Band 4	20M	QPSK	1RB	49offset	Bottom Face	0	Sensor on	20175	1732.5	17.9	18.5	1.148	0.06	0.563	**0.646**
	LTE Band 4	20M	QPSK	1RB	49offset	Edge 1	0	Sensor on	20175	1732.5	17.9	18.5	1.148	-0.1	0.546	0.627
	LTE Band 4	20M	QPSK	50RB	0offset	Bottom Face	0	Sensor on	20175	1732.5	16.86	17.5	1.159	0.04	0.463	0.537
	LTE Band 4	20M	QPSK	50RB	0offset	Edge 1	0	Sensor on	20175	1732.5	16.86	17.5	1.159	0.08	0.435	0.504

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Sensor	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE band 25	20M	QPSK	1RB	49offset	Bottom Face	10	Sensor off	26590	1905	22.24	23.5	1.337	-0.17	0.528	0.706
	LTE band 25	20M	QPSK	1RB	49offset	Edge 1	10	Sensor off	26590	1905	22.24	23.5	1.337	-0.11	0.555	0.742
	LTE band 25	20M	QPSK	1RB	49offset	Edge 2	0	Sensor off	26590	1905	22.24	23.5	1.337	0.07	0.440	0.588
	LTE band 25	20M	QPSK	50RB	24offset	Bottom Face	10	Sensor off	26590	1905	21.28	22.5	1.324	-0.03	0.386	0.511
	LTE band 25	20M	QPSK	50RB	24offset	Edge 1	10	Sensor off	26590	1905	21.28	22.5	1.324	-0.13	0.431	0.571
	LTE band 25	20M	QPSK	50RB	24offset	Edge 2	0	Sensor off	26590	1905	21.28	22.5	1.324	0.01	0.379	0.502
	LTE band 25	20M	QPSK	1RB	49offset	Bottom Face	0	Sensor on	26590	1905	17.11	17.5	1.094	0.11	0.549	0.601
09	LTE band 25	20M	QPSK	1RB	49offset	Edge 1	0	Sensor on	26590	1905	17.11	17.5	1.094	0.04	0.690	**0.755**
	LTE band 25	20M	QPSK	50RB	24offset	Bottom Face	0	Sensor on	26590	1905	15.93	16.5	1.140	0.01	0.553	0.631
	LTE band 25	20M	QPSK	50RB	24offset	Edge 1	0	Sensor on	26590	1905	15.93	16.5	1.140	0.08	0.534	0.609
	LTE Band 30	10M	QPSK	1RB	25offset	Bottom Face	10	Sensor off	27710	2310	22.75	23.5	1.189	0.04	0.183	0.217
	LTE Band 30	10M	QPSK	1RB	25offset	Edge 1	10	Sensor off	27710	2310	22.75	23.5	1.189	-0.01	0.418	0.497
	LTE Band 30	10M	QPSK	1RB	25offset	Edge 2	0	Sensor off	27710	2310	22.75	23.5	1.189	-0.02	0.220	0.261
	LTE Band 30	10M	QPSK	25RB	0offset	Bottom Face	10	Sensor off	27710	2310	21.69	22.5	1.205	-0.04	0.147	0.177
	LTE Band 30	10M	QPSK	25RB	0offset	Edge 1	10	Sensor off	27710	2310	21.69	22.5	1.205	-0.05	0.332	0.400
	LTE Band 30	10M	QPSK	25RB	0offset	Edge 2	0	Sensor off	27710	2310	21.69	22.5	1.205	0.14	0.172	0.207
	LTE Band 30	10M	QPSK	1RB	25offset	Bottom Face	0	Sensor on	27710	2310	17.58	18	1.102	0.05	0.404	0.445
10	LTE Band 30	10M	QPSK	1RB	25offset	Edge 1	0	Sensor on	27710	2310	17.58	18	1.102	-0.03	0.575	**0.633**
	LTE Band 30	10M	QPSK	25RB	0offset	Bottom Face	0	Sensor on	27710	2310	16.25	17	1.189	0.02	0.327	0.389
	LTE Band 30	10M	QPSK	25RB	0offset	Edge 1	0	Sensor on	27710	2310	16.25	17	1.189	0.04	0.472	0.561

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Sensor	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 7	20M	QPSK	1RB	49offset	Bottom Face	10	Sensor off	20850	2510	22.57	23.5	1.239	0.06	0.213	0.264
	LTE Band 7	20M	QPSK	1RB	49offset	Edge 1	10	Sensor off	20850	2510	22.57	23.5	1.239	-0.05	0.290	0.359
	LTE Band 7	20M	QPSK	1RB	49offset	Edge 2	0	Sensor off	20850	2510	22.57	23.5	1.239	-0.04	0.163	0.202
	LTE Band 7	20M	QPSK	50RB	0offset	Bottom Face	10	Sensor off	20850	2510	21.55	22.5	1.245	-0.13	0.163	0.203
	LTE Band 7	20M	QPSK	50RB	0offset	Edge 1	10	Sensor off	20850	2510	21.55	22.5	1.245	-0.02	0.226	0.281
	LTE Band 7	20M	QPSK	50RB	0offset	Edge 2	0	Sensor off	20850	2510	21.55	22.5	1.245	-0.04	0.133	0.166
11	LTE Band 7	20M	QPSK	1RB	49offset	Bottom Face	0	Sensor on	20850	2510	17.42	18.5	1.282	0.09	0.517	**0.663**
	LTE Band 7	20M	QPSK	1RB	49offset	Edge 1	0	Sensor on	20850	2510	17.42	18.5	1.282	0.02	0.497	0.637
	LTE Band 7	20M	QPSK	50RB	0offset	Bottom Face	0	Sensor on	20850	2510	16.27	17.5	1.327	0.05	0.388	0.515
	LTE Band 7	20M	QPSK	50RB	0offset	Edge 1	0	Sensor on	20850	2510	16.27	17.5	1.327	0.01	0.392	0.520

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Sensor	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 41	20M	QPSK	1RB	49offset	Bottom Face	10	Sensor off	41490	2680	23.13	23.5	1.089	62.9	1.006	-0.08	0.162	0.177
	LTE Band 41	20M	QPSK	1RB	49offset	Edge 1	10	Sensor off	41490	2680	23.13	23.5	1.089	62.9	1.006	-0.07	0.124	0.136
	LTE Band 41	20M	QPSK	1RB	49offset	Edge 2	0	Sensor off	41490	2680	23.13	23.5	1.089	62.9	1.006	0.05	0.038	0.042
	LTE Band 41	20M	QPSK	50RB	0offset	Bottom Face	10	Sensor off	41490	2680	22.17	22.5	1.079	62.9	1.006	-0.01	0.121	0.131
	LTE Band 41	20M	QPSK	50RB	0offset	Edge 1	10	Sensor off	41490	2680	22.17	22.5	1.079	62.9	1.006	0.02	0.094	0.102
	LTE Band 41	20M	QPSK	50RB	0offset	Edge 2	0	Sensor off	41490	2680	22.17	22.5	1.079	62.9	1.006	0.15	0.041	0.045
12	LTE Band 41	20M	QPSK	1RB	49offset	Bottom Face	0	Sensor on	41490	2680	21.49	21.5	1.002	62.9	1.006	0.05	0.590	**0.595**
	LTE Band 41	20M	QPSK	1RB	49offset	Edge 1	0	Sensor on	41490	2680	21.49	21.5	1.002	62.9	1.006	0.05	0.435	0.439
	LTE Band 41	20M	QPSK	50RB	0offset	Bottom Face	0	Sensor on	41490	2680	20.49	20.5	1.002	62.9	1.006	-0.04	0.503	0.507
	LTE Band 41	20M	QPSK	50RB	0offset	Edge 1	0	Sensor on	41490	2680	20.49	20.5	1.002	62.9	1.006	0.05	0.371	0.374

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN2.4GHz	802.11b 1Mbps	Bottom Face	0	11	2462	16.85	17	1.035	98.01	1.020	0.04	0.281	0.297
13	WLAN2.4GHz	802.11b 1Mbps	Edge 3	0	11	2462	16.85	17	1.035	98.01	1.020	0.01	0.544	**0.574**
	WLAN5.3GHz	802.11a 6Mbps	Bottom Face	0	64	5320	10.95	11.5	1.135	95.46	1.048	0.04	0.100	0.119
14	WLAN5.3GHz	802.11a 6Mbps	Edge 3	0	64	5320	10.95	11.5	1.135	95.46	1.048	-0.03	0.534	**0.635**
	WLAN5.3GHz	802.11a 6Mbps	Edge 3	0	60	5300	10.71	11.5	1.199	95.46	1.048	-0.12	0.424	0.533
	WLAN5.5GHz	802.11a 6Mbps	Bottom Face	0	124	5620	11.41	11.5	1.021	95.46	1.048	-0.16	0.197	0.211
15	WLAN5.5GHz	802.11a 6Mbps	Edge 3	0	124	5620	11.41	11.5	1.021	95.46	1.048	-0.05	1.230	**1.316**
	WLAN5.5GHz	802.11a 6Mbps	Edge 3	0	116	5580	11.06	11.5	1.107	95.46	1.048	-0.03	1.120	1.299
	WLAN5.5GHz	802.11a 6Mbps	Edge 3	0	144	5720	11.05	11.5	1.109	95.46	1.048	-0.07	1.050	1.221
	WLAN5.5GHz	802.11a 6Mbps	Edge 3	0	140	5700	10.97	11.5	1.130	95.46	1.048	-0.04	1.040	1.231
	WLAN5.5GHz	802.11a 6Mbps	Edge 3	0	132	5660	10.95	11.5	1.135	95.46	1.048	-0.08	1.090	1.297
	WLAN5.5GHz	802.11a 6Mbps	Edge 3	0	100	5500	10.65	11.5	1.216	95.46	1.048	-0.09	0.746	0.951
	WLAN5.8GHz	802.11a 6Mbps	Bottom Face	0	165	5825	11.34	11.5	1.038	95.46	1.048	0.07	0.250	0.272
16	WLAN5.8GHz	802.11a 6Mbps	Edge 3	0	165	5825	11.34	11.5	1.038	95.46	1.048	-0.05	1.230	**1.337**
	WLAN5.8GHz	802.11a 6Mbps	Edge 3	0	157	5785	11.13	11.5	1.089	95.46	1.048	-0.07	1.080	1.232
	WLAN5.8GHz	802.11a 6Mbps	Edge 3	0	149	5745	10.71	11.5	1.199	95.46	1.048	-0.07	1.030	1.295

15.2 Repeated SAR Measurement

No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Gap (mm)	Sensor	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	LTE Band 26	15M	QPSK	1	37	Bottom Face	0	On	26865	831.5	19.22	19.5	1.067	100	1.000	0.08	1.080	1	1.152
2nd	LTE Band 26	15M	QPSK	1	37	Bottom Face	0	On	26865	831.5	19.22	19.5	1.067	100	1.000	0.08	1.070	1.009	1.141
1st	WLAN 5.5GHz	-	802.11a 6Mbps	-	-	Edge 3	0	Off	124	5620	11.41	11.5	1.021	95.46	1.048	-0.05	1.230	1	1.316
2nd	WLAN 5.5GHz	-	802.11a 6Mbps	-	-	Edge 3	0	Off	124	5620	11.41	11.5	1.021	95.46	1.048	-0.08	1.220	1.008	1.305
1st	WLAN 5.8GHz	-	802.11a 6Mbps	-	-	Edge 3	0	Off	165	5825	11.34	11.5	1.038	95.46	1.048	-0.05	1.230	1	1.337
2nd	WLAN 5.8GHz	-	802.11a 6Mbps	-	-	Edge 3	0	Off	165	5825	11.34	11.5	1.038	95.46	1.048	-0.05	1.210	1.017	1.316

General Note:

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
2. Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR <1.45W/kg, only one repeated measurement is required.
3. The ratio is the difference in percentage between original and repeated *measured SAR*.
4. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

16. Simultaneous Transmission Analysis

NO.	Simultaneous Transmission Configurations	Tablet
		Body
1.	GPRS/EDGE + WLAN2.4GHz	Yes
2.	WCDMA + WLAN2.4GHz	Yes
3.	LTE + WLAN2.4GHz	Yes
4.	GPRS/EDGE + Bluetooth	Yes
5.	WCDMA+ Bluetooth	Yes
6.	LTE + Bluetooth	Yes
7.	GPRS/EDGE + WLAN5GHz	Yes
8.	WCDMA + WLAN5GHz	Yes
9.	LTE + WLAN5GHz	Yes

General Note:

1. EUT will choose either WLAN 2.4GHz or WLAN 5GHz according to the network signal condition; therefore, 2.4GHz WLAN and 5GHz WLAN will not operate simultaneously at any moment.
2. EUT will choose each GSM, WCDMA, LTE according to the network signal condition; therefore, they will not operate simultaneously at any moment.
3. WLAN and Bluetooth share the same antenna, and cannot transmit simultaneously.
4. For WLAN SAR chose the worse SAR of all 5G Band at the same position for co-located with WWAN analysis.
5. Chose WLAN bottom 0mm SAR representatively WLAN bottom10mm SAR to do co-located with WWAN
6. The Scaled SAR summation is calculated based on the same configuration and test position.
7. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
   i) Scalar SAR summation < 1.6W/kg.
   ii) SPLSR = (SAR1 + SAR2)^1.5 / (min. separation distance, mm), and the peak separation distance is determined from the square root of [(x1-x2)2 + (y1-y2)2 + (z1-z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
   iii) If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary.
   iv) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.

Bluetooth estimated SAR is conservatively determined by 5mm separation, for all applicable exposure positions.

Bluetooth Max Power	Exposure Position	All Positions
7.5 dBm	Estimated SAR (W/kg)	0.252 W/kg

16.1 Body Exposure Conditions

WWAN Band		Exposure Position	1	2	3	4	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)
			WWAN	2.4GHz WLAN	5GHz WLAN	Bluetooth			
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	Bluetooth SAR (W/kg)			
GSM	GSM850	Bottom Face at 10 mm	0.584	0.297	0.272	0.252	0.88	0.86	0.84
		Edge 1 at 10 mm	0.335			0.252	0.34	0.34	0.59
		Bottom Face at 0mm	1.026	0.297	0.272	0.252	1.32	1.30	1.28
		Edge 1 at 0mm	0.477			0.252	0.48	0.48	0.73
		Edge 2 at 0mm	0.138			0.252	0.14	0.14	0.39
		Edge 3 at 0mm		0.574	1.337	0.252	0.57	1.34	0.25
	GSM1900	Bottom Face at 10 mm	0.302	0.297	0.272	0.252	0.60	0.57	0.55
		Edge 1 at 10 mm	0.296			0.252	0.30	0.30	0.55
		Bottom Face at 0mm	0.673	0.297	0.272	0.252	0.97	0.95	0.93
		Edge 1 at 0mm	0.590			0.252	0.59	0.59	0.84
		Edge 2 at 0mm	0.226			0.252	0.23	0.23	0.48
		Edge 3 at 0mm		0.574	1.337	0.252	0.57	1.34	0.25
WCDMA	Band V	Bottom Face at 10 mm	0.534	0.297	0.272	0.252	0.83	0.81	0.79
		Edge 1 at 10 mm	0.319			0.252	0.32	0.32	0.57
		Bottom Face at 0mm	1.189	0.297	0.272	0.252	**1.49**	**1.46**	**1.44**
		Edge 1 at 0mm	0.522			0.252	0.52	0.52	0.77
		Edge 2 at 0mm	0.127			0.252	0.13	0.13	0.38
		Edge 3 at 0mm		0.574	1.337	0.252	0.57	1.34	0.25
	Band IV	Bottom Face at 10 mm	0.548	0.297	0.272	0.252	0.85	0.82	0.80
		Edge 1 at 10 mm	0.529			0.252	0.53	0.53	0.78
		Bottom Face at 0mm	0.963	0.297	0.272	0.252	1.26	1.24	1.22
		Edge 1 at 0mm	0.719			0.252	0.72	0.72	0.97
		Edge 2 at 0mm	0.211			0.252	0.21	0.21	0.46
		Edge 3 at 0mm		0.574	1.337	0.252	0.57	1.34	0.25
	Band II	Bottom Face at 10 mm	0.760	0.297	0.272	0.252	1.06	1.03	1.01
		Edge 1 at 10 mm	0.768			0.252	0.77	0.77	1.02
		Bottom Face at 0mm	0.655	0.297	0.272	0.252	0.95	0.93	0.91
		Edge 1 at 0mm	0.734			0.252	0.73	0.73	0.99
		Edge 2 at 0mm	0.553			0.252	0.55	0.55	0.81
		Edge 3 at 0mm		0.574	1.337	0.252	0.57	1.34	0.25

WWAN Band		Exposure Position	1	2	3	4	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)
			WWAN	2.4GHz WLAN	5GHz WLAN	Bluetooth			
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	Bluetooth SAR (W/kg)			
LTE	Band 12	Bottom Face at 0mm	0.670	0.297	0.272	0.252	0.97	0.94	0.92
		Edge 1 at 0mm	0.329			0.252	0.33	0.33	0.58
		Edge 2 at 0mm	0.017			0.252	0.02	0.02	0.27
		Edge 3 at 0mm		0.574	1.337	0.252	0.57	1.34	0.25
	Band 26	Bottom Face at 10 mm	0.480	0.297	0.272	0.252	0.78	0.75	0.73
		Edge 1 at 10 mm	0.295			0.252	0.30	0.30	0.55
		Bottom Face at 0mm	1.152	0.297	0.272	0.252	1.45	1.42	1.40
		Edge 1 at 0mm	0.563			0.252	0.56	0.56	0.82
		Edge 2 at 0mm	0.114			0.252	0.11	0.11	0.37
		Edge 3 at 0mm		0.574	1.337	0.252	0.57	1.34	0.25
	Band 4	Bottom Face at 10 mm	0.493	0.297	0.272	0.252	0.79	0.77	0.75
		Edge 1 at 10 mm	0.493			0.252	0.49	0.49	0.75
		Bottom Face at 0mm	0.646	0.297	0.272	0.252	0.94	0.92	0.90
		Edge 1 at 0mm	0.627			0.252	0.63	0.63	0.88
		Edge 2 at 0mm	0.259			0.252	0.26	0.26	0.51
		Edge 3 at 0mm		0.574	1.337	0.252	0.57	1.34	0.25
	Band 25	Bottom Face at 10 mm	0.706	0.297	0.272	0.252	1.00	0.98	0.96
		Edge 1 at 10 mm	0.742			0.252	0.74	0.74	0.99
		Bottom Face at 0mm	0.631	0.297	0.272	0.252	0.93	0.90	0.88
		Edge 1 at 0mm	0.755			0.252	0.76	0.76	1.01
		Edge 2 at 0mm	0.588			0.252	0.59	0.59	0.84
		Edge 3 at 0mm		0.574	1.337	0.252	0.57	1.34	0.25

WWAN Band		Exposure Position	1	2	3	4	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)
			WWAN	2.4GHz WLAN	5GHz WLAN	Bluetooth			
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	Bluetooth SAR (W/kg)			
LTE	Band 30	Bottom Face at 10 mm	0.217	0.297	0.272	0.252	0.51	0.49	0.47
		Edge 1 at 10 mm	0.497			0.252	0.50	0.50	0.75
		Bottom Face at 0mm	0.445	0.297	0.272	0.252	0.74	0.72	0.70
		Edge 1 at 0mm	0.633			0.252	0.63	0.63	0.89
		Edge 2 at 0mm	0.261			0.252	0.26	0.26	0.51
		Edge 3 at 0mm		0.574	1.337	0.252	0.57	1.34	0.25
	Band 7	Bottom Face at 10 mm	0.264	0.297	0.272	0.252	0.56	0.54	0.52
		Edge 1 at 10 mm	0.359			0.252	0.36	0.36	0.61
		Bottom Face at 0mm	0.663	0.297	0.272	0.252	0.96	0.94	0.92
		Edge 1 at 0mm	0.637			0.252	0.64	0.64	0.89
		Edge 2 at 0mm	0.202			0.252	0.20	0.20	0.45
		Edge 3 at 0mm		0.574	1.337	0.252	0.57	1.34	0.25
	Band 41	Bottom Face at 10 mm	0.177	0.297	0.272	0.252	0.47	0.45	0.43
		Edge 1 at 10 mm	0.136			0.252	0.14	0.14	0.39
		Bottom Face at 0mm	0.595	0.297	0.272	0.252	0.89	0.87	0.85
		Edge 1 at 0mm	0.439			0.252	0.44	0.44	0.69
		Edge 2 at 0mm	0.045			0.252	0.05	0.05	0.30
		Edge 3 at 0mm		0.574	1.337	0.252	0.57	1.34	0.25

Test Engineer : Kat Yin

17. Uncertainty Assessment

The component of uncertainly may generally be categorized according to the methods used to evaluate them. The evaluation of uncertainly by the statistical analysis of a series of observations is termed a Type An evaluation of uncertainty. The evaluation of uncertainty by means other than the statistical analysis of a series of observation is termed a Type B evaluation of uncertainty. Each component of uncertainty, however evaluated, is represented by an estimated standard deviation, termed standard uncertainty, which is determined by the positive square root of the estimated variance.

A Type A evaluation of standard uncertainty may be based on any valid statistical method for treating data. This includes calculating the standard deviation of the mean of a series of independent observations; using the method of least squares to fit a curve to the data in order to estimate the parameter of the curve and their standard deviations; or carrying out an analysis of variance in order to identify and quantify random effects in certain kinds of measurement.

A type B evaluation of standard uncertainty is typically based on scientific judgment using all of the relevant information available. These may include previous measurement data, experience, and knowledge of the behavior and properties of relevant materials and instruments, manufacture's specification, data provided in calibration reports and uncertainties assigned to reference data taken from handbooks. Broadly speaking, the uncertainty is either obtained from an outdoor source or obtained from an assumed distribution, such as the normal distribution, rectangular or triangular distributions indicated in table below.

Uncertainty Distributions	Normal	Rectangular	Triangular	U-Shape
Multi-plying Factor[a]	1/k[b]	$1/\sqrt{3}$	$1/\sqrt{6}$	$1/\sqrt{2}$

(a) standard uncertainty is determined as the product of the multiplying factor and the estimated range of variations in the measured quantity

(b) κ is the coverage factor

Table 17.1. Standard Uncertainty for Assumed Distribution

The combined standard uncertainty of the measurement result represents the estimated standard deviation of the result. It is obtained by combining the individual standard uncertainties of both Type A and Type B evaluation using the usual "root-sum-squares" (RSS) methods of combining standard deviations by taking the positive square root of the estimated variances.

Expanded uncertainty is a measure of uncertainty that defines an interval about the measurement result within which the measured value is confidently believed to lie. It is obtained by multiplying the combined standard uncertainty by a coverage factor. Typically, the coverage factor ranges from 2 to 3. Using a coverage factor allows the true value of a measured quantity to be specified with a defined probability within the specified uncertainty range. For purpose of this document, a coverage factor two is used, which corresponds to confidence interval of about 95 %. The DASY uncertainty Budget is shown in the following tables.

Error Description	Uncertainty Value (±%)	Probability	Divisor	(Ci) 1g	(Ci) 10g	Standard Uncertainty (1g) (±%)	Standard Uncertainty (10g) (±%)
Measurement System							
Probe Calibration	6.0	N	1	1	1	6.0	6.0
Axial Isotropy	4.7	R	1.732	0.7	0.7	1.9	1.9
Hemispherical Isotropy	9.6	R	1.732	0.7	0.7	3.9	3.9
Boundary Effects	1.0	R	1.732	1	1	0.6	0.6
Linearity	4.7	R	1.732	1	1	2.7	2.7
System Detection Limits	1.0	R	1.732	1	1	0.6	0.6
Modulation Response	3.2	R	1.732	1	1	1.8	1.8
Readout Electronics	0.3	N	1	1	1	0.3	0.3
Response Time	0.0	R	1.732	1	1	0.0	0.0
Integration Time	2.6	R	1.732	1	1	1.5	1.5
RF Ambient Noise	3.0	R	1.732	1	1	1.7	1.7
RF Ambient Reflections	3.0	R	1.732	1	1	1.7	1.7
Probe Positioner	0.4	R	1.732	1	1	0.2	0.2
Probe Positioning	2.9	R	1.732	1	1	1.7	1.7
Max. SAR Eval.	2.0	R	1.732	1	1	1.2	1.2
Test Sample Related							
Device Positioning	3.0	N	1	1	1	3.0	3.0
Device Holder	3.6	N	1	1	1	3.6	3.6
Power Drift	5.0	R	1.732	1	1	2.9	2.9
Power Scaling	0.0	R	1.732	1	1	0.0	0.0
Phantom and Setup							
Phantom Uncertainty	6.1	R	1.732	1	1	3.5	3.5
SAR correction	0.0	R	1.732	1	0.84	0.0	0.0
Liquid Conductivity Repeatability	0.2	N	1	0.78	0.71	0.1	0.1
Liquid Conductivity (target)	5.0	R	1.732	0.78	0.71	2.3	2.0
Liquid Conductivity (mea.)	2.5	R	1.732	0.78	0.71	1.1	1.0
Temp. unc. - Conductivity	3.4	R	1.732	0.78	0.71	1.5	1.4
Liquid Permittivity Repeatability	0.15	N	1	0.23	0.26	0.0	0.0
Liquid Permittivity (target)	5.0	R	1.732	0.23	0.26	0.7	0.8
Liquid Permittivity (mea.)	2.5	R	1.732	0.23	0.26	0.3	0.4
Temp. unc. - Permittivity	0.83	R	1.732	0.23	0.26	0.1	0.1
Combined Std. Uncertainty						11.4%	11.4%
Coverage Factor for 95 %						K=2	K=2
Expanded STD Uncertainty						22.9%	22.7%

Table 17.2. Uncertainty Budget for frequency range 300 MHz to 3 GHz

Error Description	Uncertainty Value (±%)	Probability	Divisor	(Ci) 1g	(Ci) 10g	Standard Uncertainty (1g) (±%)	Standard Uncertainty (10g) (±%)
Measurement System							
Probe Calibration	7.0	N	1	1	1	7.0	7.0
Axial Isotropy	4.7	R	1.732	0.7	0.7	1.9	1.9
Hemispherical Isotropy	9.6	R	1.732	0.7	0.7	3.9	3.9
Boundary Effects	2.0	R	1.732	1	1	1.2	1.2
Linearity	4.7	R	1.732	1	1	2.7	2.7
System Detection Limits	1.0	R	1.732	1	1	0.6	0.6
Modulation Response	3.2	R	1.732	1	1	1.8	1.8
Readout Electronics	0.3	N	1	1	1	0.3	0.3
Response Time	0.0	R	1.732	1	1	0.0	0.0
Integration Time	2.6	R	1.732	1	1	1.5	1.5
RF Ambient Noise	3.0	R	1.732	1	1	1.7	1.7
RF Ambient Reflections	3.0	R	1.732	1	1	1.7	1.7
Probe Positioner	0.4	R	1.732	1	1	0.2	0.2
Probe Positioning	6.7	R	1.732	1	1	3.9	3.9
Max. SAR Eval.	4.0	R	1.732	1	1	2.3	2.3
Test Sample Related							
Device Positioning	3.0	N	1	1	1	3.0	3.0
Device Holder	3.6	N	1	1	1	3.6	3.6
Power Drift	5.0	R	1.732	1	1	2.9	2.9
Power Scaling	0.0	R	1.732	1	1	0.0	0.0
Phantom and Setup							
Phantom Uncertainty	6.6	R	1.732	1	1	3.8	3.8
SAR correction	0.0	R	1.732	1	0.84	0.0	0.0
Liquid Conductivity Repeatability	0.2	N	1	0.78	0.71	0.1	0.1
Liquid Conductivity (target)	5.0	R	1.732	0.78	0.71	2.3	2.0
Liquid Conductivity (mea.)	2.5	R	1.732	0.78	0.71	1.1	1.0
Temp. unc. - Conductivity	3.4	R	1.732	0.78	0.71	1.5	1.4
Liquid Permittivity Repeatability	0.15	N	1	0.23	0.26	0.0	0.0
Liquid Permittivity (target)	5.0	R	1.732	0.23	0.26	0.7	0.8
Liquid Permittivity (mea.)	2.5	R	1.732	0.23	0.26	0.3	0.4
Temp. unc. - Permittivity	0.83	R	1.732	0.23	0.26	0.1	0.1
Combined Std. Uncertainty						12.8%	12.7%
Coverage Factor for 95 %						K=2	K=2
Expanded STD Uncertainty						25.5%	25.4%

Table 17.3. Uncertainty Budget for frequency range 3 GHz to 6 GHz

18. References

[1] FCC 47 CFR Part 2 “Frequency Allocations and Radio Treaty Matters; General Rules and Regulations”

[2] ANSI/IEEE Std. C95.1-1992, “IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz”, September 1992

[3] IEEE Std. 1528-2013, “IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques”, Sep 2013

[4] SPEAG DASY System Handbook

[5] FCC KDB 248227 D01 v02r02, “SAR Guidance for IEEE 802.11 (WiFi) Transmitters”, Oct 2015.

[6] FCC KDB 447498 D01 v06, “Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies”, Oct 2015

[7] FCC KDB 941225 D01 v03r01, “3G SAR MEAUREMENT PROCEDURES”, Oct 2015

[8] FCC KDB 941225 D05 v02r05, “SAR Evaluation Considerations for LTE Devices”, Dec 2015

[9] FCC KDB 616217 D04 v01r02, “SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers”, Oct 2015

[10] FCC KDB 865664 D01 v01r04, "SAR Measurement Requirements for 100 MHz to 6 GHz", Aug 2015.

[11] FCC KDB 865664 D02 v01r02, “RF Exposure Compliance Reporting and Documentation Considerations” Oct 2015.

Appendix A. Plots of System Performance Check

The plots are shown as follows.

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016/7/17

System Check_Body_750MHz_20160717

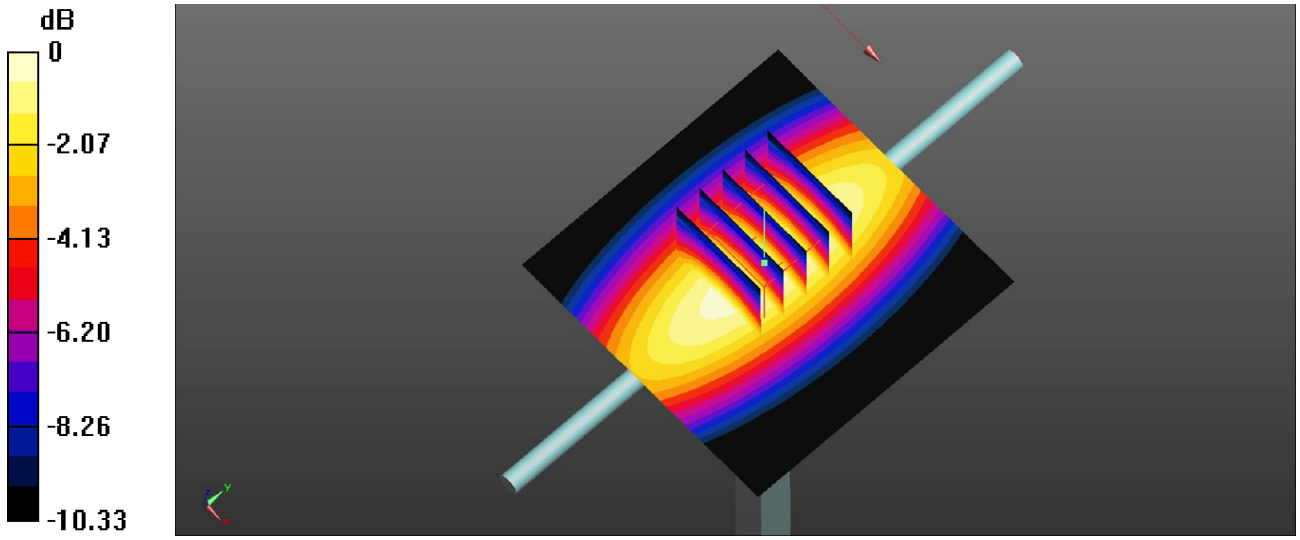
DUT: D750V3-SN:1087

Communication System: UID 0, CW; Frequency: 750 MHz;Duty Cycle: 1:1
Medium: MSL_750_2016/07/17 Medium parameters used: f = 750 MHz; σ = 0.977 S/m; ε_r = 53.883; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature ：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(10.59, 10.59, 10.59); Calibrated: 2015/11/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2015/8/27
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.96 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 50.65 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 3.53 W/kg
SAR(1 g) = 2.28 W/kg; SAR(10 g) = 1.57 W/kg
Maximum value of SAR (measured) = 2.99 W/kg



0 dB = 2.99 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016/7/17

System Check_Body_835MHz_20160717

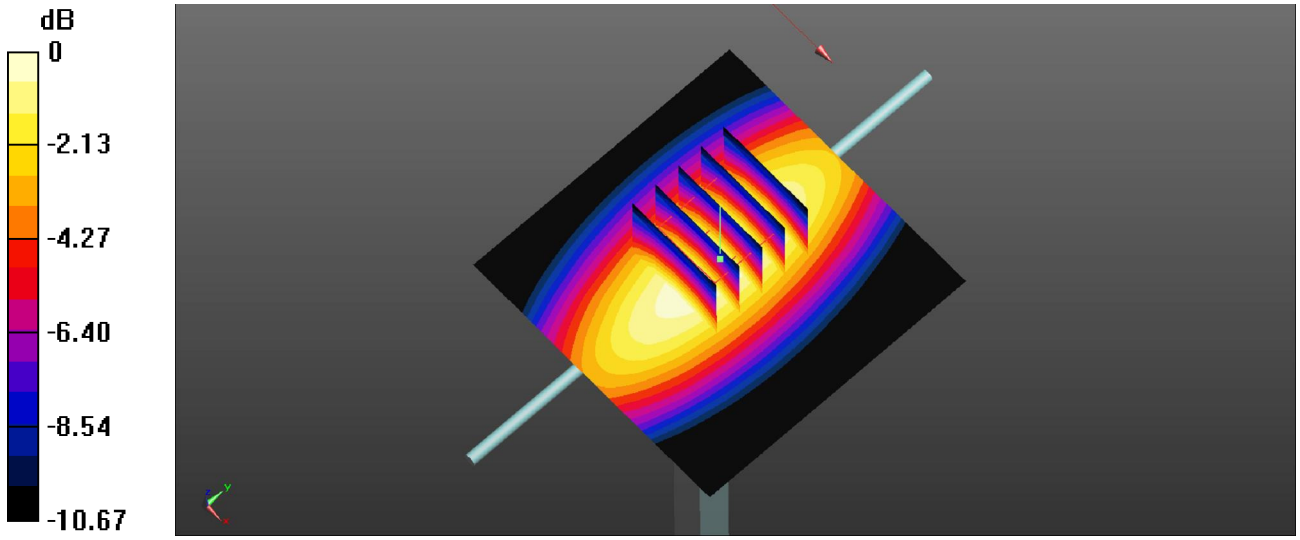
DUT: D835V2-SN:4d151

Communication System: UID 0, CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: MSL_835_2016/07/17 Medium parameters used: f = 835 MHz; σ = 0.977 S/m; ε_r = 54.466; ρ = 1000 kg/m^3
Ambient Temperature：23.9 ℃; Liquid Temperature ：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(10.3, 10.3, 10.3); Calibrated: 2015/11/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2015/8/27
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 3.10 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 51.63 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 3.66 W/kg
SAR(1 g) = 2.47 W/kg; SAR(10 g) = 1.62 W/kg
Maximum value of SAR (measured) = 3.11 W/kg



0 dB = 3.11 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016/7/17

System Check_Body_1750MHz_20160717

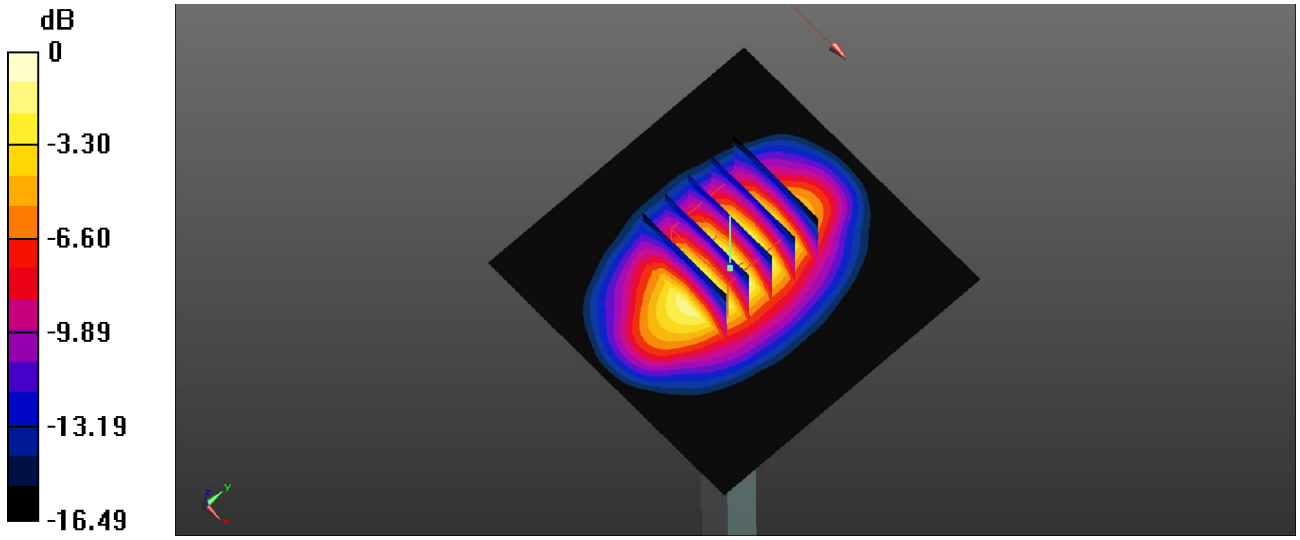
DUT: D1750V2-SN:1090

Communication System: UID 0, CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: MSL_1750_2016/07/17 Medium parameters used: f = 1750 MHz; σ = 1.492 S/m; ε_r = 53.378; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature ：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(8.24, 8.24, 8.24); Calibrated: 2015/11/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2015/8/27
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 13.4 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 90.79 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 15.9 W/kg
SAR(1 g) = 8.92 W/kg; SAR(10 g) = 4.77 W/kg
Maximum value of SAR (measured) = 13.6 W/kg



0 dB = 13.6 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016/7/16

System Check_Body_1900MHz_20160716

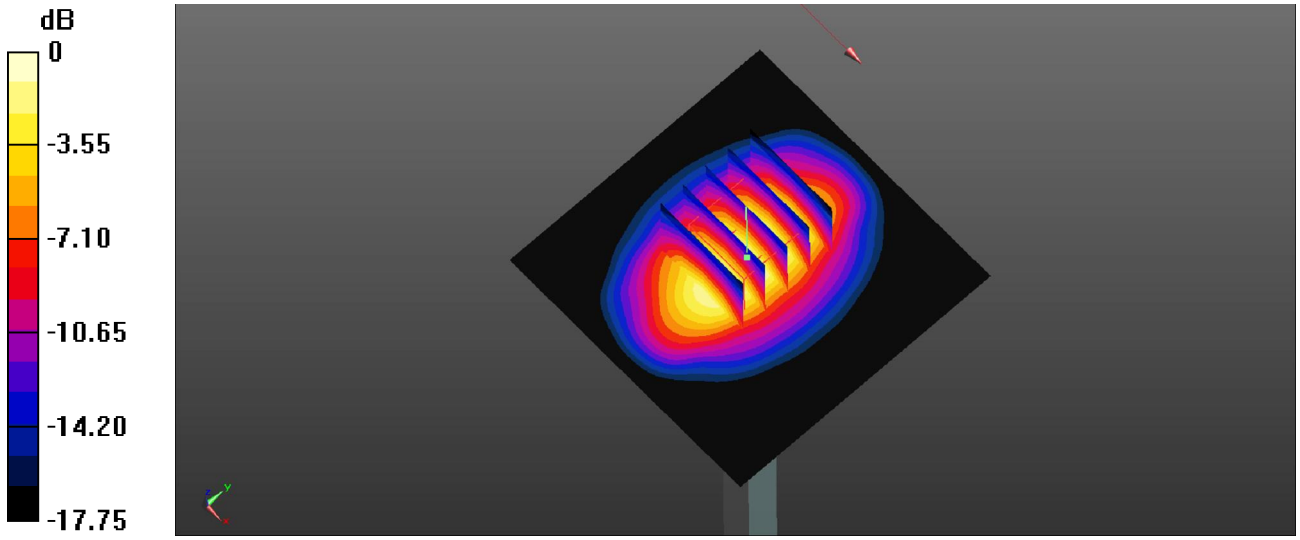
DUT: D1900V2-SN:5d170

Communication System: UID 0, CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: MSL_1900_2016/07/16 Medium parameters used: f = 1900 MHz; σ = 1.53 S/m; ε_r = 55.281; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature ：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(7.99, 7.99, 7.99); Calibrated: 2015/11/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2015/8/27
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 14.7 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 84.04 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 18.7 W/kg
SAR(1 g) = 10.4 W/kg; SAR(10 g) = 5.43 W/kg
Maximum value of SAR (measured) = 14.8 W/kg



0 dB = 14.8 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016/7/15

System Check_Body_2300MHz_20160715

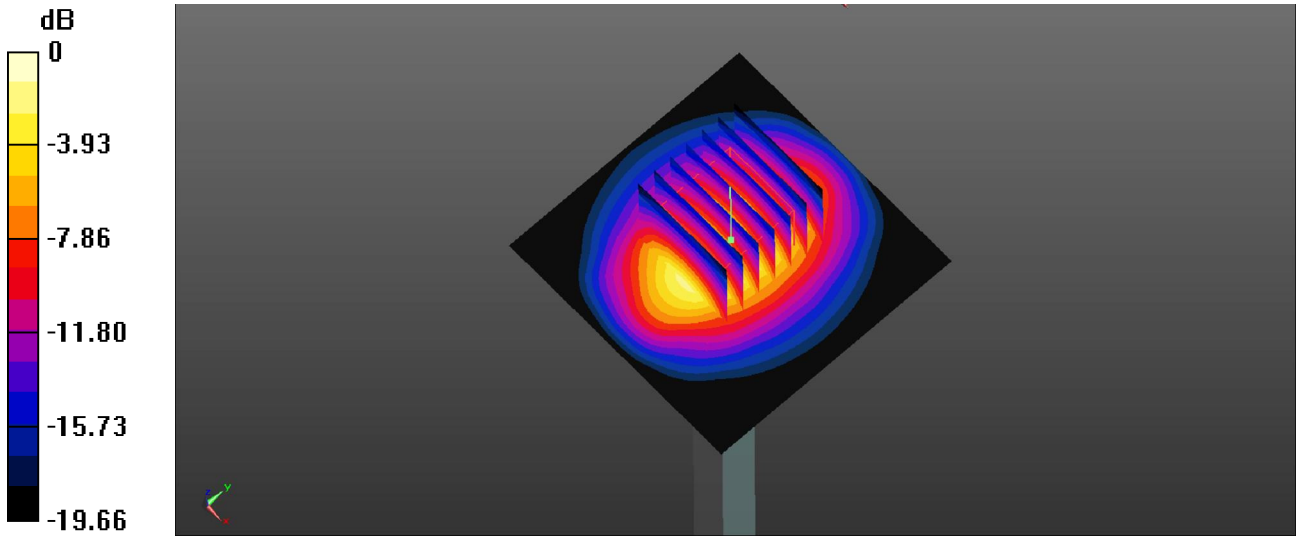
DUT: D2300V2-SN:1006

Communication System: UID 0, CW; Frequency: 2300 MHz;Duty Cycle: 1:1
Medium: MSL_2300_2016/07/15 Medium parameters used: f = 2300 MHz; σ = 1.749 S/m; ε_r = 51.991; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature ：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(7.72, 7.72, 7.72); Calibrated: 2015/11/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2015/8/27
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 18.4 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 102.2 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 23.9 W/kg
SAR(1 g) = 12.4 W/kg; SAR(10 g) = 6 W/kg
Maximum value of SAR (measured) = 18.3 W/kg



0 dB = 18.3 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016/7/15

System Check_Body_2450MHz_20160715

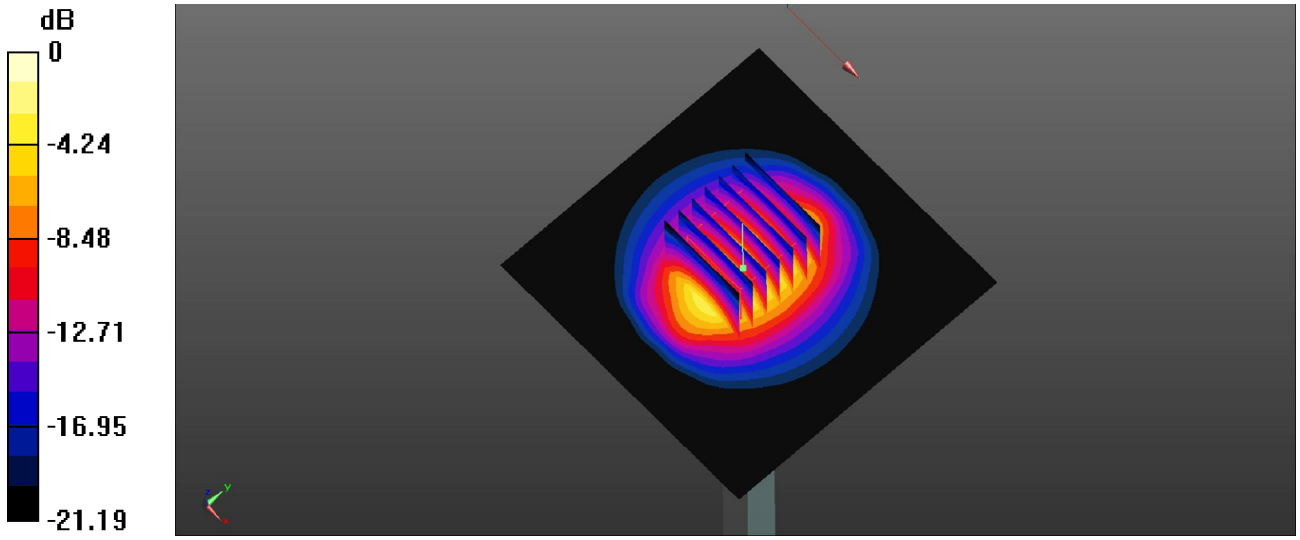
DUT: D2450V2-SN:908

Communication System: UID 0, CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: MSL_2450_2016/07/15 Medium parameters used: f = 2450 MHz; σ = 1.983 S/m; ε_r = 51.159; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature ：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(7.55, 7.55, 7.55); Calibrated: 2015/11/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2015/8/27
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (81x81x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 20.3 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 87.13 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 27.0 W/kg
SAR(1 g) = 13.4 W/kg; SAR(10 g) = 6.26 W/kg
Maximum value of SAR (measured) = 20.4 W/kg



0 dB = 20.4 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016/7/15

System Check_Body_2600MHz_20160715

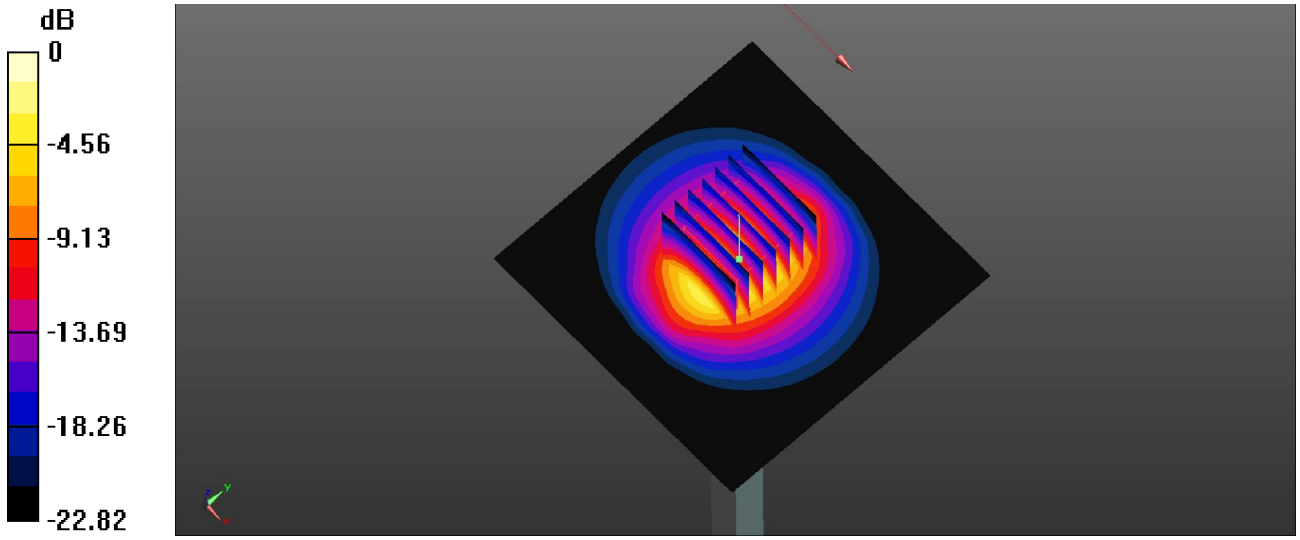
DUT: D2600V2-SN:1112

Communication System: UID 0, CW; Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: MSL_2600_2016/07/15 Medium parameters used: f = 2600 MHz; σ = 2.149 S/m; ε_r = 50.972; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature ：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(7.37, 7.37, 7.37); Calibrated: 2015/11/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2015/8/27
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (81x81x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 21.5 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 84.56 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 29.1 W/kg
SAR(1 g) = 13.7 W/kg; SAR(10 g) = 6.05 W/kg
Maximum value of SAR (measured) = 21.4 W/kg



0 dB = 21.4 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016/7/24

System Check_Body_5250MHz_20160724

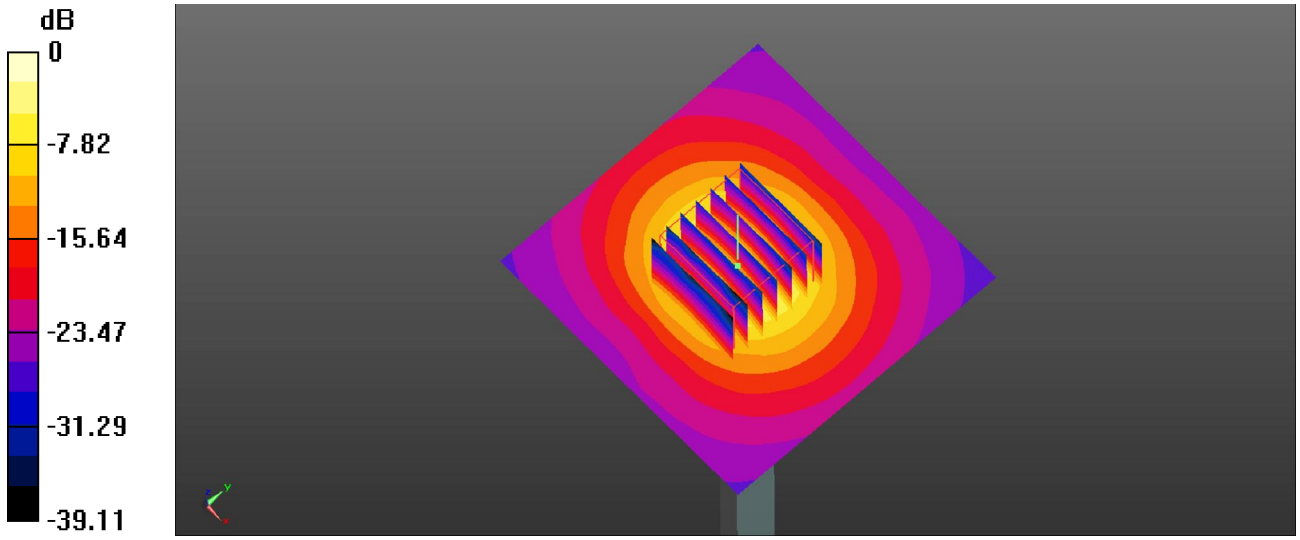
DUT: D5GHzV2-SN:1167

Communication System: UID 0, CW (0); Frequency: 5250 MHz;Duty Cycle: 1:1
Medium: MSL_5000_2016/07/24 Medium parameters used: f = 5250 MHz; σ = 5.15 S/m; ε_r = 50.163; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature ：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(4.35, 4.35, 4.35); Calibrated: 2015/11/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2015/8/27
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 18.8 W/kg

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 50.38 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 30.6 W/kg
SAR(1 g) = 7.93 W/kg; SAR(10 g) = 2.18 W/kg
Maximum value of SAR (measured) = 19.3 W/kg



0 dB = 19.3 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016/7/24

System Check_Body_5600MHz_20160724

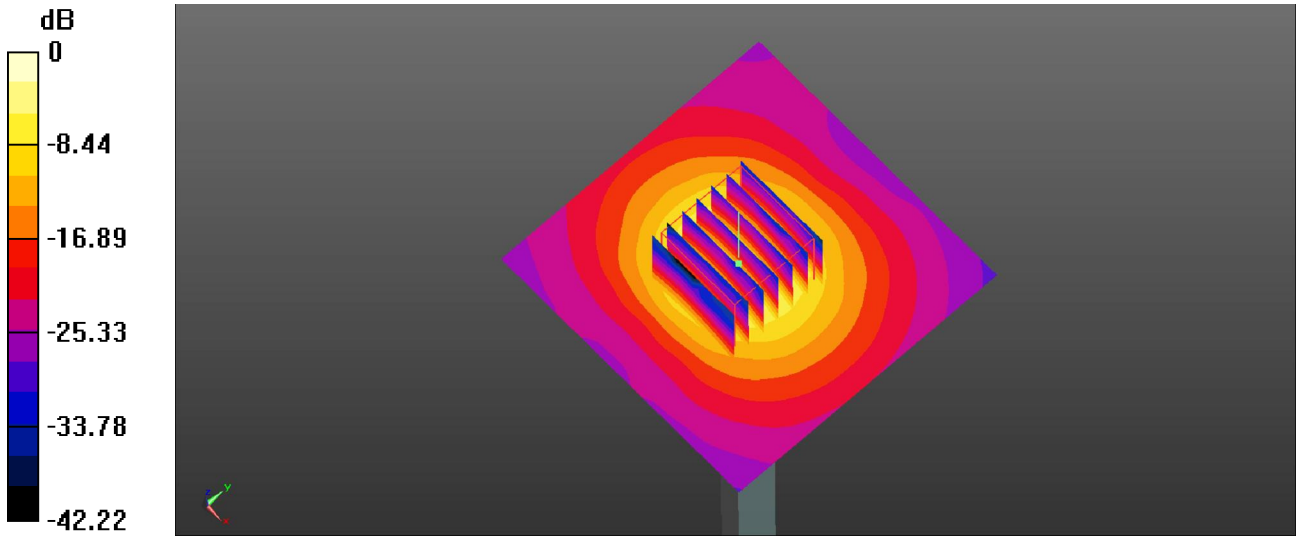
DUT: D5GHzV2-SN:1167

Communication System: UID 0, CW (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium: MSL_5000_2016/07/24 Medium parameters used: f = 5600 MHz; σ = 5.664 S/m; ε_r = 49.482; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature ：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(3.68, 3.68, 3.68); Calibrated: 2015/11/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2015/8/27
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 19.5 W/kg

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 47.77 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 32.5 W/kg
SAR(1 g) = 7.95 W/kg; SAR(10 g) = 2.18 W/kg
Maximum value of SAR (measured) = 19.8 W/kg



0 dB = 19.8 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016/7/24

System Check_Body_5750MHz_20160724

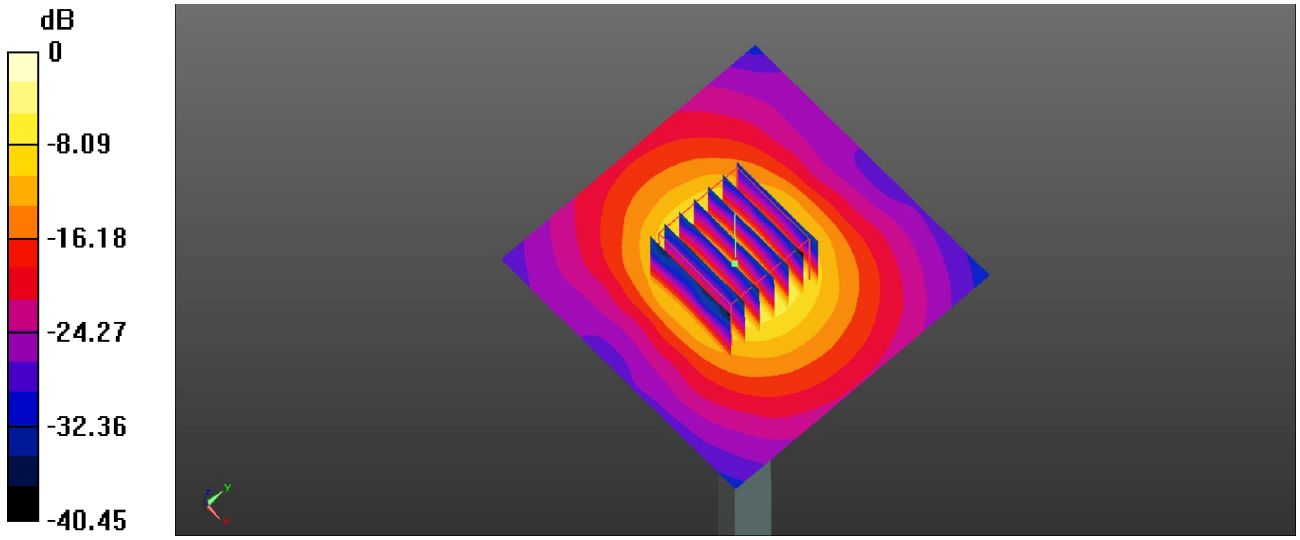
DUT: D5GHzV2-SN:1167

Communication System: UID 0, CW (0); Frequency: 5750 MHz;Duty Cycle: 1:1
Medium: MSL_5000_2016/07/24 Medium parameters used: f = 5750 MHz; σ = 5.829 S/m; ε_r = 49.302; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature ：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(3.81, 3.81, 3.81); Calibrated: 2015/11/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2015/8/27
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 17.1 W/kg

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 44.06 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 28.8 W/kg
SAR(1 g) = 6.91 W/kg; SAR(10 g) = 1.88 W/kg
Maximum value of SAR (measured) = 17.3 W/kg



0 dB = 17.3 W/kg

Appendix B. Plots of High SAR Measurement

The plots are shown as follows.

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016/7/17

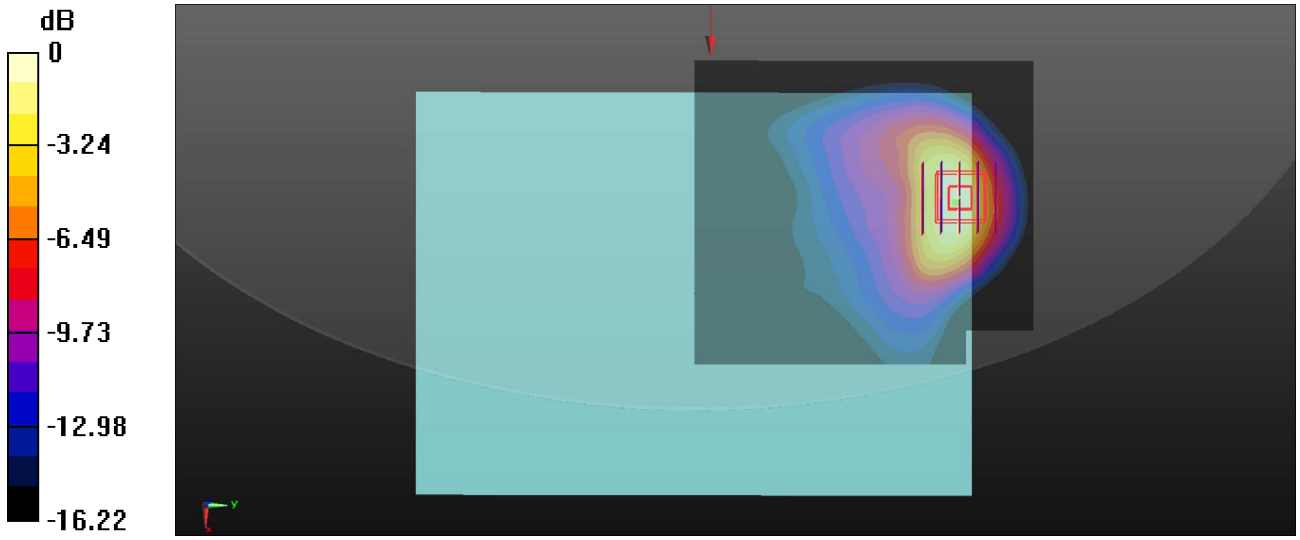
01_GSM850_GPRS (2 Tx slots)_Bottom Face_0mm_Ch251_Sensor on

Communication System: UID 0, GPRS (GMSK 2 Tx slot) (0); Frequency: 848.8 MHz;Duty Cycle: 1:4.15
Medium: MSL_835_2016/07/17 Medium parameters used: f = 848.8 MHz; σ = 0.994 S/m; ε_r = 54.359;ρ = 1000 kg/m^3
Ambient Temperature：23.9 ℃; Liquid Temperature ：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(10.3, 10.3, 10.3); Calibrated: 2015/11/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2015/8/27
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch251/Area Scan (91x101x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.66 W/kg

Ch251/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.389 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 2.00 W/kg
SAR(1 g) = 0.966 W/kg; SAR(10 g) = 0.506 W/kg
Maximum value of SAR (measured) = 1.60 W/kg



0 dB = 1.60 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016/7/16

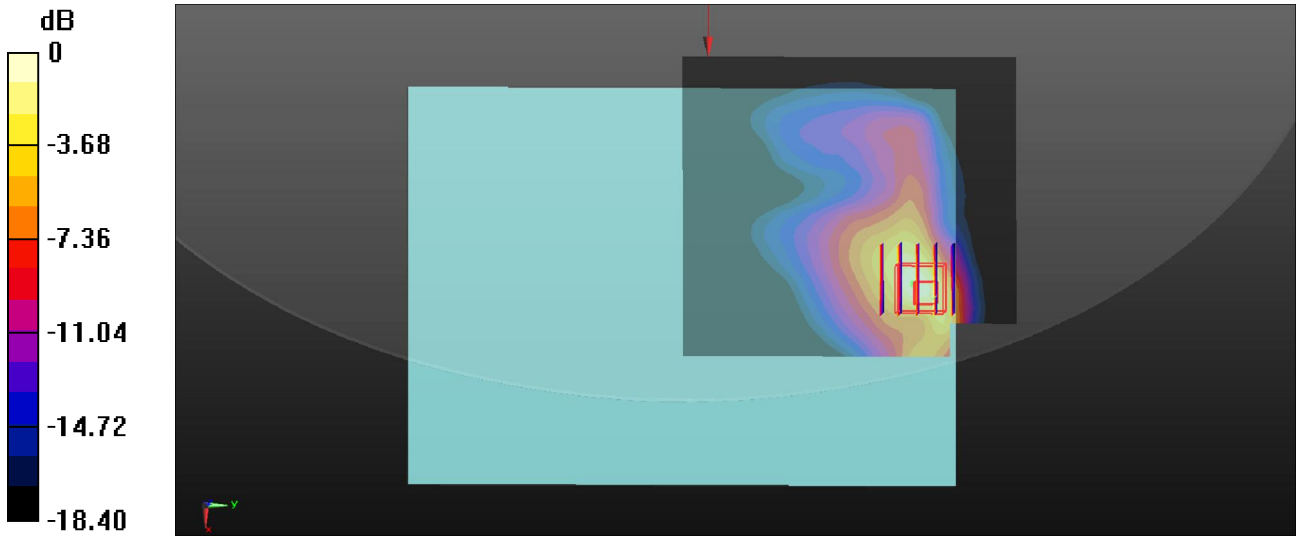
02_GSM1900_GPRS (2 Tx slots)_Bottom Face_0mm_Ch512_Sensor on

Communication System: UID 0, GPRS (GMSK 2 Tx slot) (0); Frequency: 1850.2 MHz;Duty Cycle: 1:4.15
Medium: MSL_1900_2016/07/16 Medium parameters used: f = 1850.2 MHz; σ = 1.483 S/m; ε_r = 55.412; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature ：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(7.99, 7.99, 7.99); Calibrated: 2015/11/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2015/8/27
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch512/Area Scan (91x101x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.939 W/kg

Ch512/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.634 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 1.30 W/kg
SAR(1 g) = 0.625 W/kg; SAR(10 g) = 0.309 W/kg
Maximum value of SAR (measured) = 1.01 W/kg



0 dB = 1.01 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016/7/17

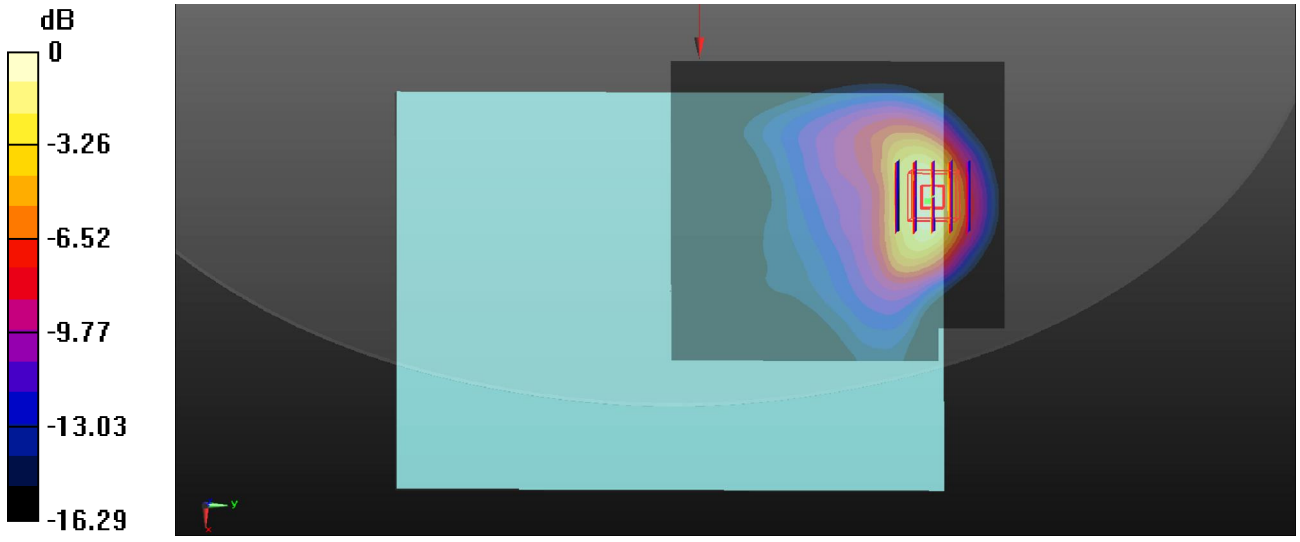
03_WCDMA Band V_RMC 12.2Kbps_Bottom Face_0mm_Ch4233_Sensor on

Communication System: UID 0, WCDMA (0); Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: MSL_835_2016/07/17 Medium parameters used: f = 846.6 MHz; σ = 0.992 S/m; ε_r = 54.371;ρ = 1000 kg/m^3
Ambient Temperature：23.9 ℃; Liquid Temperature ：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(10.3, 10.3, 10.3); Calibrated: 2015/11/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2015/8/27
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch4233/Area Scan (91x101x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.45 W/kg

Ch4233/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.412 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 1.80 W/kg
SAR(1 g) = 0.836 W/kg; SAR(10 g) = 0.444 W/kg
Maximum value of SAR (measured) = 1.44 W/kg



0 dB = 1.44 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016/7/17

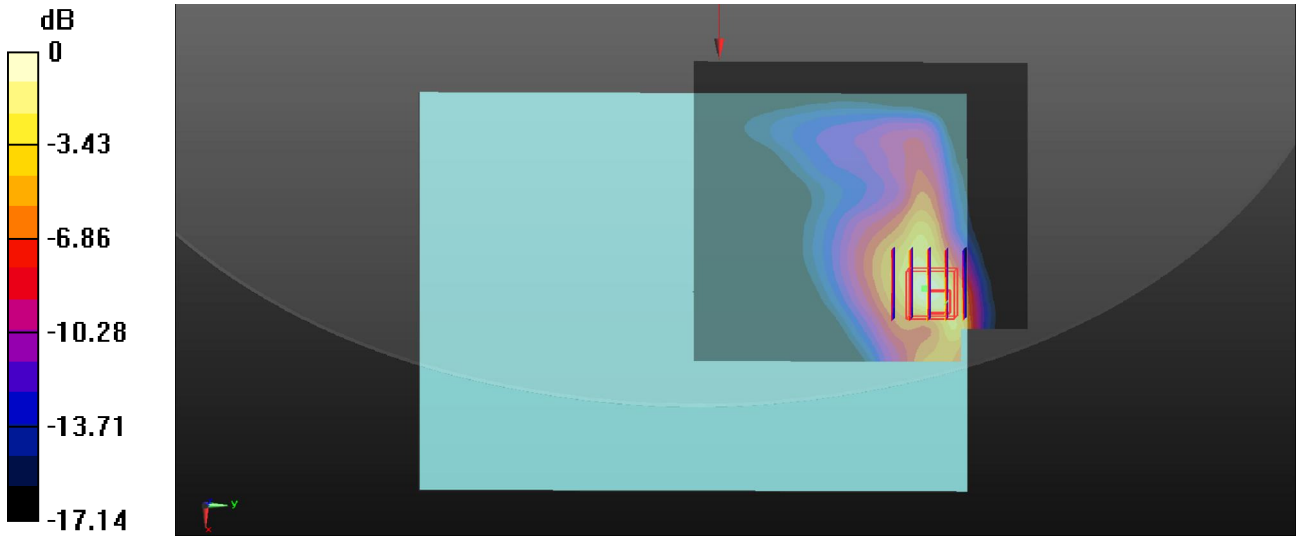
04_WCDMA Band IV_RMC 12.2Kbps_Bottom Face_0mm_Ch1513_Sensor on

Communication System: UID 0, WCDMA (0); Frequency: 1752.6 MHz;Duty Cycle: 1:1
Medium: MSL_1750_2016/07/17 Medium parameters used: f = 1753 MHz; σ = 1.495 S/m; ε_r = 53.369; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature ：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(8.24, 8.24, 8.24); Calibrated: 2015/11/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2015/8/27
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch1513/Area Scan (91x101x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.07 W/kg

Ch1513/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.608 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.48 W/kg
SAR(1 g) = 0.712 W/kg; SAR(10 g) = 0.366 W/kg
Maximum value of SAR (measured) = 1.17 W/kg



0 dB = 1.17 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016/7/16

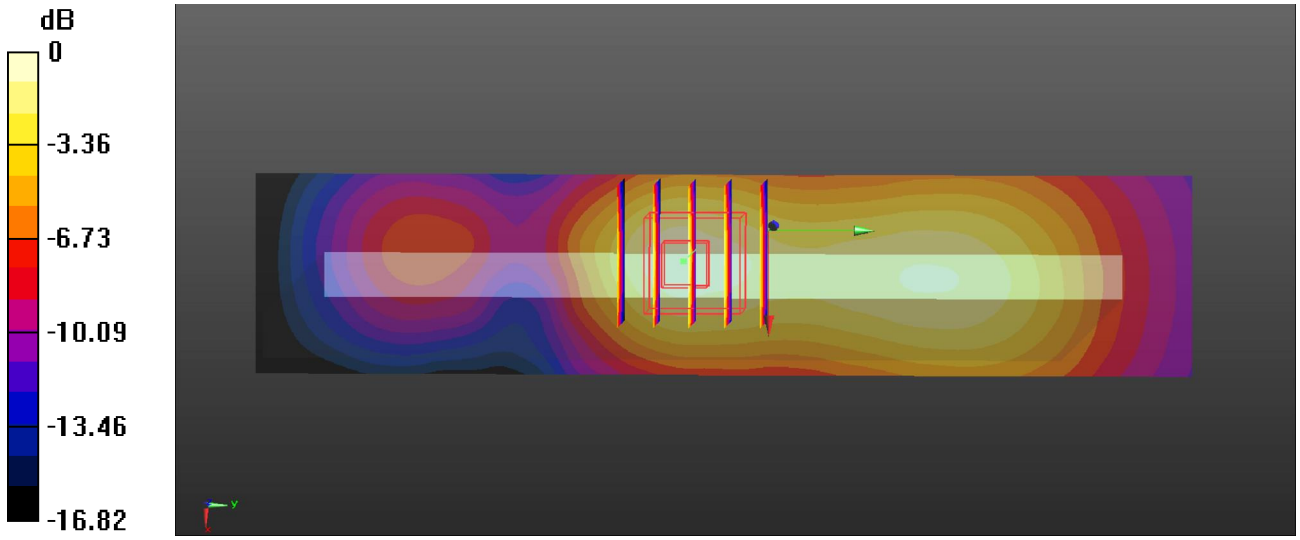
05_WCDMA Band II_RMC 12.2Kbps_Edge 1_10mm_Ch9538_Sensor off

Communication System: UID 0, WCDMA (0); Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: MSL_1900_2016/07/16 Medium parameters used: f = 1907.6 MHz; σ = 1.54 S/m; ε_r =55.218; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature ：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(7.99, 7.99, 7.99); Calibrated: 2015/11/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2015/8/27
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch9538/Area Scan (31x141x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.968 W/kg

Ch9538/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.13 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.16 W/kg
SAR(1 g) = 0.672 W/kg; SAR(10 g) = 0.380 W/kg
Maximum value of SAR (measured) = 0.967 W/kg



0 dB = 0.967 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016/7/17

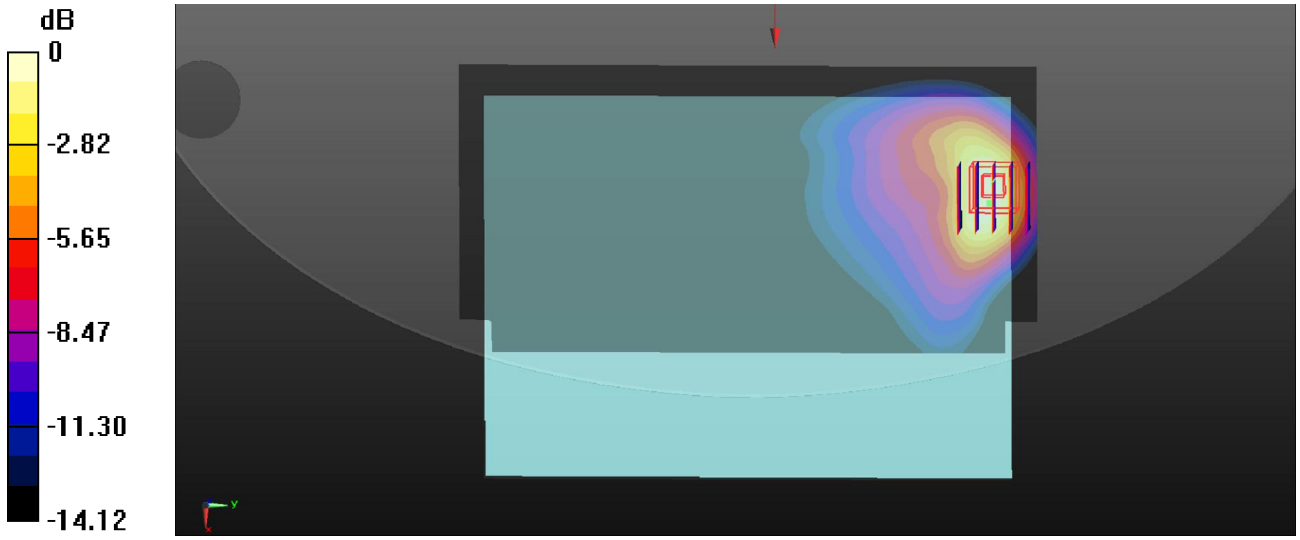
06_LTE Band 12_10M_QPSK_1RB_25offset_Bottom Face_0mm_Ch23095_Sensor off

Communication System: UID 0, FDD-LTE (0); Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium: MSL_750_2016/07/17 Medium parameters used: f = 707.5 MHz; σ = 0.936 S/m; ε_r = 54.323; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature ：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(10.59, 10.59, 10.59); Calibrated: 2015/11/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2015/8/27
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch23095/Area Scan (91x181x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.920 W/kg

Ch23095/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.433 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.26 W/kg
SAR(1 g) = 0.582 W/kg; SAR(10 g) = 0.321 W/kg
Maximum value of SAR (measured) = 0.971 W/kg



0 dB = 0.971 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016/7/17

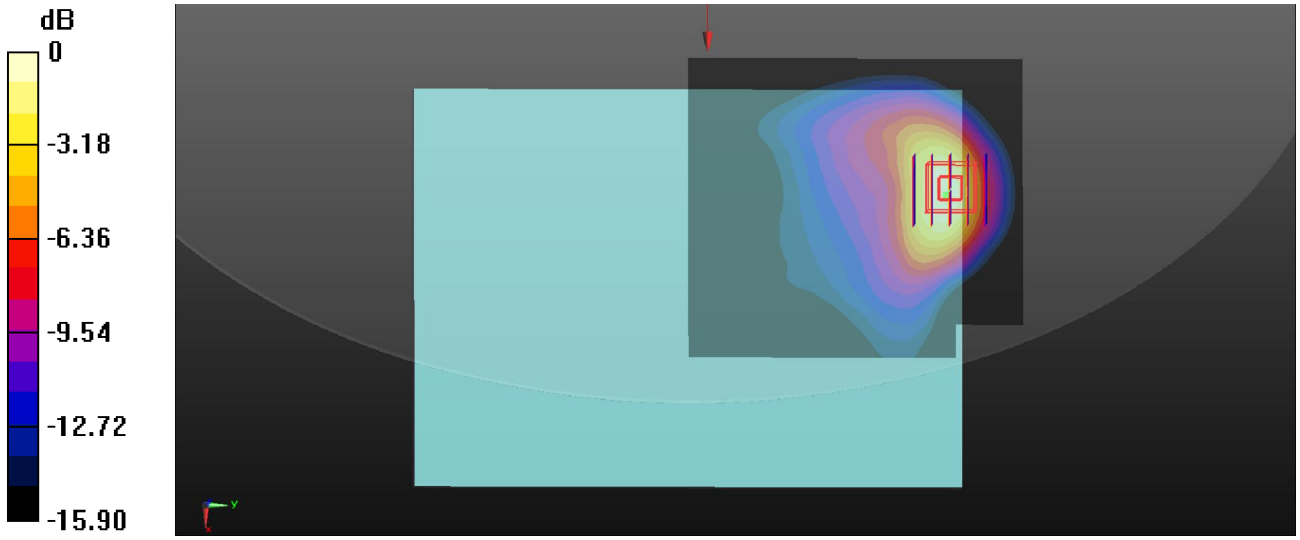
07_LTE Band 26_15M_QPSK_1RB_37offset_Bottom Face_0mm_Ch26865_Sensor on

Communication System: UID 0, FDD-LTE (0); Frequency: 831.5 MHz;Duty Cycle: 1:1
Medium: MSL_835_2016/07/12 Medium parameters used: f = 831.5 MHz; σ = 0.973 S/m; ε_r = 54.503; ρ = 1000 kg/m^3
Ambient Temperature：23.9 ℃; Liquid Temperature ：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(10.3, 10.3, 10.3); Calibrated: 2015/11/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2015/8/27
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch26865/Area Scan (91x101x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.82 W/kg

Ch26865/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.495 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 2.19 W/kg
SAR(1 g) = 1.08 W/kg; SAR(10 g) = 0.566 W/kg
Maximum value of SAR (measured) = 1.79 W/kg



0 dB = 1.79 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016/7/17

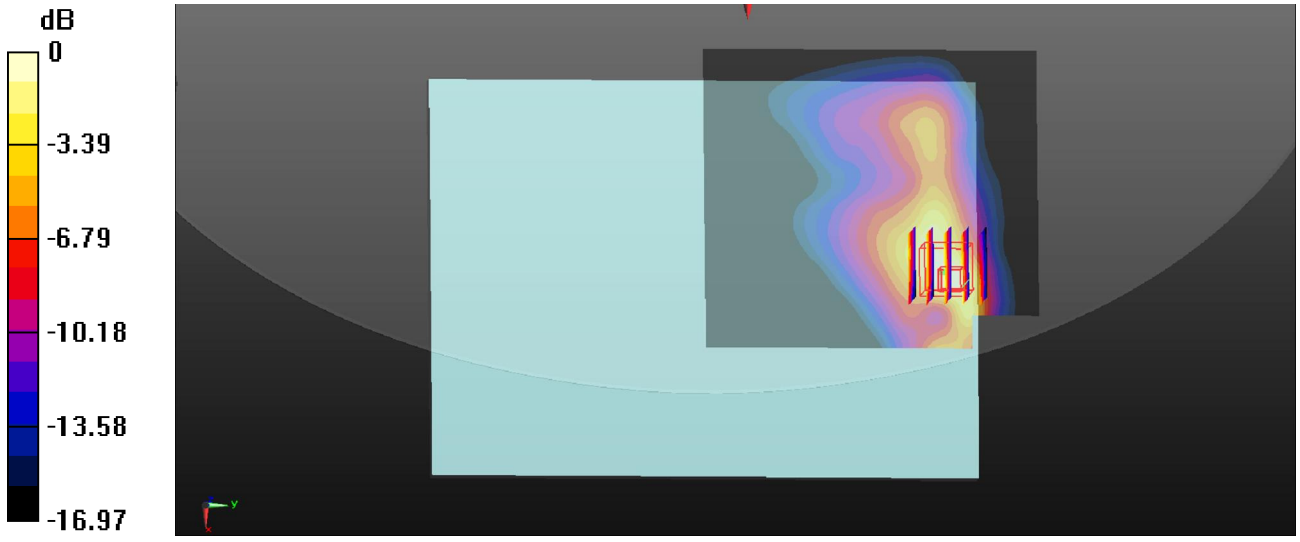
08_LTE Band 4_20M_QPSK_1RB_49offset_Bottom Face_0mm_Ch20175_Sensor on

Communication System: UID 0, FDD-LTE (0); Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium: MSL_1750_2016/07/17 Medium parameters used: f = 1732.5 MHz; σ = 1.473 S/m; ε_r = 53.437; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature ：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(8.24, 8.24, 8.24); Calibrated: 2015/11/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2015/8/27
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch20175/Area Scan (91x101x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.826 W/kg

Ch20175/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.555 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.11 W/kg
SAR(1 g) = 0.563 W/kg; SAR(10 g) = 0.290 W/kg
Maximum value of SAR (measured) = 0.818 W/kg



0 dB = 0.818 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016/7/16

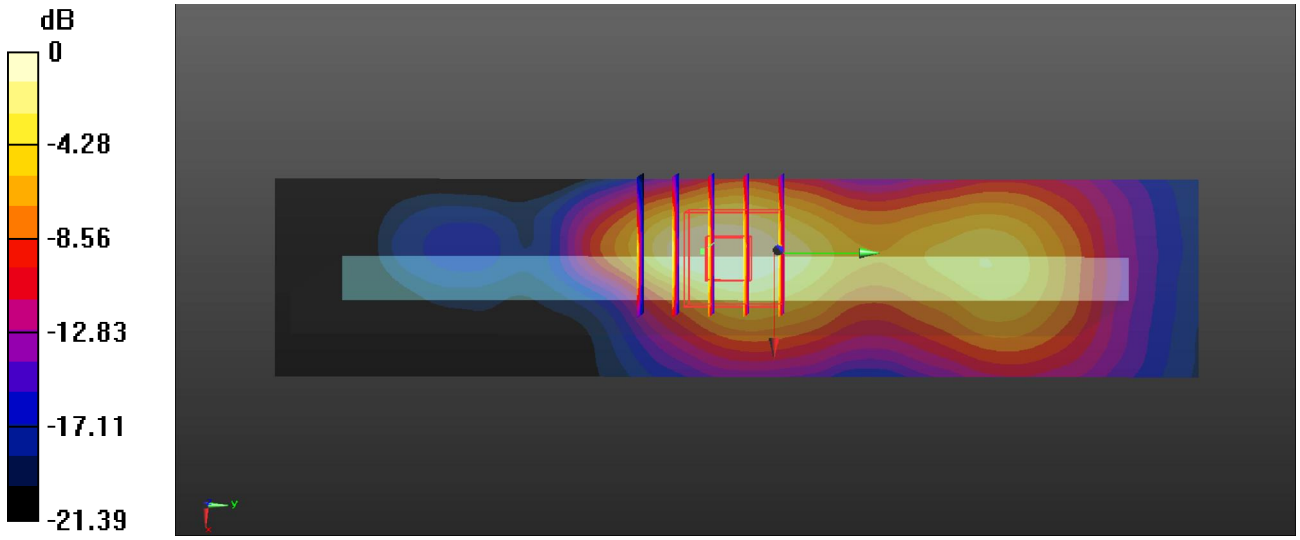
09_LTE Band 25_20M_QPSK_1RB_49offset_Edge 1_0mm_Ch26590_Sensor on

Communication System: UID 0, FDD-LTE (0); Frequency: 1905 MHz;Duty Cycle: 1:1
Medium: MSL_1900_2016/07/16 Medium parameters used: f = 1905 MHz; σ = 1.536 S/m; ε_r = 55.241; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature ：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(7.99, 7.99, 7.99); Calibrated: 2015/11/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2015/8/27
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch26590/Area Scan (31x141x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.13 W/kg

Ch26590/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.94 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.39 W/kg
SAR(1 g) = 0.690 W/kg; SAR(10 g) = 0.344 W/kg
Maximum value of SAR (measured) = 1.06 W/kg



0 dB = 1.06 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016/7/15

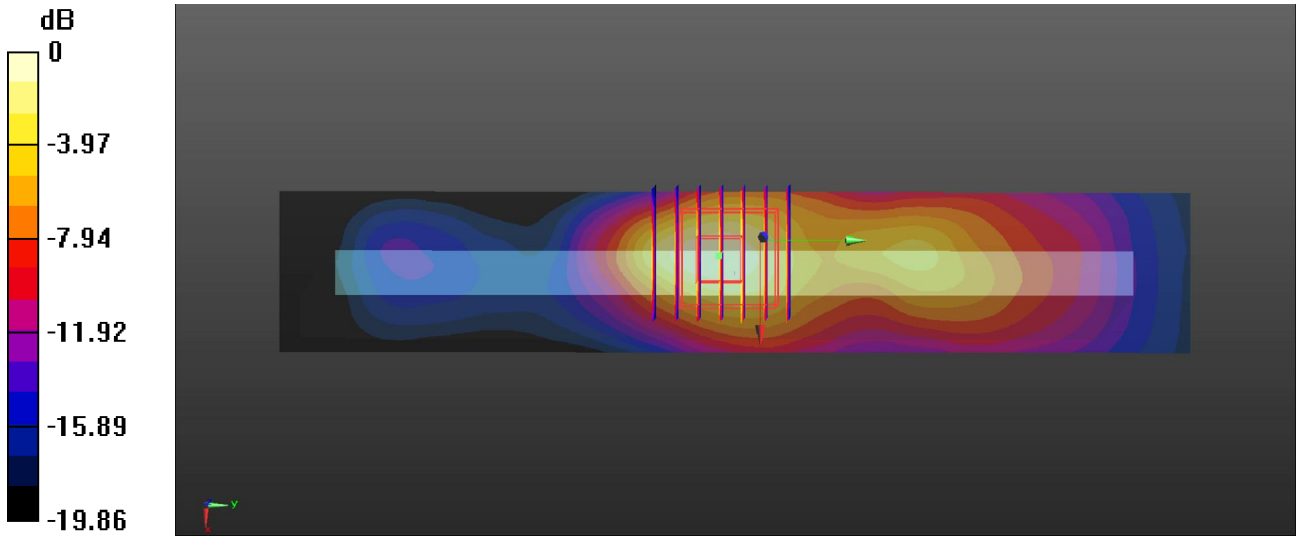
10_LTE Band 30_10M_QPSK_1RB_25offset_Edge 1_10mm_Ch27710_Sensor on

Communication System: UID 0, FDD-LTE (0); Frequency: 2310 MHz;Duty Cycle: 1:1
Medium: MSL_2300_2016/07/15 Medium parameters used: f = 2310 MHz; σ = 1.762 S/m; ε_r = 51.959; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature ：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(7.72, 7.72, 7.72); Calibrated: 2015/11/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2015/8/27
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch27710/Area Scan (31x171x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.980 W/kg

Ch27710/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.32 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.23 W/kg
SAR(1 g) = 0.575 W/kg; SAR(10 g) = 0.275 W/kg
Maximum value of SAR (measured) = 0.964 W/kg



0 dB = 0.964 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2016/7/15

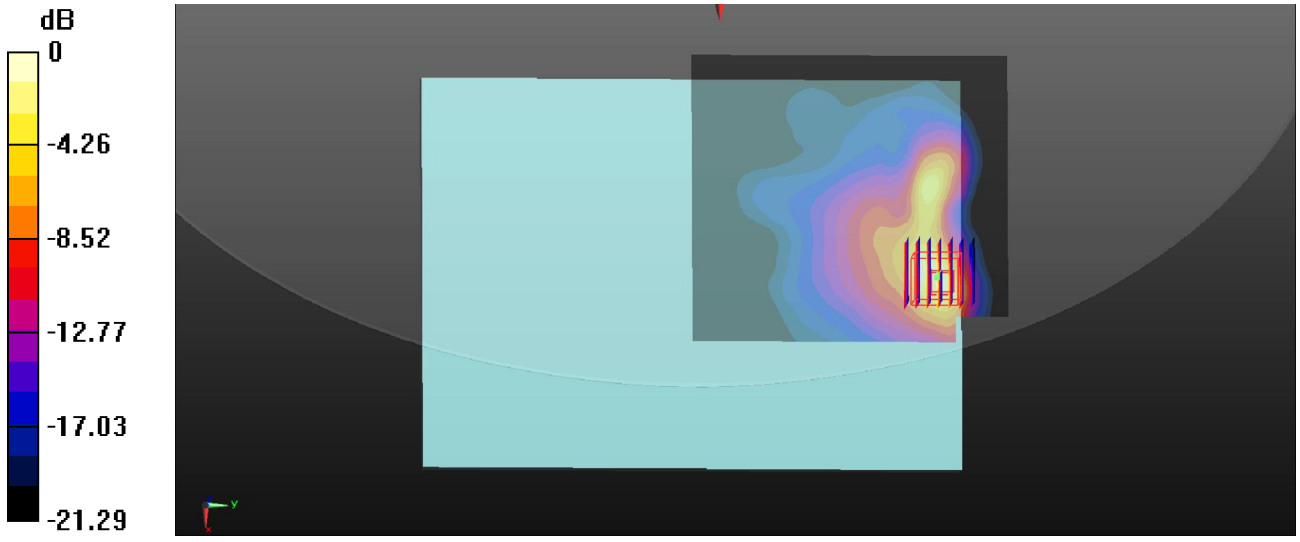
11_LTE band 7_20M_QPSK_1RB_49offset_Bottom Face_0mm_Ch20850_Sensor on

Communication System: UID 0, FDD-LTE (0); Frequency: 2510 MHz;Duty Cycle: 1:1
Medium: MSL_2600_2016/07/15 Medium parameters used: f = 2510 MHz; σ = 2.025 S/m; ε_r = 51.27; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃; Liquid Temperature ：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(7.37, 7.37, 7.37); Calibrated: 2015/11/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2015/8/27
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch20850/Area Scan (111x121x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.814 W/kg

Ch20850/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.494 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 1.29 W/kg
SAR(1 g) = 0.517 W/kg; SAR(10 g) = 0.213 W/kg
Maximum value of SAR (measured) = 0.954 W/kg



0 dB = 0.954 W/kg