FCC SAR TEST REPORT

FCC ID	:	R9C-CPH2305
Equipment	:	Mobile Phone
Brand Name	:	OPPO
Model Name	:	CPH2305
Applicant	:	Guangdong OPPO Mobile Telecommunications Corp., Ltd. NO.18 Haibin Road, Wusha Village, Chang'an Town, Dongguan City, Guangdong, China
Manufacturer	:	Guangdong OPPO Mobile Telecommunications Corp., Ltd. NO.18 Haibin Road, Wusha Village, Chang'an Town, Dongguan City, Guangdong, China
Standard	:	FCC 47 CFR Part 2 (2.1093)

We, Sporton International (Kunshan) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in 47 CFR Part 2.1093 and FCC KDB and has 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 (Kunshan) Inc., the test report shall not be reproduced except in full.

Nick Hu

Reviewed by: Nick Hu / Supervisor

Kat Yin

Approved by: Kat Yin / Manager

ACCREDITED Cert #5145.02

Sporton International (Kunshan) Inc.
No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China

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History of this test report

Report No.	Version	Description	Issued Date
FA1O1422	01	Initial issue of report	Dec. 02, 2021

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Guangdong OPPO Mobile Telecommunications Corp., Ltd., Mobile Phone, CPH2305**, are as follows.

Equipment Class	Frequency Band		Highest SAR Summary			Highest Simultaneous Transmission 1g SAR (W/kg)
			Head (Separation 0mm)	Body-worn (Separation 10mm)	Hotspot (Separation 10mm)	
			1g SAR (W/kg)			
Licensed	GSM	GSM850	0.79	0.66	0.98	1.59
		GSM1900	1.11	0.72	0.94	
	WCDMA	WCDMA V	0.58	0.46	0.81	
		WCDMA IV	0.73	0.70	0.84	
		WCDMA II	0.80	0.65	0.74	
	LTE	LTE Band 12/17	0.66	0.44	0.84	
		LTE Band 13	0.51	0.43	0.70	
		LTE Band 26/5	0.77	0.51	0.80	
		LTE Band 66/4	1.06	0.59	**1.17**	
		LTE Band 25/2	1.13	0.73	0.99	
		LTE Band 7	1.14	0.62	0.83	
		LTE Band 38	1.13	0.48	0.63	
		LTE Band 41	1.10	0.46	0.67	
	5G NR	FR1 n12	0.57	0.43	0.69	
		FR1 n13	0.38	0.31	0.34	
		FR1 n5	0.67	0.45	0.58	
		FR1 n26	0.16	0.26	0.26	
		FR1 n66	0.50	0.68	1.05	
		FR1 n2	0.65	0.60	1.07	
		FR1 n25	0.25	0.25	0.27	
		FR1 n7	0.88	0.49	0.90	
		FR1 n38	0.64	0.48	0.69	
		FR1 n41	0.85	0.50	1.01	
DTS	WLAN	2.4GHz WLAN	0.76	0.15	0.35	1.59
NII		5GHz WLAN	**1.17**	**0.81**	0.23	1.59
DSS	2.4GHz Band	Bluetooth	0.87	0.17	0.28	1.59
Date of Testing:			2021/10/26 ~ 2021/11/16			

Remark: This device supports both LTE B4/5/17 and B66/26/12. Since the supported frequency span for LTE B4/5/17 falls completely within the supports frequency span for LTE B66/26/12, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for B66/26/12.

Equipment Class	Frequency Band		Highest SAR Summary Product Specific (Separation 0mm) 10g SAR (W/kg)	Highest Simultaneous Transmission 10g SAR (W/kg)
Licensed	WCDMA	WCDMA IV	1.03	3.27
		WCDMA II	1.12	
	LTE	LTE Band 66/4	1.06	
		LTE Band 25	0.86	
		LTE Band 7	1.35	
		LTE Band 38	1.18	
		LTE Band 41	0.93	
	5G NR	FR1 n66	**1.70**	
		FR1 n2	1.38	
		FR1 n7	1.00	
		FR1 n38	1.05	
		FR1 n41	1.16	
NII	WLAN	5GHz WLAN	1.50	3.27
Date of Testing:			2021/10/26 ~ 2021/11/16	

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6W/kg as averaged over any 1 gram of tissue; 10-gram SAR for Product Specific 10g SAR, limit: 4.0W/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

Sporton International (Kunshan) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Testing Laboratory			
Test Firm	Sporton International (Kunshan) Inc.		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	SAR01-KS	CN1257	314309

3. Guidance Applied

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 648474 D04 SAR Evaluation Considerations for Wireless Handsets v01r03
- FCC KDB 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D05A Rel.10 LTE SAR Test Guidance v01r02
- FCC KDB 941225 D06 Hotspot Mode SAR v02r01
- FCC KDB 941225 D07 UMPC Mini Tablet v01r02

4. Equipment Under Test (EUT) Information

4.1 General Information

Product Feature & Specification	
Equipment Name	Mobile Phone
Brand Name	OPPO
Model Name	CPH2305
FCC ID	R9C-CPH2305
IMEI Code	SIM1: 866483050045138 SIM2: 866483050045120
Wireless Technology and Frequency Range	GSM850: 824 MHz ~ 849 MHz GSM1900: 1850 MHz ~ 1910 MHz WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 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 13: 777 MHz ~ 787 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 66: 1710 MHz ~ 1780 MHz 5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n7 : 2500 MHz ~ 2570 MHz 5G NR n12 : 699 MHz ~ 716 MHz 5G NR n13 : 777 MHz ~ 787 MHz 5G NR n25 : 1850 MHz ~ 1915 MHz 5G NR n26 : 814 MHz ~ 849 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n66 : 1710 MHz ~ 1780 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 NFC: 13.56 MHz WPC: 110 kHz~ 148.5 kHz
Mode	GSM/GPRS/EGPRS/DTM AMR / RMC 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+ (16QAM uplink is not supported) LTE: QPSK, 16QAM, 64QAM, 256QAM(Downlink Only) 5G NR : CP-OFDM / DFT-s-OFDM, QPSK, 16QAM, 64QAM, 256QAM WLAN 2.4GHz : 802.11b/g/n/ac HT20/HT40/VHT20/VHT40 WLAN 2.4GHz : 802.11ax HE20/HE40 WLAN 5GHz : 802.11a/n/ac/ax HT20/HT40/VHT20/VHT40/VHT80/VHT160/HE20/HE40/HE80/HE160 Bluetooth BR/EDR/LE NFC: ASK WPC: ASK
HW Version	11

SW Version	ColorOS V12.1
GSM / (E)GPRS Dual Transfer mode	Class A – EUT can support Packet Switched and Circuit Switched Network simultaneously.
EUT Stage	Production Unit

Remark:

1. This device supports VoIP in GPRS, EGPRS, CDMA, WCDMA and LTE (e.g. for 3rd-party VoIP) and LTE supports VoLTE operation.
2. This device supports DTM operation up to multi-slot class 11 and supports GRPS/EGRPS mode up to multi-slot class 33.
3. The 2.4GHz/5GHz WLAN can transmit in SISO and MIMO antenna mode.
4. This device WLAN 2.4GHz / 5.2GHz / 5.8GHz supports Hotspot operation and Bluetooth support tethering applications.
5. The device implements the power management and receiver detection/hotspot mode for SAR compliance at different exposure conditions (head, body-worn, hotspot/extremity) to ensure the power level not exceeding the associated power table. Details about the power management decision are provided in the operational description.
6. For receiver detection at head/Body exposure condition, while the device WLAN/BT transmits simultaneously with WWAN, then power reduction will be implemented immediately.
7. There are four kinds of SIM card states, they are: single SIM card, dual SIM card, dual SIM + eSIM and Single SIM + eSIM, please refer to the product equality declaration exhibit submitted. For the difference does not influence the RF exposure, so we chose dual SIM card to perform SAR testing. For dual SIM card mobile has two SIM slots and supports dual SIM dual standby. The WWAN radio transmission will be enabled by either one SIM at a time (single active). After pre-scan two SIM cards power, we found test result of the SIM1 was the worse, so we chose SIM1 slot to perform all tests. Based on the similarity, we chose dual SIM card mobile to perform all tests and dual SIM + eSIM verified e-SIM slot worse case of dual SIM card.
8. LTE band 41 supports HPUE, HPUE power and SAR testing performed separately.
9. 5GNR n41 supports UL MIMO, UL MIMO power and SAR testing performed separately.
10. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
11. For 5G NR support SA and NSA mode. NSA and SA mode power and SAR performed separately.
12. For DFT-s-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for the CP-OFDM mode will not higher than DFT-s-OFDM mode, therefore, CP-OFDM measurement is unnecessary.
13. 5G NR supports CP-OFDM and DFT-s-OFDM modulation, for DFT-s-OFDM power is higher than CP-OFDM, so only show DFT-s-OFDM power table and chose DFT-s-OFDM to perform SAR testing.
14. For 5G NR NSA mode, standalone SAR performed for 5GNR band with the maximum power, EN-DC SAR summed 5GNR standalone SAR and LTE standalone SAR , the result of EN-DC SAR is more conservatively.
15. RF exposure report for WPC (Wireless power charging) will be separately submitted.
16. This device supports 5GNR FR1 bands as following table, including NSA mode and SA mode.

<5G NR>

Mode	Band	Duplex	SCS(KHz)	Bandwidths(BW)
SA	n2	FDD	15	5, 10, 15, 20
	n5	FDD	15	5, 10, 15, 20
	n7	FDD	15	5, 10, 15, 20, 25, 30, 40, 50
	n12	FDD	15	5, 10, 15
	n13	FDD	15	5, 10
	n25	FDD	15	5, 10, 15, 20, 25, 30, 40
	n26	FDD	15	5, 10, 15, 20
	n66	FDD	15	5, 10, 15, 20, 30, 40
	n38	TDD	30	20, 30
	n41	TDD	30	20, 30, 40, 50, 60, 80, 90, 100
NSA	n5	FDD	15	5, 10, 15, 20
	n7	FDD	15	5, 10, 15, 20, 25, 30, 40
	n66	FDD	15	5, 10, 15, 20, 30, 40
	n41	TDD	30	20, 30, 40, 50, 60, 80, 90, 100

4.2 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05	
FCC ID	R9C-CPH2305
Equipment Name	Mobile Phone
Operating Frequency Range of each LTE transmission band	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 13: 777 MHz ~ 787 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 66: 1710 MHz ~ 1780 MHz
Channel Bandwidth	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 13: 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 38: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 66:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
uplink modulations used	QPSK / 16QAM / 64QAM
LTE Voice / Data requirements	Voice and Data
LTE Release Version	R16, Cat 13
CA Support	Yes, Uplink and Downlink
LTE MPR permanently built-in by design	**Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3** Modulation | Channel bandwidth / Transmission bandwidth (N_{RB}) 1.4 MHz | 3.0 MHz | 5 MHz | 10 MHz | 15 MHz | 20 MHz | MPR (dB) QPSK | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 1 16 QAM | ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 1 16 QAM | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 2 64 QAM | ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 2 64 QAM | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 3 256 QAM | ≥ 1 | ≤ 5
LTE A-MPR	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)
Spectrum plots for RB configuration	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.
Power reduction applied to satisfy SAR compliance	Yes, receiver detected /hotspot will trigger reduced power for some LTE bands, the detail please referred to section 12.
LTE Carrier Aggregation Combinations	Inter-Band and Intra-Band possible combinations and the detail power measurement please referred to section 12.
LTE Carrier Aggregation Additional Information	1. This device supports LTE Carrier Aggregation (CA) in the uplink for intra-band CA and inter-band CA with two component carriers in the uplink. SAR Measurements and conducted powers were evaluated per FCC Guidance. 2. This device supports maximum of 2 carriers in the downlink and 2 carriers in the uplink. Additional following LTE Release features are not supported: Relay, HetNet, Enhanced MIMO, eICI, WiFi Offloading, MDH, eMBMA, Cross-Carrier Scheduling, Enhanced SC-FDMA.

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 13								
	Bandwidth 5 MHz				Bandwidth 10 MHz			
	Channel #		Freq.(MHz)		Channel #		Freq.(MHz)	
L	23205		779.5		23230		782	
M	23230		782					
H	23255		784.5					
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 38								
	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	37775	2572.5	37800	2575	37825	2577.5	37850	2580
M	38000	2595	38000	2595	38000	2595	38000	2595
H	38225	2617.5	38200	2615	38175	2612.5	38150	2610

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

LTE Band 66												
	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	131979	1710.7	131987	1711.5	131997	1712.5	132022	1715	132047	1717.5	132072	1720
M	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745
H	132665	1779.3	132657	1778.5	132647	1777.5	132622	1775	132597	1772.5	132572	1770

4.3 General 5G NR SAR Test and Reporting Considerations

5G NR FR1 Information	
Operating Frequency Range of each 5G NR transmission band	5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n7 : 2500 MHz ~ 2570 MHz 5G NR n12 : 699 MHz ~ 716 MHz 5G NR n13 : 777 MHz ~ 787 MHz 5G NR n25 : 1850 MHz ~ 1915 MHz 5G NR n26 : 814 MHz ~ 849 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz
Channel Bandwidth	Please refer to 5G NR table in section 4.1
SCS	FDD: SCS15KHz, TDD: SCS30KHz
uplink modulations used	DFT-s-OFDM: QPSK / 16QAM / 64QAM / 256QAM CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM
A-MPR (Additional MPR) disabled for SAR Testing?	Yes
LTE Anchor Bands for n5	LTE B7
LTE Anchor Bands for n7	LTE B5/66
LTE Anchor Bands for n41	LTE B25/26
LTE Anchor Bands for n66	LTE B7

Transmission (H, M, L) channel numbers and frequencies in each 5G NR band

NR Band 2(SA)

	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	370500	1852.5	371000	1855	371500	1857.5	372000	1860
M	376000	1880	376000	1880	376000	1880	376000	1880
H	381500	1907.5	381000	1905	380500	1902.5	380000	1900

NR Band 5(SA&NSA)

	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	165300	826.5	165800	829	166300	831.5	166800	834
M	167300	836.5	167300	836.5	167300	836.5	167300	836.5
H	169300	846.5	168800	844	168300	841.5	167800	839

NR Band 7(SA)

	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	500500	2502.5	501000	2505	501500	2507.5	502000	2510	502500	2512.5	503000	2515	504000	2520	505000	2525
M	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535
H	513500	2567.5	513000	2565	512500	2562.5	512000	2560	511500	2557.5	511000	2555	510000	2550	509000	2545

NR Band 7(NSA)

	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	500500	2502.5	501000	2505	501500	2507.5	502000	2510	502500	2512.5	503000	2515	504000	2520
M	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535
H	513500	2567.5	513000	2565	512500	2562.5	512000	2560	511500	2557.5	511000	2555	510000	2550

NR Band 12(SA)

	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	140300	701.5	140800	704	141300	706.5
M	141500	707.5	141500	707.5	141500	707.5
H	142700	713.5	142200	711	141700	708.5

NR Band 13(SA)				
	Bandwidth 5MHz		Bandwidth 10MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	155900	779.5		
M	156400	782	156400	782
H	156900	784.5		

NR Band 25(SA)														
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	370500	1852.5	371000	1855	371500	1857.5	372000	1860	372500	1862.5	373000	1865	374000	1870
M	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5
H	382500	1912.5	382000	1910	381500	1907.5	381000	1905	380500	1902.5	38000	1900	379000	1895

NR Band 26(SA)								
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	163300	816.5	163800	819	164300	821.5	164800	824
M	166300	831.5	166300	831.5	166300	831.5	166300	831.5
H	169300	846.5	168800	844	168300	841.5	167800	839

NR Band 66(SA&NSA)												
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	342500	1712.5	343000	1715	343500	1717.5	344000	1720	345000	1725	346000	1730
M	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745
H	355500	1777.5	355000	1775	354500	1772.5	354000	1770	353000	1765	352000	1760

NR Band 38(SA)				
	Bandwidth 20MHz		Bandwidth 30MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	516000	2580	517002	2585.01
M	519000	2595	519000	2595
H	522000	2610	520998	2604.99

NR Band 41(SA&NSA)																
	Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	501204	2506.02	502200	2511	503202	2516.01	504204	2521.02	505200	2526	507204	2536.02	508200	2541	509202	2546.01
M	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99
H	535998	2679.99	534996	2674.98	534000	2670	532998	2664.99	531996	2659.98	529998	2649.99	528996	2644.98	528000	2640

5. RF Exposure Limits

5.1 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.

5.2 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.

6. Specific Absorption Rate (SAR)

6.1 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.

6.2 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:

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

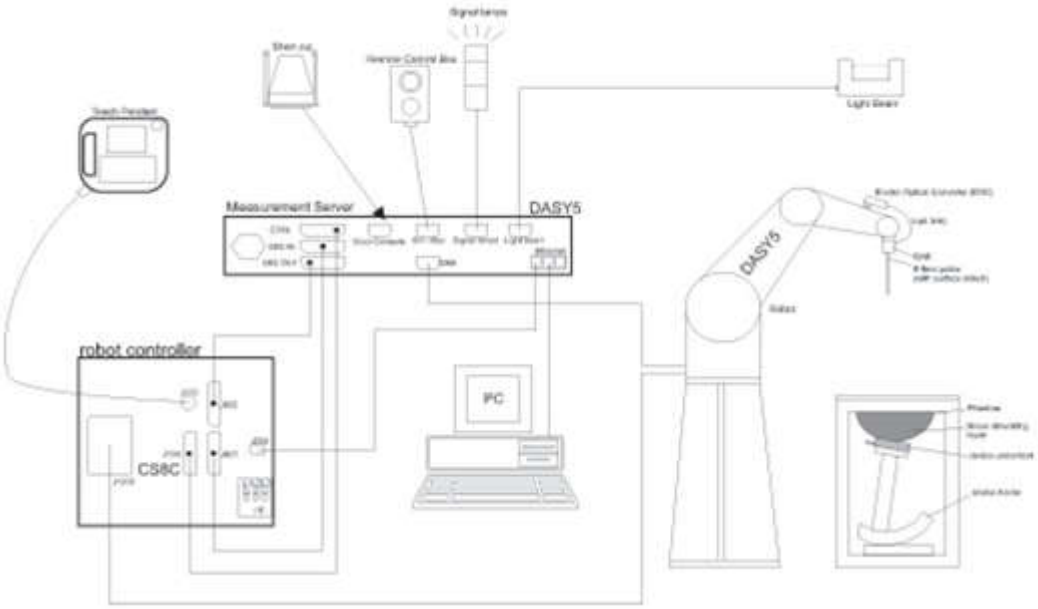
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

7. 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.

7.1 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

7.2 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

7.3 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

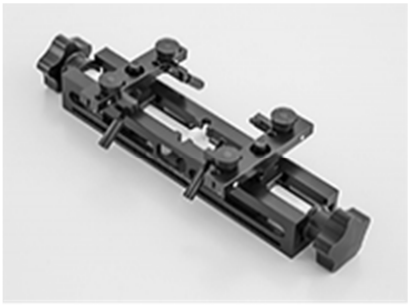
The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

7.4 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

8. 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

8.1 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 Reduced to surface
(f) Calculation of the averaged SAR within masses of 1g and 10g

8.2 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 Reduceds to surface determines the closest measurement point to phantom surface. This distance cannot be smaller than the distance of Reduced calibration points to probe tip as defined in the probe properties.

8.3 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.	

8.4 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.

8.5 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.

8.6 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.

9. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1099	Dec. 06, 2018	Nov. 24, 2021
SPEAG	835MHz System Validation Kit	D835V2	4d162	Dec. 05, 2018	Nov. 24, 2021
SPEAG	1750MHz System Validation Kit	D1750V2	1090	Mar. 27, 2019	Mar. 25, 2022
SPEAG	1900MHz System Validation Kit	D1900V2	5d182	Dec. 07, 2018	Nov. 24, 2021
SPEAG	2450MHz System Validation Kit	D2450V2	924	Sep. 02, 2020	Sep. 01, 2023
SPEAG	2600MHz System Validation Kit	D2600V2	1070	Dec. 07, 2018	Nov. 24, 2021
SPEAG	5000MHz System Validation Kit	D5GHzV2	1113	Sep. 24, 2019	Sep. 22, 2022
SPEAG	Data Acquisition Electronics	DAE4	1386	Jan. 13, 2021	Jan. 12, 2022
SPEAG	Dosimetric E-Field Probe	EX3DV4	3975	Jun. 07, 2021	Jun. 06, 2022
SPEAG	SAM Twin Phantom	QD 000 P40 CD	1671	NCR	NCR
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Anritsu	Radio communication analyzer	MT8820C	6201300653	Jul. 14, 2021	Jul. 13, 2022
Anritsu	Radio communication analyzer	MT8821C	6272278319	Jun. 29, 2021	Jun. 28, 2022
Agilent	Wireless Communication Test Set	E5515C	MY50267224	Jul. 14, 2021	Jul. 13, 2022
Agilent	Network Analyzer	E5071C	MY46106933	Jul. 31, 2021	Jul. 30, 2022
Speag	Dielectric Assessment KIT	DAK-3.5	1071	Dec. 23, 2020	Dec. 22, 2021
Agilent	Signal Generator	N5181A	MY50145381	Dec. 25, 2020	Dec. 24, 2021
Anritsu	Power Sensor	MA2411B	1207253	Dec. 25, 2020	Dec. 24, 2021
Anritsu	Power Meter	ML2495A	1218010	Dec. 25, 2020	Dec. 24, 2021
R&S	Power Sensor	NRP8S	109228	Apr. 09, 2021	Apr. 08, 2022
R&S	CBT BLUETOOTH TESTER	CBT	100963	Dec. 25, 2020	Dec. 24, 2021
R&S	Spectrum Analyzer	FSP7	100818	Jul. 14, 2021	Jul. 13, 2022
TES	Hygrometer	1310	200505600	Jul. 17, 2021	Jul. 16, 2022
Anymetre	Thermo-Hygrometer	JR593	2015030904	Jul. 17, 2021	Jul. 16, 2022
SPEAG	Device Holder	N/A	N/A	N/A	N/A
AR	Amplifier	5S1G4	0333096	Note 1	
mini-circuits	Amplifier	ZVE-3W-83+	599201528	Note 1	
ARRA	Power Divider	A3200-2	N/A	Note 1	
ET Industries	Dual Directional Coupler	C-058-10	N/A	Note 1	
Weinschel	Attenuator 1	3M-10	N/A	Note 1	
Weinschel	Attenuator 2	3M-20	N/A	Note 1	

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.
2. Referring to KDB 865664 D01v01r04, the dipole calibration interval can be extended to 3 years with justification. The dipoles are also not physically damaged, or repaired during the interval.
3. The justification data of dipole can be found in appendix C. The return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration.

10. System Verification

10.1 Tissue Simulating Liquids

For the measurement of the field distribution inside the SAM phantom with DASY, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 10.1. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 10.2.

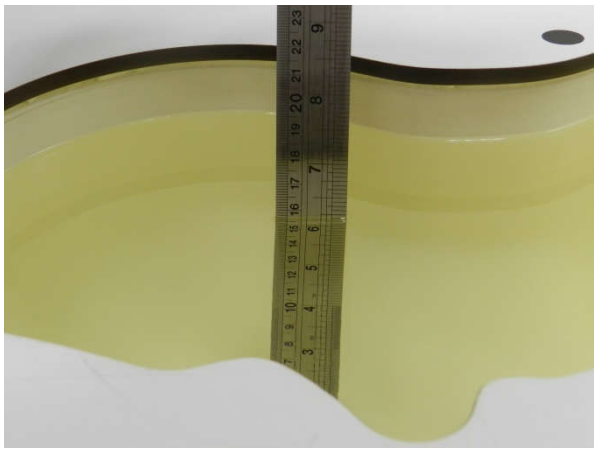


Fig 10.1Photo of Liquid Height for Head SAR

Fig 10.2 Photo of Liquid Height for Body SAR

10.2 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 Head								
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.40	40.0
2450	55.0	0	0	0	0	45.0	1.80	39.2
2600	54.8	0	0	0.1	0	45.1	1.96	39.0

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	Head	22.3	0.879	40.957	0.89	41.90	-1.24	-2.25	±5	2021/10/26
750	Head	22.5	0.894	41.019	0.89	41.90	0.45	-2.10	±5	2021/10/28
835	Head	22.6	0.917	40.748	0.90	41.50	1.89	-1.81	±5	2021/10/27
835	Head	22.1	0.902	40.749	0.90	41.50	0.22	-1.81	±5	2021/11/5
1750	Head	22.6	1.377	41.359	1.37	40.10	0.51	3.14	±5	2021/11/8
1750	Head	22.8	1.383	40.015	1.37	40.10	0.95	-0.21	±5	2021/11/13
1900	Head	22.9	1.448	39.000	1.40	40.00	3.43	-2.50	±5	2021/11/5
1900	Head	22.4	1.440	40.038	1.40	40.00	2.86	0.09	±5	2021/11/16
2450	Head	22.3	1.829	40.081	1.80	39.20	1.61	2.25	±5	2021/11/6
2450	Head	22.2	1.823	37.953	1.80	39.20	1.28	-3.18	±5	2021/11/9
2600	Head	22.4	2.055	37.597	1.96	39.00	4.85	-3.60	±5	2021/10/29
2600	Head	22.9	2.053	37.984	1.96	39.00	4.74	-2.61	±5	2021/11/11
5250	Head	22.8	4.725	36.522	4.71	35.95	0.32	1.59	±5	2021/11/1
5250	Head	22.8	4.626	37.038	4.71	35.95	-1.78	3.03	±5	2021/11/2
5600	Head	22.6	5.034	36.508	5.07	35.50	-0.71	2.84	±5	2021/11/3
5600	Head	22.7	5.155	35.916	5.07	35.50	1.68	1.17	±5	2021/11/9
5750	Head	22.7	5.203	36.253	5.22	35.35	-0.33	2.55	±5	2021/11/4
5750	Head	22.3	5.332	35.643	5.22	35.35	2.15	0.83	±5	2021/11/12

10.3 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.

<1g SAR>

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 (%)
2021/10/26	750	Head	250	1099	3975	1386	2.13	8.52	8.52	0.00
2021/10/28	750	Head	250	1099	3975	1386	2.17	8.52	8.68	1.88
2021/10/27	835	Head	250	4d162	3975	1386	2.54	9.61	10.16	5.72
2021/11/5	835	Head	250	4d162	3975	1386	2.53	9.61	10.12	5.31
2021/11/8	1750	Head	250	1090	3975	1386	9.67	36.40	38.68	6.26
2021/11/13	1750	Head	250	1090	3975	1386	9.71	36.40	38.84	6.70
2021/11/5	1900	Head	250	5d182	3975	1386	10.70	39.60	42.8	8.08
2021/11/16	1900	Head	250	5d182	3975	1386	10.30	39.60	41.2	4.04
2021/11/6	2450	Head	250	924	3975	1386	13.50	51.40	54	5.06
2021/11/9	2450	Head	250	924	3975	1386	12.90	51.40	51.6	0.39
2021/10/29	2600	Head	250	1070	3975	1386	15.40	58.10	61.6	6.02
2021/11/11	2600	Head	250	1070	3975	1386	14.90	58.10	59.6	2.58
2021/11/1	5250	Head	100	1113	3975	1386	8.20	80.50	82	1.86
2021/11/2	5250	Head	100	1113	3975	1386	8.56	80.50	85.6	6.34
2021/11/3	5600	Head	100	1113	3975	1386	7.82	83.40	78.2	-6.24
2021/11/9	5600	Head	100	1113	3975	1386	8.20	83.40	82	-1.68
2021/11/4	5750	Head	100	1113	3975	1386	8.73	80.00	87.3	9.13
2021/11/12	5750	Head	100	1113	3975	1386	8.35	80.00	83.5	4.38

<10g SAR>

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
2021/10/26	750	Head	250	1099	3975	1386	1.42	5.64	5.68	0.71
2021/10/28	750	Head	250	1099	3975	1386	1.44	5.64	5.76	2.13
2021/10/27	835	Head	250	4d162	3975	1386	1.65	6.35	6.6	3.94
2021/11/5	835	Head	250	4d162	3975	1386	1.65	6.35	6.6	3.94
2021/11/8	1750	Head	250	1090	3975	1386	5.17	19.20	20.68	7.71
2021/11/13	1750	Head	250	1090	3975	1386	5.20	19.20	20.8	8.33
2021/11/5	1900	Head	250	5d182	3975	1386	5.51	20.70	22.04	6.47
2021/11/16	1900	Head	250	5d182	3975	1386	5.48	20.70	21.92	5.89
2021/11/6	2450	Head	250	924	3975	1386	6.11	24.00	24.44	1.83
2021/11/9	2450	Head	250	924	3975	1386	6.02	24.00	24.08	0.33
2021/10/29	2600	Head	250	1070	3975	1386	6.68	26.10	26.72	2.38
2021/11/11	2600	Head	250	1070	3975	1386	6.87	26.10	27.48	5.29
2021/11/1	5250	Head	100	1113	3975	1386	2.36	23.10	23.6	2.16
2021/11/2	5250	Head	100	1113	3975	1386	2.42	23.10	24.2	4.76
2021/11/3	5600	Head	100	1113	3975	1386	2.32	23.80	23.2	-2.52
2021/11/9	5600	Head	100	1113	3975	1386	2.53	23.80	25.3	6.30
2021/11/4	5750	Head	100	1113	3975	1386	2.41	22.80	24.1	5.70
2021/11/12	5750	Head	100	1113	3975	1386	2.27	22.80	22.7	-0.44

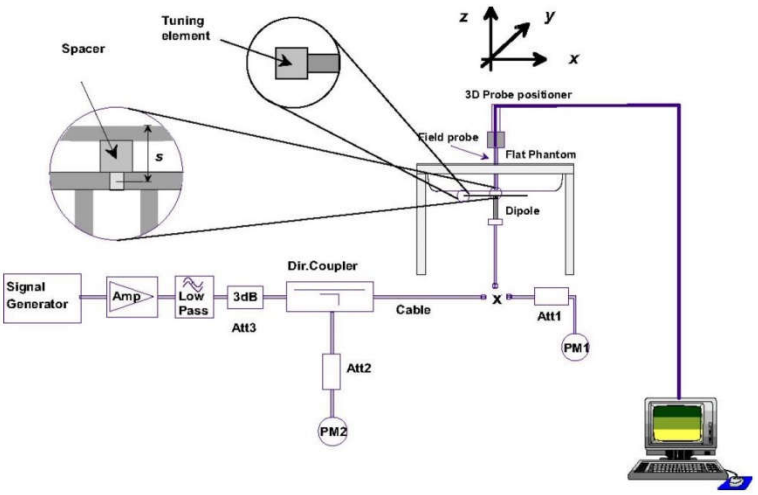


Fig 8.3.1 System Performance Check Setup

Fig 8.3.2 Setup Photo

11. RF Exposure Positions

11.1 Ear and handset reference point

Figure 9.1.1 shows the front, back, and side views of the SAM phantom. The center-of-mouth reference point is labeled “M,” the left ear reference point (ERP) is marked “LE,” and the right ERP is marked “RE.” Each ERP is 15 mm along the B-M (back-mouth) line behind the entrance-to-ear-canal (EEC) point, as shown in Figure 9.1.2 The Reference Plane is defined as passing through the two ear reference points and point M. The line N-F (neck-front), also called the reference pivoting line, is normal to the Reference Plane and perpendicular to both a line passing through RE and LE and the B-M line (see Figure 9.1.3). Both N-F and B-M lines should be marked on the exterior of the phantom shell to facilitate handset positioning. Posterior to the N-F line the ear shape is a flat surface with 6 mm thickness at each ERP, and forward of the N-F line the ear is truncated, as illustrated in Figure 9.1.2. The ear truncation is introduced to preclude the ear lobe from interfering with handset tilt, which could lead to unstable positioning at the cheek.

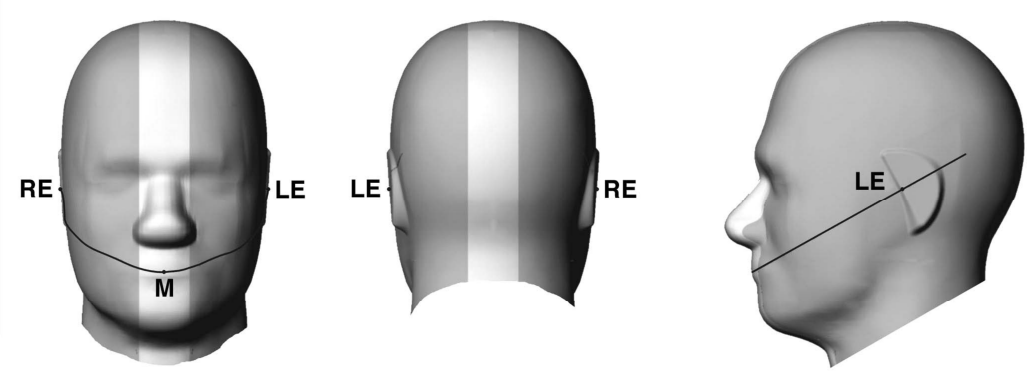


Fig 9.1.1 Front, back, and side views of SAM twin phantom

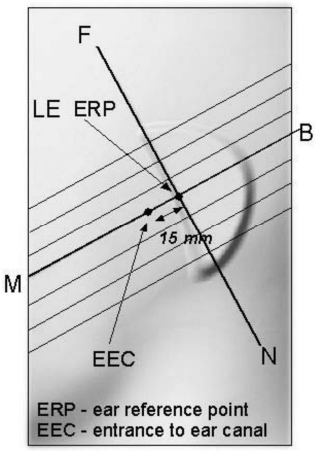


Fig 9.1.2 Close-up side view of phantom showing the ear region.

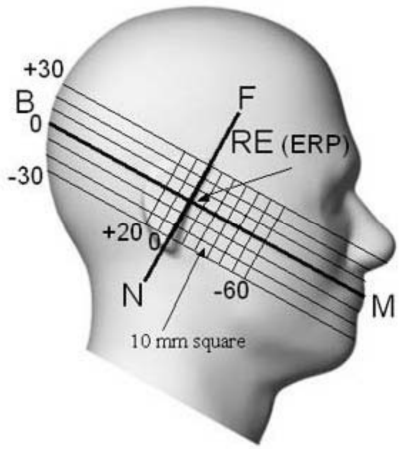


Fig 9.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

11.2 Definition of the cheek position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. Define two imaginary lines on the handset—the vertical centerline and the horizontal line. The vertical centerline passes through two points on the front side of the handset—the midpoint of the width wt of the handset at the level of the acoustic output (point A in Figure 9.2.1 and Figure 9.2.2), and the midpoint of the width wb of the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output (see Figure 9.2.1). The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset (see Figure 9.2.2), especially for clamshell handsets, handsets with flip covers, and other irregularly-shaped handsets.
3. Position the handset close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 9.2.3), such that the plane defined by the vertical centerline and the horizontal line of the handset is approximately parallel to the sagittal plane of the phantom.
4. Translate the handset towards the phantom along the line passing through RE and LE until handset point A touches the pinna at the ERP.
5. While maintaining the handset in this plane, rotate it around the LE-RE line until the vertical centerline is in the plane normal to the plane containing B-M and N-F lines, i.e., the Reference Plane.
6. Rotate the handset around the vertical centerline until the handset (horizontal line) is parallel to the N-F line.
7. While maintaining the vertical centerline in the Reference Plane, keeping point A on the line passing through RE and LE, and maintaining the handset contact with the pinna, rotate the handset about the N-F line until any point on the handset is in contact with a phantom point below the pinna on the cheek. See Figure 9.2.3. The actual rotation angles should be documented in the test report.

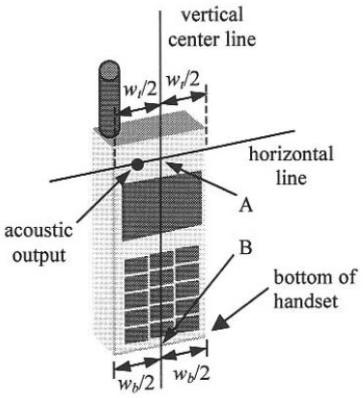


Fig 9.2.1 Handset vertical and horizontal reference lines—"fixed case

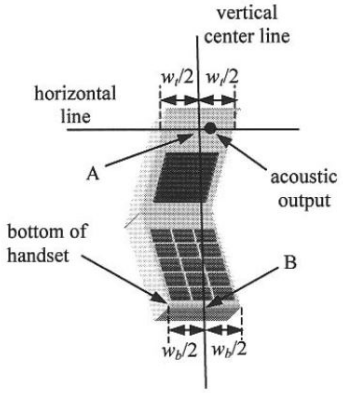


Fig 9.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

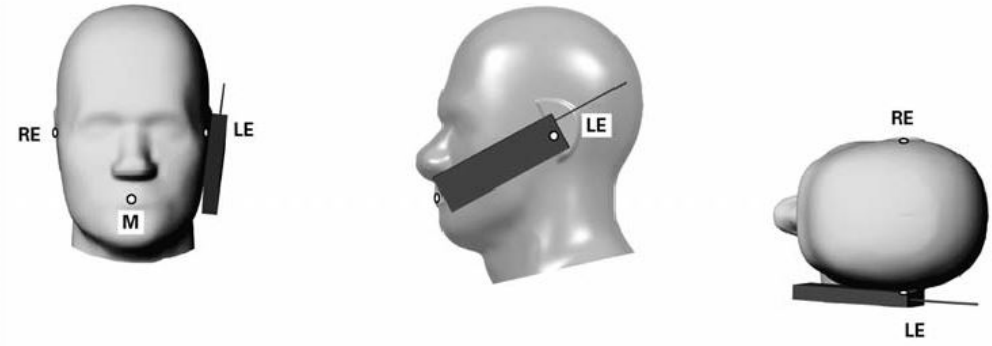


Fig 9.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

11.3 Definition of the tilt position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. While maintaining the orientation of the handset, move the handset away from the pinna along the line passing through RE and LE far enough to allow a rotation of the handset away from the cheek by 15°.
3. Rotate the handset around the horizontal line by 15°.
4. While maintaining the orientation of the handset, move the handset towards the phantom on the line passing through RE and LE until any part of the handset touches the ear. The tilt position is obtained when the contact point is on the pinna. See Figure 9.3.1. If contact occurs at any location other than the pinna, e.g., the antenna at the back of the phantom head, the angle of the handset should be reduced. In this case, the tilt position is obtained if any point on the handset is in contact with the pinna and a second point

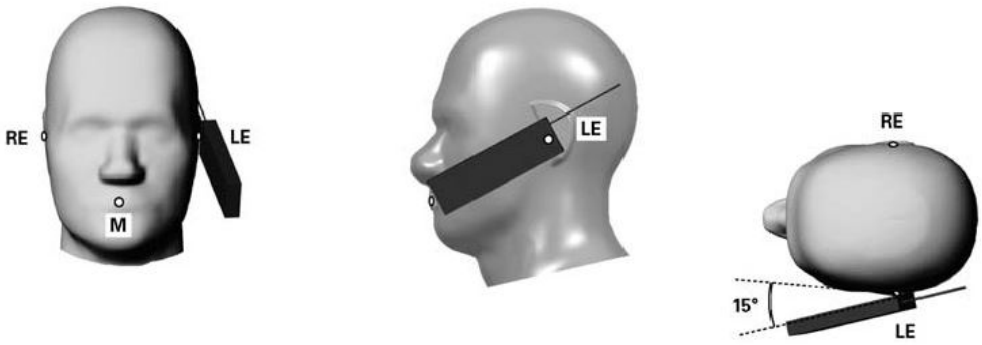


Fig 9.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

11.4 Body Worn Accessory

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 9.4). Per KDB648474 D04v01r03, body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB 447498 D01v06 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for body-worn accessory, measured without a headset connected to the handset is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a handset attached to the handset.

Accessories for body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are test with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-chip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

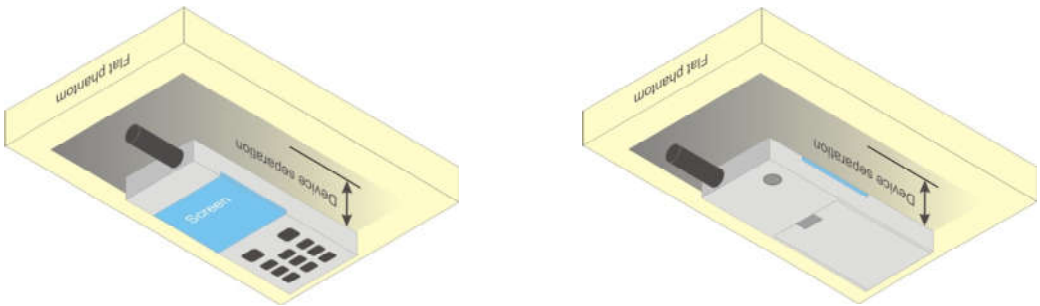


Fig 9.4 Body Worn Position

11.5 Product Specific Exposure

For smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, According to KDB648474 D04v01r03, the following phablet procedures should be applied to evaluate SAR compliance for each applicable wireless modes and frequency band. Devices marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance

1. The normally required head and body-worn accessory SAR test procedures for handsets, including hotspot mode, must be applied.

2. The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for 10-g extremity SAR according to the body-equivalent tissue dielectric parameters in KDB 865664 to address interactive hand use exposure conditions.6 The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.

11.6 Wireless Router

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 v02r01 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10mm from the front, back and edges of the device containing transmitting antennas within 2.5cm of their edges, determined form general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WIFI transmitter according to FCC KDB Publication 447498 D01v06 publication procedures. The “Portable Hotspot” feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

12. GSM/UMTS/CDMA/LTE Output Power (Unit: dBm)

The detailed conducted power table can refer to Appendix E.

<GSM Conducted Power>

1. For DTM multi-slot class mode, the device was linked with base station simulator (Agilent E5515C) and transmit maximum power on maximum number of TX slots, i.e. one CS timeslot, and additional PS timeslots (1 for DTM class 5 and 9, 2 for DTM class 11) in one TDMA frame.
2. Agilent E5515C was used to setup the device operated under DTM mode for power measurement and SAR testing. For conducted power, the power of the burst for voice and the power of the bursts for data was reported separately, and the frame-average power is derived to determine SAR testing.
3. Per KDB 447498 D01v06, the maximum output power channel is used for SAR testing and for further SAR test reduction.
4. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE/ DTM modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. Therefore, the GPRS (3Tx slots) for GSM850, GPRS (4Tx slots) for GSM1900 are considered as the primary mode.
5. Other configurations of GSM / GPRS / EDGE / DTM are considered as secondary modes. Both primary and secondary modes must be in the same frequency band. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

<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.
3. For DC-HSDPA, the device was configured according to the H-Set 12, Fixed Reference Channel (FRC) configuration in Table C.8.1.12 of 3GPP TS 34.121-1, with the primary and the secondary serving HS-DSCH Cell enabled during the power measurement.

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 4) (Note 5)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2) (Note 6)	AG Index (Note 5)	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	$\beta_{ed}1$: 47/15 $\beta_{ed}2$: 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	0	-	-	5/15	5/15	47/15	4	1	1.0	0.0	12	67

Note 1: For sub-test 1 to 4, Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c. For sub-test 5, Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 5/15 with β_{hs} = 5/15 * 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: 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 5: β_{ed} can not be set directly; it is set by Absolute Grant Value.

Note 6: For subtests 2, 3 and 4, UE may perform E-DPDCH power scaling at max power which could results in slightly smaller MPR values.

Setup Configuration

DC-HSDPA 3GPP release 8 Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration below
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 RMC 12.2Kbps + HSDPA mode.
   ii. Set Cell Power = -25 dBm
   iii. Set HS-DSCH Configuration Type to FRC (H-set 12, QPSK)
   iv. Select HSDPA Uplink Parameters
   v. Set Gain Factors (β_c and β_d) and parameters were set according to each Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
      a). Subtest 1: β_c/β_d=2/15
      b). Subtest 2: β_c/β_d=12/15
      c). Subtest 3: β_c/β_d=15/8
      d). Subtest 4: β_c/β_d=15/4
   vi. Set Delta ACK, Delta NACK and Delta CQI = 8
   vii. Set Ack-Nack Repetition Factor to 3
   viii. Set CQI Feedback Cycle (k) to 4 ms
   ix. Set CQI Repetition Factor to 2
   x. Power Ctrl Mode = All Up bits
d. The transmitted maximum output power was recorded.

The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
A summary of these settings are illustrated below:

C.8.1.12 Fixed Reference Channel Definition H-Set 12

Table C.8.1.12: Fixed Reference Channel H-Set 12

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Proces ses	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK
Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table.		
Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.		

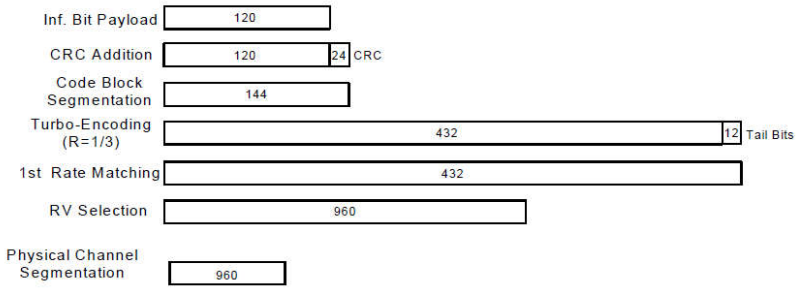


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

Setup Configuration

<WCDMA Conducted Power>

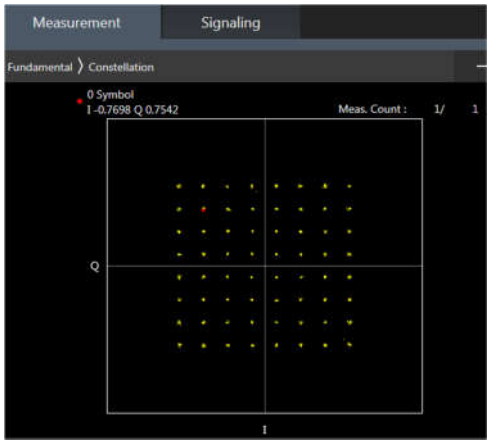
General Note:

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. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA 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 / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA, and according to the following RF output power, the output power results of the secondary modes (HSDPA / HSUPA / DC-HSDPA) are less than ¼ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA.

<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 B4 / B5 / B12 / B17 / B26 / B38 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 4/5/17 SAR test was covered by Band 66/26/12; 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
10. According to 2017 TCB workshop, for 64 QAM and 16 QAM should be verified by checking the signal constellation with a call box to avoid incorrect maximum power levels due to MPR and other requirements associated with signal modulation, and the following figure is taken from the "Fundamental Measurement >> Modulation Analysis >> constellation" mode of the device connect to the MT8821C base station, therefore, the device 64QAM and 16QAM signal modulation are correct.



64QAM

16QAM

<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.

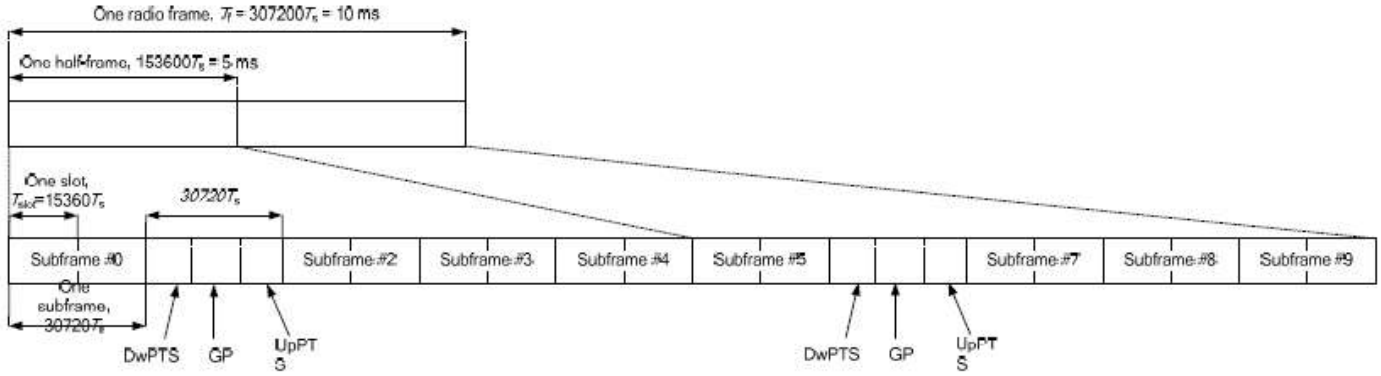


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

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:

For LTE Band 41 Power class 2

i. Uplink-downlink configuration: 1. In a half-frame consisted of 5 subfames, uplink operation is in 2 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: (2+0.167)/5 = 43.3%
iv. for special subframe with normal cyclic prefix in uplink, the total uplink duty factor in one half-frame is: (2+0.143)/5 = 42.9%
v. For TDD LTE SAR measurement, the duty cycle 1:2.33 (42.9 %) was used perform testing and considering the theoretical duty cycle of 43.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 42.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 43.3%/42.9% = 1.009 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.

For LTE Band 41 Power class 3

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.

The device can adjust uplink/downlink configuration automatically according to the transmitting power class level, as followings:

LTE TDD Band	Power Class level	support uplink/downlink configuration
LTE Band 41	> 23	1,2,3,4,5
	=23	0,1,2,3,4,5,6
	< 23	0,1,2,3,4,5,6

<LTE Carrier Aggregation combinations>

General Note:

1. This device supports Carrier Aggregation on downlink for inter and intra band and uplink CA. For the device supports combination bands and configurations are according to 3GPP.
2. In applying the existing power measurement procedure of KDB 941225 D05A for DL CA SAR test exclusion, only the subset with the largest number of combinations of the frequency band and CCs in each row need consideration, and that configurations require power measurement should be highlighted in the below table.
3. All permutations exist. No restrictions on Pcell & Scell combinations..

2CC Downlink Carrier Aggregation				3CC Downlink Carrier Aggregation			
Number	Combination	4X4 MIMO	Covered by Measurement Superset	Number	Combination	4X4 MIMO	Covered by Measurement Superset
1	7B	7B		1	41A-41C	41A, 41C, 41A-41C	
2	7C	7C	1-5CC	2	41D	41D	
3	38C	38C		3	5A-66A-66A	66A, 66A-66A	1-5CC
4	41C	41C	1-3CC	4	5A-7A-7A	7A-7A	
5	41A-41A	41A, 41A-41A	6-3CC	5	5A-7A-66A	7A-66A	1-4CC
6	7A-7A	7A, 7A-7A	4-3CC	6	41A-41A-41A	41A, 41A-41A-41A	
7	5A-41A	41A		7	4A-7C	4A, 7C, 4A-7C	
8	5A-66A	66A	1-5CC	8	5A-7C	7C	1-5CC
9	7A-66A	7A,66A	1-4CC	9	7A-66A-66A	7A, 66A, 7A-66A, 66A-66A, 7A-66A-66A	1-4CC
10	2A-5A	.		10	7C-66A	7C-66A	1-5CC
11	4A-5A	4A		11	26A-41C	41C	
12	4A-7A	4A, 7A, 4A-7A					
13	5A-7A	7A	1-4CC				
14	12A-66A	66A					
15	66A-66A	66A, 66A-66A	1-5CC				
16	4A-4A	4A, 4A-4A					
17	26A-41A	41A					
18	5A-38A	38A					

4CC Downlink Carrier Aggregation				5CC Downlink Carrier Aggregation			
Number	Combination	4X4 MIMO	Covered by Measurement Superset	Number	Combination	4X4 MIMO	Covered by Measurement Superset
1	5A-7A-66A-66A	7A-66A-66A		1	5A-7C-66A-66A	7C,66A	1
2	5A-7C-66A	7C,66A	1-5CC				2
3	7C-66A-66A	7C, 66A, 7C-66A, 66A-66A, 7C-66A-66A	1-5CC				3

<LTE Downlink Carrier Aggregation>

General Note:

i. According to KDB941225 D05A v01r02, Uplink maximum output power measurement with downlink carrier aggregation active should be measured, using the highest output channel measured without downlink carrier aggregation, to confirm that uplink maximum output power with downlink carrier aggregation active remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output measured without downlink carrier aggregation active.

ii. Uplink maximum output power with downlink carrier aggregation active does not show more than ¼ dB higher than the maximum output power without downlink carrier aggregation active, therefore SAR evaluation with downlink carrier aggregation active can be excluded.

iii. The device supports downlink five carrier aggregation. For power measurement were control and acknowledge data is sent on uplink channels that operate identical to specifications when downlink carrier aggregation is inactive.

iv. Selected highest measured power when downlink carrier aggregation is inactive for conducted power comparison with downlink carrier aggregation is active, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.

v. For non-contiguous intra-band CA, the SCC selected to provide maximum separation from the PCC and must remain fully within the downlink transmission band.

vi. For Intra-band, contiguous CA, the downlink channels selected to perform the uplink power measurement must satisfy 3GPP channel spacing (5.4.1A of 3GPP TS 36.521 or equivalent) and channel bandwidth (5.4.2A) requirements.

$$\text{Nominal channel spacing} = \left\lfloor \frac{BW_{Channel(1)} + BW_{Channel(2)} - 0.1\left|BW_{Channel(1)} - BW_{Channel(2)}\right|}{0.6} \right\rfloor 0.3 \ \ [\text{MHz}]$$

LTE 4x4 MIMO (Downlink)

This device supports downlink 4x4 MIMO operations for LTE Bands 7/38/41/66 only. Uplink transmission is limited to a single output stream. Power measurements were performed with downlink 4x4 MIMO active for the configuration with highest measured maximum conducted power with 4x4 downlink MIMO inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band.

Per FCC Guidance, SAR for downlink 4x4 MIMO was not needed since the maximum average output power in 4x4 downlink MIMO mode was not > 0.25 dB higher than the maximum output power with downlink 4x4 MIMO inactive. When carrier aggregation is applicable, power measurements were performed with the downlink carrier aggregation and 4x4 DL MIMO active for the configuration with highest measured maximum conducted power with downlink carrier aggregation inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band.

4X4 MIMO	Band
	LTE Band 7/38/41/66

<LTE Uplink carrier aggregation>

2CC Uplink Carrier Aggregation	
Number	Combination
1	7C
2	38C
3	41C

<Intra-band>

General Note:

i. The device supports intra-band uplink carrier aggregation for LTE B7/B38/B41 with a maximum of two 20MHz component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre 3GPP requirement.

ii. According TCB workshop, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.

iii. Additional SAR measurement for LTE UL CA whit other DL CA combinations active were not required since the maximum output power for this configuration was not > 0.25dB higher than the maximum output power for UL CA active.

<Inter-band uplink carrier aggregation consideration>

2CC Uplink Carrier Aggregation				
UL CA	Combination			
	PCC		SCC	
	Band	ANT port	Band	ANT port
2A-7A	2A	4	7A	3
2A-7A	2A	4	7A	6
2A-7A	2A	5	7A	3
2A-7A	2A	5	7A	6
7A-2A	7A	3	2A	4
7A-2A	7A	3	2A	5
7A-2A	7A	6	2A	4
7A-2A	7A	6	2A	5

General Note:
For Inter band CA co-located SAR analysis is performed using standalone SAR summed together and they are more conservatively for inter-band CA.

13. 5G NR Output Power (Unit: dBm)

General Note:

1. NR implementation of n2/n5/n7/n12/n13/n25/n26/n66/n38/n41 supports SA operations.
2. NR implementation of n5/n7/n66 and n41 supports NSA operations.
3. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
   a. For DFT-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class2 and 3, the CP-OFDM mode will not higher than DFT-OFDM mode, therefore, similar FCC KDB 941225 D05 procedure for other modulation output power for each RB allocation configuration is > not ½ dB higher than the same configuration in DFT-QPSK and the reported SAR for the DFT-QPSK configuration is ≤ 1.45 W/kg; CP-OFDM testing is not required.
   b. For DFT-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class2 and 3, for 16QAM/64QAM/256QAM and smaller bandwidth output power will spot check largest channel bandwidth worst RB configuration to ensure the 16QAM/64QAM/256QAM and smaller bandwidth output power will not ½ dB higher than the same configuration in the largest supported bandwidth.
   c. SAR testing 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
   d. 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure
   e. 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
   f. 16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in QPSK, also reported SAR for the QPSK configuration is less than 1.45 W/kg, 16QAM/64QAM/ 256QAM SAR testing are not required.
   g. Smaller bandwidth output power for each RB allocation configuration for this device will 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, smaller bandwidth SAR testing is not required for this device
4. Due to test setup limitations, SAR testing for NR was performed using Factory Test Mode software to establish the connection and perform SAR with 100% transmission.

<3GPP 38.101 MPR for EN-DC>

Table 6.2.2-1 Maximum power reduction (MPR) for power class 3

Modulation		MPR (dB)		
		Edge RB allocations	Outer RB allocations	Inner RB allocations
DFT-s-OFDM	Pi/2 BPSK	≤ 3.5[1]	≤ 1.2[1]	≤ 0.2[1]
		≤ 0.5[2]	≤ 0.5[2]	0[2]
	QPSK	≤ 1		0
	16 QAM	≤ 2		≤ 1
	64 QAM	≤ 2.5		
	256 QAM	≤ 4.5		
CP-OFDM	QPSK	≤ 3		≤ 1.5
	16 QAM	≤ 3		≤ 2
	64 QAM	≤ 3.5		
	256 QAM	≤ 6.5		

NOTE 1: Applicable for UE operating in TDD mode with Pi/2 BPSK modulation and UE indicates support for UE capability *powerBoosting-pi2BPSK* and if the IE *powerBoostPi2BPSK* is set to 1 and 40 % or less slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79. The reference power of 0 dB MPR is 26 dBm.

NOTE 2: Applicable for UE operating in FDD mode, or in TDD mode in bands other than n40, n41, n77, n78 and n79 with Pi/2 BPSK modulation and if the IE *powerBoostPi2BPSK* is set to 0 and if more than 40 % of slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79.

Table 6.2.2-2 Maximum power reduction (MPR) for power class 2

Modulation		MPR (dB)		
		Edge RB allocations	Outer RB allocations	Inner RB allocations
DFT-s-OFDM	Pi/2 BPSK	≤ 3.5	≤ 0.5	0
	QPSK	≤ 3.5	≤ 1	0
	16 QAM	≤ 3.5	≤ 2	≤ 1
	64 QAM	≤ 3.5	≤ 2.5	
	256 QAM	≤ 4.5		
CP-OFDM	QPSK	≤ 3.5	≤ 3	≤ 1.5
	16 QAM	≤ 3.5	≤ 3	≤ 2
	64 QAM	≤ 3.5		
	256 QAM	≤ 6.5		

<Inter Band EN-DC Configuration>

ENDC List	LTE Ant No.	NR Ant No.
DC_7A_n5A	Ant.3/ Ant.6	Ant.0/Ant.1
DC_5A_n7A	Ant.0/Ant.1	Ant.3/ Ant.6
DC_66A_n7A	Ant.4/ Ant.5	Ant.3/ Ant.6
DC_25A_n41A	Ant.3/ Ant.4	Ant.5
DC_26A_n41A	Ant.0/Ant.1	Ant.5
DC_7A_n66A	Ant.4/ Ant.5	Ant.3/ Ant.6

Note: For 5GNR n41 supports 2X2 MIMO uplink.

14. WiFi/Bluetooth Output Power (Unit: dBm)

General Note:

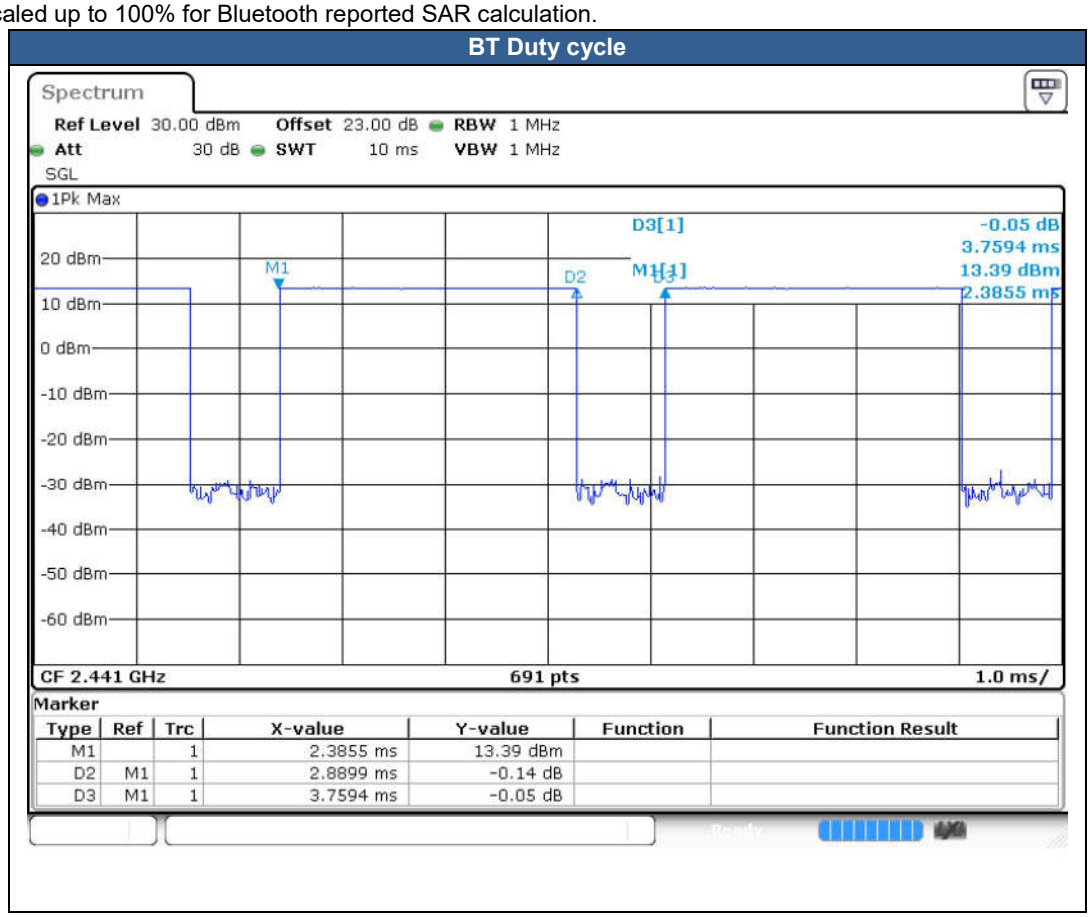
1. Per KDB 248227 D01v02r02, SAR test reduction is determined according to 802.11 transmission mode configurations and certain exposure conditions with multiple test positions. In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements. 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.
5. For modes with the same maximum output power, the guidance from section 5.3.2 a) of FCC KDB Publication 248227 D01 should be applied, with 802.11ax being considered as the highest 802.11 mode for the appropriate frequency bands.
6. 802.11ax full tone and partial tone supported for WLAN2.4GHz/WLAN5GHz, after verification for the partial tone power level is far less than full tone power level, so we chose full tone power to be measured in this report.

<2.4GHz Bluetooth>

General Note:

1. For 2.4GHz Bluetooth SAR testing was selected 1Mbps, due to its highest average power.
2. The Bluetooth duty cycle is 76.87% as following figure, according to 2016 Oct. TCB workshop for Bluetooth SAR scaling need further consideration and the maximum duty cycle is 100%, therefore the actual duty cycle will be scaled up to 100% for Bluetooth reported SAR calculation.

BT Duty cycle



15. Antenna Location

The detailed antenna location can refer to Appendix D.

16. 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 BT/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 BT/WLAN: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
   e. For TDD LTE SAR measurement of power class 3, 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 (W/kg) = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
   f. For TDD LTE SAR measurement of power class 2, the duty cycle 1:2.33 (42.9 %) was used perform testing and considering the theoretical duty cycle of 43.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 42.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 43.3%/42.9% = 1.009 is applied to scale-up the measured SAR result. The reported TDD LTE SAR (W/kg) = 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. Per KDB 865664 D01v01r04, if the extremity repeated SAR is necessary, the same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.
4. The device implements the power management and receiver detection/hotspot mode for SAR compliance at different exposure conditions (head, body-worn, hotspot/extremity) to ensure the power level not exceeding the associated power table. Details about the power management decision are provided in the operational description.
5. For receiver detection at head/body exposure condition, while the device WLAN/BT transmits simultaneously with WWAN, then power reduction will be implemented immediately.
6. Per KDB 648474 D04v01r03, when the reported SAR for a body-worn accessory measured without a headset connected to the handset is ≤ 1.2 W/kg, SAR testing with a headset connected to the handset is not required.
7. Per KDB648474 D04v01r03, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, when hotspot mode applies, 10-g product specific SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg, however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold, WCDMA B2/B4, LTE B66/B4/B25/B7/B38/B41, 5G NR SA n66/n2/n7/n38/n41, ENDC LTE B7/B25, 5G NR NSA n41 are required to be tested.
8. WLAN 5.3/5.5GHz tested the product specific 10g SAR since it has no hotspot mode.
9. When 10-g product specific 10g SAR is considered, SAR thresholds is specified in the procedures for SAR test reduction and exclusion should be multiplied by 2.5.
10. “n/a” in the test results means the 1g/10g SAR tube is too small to be found.

GSM Note:

1. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE / DTM modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. Therefore, the GPRS (3Tx slots) for GSM850, GPRS (4Tx slots) for GSM1900 are considered as the primary mode.
2. Other configurations of GSM / GPRS / EDGE / DTM are considered as secondary modes. Both primary and secondary modes must be in the same frequency band. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary

mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

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. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA 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 / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA, and according to the following RF output power, the output power results of the secondary modes (HSUPA, HSDPA, DC-HSDPA) are less than ¼ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA.

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 B4 / B5 / B12 / B17 / B26 / B38 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 4/5/17 SAR test was covered by Band 66/26/12;; 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.

5G NR Note:

1. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
2. SAR testing 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
3. 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure
4. 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
5. 16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in BPSK, also reported SAR for the QPSK configuration is less than 1.45 W/kg, 16QAM/64QAM/256QAM SAR testing are not required.
6. Smaller bandwidth output power for each RB allocation configuration for this device will 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, smaller bandwidth SAR testing is not required for this device.
7. For 5G NR NSA mode, standalone SAR performed for 5GNR band with the maximum power, EN-DC SAR summed 5GNR standalone SAR and LTE standalone SAR, the result of EN-DC SAR is more conservatively.

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, U-NII-1 or U-NII-2A SAR testing is not required when the U-NII-1 or 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 or U-NII-2A.
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.

16.1 Head SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Power Reduction	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(3 Tx slots)	Right Cheek	0mm	Ant 0	DSI 18	Reduced	189	836.4	27.70	29.00	1.349	0.12	0.219	0.295
	GSM850	GPRS(3 Tx slots)	Right Tilted	0mm	Ant 0	DSI 18	Reduced	189	836.4	27.70	29.00	1.349	-0.16	0.020	0.027
01	GSM850	GPRS(3 Tx slots)	Left Cheek	0mm	Ant 0	DSI 18	Reduced	189	836.4	27.70	29.00	1.349	0.11	0.583	**0.786**
	GSM850	GPRS(3 Tx slots)	Left Tilted	0mm	Ant 0	DSI 18	Reduced	189	836.4	27.70	29.00	1.349	0.09	0.055	0.074
	GSM850	DTM Multi-slot class 11	Left Cheek	0mm	Ant 0	DSI 18	Reduced	189	836.4	23.31	24.74	1.390	0.02	0.410	0.570
	GSM850	GPRS(3 Tx slots)	Right Cheek	0mm	Ant 1	DSI 18	Full	189	836.4	29.41	30.50	1.285	0.07	0.204	0.262
	GSM850	DTM Multi-slot class 11	Right Cheek	0mm	Ant 1	DSI 18	Full	189	836.4	24.99	26.24	1.334	-0.02	0.180	0.240
	GSM850	GPRS(3 Tx slots)	Right Tilted	0mm	Ant 1	DSI 18	Full	189	836.4	29.41	30.50	1.285	0.16	0.103	0.132
	GSM850	GPRS(3 Tx slots)	Left Cheek	0mm	Ant 1	DSI 18	Full	189	836.4	29.41	30.50	1.285	0.19	0.128	0.165
	GSM850	GPRS(3 Tx slots)	Left Tilted	0mm	Ant 1	DSI 18	Full	189	836.4	29.41	30.50	1.285	-0.16	0.094	0.121
	GSM1900	GPRS(4 Tx slots)	Right Cheek	0mm	Ant 3	DSI 18	Reduced	512	1850.2	20.36	21.00	1.159	-0.1	0.814	0.943
02	GSM1900	GPRS(4 Tx slots)	Right Tilted	0mm	Ant 3	DSI 18	Reduced	512	1850.2	20.36	21.00	1.159	-0.02	0.957	**1.109**
	GSM1900	DTM Multi-slot class 11	Right Tilted	0mm	Ant 3	DSI 18	Reduced	512	1850.2	16.65	17.74	1.285	0.03	0.810	1.041
	GSM1900	GPRS(4 Tx slots)	Left Cheek	0mm	Ant 3	DSI 18	Reduced	512	1850.2	20.36	21.00	1.159	0.18	0.687	0.796
	GSM1900	GPRS(4 Tx slots)	Left Tilted	0mm	Ant 3	DSI 18	Reduced	512	1850.2	20.36	21.00	1.159	-0.15	0.671	0.778
	GSM1900	GPRS(4 Tx slots)	Right Cheek	0mm	Ant 3	DSI 18	Reduced	661	1880	19.78	21.00	1.324	0.11	0.731	0.968
	GSM1900	GPRS(4 Tx slots)	Right Cheek	0mm	Ant 3	DSI 18	Reduced	810	1909.8	19.82	21.00	1.312	-0.13	0.659	0.865
	GSM1900	GPRS(4 Tx slots)	Right Tilted	0mm	Ant 3	DSI 18	Reduced	661	1880	19.78	21.00	1.324	-0.19	0.791	1.048
	GSM1900	GPRS(4 Tx slots)	Right Tilted	0mm	Ant 3	DSI 18	Reduced	810	1909.8	19.82	21.00	1.312	-0.17	0.841	1.104
	GSM1900	GPRS(4 Tx slots)	Right Cheek	0mm	Ant 4	DSI 18	Full	512	1850.2	25.54	26.00	1.112	-0.03	0.029	0.033
	GSM1900	GPRS(4 Tx slots)	Right Tilted	0mm	Ant 4	DSI 18	Full	512	1850.2	25.54	26.00	1.112	0.1	0.012	0.013
	GSM1900	GPRS(4 Tx slots)	Left Cheek	0mm	Ant 4	DSI 18	Full	512	1850.2	25.54	26.00	1.112	-0.04	0.037	0.041
	GSM1900	DTM Multi-slot class 11	Left Cheek	0mm	Ant 4	DSI 18	Full	512	1850.2	22.37	22.74	1.089	0.09	0.020	0.022
	GSM1900	GPRS(4 Tx slots)	Left Tilted	0mm	Ant 4	DSI 18	Full	512	1850.2	25.54	26.00	1.112	-0.15	0.012	0.013

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Power Reduction	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 V	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	DSI 18	Reduced	4182	836.4	22.35	23.00	1.161	-0.09	0.214	0.249
	WCDMA V	RMC 12.2Kbps	Right Tilted	0mm	Ant 0	DSI 18	Reduced	4182	836.4	22.35	23.00	1.161	-	n/a	n/a
03	WCDMA V	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	DSI 18	Reduced	4182	836.4	22.35	23.00	1.161	-0.16	0.496	**0.576**
	WCDMA V	RMC 12.2Kbps	Left Tilted	0mm	Ant 0	DSI 18	Reduced	4182	836.4	22.35	23.00	1.161	0.03	0.049	0.057
	WCDMA V	RMC 12.2Kbps	Right Cheek	0mm	Ant 1	DSI 18	Full	4182	836.4	24.36	25.00	1.159	0.15	0.180	0.209
	WCDMA V	RMC 12.2Kbps	Right Tilted	0mm	Ant 1	DSI 18	Full	4182	836.4	24.36	25.00	1.159	-0.07	0.089	0.103
	WCDMA V	RMC 12.2Kbps	Left Cheek	0mm	Ant 1	DSI 18	Full	4182	836.4	24.36	25.00	1.159	0.11	0.105	0.122
	WCDMA V	RMC 12.2Kbps	Left Tilted	0mm	Ant 1	DSI 18	Full	4182	836.4	24.36	25.00	1.159	-0.15	0.081	0.094
	WCDMA IV	RMC 12.2Kbps	Right Cheek	0mm	Ant 3	DSI 18	Reduced	1413	1732.6	15.52	16.00	1.117	0.15	0.605	0.676
04	WCDMA IV	RMC 12.2Kbps	Right Tilted	0mm	Ant 3	DSI 18	Reduced	1413	1732.6	15.52	16.00	1.117	0.04	0.652	**0.728**
	WCDMA IV	RMC 12.2Kbps	Left Cheek	0mm	Ant 3	DSI 18	Reduced	1413	1732.6	15.52	16.00	1.117	-0.16	0.493	0.551
	WCDMA IV	RMC 12.2Kbps	Left Tilted	0mm	Ant 3	DSI 18	Reduced	1413	1732.6	15.52	16.00	1.117	0.15	0.498	0.556
	WCDMA IV	RMC 12.2Kbps	Right Cheek	0mm	Ant 4	DSI 18	Full	1413	1732.6	23.58	24.00	1.102	0.16	0.099	0.109
	WCDMA IV	RMC 12.2Kbps	Right Tilted	0mm	Ant 4	DSI 18	Full	1413	1732.6	23.58	24.00	1.102	-	n/a	n/a
	WCDMA IV	RMC 12.2Kbps	Left Cheek	0mm	Ant 4	DSI 18	Full	1413	1732.6	23.58	24.00	1.102	-0.11	0.060	0.066
	WCDMA IV	RMC 12.2Kbps	Left Tilted	0mm	Ant 4	DSI 18	Full	1413	1732.6	23.58	24.00	1.102	-0.1	0.058	0.064
	WCDMA II	RMC 12.2Kbps	Right Cheek	0mm	Ant 3	DSI 18	Reduced	9400	1880	16.39	17.00	1.151	-0.06	0.607	0.699
05	WCDMA II	RMC 12.2Kbps	Right Tilted	0mm	Ant 3	DSI 18	Reduced	9400	1880	16.39	17.00	1.151	-0.18	0.697	**0.802**
	WCDMA II	RMC 12.2Kbps	Left Cheek	0mm	Ant 3	DSI 18	Reduced	9400	1880	16.39	17.00	1.151	0.05	0.479	0.551
	WCDMA II	RMC 12.2Kbps	Left Tilted	0mm	Ant 3	DSI 18	Reduced	9400	1880	16.39	17.00	1.151	0.07	0.489	0.563
	WCDMA II	RMC 12.2Kbps	Right Tilted	0mm	Ant 3	DSI 18	Reduced	9262	1852.4	16.37	17.00	1.156	-0.06	0.613	0.709
	WCDMA II	RMC 12.2Kbps	Right Tilted	0mm	Ant 3	DSI 18	Reduced	9538	1907.6	16.30	17.00	1.175	-0.07	0.563	0.661

	WCDMA II	RMC 12.2Kbps	Right Cheek	0mm	Ant 4	DSI 18	Full	9400	1880	24.46	25.00	1.132	0.16	0.077	0.087
	WCDMA II	RMC 12.2Kbps	Right Tilted	0mm	Ant 4	DSI 18	Full	9400	1880	24.46	25.00	1.132	-	n/a	n/a
	WCDMA II	RMC 12.2Kbps	Left Cheek	0mm	Ant 4	DSI 18	Full	9400	1880	24.46	25.00	1.132	0.07	0.077	0.087
	WCDMA II	RMC 12.2Kbps	Left Tilted	0mm	Ant 4	DSI 18	Full	9400	1880	24.46	25.00	1.132	-0.07	0.042	0.048

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna	Power State	Power Reduction	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 12	10M	QPSK	1	0	Right Cheek	0mm	Ant 0	DSI 18	Full	23095	707.5	24.15	25.00	1.216	0.18	0.270	0.328
	LTE Band 12	10M	QPSK	1	0	Right Tilted	0mm	Ant 0	DSI 18	Full	23095	707.5	24.15	25.00	1.216	-0.18	0.047	0.057
06	LTE Band 12	10M	QPSK	1	0	Left Cheek	0mm	Ant 0	DSI 18	Full	23095	707.5	24.15	25.00	1.216	-0.08	0.546	**0.664**
	LTE Band 12	10M	QPSK	1	0	Left Tilted	0mm	Ant 0	DSI 18	Full	23095	707.5	24.15	25.00	1.216	-0.1	0.072	0.088
	LTE Band 12	10M	QPSK	25	0	Right Cheek	0mm	Ant 0	DSI 18	Full	23095	707.5	23.16	24.00	1.213	-0.09	0.234	0.284
	LTE Band 12	10M	QPSK	25	0	Right Tilted	0mm	Ant 0	DSI 18	Full	23095	707.5	23.16	24.00	1.213	0.02	0.042	0.051
	LTE Band 12	10M	QPSK	25	0	Left Cheek	0mm	Ant 0	DSI 18	Full	23095	707.5	23.16	24.00	1.213	-0.15	0.440	0.534
	LTE Band 12	10M	QPSK	25	0	Left Tilted	0mm	Ant 0	DSI 18	Full	23095	707.5	23.16	24.00	1.213	0.1	0.061	0.074
	LTE Band 12	10M	QPSK	1	0	Right Cheek	0mm	Ant 1	DSI 18	Full	23095	707.5	24.24	25.00	1.191	-0.08	0.115	0.137
	LTE Band 12	10M	QPSK	1	0	Right Tilted	0mm	Ant 1	DSI 18	Full	23095	707.5	24.24	25.00	1.191	0.03	0.063	0.075
	LTE Band 12	10M	QPSK	1	0	Left Cheek	0mm	Ant 1	DSI 18	Full	23095	707.5	24.24	25.00	1.191	0.16	0.079	0.094
	LTE Band 12	10M	QPSK	1	0	Left Tilted	0mm	Ant 1	DSI 18	Full	23095	707.5	24.24	25.00	1.191	0.17	0.057	0.068
	LTE Band 12	10M	QPSK	25	0	Right Cheek	0mm	Ant 1	DSI 18	Full	23095	707.5	23.18	24.00	1.208	0.11	0.094	0.114
	LTE Band 12	10M	QPSK	25	0	Right Tilted	0mm	Ant 1	DSI 18	Full	23095	707.5	23.18	24.00	1.208	0.02	0.052	0.063
	LTE Band 12	10M	QPSK	25	0	Left Cheek	0mm	Ant 1	DSI 18	Full	23095	707.5	23.18	24.00	1.208	0.12	0.065	0.079
	LTE Band 12	10M	QPSK	25	0	Left Tilted	0mm	Ant 1	DSI 18	Full	23095	707.5	23.18	24.00	1.208	0.12	0.046	0.056
	LTE Band 13	10M	QPSK	1	0	Right Cheek	0mm	Ant 0	DSI 18	Reduced	23230	782	22.02	23.00	1.253	-0.06	0.178	0.223
	LTE Band 13	10M	QPSK	1	0	Right Tilted	0mm	Ant 0	DSI 18	Reduced	23230	782	22.02	23.00	1.253	-	n/a	n/a
07	LTE Band 13	10M	QPSK	1	0	Left Cheek	0mm	Ant 0	DSI 18	Reduced	23230	782	22.02	23.00	1.253	0.19	0.405	**0.508**
	LTE Band 13	10M	QPSK	1	0	Left Tilted	0mm	Ant 0	DSI 18	Reduced	23230	782	22.02	23.00	1.253	-0.01	0.046	0.058
	LTE Band 13	10M	QPSK	25	0	Right Cheek	0mm	Ant 0	DSI 18	Reduced	23230	782	21.97	23.00	1.268	-0.16	0.177	0.224
	LTE Band 13	10M	QPSK	25	0	Right Tilted	0mm	Ant 0	DSI 18	Reduced	23230	782	21.97	23.00	1.268	-	n/a	n/a
	LTE Band 13	10M	QPSK	25	0	Left Cheek	0mm	Ant 0	DSI 18	Reduced	23230	782	21.97	23.00	1.268	-0.04	0.355	0.450
	LTE Band 13	10M	QPSK	25	0	Left Tilted	0mm	Ant 0	DSI 18	Reduced	23230	782	21.97	23.00	1.268	0.01	0.045	0.057
	LTE Band 13	10M	QPSK	1	0	Right Cheek	0mm	Ant 1	DSI 18	Full	23230	782	23.31	24.00	1.172	-0.08	0.096	0.113
	LTE Band 13	10M	QPSK	1	0	Right Tilted	0mm	Ant 1	DSI 18	Full	23230	782	23.31	24.00	1.172	0.02	0.052	0.061
	LTE Band 13	10M	QPSK	1	0	Left Cheek	0mm	Ant 1	DSI 18	Full	23230	782	23.31	24.00	1.172	0.1	0.063	0.074
	LTE Band 13	10M	QPSK	1	0	Left Tilted	0mm	Ant 1	DSI 18	Full	23230	782	23.31	24.00	1.172	-0.03	0.051	0.060
	LTE Band 13	10M	QPSK	25	0	Right Cheek	0mm	Ant 1	DSI 18	Full	23230	782	22.19	23.00	1.205	-0.05	0.075	0.090
	LTE Band 13	10M	QPSK	25	0	Right Tilted	0mm	Ant 1	DSI 18	Full	23230	782	22.19	23.00	1.205	-	n/a	n/a
	LTE Band 13	10M	QPSK	25	0	Left Cheek	0mm	Ant 1	DSI 18	Full	23230	782	22.19	23.00	1.205	-0.14	0.050	0.060
	LTE Band 13	10M	QPSK	25	0	Left Tilted	0mm	Ant 1	DSI 18	Full	23230	782	22.19	23.00	1.205	-	n/a	n/a
	LTE Band 26	15M	QPSK	1	0	Right Cheek	0mm	Ant 0	DSI 18	Full	26865	831.5	23.86	25.00	1.300	-0.09	0.277	0.360
	LTE Band 26	15M	QPSK	1	0	Right Tilted	0mm	Ant 0	DSI 18	Full	26865	831.5	23.86	25.00	1.300	-0.13	0.049	0.064
08	LTE Band 26	15M	QPSK	1	0	Left Cheek	0mm	Ant 0	DSI 18	Full	26865	831.5	23.86	25.00	1.300	-0.01	0.590	**0.767**
	LTE Band 26	15M	QPSK	1	0	Left Tilted	0mm	Ant 0	DSI 18	Full	26865	831.5	23.86	25.00	1.300	0.01	0.062	0.081
	LTE Band 26	15M	QPSK	36	0	Right Cheek	0mm	Ant 0	DSI 18	Full	26865	831.5	22.98	24.00	1.265	0.01	0.231	0.292
	LTE Band 26	15M	QPSK	36	0	Right Tilted	0mm	Ant 0	DSI 18	Full	26865	831.5	22.98	24.00	1.265	-	n/a	n/a
	LTE Band 26	15M	QPSK	36	0	Left Cheek	0mm	Ant 0	DSI 18	Full	26865	831.5	22.98	24.00	1.265	-0.03	0.500	0.632
	LTE Band 26	15M	QPSK	36	0	Left Tilted	0mm	Ant 0	DSI 18	Full	26865	831.5	22.98	24.00	1.265	-0.04	0.054	0.068
	LTE Band 26	15M	QPSK	1	0	Right Cheek	0mm	Ant 1	DSI 18	Full	26865	831.5	24.22	25.00	1.197	0.14	0.166	0.199
	LTE Band 26	15M	QPSK	1	0	Right Tilted	0mm	Ant 1	DSI 18	Full	26865	831.5	24.22	25.00	1.197	0.11	0.089	0.107
	LTE Band 26	15M	QPSK	1	0	Left Cheek	0mm	Ant 1	DSI 18	Full	26865	831.5	24.22	25.00	1.197	-0.14	0.106	0.127
	LTE Band 26	15M	QPSK	1	0	Left Tilted	0mm	Ant 1	DSI 18	Full	26865	831.5	24.22	25.00	1.197	-0.12	0.075	0.090
	LTE Band 26	15M	QPSK	36	0	Right Cheek	0mm	Ant 1	DSI 18	Full	26865	831.5	23.25	24.00	1.189	-0.02	0.135	0.160
	LTE Band 26	15M	QPSK	36	0	Right Tilted	0mm	Ant 1	DSI 18	Full	26865	831.5	23.25	24.00	1.189	-0.01	0.069	0.082
	LTE Band 26	15M	QPSK	36	0	Left Cheek	0mm	Ant 1	DSI 18	Full	26865	831.5	23.25	24.00	1.189	0.04	0.083	0.099
	LTE Band 26	15M	QPSK	36	0	Left Tilted	0mm	Ant 1	DSI 18	Full	26865	831.5	23.25	24.00	1.189	-0.1	0.063	0.075

ENDC																		
	LTE Band 5	10M	QPSK	1	0	Right Cheek	0mm	Ant 0	DSI 18	Reduced	20525	836.5	17.89	19.00	1.291	0.01	0.057	0.074
	LTE Band 5	10M	QPSK	1	0	Right Tilted	0mm	Ant 0	DSI 18	Reduced	20525	836.5	17.89	19.00	1.291	-	n/a	n/a
	LTE Band 5	10M	QPSK	1	0	Left Cheek	0mm	Ant 0	DSI 18	Reduced	20525	836.5	17.89	19.00	1.291	-0.19	0.106	0.137
	LTE Band 5	10M	QPSK	1	0	Left Tilted	0mm	Ant 0	DSI 18	Reduced	20525	836.5	17.89	19.00	1.291	-	n/a	n/a
	LTE Band 5	10M	QPSK	25	0	Right Cheek	0mm	Ant 0	DSI 18	Reduced	20525	836.5	17.78	19.00	1.324	-0.18	0.074	0.098
	LTE Band 5	10M	QPSK	25	0	Right Tilted	0mm	Ant 0	DSI 18	Reduced	20525	836.5	17.78	19.00	1.324	-	n/a	n/a
	LTE Band 5	10M	QPSK	25	0	Left Cheek	0mm	Ant 0	DSI 18	Reduced	20525	836.5	17.78	19.00	1.324	-0.14	0.171	0.226
	LTE Band 5	10M	QPSK	25	0	Left Tilted	0mm	Ant 0	DSI 18	Reduced	20525	836.5	17.78	19.00	1.324	-	n/a	n/a
	LTE Band 5	10M	QPSK	1	0	Right Cheek	0mm	Ant 1	DSI 18	Reduced	20525	836.5	20.51	21.50	1.256	-0.07	0.074	0.093
	LTE Band 5	10M	QPSK	1	0	Right Tilted	0mm	Ant 1	DSI 18	Reduced	20525	836.5	20.51	21.50	1.256	-	n/a	n/a
	LTE Band 5	10M	QPSK	1	0	Left Cheek	0mm	Ant 1	DSI 18	Reduced	20525	836.5	20.51	21.50	1.256	-	n/a	n/a
	LTE Band 5	10M	QPSK	1	0	Left Tilted	0mm	Ant 1	DSI 18	Reduced	20525	836.5	20.51	21.50	1.256	-	n/a	n/a
	LTE Band 5	10M	QPSK	25	0	Right Cheek	0mm	Ant 1	DSI 18	Reduced	20525	836.5	20.49	21.50	1.262	-0.1	0.071	0.090
	LTE Band 5	10M	QPSK	25	0	Right Tilted	0mm	Ant 1	DSI 18	Reduced	20525	836.5	20.49	21.50	1.262	-	n/a	n/a
	LTE Band 5	10M	QPSK	25	0	Left Cheek	0mm	Ant 1	DSI 18	Reduced	20525	836.5	20.49	21.50	1.262	-	n/a	n/a
	LTE Band 5	10M	QPSK	25	0	Left Tilted	0mm	Ant 1	DSI 18	Reduced	20525	836.5	20.49	21.50	1.262	-	n/a	n/a
	LTE Band 26	15M	QPSK	1	0	Right Cheek	0mm	Ant 0	DSI 18	Reduced	26865	831.5	17.49	18.50	1.262	0.03	0.061	0.077
	LTE Band 26	15M	QPSK	1	0	Right Tilted	0mm	Ant 0	DSI 18	Reduced	26865	831.5	17.49	18.50	1.262	-	n/a	n/a
	LTE Band 26	15M	QPSK	1	0	Left Cheek	0mm	Ant 0	DSI 18	Reduced	26865	831.5	17.49	18.50	1.262	0.06	0.116	0.146
	LTE Band 26	15M	QPSK	1	0	Left Tilted	0mm	Ant 0	DSI 18	Reduced	26865	831.5	17.49	18.50	1.262	-	n/a	n/a
	LTE Band 26	15M	QPSK	36	0	Right Cheek	0mm	Ant 0	DSI 18	Reduced	26865	831.5	17.31	18.50	1.315	0.01	0.063	0.083
	LTE Band 26	15M	QPSK	36	0	Right Tilted	0mm	Ant 0	DSI 18	Reduced	26865	831.5	17.31	18.50	1.315	-	n/a	n/a
	LTE Band 26	15M	QPSK	36	0	Left Cheek	0mm	Ant 0	DSI 18	Reduced	26865	831.5	17.31	18.50	1.315	-0.03	0.135	0.178
	LTE Band 26	15M	QPSK	36	0	Left Tilted	0mm	Ant 0	DSI 18	Reduced	26865	831.5	17.31	18.50	1.315	-	n/a	n/a
	LTE Band 26	15M	QPSK	1	0	Right Cheek	0mm	Ant 1	DSI 18	Reduced	26865	831.5	21.35	22.50	1.303	0.12	0.088	0.115
	LTE Band 26	15M	QPSK	1	0	Right Tilted	0mm	Ant 1	DSI 18	Reduced	26865	831.5	21.35	22.50	1.303	-0.09	0.046	0.060
	LTE Band 26	15M	QPSK	1	0	Left Cheek	0mm	Ant 1	DSI 18	Reduced	26865	831.5	21.35	22.50	1.303	0.14	0.054	0.070
	LTE Band 26	15M	QPSK	1	0	Left Tilted	0mm	Ant 1	DSI 18	Reduced	26865	831.5	21.35	22.50	1.303	-0.04	0.043	0.056
	LTE Band 26	15M	QPSK	36	0	Right Cheek	0mm	Ant 1	DSI 18	Reduced	26865	831.5	21.32	22.50	1.312	0.12	0.084	0.110
	LTE Band 26	15M	QPSK	36	0	Right Tilted	0mm	Ant 1	DSI 18	Reduced	26865	831.5	21.32	22.50	1.312	-0.15	0.044	0.058
	LTE Band 26	15M	QPSK	36	0	Left Cheek	0mm	Ant 1	DSI 18	Reduced	26865	831.5	21.32	22.50	1.312	-0.03	0.052	0.068
	LTE Band 26	15M	QPSK	36	0	Left Tilted	0mm	Ant 1	DSI 18	Reduced	26865	831.5	21.32	22.50	1.312	-	n/a	n/a
	LTE Band 66	20M	QPSK	1	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	132322	1745	16.67	17.50	1.211	0.15	0.817	0.989
	LTE Band 66	20M	QPSK	1	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	132322	1745	16.67	17.50	1.211	-0.02	0.867	1.050
	LTE Band 66	20M	QPSK	1	0	Left Cheek	0mm	Ant 3	DSI 18	Reduced	132322	1745	16.67	17.50	1.211	0.07	0.629	0.761
	LTE Band 66	20M	QPSK	1	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	132322	1745	16.67	17.50	1.211	-0.04	0.651	0.788
	LTE Band 66	20M	QPSK	1	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	132072	1720	16.62	17.50	1.225	-0.11	0.809	0.991
	LTE Band 66	20M	QPSK	1	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	132572	1770	16.53	17.50	1.250	-0.09	0.789	0.986
	LTE Band 66	20M	QPSK	1	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	132072	1720	16.62	17.50	1.225	-0.11	0.825	1.010
	LTE Band 66	20M	QPSK	1	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	132572	1770	16.53	17.50	1.250	0.18	0.802	1.003
	LTE Band 66	20M	QPSK	50	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	132322	1745	16.56	17.50	1.242	0.02	0.815	1.012
09	LTE Band 66	20M	QPSK	50	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	132322	1745	16.56	17.50	1.242	-0.01	0.855	**1.062**
	LTE Band 66	20M	QPSK	50	0	Left Cheek	0mm	Ant 3	DSI 18	Reduced	132322	1745	16.56	17.50	1.242	-0.09	0.635	0.788
	LTE Band 66	20M	QPSK	50	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	132322	1745	16.56	17.50	1.242	0.09	0.643	0.798
	LTE Band 66	20M	QPSK	50	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	132072	1720	16.52	17.50	1.253	-0.17	0.809	1.014
	LTE Band 66	20M	QPSK	50	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	132572	1770	16.50	17.50	1.259	-0.15	0.789	0.993
	LTE Band 66	20M	QPSK	50	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	132072	1720	16.52	17.50	1.253	0.13	0.824	1.033
	LTE Band 66	20M	QPSK	50	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	132572	1770	16.50	17.50	1.259	-0.17	0.794	1.000
	LTE Band 66	20M	QPSK	100	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	132322	1745	16.49	17.50	1.262	0.01	0.801	1.011
	LTE Band 66	20M	QPSK	100	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	132322	1745	16.49	17.50	1.262	0.05	0.824	1.040
	LTE Band 66	20M	QPSK	1	0	Right Cheek	0mm	Ant 4	DSI 18	Full	132322	1745	23.41	24.00	1.146	-0.01	0.091	0.104
	LTE Band 66	20M	QPSK	1	0	Right Tilted	0mm	Ant 4	DSI 18	Full	132322	1745	23.41	24.00	1.146	0.15	0.055	0.063
	LTE Band 66	20M	QPSK	1	0	Left Cheek	0mm	Ant 4	DSI 18	Full	132322	1745	23.41	24.00	1.146	-0.04	0.052	0.060
	LTE Band 66	20M	QPSK	1	0	Left Tilted	0mm	Ant 4	DSI 18	Full	132322	1745	23.41	24.00	1.146	0.02	0.057	0.065
	LTE Band 66	20M	QPSK	50	0	Right Cheek	0mm	Ant 4	DSI 18	Full	132322	1745	22.28	23.00	1.180	-0.1	0.077	0.091

	LTE Band 66	20M	QPSK	50	0	Right Tilted	0mm	Ant 4	DSI 18	Full	132322	1745	22.28	23.00	1.180	-0.12	0.047	0.055
	LTE Band 66	20M	QPSK	50	0	Left Cheek	0mm	Ant 4	DSI 18	Full	132322	1745	22.28	23.00	1.180	-	n/a	n/a
	LTE Band 66	20M	QPSK	50	0	Left Tilted	0mm	Ant 4	DSI 18	Full	132322	1745	22.28	23.00	1.180	-0.03	0.044	0.052
ENDC																		
	LTE Band 66	20M	QPSK	1	0	Right Cheek	0mm	Ant 5	DSI 18	Reduced	132322	1745	15.85	17.00	1.303	-	n/a	n/a
	LTE Band 66	20M	QPSK	1	0	Right Tilted	0mm	Ant 5	DSI 18	Reduced	132322	1745	15.85	17.00	1.303	-	n/a	n/a
	LTE Band 66	20M	QPSK	1	0	Left Cheek	0mm	Ant 5	DSI 18	Reduced	132322	1745	15.85	17.00	1.303	-	n/a	n/a
	LTE Band 66	20M	QPSK	1	0	Left Tilted	0mm	Ant 5	DSI 18	Reduced	132322	1745	15.85	17.00	1.303	-	n/a	n/a
	LTE Band 66	20M	QPSK	50	0	Right Cheek	0mm	Ant 5	DSI 18	Reduced	132322	1745	15.81	17.00	1.315	-0.05	0.030	0.039
	LTE Band 66	20M	QPSK	50	0	Right Tilted	0mm	Ant 5	DSI 18	Reduced	132322	1745	15.81	17.00	1.315	-	n/a	n/a
	LTE Band 66	20M	QPSK	50	0	Left Cheek	0mm	Ant 5	DSI 18	Reduced	132322	1745	15.81	17.00	1.315	-	n/a	n/a
	LTE Band 66	20M	QPSK	50	0	Left Tilted	0mm	Ant 5	DSI 18	Reduced	132322	1745	15.81	17.00	1.315	-	n/a	n/a
	LTE Band 66	20M	QPSK	1	0	Right Cheek	0mm	Ant 4	DSI 18	Full	132322	1745	23.41	24.00	1.146	-0.01	0.091	0.104
	LTE Band 66	20M	QPSK	1	0	Right Tilted	0mm	Ant 4	DSI 18	Full	132322	1745	23.41	24.00	1.146	0.15	0.055	0.063
	LTE Band 66	20M	QPSK	1	0	Left Cheek	0mm	Ant 4	DSI 18	Full	132322	1745	23.41	24.00	1.146	-0.04	0.052	0.060
	LTE Band 66	20M	QPSK	1	0	Left Tilted	0mm	Ant 4	DSI 18	Full	132322	1745	23.41	24.00	1.146	0.02	0.057	0.065
	LTE Band 66	20M	QPSK	50	0	Right Cheek	0mm	Ant 4	DSI 18	Full	132322	1745	22.28	23.00	1.180	-0.1	0.077	0.091
	LTE Band 66	20M	QPSK	50	0	Right Tilted	0mm	Ant 4	DSI 18	Full	132322	1745	22.28	23.00	1.180	-0.12	0.047	0.055
	LTE Band 66	20M	QPSK	50	0	Left Cheek	0mm	Ant 4	DSI 18	Full	132322	1745	22.28	23.00	1.180	-	n/a	n/a
	LTE Band 66	20M	QPSK	50	0	Left Tilted	0mm	Ant 4	DSI 18	Full	132322	1745	22.28	23.00	1.180	-0.03	0.044	0.052
	LTE Band 25	20M	QPSK	1	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	26340	1880	18.13	19.00	1.222	-0.03	0.851	1.040
	LTE Band 25	20M	QPSK	1	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	26340	1880	18.13	19.00	1.222	-0.03	0.909	1.111
	LTE Band 25	20M	QPSK	1	0	Left Cheek	0mm	Ant 3	DSI 18	Reduced	26340	1880	18.13	19.00	1.222	-0.11	0.651	0.795
	LTE Band 25	20M	QPSK	1	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	26340	1880	18.13	19.00	1.222	-0.16	0.744	0.909
	LTE Band 25	20M	QPSK	1	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	26140	1860	18.11	19.00	1.227	-0.1	0.401	0.492
	LTE Band 25	20M	QPSK	1	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	26590	1905	17.98	19.00	1.265	-0.07	0.320	0.405
	LTE Band 25	20M	QPSK	1	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	26140	1860	18.11	19.00	1.227	-0.13	0.903	1.108
	LTE Band 25	20M	QPSK	1	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	26590	1905	17.98	19.00	1.265	0.15	0.846	1.070
	LTE Band 25	20M	QPSK	1	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	26140	1860	18.11	19.00	1.227	0.11	0.765	0.939
	LTE Band 25	20M	QPSK	1	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	26590	1905	17.98	19.00	1.265	0.01	0.675	0.854
	LTE Band 25	20M	QPSK	50	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	26340	1880	18.09	19.00	1.233	0.19	0.842	1.038
10	LTE Band 25	20M	QPSK	50	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	26340	1880	18.09	19.00	1.233	-0.16	0.918	**1.132**
	LTE Band 25	20M	QPSK	50	0	Left Cheek	0mm	Ant 3	DSI 18	Reduced	26340	1880	18.09	19.00	1.233	0.05	0.642	0.792
	LTE Band 25	20M	QPSK	50	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	26340	1880	18.09	19.00	1.233	0.08	0.721	0.889
	LTE Band 25	20M	QPSK	50	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	26140	1860	18.07	19.00	1.239	-0.12	0.377	0.467
	LTE Band 25	20M	QPSK	50	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	26590	1905	17.90	19.00	1.288	0.09	0.318	0.410
	LTE Band 25	20M	QPSK	50	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	26140	1860	18.07	19.00	1.239	0.16	0.912	1.130
	LTE Band 25	20M	QPSK	50	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	26590	1905	17.90	19.00	1.288	0.16	0.835	1.076
	LTE Band 25	20M	QPSK	50	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	26140	1860	18.07	19.00	1.239	-0.15	0.770	0.954
	LTE Band 25	20M	QPSK	50	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	26590	1905	17.90	19.00	1.288	-0.07	0.667	0.859
	LTE Band 25	20M	QPSK	100	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	26340	1880	18.08	19.00	1.236	-0.02	0.833	1.030
	LTE Band 25	20M	QPSK	100	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	26340	1880	18.08	19.00	1.236	0.19	0.902	1.115
	LTE Band 25	20M	QPSK	100	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	26340	1880	18.08	19.00	1.236	0.1	0.725	0.896
	LTE Band 25	20M	QPSK	1	0	Right Cheek	0mm	Ant 4	DSI 18	Full	26340	1880	23.39	24.00	1.151	0.07	0.048	0.055
	LTE Band 25	20M	QPSK	1	0	Right Tilted	0mm	Ant 4	DSI 18	Full	26340	1880	23.39	24.00	1.151	-	n/a	n/a
	LTE Band 25	20M	QPSK	1	0	Left Cheek	0mm	Ant 4	DSI 18	Full	26340	1880	23.39	24.00	1.151	0.13	0.058	0.067
	LTE Band 25	20M	QPSK	1	0	Left Tilted	0mm	Ant 4	DSI 18	Full	26340	1880	23.39	24.00	1.151	-	n/a	n/a
	LTE Band 25	20M	QPSK	50	0	Right Cheek	0mm	Ant 4	DSI 18	Full	26340	1880	22.28	23.00	1.180	0.11	0.039	0.046
	LTE Band 25	20M	QPSK	50	0	Right Tilted	0mm	Ant 4	DSI 18	Full	26340	1880	22.28	23.00	1.180	-	n/a	n/a
	LTE Band 25	20M	QPSK	50	0	Left Cheek	0mm	Ant 4	DSI 18	Full	26340	1880	22.28	23.00	1.180	-0.19	0.044	0.052
	LTE Band 25	20M	QPSK	50	0	Left Tilted	0mm	Ant 4	DSI 18	Full	26340	1880	22.28	23.00	1.180	-	n/a	n/a
	LTE Band 2_Inter-CA	20M	QPSK	1	0	Right Cheek	0mm	Ant 4	DSI 18	Full	18900	1880	23.26	24.00	1.186	-0.04	0.062	0.074
	LTE Band 2_Inter-CA	20M	QPSK	1	0	Right Tilted	0mm	Ant 4	DSI 18	Full	18900	1880	23.26	24.00	1.186	-0.1	0.024	0.029
	LTE Band 2_Inter-CA	20M	QPSK	1	0	Left Cheek	0mm	Ant 4	DSI 18	Full	18900	1880	23.26	24.00	1.186	-0.06	0.077	0.091
	LTE Band 2_Inter-CA	20M	QPSK	1	0	Left Tilted	0mm	Ant 4	DSI 18	Full	18900	1880	23.26	24.00	1.186	0.1	0.034	0.040
	LTE Band 2_Inter-CA	20M	QPSK	50	0	Right Cheek	0mm	Ant 4	DSI 18	Full	18900	1880	22.18	23.00	1.208	-0.06	0.052	0.062

	LTE Band 2_Inter-CA	20M	QPSK	50	0	Right Tilted	0mm	Ant 4	DSI 18	Full	18900	1880	22.18	23.00	1.208	-0.19	0.024	0.029
	LTE Band 2_Inter-CA	20M	QPSK	50	0	Left Cheek	0mm	Ant 4	DSI 18	Full	18900	1880	22.18	23.00	1.208	0.02	0.070	0.085
	LTE Band 2_Inter-CA	20M	QPSK	50	0	Left Tilted	0mm	Ant 4	DSI 18	Full	18900	1880	22.18	23.00	1.208	-0.03	0.040	0.048
	LTE Band 2_Inter-CA	20M	QPSK	1	0	Right Cheek	0mm	Ant 5	DSI 18	Reduced	18900	1880	17.25	18.00	1.189	0.16	0.397	0.472
	LTE Band 2_Inter-CA	20M	QPSK	1	0	Right Tilted	0mm	Ant 5	DSI 18	Reduced	18900	1880	17.25	18.00	1.189	-0.05	0.090	0.107
	LTE Band 2_Inter-CA	20M	QPSK	1	0	Left Cheek	0mm	Ant 5	DSI 18	Reduced	18900	1880	17.25	18.00	1.189	0.09	0.059	0.070
	LTE Band 2_Inter-CA	20M	QPSK	1	0	Left Tilted	0mm	Ant 5	DSI 18	Reduced	18900	1880	17.25	18.00	1.189	-	n/a	n/a
	LTE Band 2_Inter-CA	20M	QPSK	50	0	Right Cheek	0mm	Ant 5	DSI 18	Reduced	18900	1880	17.21	18.00	1.199	-0.08	0.310	0.372
	LTE Band 2_Inter-CA	20M	QPSK	50	0	Right Tilted	0mm	Ant 5	DSI 18	Reduced	18900	1880	17.21	18.00	1.199	-0.03	0.102	0.122
	LTE Band 2_Inter-CA	20M	QPSK	50	0	Left Cheek	0mm	Ant 5	DSI 18	Reduced	18900	1880	17.21	18.00	1.199	0.15	0.071	0.085
	LTE Band 2_Inter-CA	20M	QPSK	50	0	Left Tilted	0mm	Ant 5	DSI 18	Reduced	18900	1880	17.21	18.00	1.199	-	n/a	n/a
ENDC																		
	LTE Band 25	20M	QPSK	1	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	26340	1880	15.13	16.00	1.222	-0.06	0.468	0.572
	LTE Band 25	20M	QPSK	1	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	26340	1880	15.13	16.00	1.222	0.16	0.472	0.577
	LTE Band 25	20M	QPSK	1	0	Left Cheek	0mm	Ant 3	DSI 18	Reduced	26340	1880	15.13	16.00	1.222	0.06	0.373	0.456
	LTE Band 25	20M	QPSK	1	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	26340	1880	15.13	16.00	1.222	0.02	0.345	0.422
	LTE Band 25	20M	QPSK	1	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	26140	1860	14.92	16.00	1.282	0.04	0.459	0.589
	LTE Band 25	20M	QPSK	1	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	26590	1905	14.91	16.00	1.285	0.16	0.495	0.636
	LTE Band 25	20M	QPSK	1	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	26140	1860	14.92	16.00	1.282	-0.07	0.461	0.591
	LTE Band 25	20M	QPSK	1	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	26590	1905	14.91	16.00	1.285	0.03	0.439	0.564
	LTE Band 25	20M	QPSK	50	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	26340	1880	15.06	16.00	1.242	-0.02	0.467	0.580
	LTE Band 25	20M	QPSK	50	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	26340	1880	15.06	16.00	1.242	-0.14	0.470	0.584
	LTE Band 25	20M	QPSK	50	0	Left Cheek	0mm	Ant 3	DSI 18	Reduced	26340	1880	15.06	16.00	1.242	-0.16	0.361	0.448
	LTE Band 25	20M	QPSK	50	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	26340	1880	15.06	16.00	1.242	-0.03	0.346	0.430
	LTE Band 25	20M	QPSK	50	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	26140	1860	14.90	16.00	1.288	0.13	0.478	0.616
	LTE Band 25	20M	QPSK	50	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	26590	1905	14.88	16.00	1.294	0.08	0.435	0.563
	LTE Band 25	20M	QPSK	50	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	26140	1860	14.90	16.00	1.288	-0.1	0.476	0.613
	LTE Band 25	20M	QPSK	50	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	26590	1905	14.88	16.00	1.294	0.11	0.398	0.515
	LTE Band 25	20M	QPSK	1	0	Right Cheek	0mm	Ant 4	DSI 18	Full	26340	1880	23.39	24.00	1.151	0.07	0.048	0.055
	LTE Band 25	20M	QPSK	1	0	Right Tilted	0mm	Ant 4	DSI 18	Full	26340	1880	23.39	24.00	1.151	-	n/a	n/a
	LTE Band 25	20M	QPSK	1	0	Left Cheek	0mm	Ant 4	DSI 18	Full	26340	1880	23.39	24.00	1.151	0.13	0.058	0.067
	LTE Band 25	20M	QPSK	1	0	Left Tilted	0mm	Ant 4	DSI 18	Full	26340	1880	23.39	24.00	1.151	-	n/a	n/a
	LTE Band 25	20M	QPSK	50	0	Right Cheek	0mm	Ant 4	DSI 18	Full	26340	1880	22.28	23.00	1.180	0.11	0.039	0.046
	LTE Band 25	20M	QPSK	50	0	Right Tilted	0mm	Ant 4	DSI 18	Full	26340	1880	22.28	23.00	1.180	-	n/a	n/a
	LTE Band 25	20M	QPSK	50	0	Left Cheek	0mm	Ant 4	DSI 18	Full	26340	1880	22.28	23.00	1.180	-0.19	0.044	0.052
	LTE Band 25	20M	QPSK	50	0	Left Tilted	0mm	Ant 4	DSI 18	Full	26340	1880	22.28	23.00	1.180	-	n/a	n/a
	LTE Band 7	20M	QPSK	1	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	21100	2535	15.83	17.00	1.309	-0.17	0.562	0.736
	LTE Band 7	20M	QPSK	1	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	21100	2535	15.83	17.00	1.309	-0.04	0.758	0.992
	LTE Band 7	20M	QPSK	1	0	Left Cheek	0mm	Ant 3	DSI 18	Reduced	21100	2535	15.83	17.00	1.309	-0.02	0.445	0.583
	LTE Band 7	20M	QPSK	1	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	21100	2535	15.83	17.00	1.309	-0.03	0.621	0.813
	LTE Band 7	20M	QPSK	1	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	20850	2510	15.67	17.00	1.358	0.19	0.670	0.910
	LTE Band 7	20M	QPSK	1	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	21350	2560	15.68	17.00	1.355	-0.09	0.622	0.843
	LTE Band 7	20M	QPSK	1	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	20850	2510	15.67	17.00	1.358	0.05	0.588	0.799
	LTE Band 7	20M	QPSK	1	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	21350	2560	15.68	17.00	1.355	0.07	0.541	0.733
	LTE Band 7	20M	QPSK	50	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	21100	2535	15.68	17.00	1.355	-0.01	0.569	0.771
11	LTE Band 7	20M	QPSK	50	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	21100	2535	15.68	17.00	1.355	0.08	0.838	**1.136**
	LTE Band 7C	20M	QPSK	50	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	21100+ 20902	2535+ 2515.2	15.61	17.00	1.377	0.11	0.783	1.078
	LTE Band 7_E-SIM	20M	QPSK	50	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	21100	2535	15.68	17.00	1.355	0.04	0.797	1.080
	LTE Band 7	20M	QPSK	50	0	Left Cheek	0mm	Ant 3	DSI 18	Reduced	21100	2535	15.68	17.00	1.355	0.17	0.449	0.608
	LTE Band 7	20M	QPSK	50	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	21100	2535	15.68	17.00	1.355	-0.17	0.602	0.816
	LTE Band 7	20M	QPSK	50	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	20850	2510	15.66	17.00	1.361	0.18	0.658	0.896
	LTE Band 7	20M	QPSK	50	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	21350	2560	15.67	17.00	1.358	-0.18	0.631	0.857
	LTE Band 7	20M	QPSK	50	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	20850	2510	15.66	17.00	1.361	0.08	0.566	0.771
	LTE Band 7	20M	QPSK	50	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	21350	2560	15.67	17.00	1.358	-0.11	0.532	0.723
	LTE Band 7	20M	QPSK	100	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	21100	2535	15.64	17.00	1.368	0.05	0.812	1.111
	LTE Band 7	20M	QPSK	100	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	21100	2535	15.64	17.00	1.368	0.02	0.598	0.818

	LTE Band 7	20M	QPSK	1	0	Right Cheek	0mm	Ant 4	DSI 18	Full	21100	2535	23.16	24.00	1.213	-0.02	0.097	0.118
	LTE Band 7C	20M	QPSK	1	0	Right Cheek	0mm	Ant 4	DSI 18	Full	21100+ 20902	2535+ 2515.2	22.75	24.00	1.334	-0.08	0.079	0.105
	LTE Band 7	20M	QPSK	1	0	Right Tilted	0mm	Ant 4	DSI 18	Full	21100	2535	23.16	24.00	1.213	0.15	0.081	0.098
	LTE Band 7	20M	QPSK	1	0	Left Cheek	0mm	Ant 4	DSI 18	Full	21100	2535	23.16	24.00	1.213	0.1	0.069	0.084
	LTE Band 7	20M	QPSK	1	0	Left Tilted	0mm	Ant 4	DSI 18	Full	21100	2535	23.16	24.00	1.213	-0.11	0.085	0.103
	LTE Band 7	20M	QPSK	50	0	Right Cheek	0mm	Ant 4	DSI 18	Full	21100	2535	22.37	23.00	1.156	0.13	0.083	0.096
	LTE Band 7	20M	QPSK	50	0	Right Tilted	0mm	Ant 4	DSI 18	Full	21100	2535	22.37	23.00	1.156	0.19	0.067	0.077
	LTE Band 7	20M	QPSK	50	0	Left Cheek	0mm	Ant 4	DSI 18	Full	21100	2535	22.37	23.00	1.156	0.03	0.060	0.069
	LTE Band 7	20M	QPSK	50	0	Left Tilted	0mm	Ant 4	DSI 18	Full	21100	2535	22.37	23.00	1.156	-0.02	0.069	0.080
	LTE Band 7_Inter-CA	20M	QPSK	1	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	21100	2535	12.32	13.00	1.169	0.17	0.283	0.331
	LTE Band 7_Inter-CA	20M	QPSK	1	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	21100	2535	12.32	13.00	1.169	-0.07	0.318	0.372
	LTE Band 7_Inter-CA	20M	QPSK	1	0	Left Cheek	0mm	Ant 3	DSI 18	Reduced	21100	2535	12.32	13.00	1.169	-0.12	0.206	0.241
	LTE Band 7_Inter-CA	20M	QPSK	1	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	21100	2535	12.32	13.00	1.169	0.17	0.263	0.308
	LTE Band 7_Inter-CA	20M	QPSK	50	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	21100	2535	12.27	13.00	1.183	0.05	0.375	0.444
	LTE Band 7_Inter-CA	20M	QPSK	50	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	21100	2535	12.27	13.00	1.183	-0.02	0.452	0.535
	LTE Band 7_Inter-CA	20M	QPSK	50	0	Left Cheek	0mm	Ant 3	DSI 18	Reduced	21100	2535	12.27	13.00	1.183	-0.02	0.169	0.200
	LTE Band 7_Inter-CA	20M	QPSK	50	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	21100	2535	12.27	13.00	1.183	-0.09	0.238	0.282
	LTE Band 7_Inter-CA	20M	QPSK	1	0	Right Cheek	0mm	Ant 6	DSI 18	Reduced	21100	2535	18.05	18.50	1.109	0.04	0.447	0.496
	LTE Band 7_Inter-CA	20M	QPSK	1	0	Right Tilted	0mm	Ant 6	DSI 18	Reduced	21100	2535	18.05	18.50	1.109	-0.05	0.054	0.060
	LTE Band 7_Inter-CA	20M	QPSK	1	0	Left Cheek	0mm	Ant 6	DSI 18	Reduced	21100	2535	18.05	18.50	1.109	-0.14	0.249	0.276
	LTE Band 7_Inter-CA	20M	QPSK	1	0	Left Tilted	0mm	Ant 6	DSI 18	Reduced	21100	2535	18.05	18.50	1.109	-0.16	0.083	0.092
	LTE Band 7_Inter-CA	20M	QPSK	50	0	Right Cheek	0mm	Ant 6	DSI 18	Reduced	21100	2535	17.80	18.50	1.175	-0.15	0.313	0.368
	LTE Band 7_Inter-CA	20M	QPSK	50	0	Right Tilted	0mm	Ant 6	DSI 18	Reduced	21100	2535	17.80	18.50	1.175	0.14	0.051	0.060
	LTE Band 7_Inter-CA	20M	QPSK	50	0	Left Cheek	0mm	Ant 6	DSI 18	Reduced	21100	2535	17.80	18.50	1.175	-0.05	0.241	0.283
	LTE Band 7_Inter-CA	20M	QPSK	50	0	Left Tilted	0mm	Ant 6	DSI 18	Reduced	21100	2535	17.80	18.50	1.175	0.1	0.086	0.101
ENDC																		
	LTE Band 7	20M	QPSK	1	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	21100	2535	13.16	14.00	1.213	0.12	0.434	0.527
	LTE Band 7	20M	QPSK	1	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	21100	2535	13.16	14.00	1.213	0.12	0.558	0.677
	LTE Band 7	20M	QPSK	1	0	Left Cheek	0mm	Ant 3	DSI 18	Reduced	21100	2535	13.16	14.00	1.213	0.19	0.359	0.436
	LTE Band 7	20M	QPSK	1	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	21100	2535	13.16	14.00	1.213	-0.12	0.437	0.530
	LTE Band 7	20M	QPSK	50	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	21100	2535	13.08	14.00	1.236	-0.01	0.444	0.549
	LTE Band 7	20M	QPSK	50	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	21100	2535	13.18	14.00	1.208	0.06	0.657	0.794
	LTE Band 7	20M	QPSK	50	0	Left Cheek	0mm	Ant 3	DSI 18	Reduced	21100	2535	13.08	14.00	1.236	0.15	0.580	0.717
	LTE Band 7	20M	QPSK	50	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	21100	2535	13.08	14.00	1.236	0.09	0.456	0.564
	LTE Band 7	20M	QPSK	1	0	Right Cheek	0mm	Ant 4	DSI 18	Full	21100	2535	23.16	24.00	1.213	-0.02	0.097	0.118
	LTE Band 7	20M	QPSK	1	0	Right Tilted	0mm	Ant 4	DSI 18	Full	21100	2535	23.16	24.00	1.213	0.15	0.081	0.098
	LTE Band 7	20M	QPSK	1	0	Left Cheek	0mm	Ant 4	DSI 18	Full	21100	2535	23.16	24.00	1.213	0.1	0.069	0.084
	LTE Band 7	20M	QPSK	1	0	Left Tilted	0mm	Ant 4	DSI 18	Full	21100	2535	23.16	24.00	1.213	-0.11	0.085	0.103
	LTE Band 7	20M	QPSK	50	0	Right Cheek	0mm	Ant 4	DSI 18	Full	21100	2535	22.37	23.00	1.156	0.13	0.083	0.096
	LTE Band 7	20M	QPSK	50	0	Right Tilted	0mm	Ant 4	DSI 18	Full	21100	2535	22.37	23.00	1.156	0.19	0.067	0.077
	LTE Band 7	20M	QPSK	50	0	Left Cheek	0mm	Ant 4	DSI 18	Full	21100	2535	22.37	23.00	1.156	0.03	0.060	0.069
	LTE Band 7	20M	QPSK	50	0	Left Tilted	0mm	Ant 4	DSI 18	Full	21100	2535	22.37	23.00	1.156	-0.02	0.069	0.080
	LTE Band 7	20M	QPSK	1	0	Right Cheek	0mm	Ant 5	DSI 18	Reduced	21100	2535	14.06	15.00	1.242	-0.1	0.370	0.459
	LTE Band 7	20M	QPSK	1	0	Right Tilted	0mm	Ant 5	DSI 18	Reduced	21100	2535	14.06	15.00	1.242	0.05	0.124	0.154
	LTE Band 7	20M	QPSK	1	0	Left Cheek	0mm	Ant 5	DSI 18	Reduced	21100	2535	14.06	15.00	1.242	0.14	0.093	0.115
	LTE Band 7	20M	QPSK	1	0	Left Tilted	0mm	Ant 5	DSI 18	Reduced	21100	2535	14.06	15.00	1.242	-0.01	0.054	0.067
	LTE Band 7	20M	QPSK	50	0	Right Cheek	0mm	Ant 5	DSI 18	Reduced	21100	2535	13.92	15.00	1.282	0.06	0.494	0.633
	LTE Band 7	20M	QPSK	50	0	Right Tilted	0mm	Ant 5	DSI 18	Reduced	21100	2535	13.92	15.00	1.282	-0.09	0.154	0.197
	LTE Band 7	20M	QPSK	50	0	Left Cheek	0mm	Ant 5	DSI 18	Reduced	21100	2535	13.92	15.00	1.282	-0.01	0.095	0.122
	LTE Band 7	20M	QPSK	50	0	Left Tilted	0mm	Ant 5	DSI 18	Reduced	21100	2535	13.92	15.00	1.282	0.01	0.054	0.069
	LTE Band 7	20M	QPSK	1	0	Right Cheek	0mm	Ant 6	DSI 18	Reduced	21100	2535	18.65	19.50	1.216	-0.07	0.333	0.405
	LTE Band 7	20M	QPSK	1	0	Right Tilted	0mm	Ant 6	DSI 18	Reduced	21100	2535	18.65	19.50	1.216	0.18	0.059	0.072
	LTE Band 7	20M	QPSK	1	0	Left Cheek	0mm	Ant 6	DSI 18	Reduced	21100	2535	18.65	19.50	1.216	-0.11	0.262	0.319
	LTE Band 7	20M	QPSK	1	0	Left Tilted	0mm	Ant 6	DSI 18	Reduced	21100	2535	18.65	19.50	1.216	-0.1	0.087	0.106
	LTE Band 7	20M	QPSK	50	0	Right Cheek	0mm	Ant 6	DSI 18	Reduced	21100	2535	18.61	19.50	1.227	-0.04	0.365	0.448
	LTE Band 7	20M	QPSK	50	0	Right Tilted	0mm	Ant 6	DSI 18	Reduced	21100	2535	18.61	19.50	1.227	0.17	0.061	0.075

	LTE Band 7	20M	QPSK	50	0	Left Cheek	0mm	Ant 6	DSI 18	Reduced	21100	2535	18.61	19.50	1.227	-0.08	0.275	0.338
	LTE Band 7	20M	QPSK	50	0	Left Tilted	0mm	Ant 6	DSI 18	Reduced	21100	2535	18.61	19.50	1.227	0.11	0.094	0.115

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna	Power State	Power Reduction	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 38	20M	QPSK	1	99	Right Cheek	0mm	Ant 3	DSI 18	Reduced	38000	2595	18.68	19.50	1.208	62.9	1.006	0.01	0.601	0.730
	LTE Band 38	20M	QPSK	1	99	Right Tilted	0mm	Ant 3	DSI 18	Reduced	38000	2595	18.68	19.50	1.208	62.9	1.006	0.1	0.682	0.829
	LTE Band 38	20M	QPSK	1	99	Left Cheek	0mm	Ant 3	DSI 18	Reduced	38000	2595	18.68	19.50	1.208	62.9	1.006	-0.12	0.497	0.604
	LTE Band 38	20M	QPSK	1	99	Left Tilted	0mm	Ant 3	DSI 18	Reduced	38000	2595	18.68	19.50	1.208	62.9	1.006	0.06	0.643	0.781
	LTE Band 38	20M	QPSK	50	24	Right Cheek	0mm	Ant 3	DSI 18	Reduced	38000	2595	18.56	19.50	1.242	62.9	1.006	0.05	0.630	0.787
12	LTE Band 38	20M	QPSK	50	24	Right Tilted	0mm	Ant 3	DSI 18	Reduced	38000	2595	18.56	19.50	1.242	62.9	1.006	0.11	0.902	**1.127**
	LTE Band 38C	20M	QPSK	50	24	Right Tilted	0mm	Ant 3	DSI 18	Reduced	37901+ 38099	2585.1+ 2604.9	18.52	19.50	1.253	62.9	1.006	0.04	0.877	1.106
	LTE Band 38	20M	QPSK	50	24	Left Cheek	0mm	Ant 3	DSI 18	Reduced	38000	2595	18.56	19.50	1.242	62.9	1.006	0.03	0.482	0.602
	LTE Band 38	20M	QPSK	50	24	Left Tilted	0mm	Ant 3	DSI 18	Reduced	38000	2595	18.56	19.50	1.242	62.9	1.006	-0.04	0.698	0.872
	LTE Band 38	20M	QPSK	100	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	38000	2595	18.53	19.50	1.250	62.9	1.006	-0.1	0.852	1.072
	LTE Band 38	20M	QPSK	100	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	38000	2595	18.53	19.50	1.250	62.9	1.006	-0.13	0.611	0.768
	LTE Band 38	20M	QPSK	1	99	Right Cheek	0mm	Ant 4	DSI 18	Full	38000	2595	23.73	24.50	1.194	62.9	1.006	0.05	0.075	0.090
	LTE Band 38C	20M	QPSK	1	99	Right Cheek	0mm	Ant 4	DSI 18	Full	37901+ 38099	2585.1+ 2604.9	23.07	24.50	1.390	62.9	1.006	0.02	0.060	0.084
	LTE Band 38	20M	QPSK	1	99	Right Tilted	0mm	Ant 4	DSI 18	Full	38000	2595	23.73	24.50	1.194	62.9	1.006	0.15	0.042	0.050
	LTE Band 38	20M	QPSK	1	99	Left Cheek	0mm	Ant 4	DSI 18	Full	38000	2595	23.73	24.50	1.194	62.9	1.006	-0.19	0.053	0.064
	LTE Band 38	20M	QPSK	1	99	Left Tilted	0mm	Ant 4	DSI 18	Full	38000	2595	23.73	24.50	1.194	62.9	1.006	-0.09	0.064	0.077
	LTE Band 38	20M	QPSK	50	24	Right Cheek	0mm	Ant 4	DSI 18	Full	38000	2595	22.62	23.50	1.225	62.9	1.006	-0.19	0.061	0.075
	LTE Band 38	20M	QPSK	50	24	Right Tilted	0mm	Ant 4	DSI 18	Full	38000	2595	22.62	23.50	1.225	62.9	1.006	-	n/a	n/a
	LTE Band 38	20M	QPSK	50	24	Left Cheek	0mm	Ant 4	DSI 18	Full	38000	2595	22.62	23.50	1.225	62.9	1.006	0.13	0.046	0.057
	LTE Band 38	20M	QPSK	50	24	Left Tilted	0mm	Ant 4	DSI 18	Full	38000	2595	22.62	23.50	1.225	62.9	1.006	-0.05	0.051	0.063
	LTE Band 41	20M	QPSK	1	99	Right Cheek	0mm	Ant 3	DSI 18	Reduced	40620	2593	18.66	19.50	1.213	62.9	1.006	0.07	0.603	0.736
	LTE Band 41	20M	QPSK	1	99	Right Tilted	0mm	Ant 3	DSI 18	Reduced	40620	2593	18.66	19.50	1.213	62.9	1.006	0.04	0.894	1.091
	LTE Band 41C	20M	QPSK	1	99	Right Tilted	0mm	Ant 3	DSI 18	Reduced	40620+ 40422	2593+ 2573.2	18.36	19.50	1.300	62.9	1.006	0.05	0.832	1.088
	LTE Band 41	20M	QPSK	1	99	Left Cheek	0mm	Ant 3	DSI 18	Reduced	40620	2593	18.66	19.50	1.213	62.9	1.006	0.13	0.454	0.554
	LTE Band 41	20M	QPSK	1	99	Left Tilted	0mm	Ant 3	DSI 18	Reduced	40620	2593	18.66	19.50	1.213	62.9	1.006	0.07	0.650	0.793
	LTE Band 41	20M	QPSK	1	99	Right Cheek	0mm	Ant 3	DSI 18	Reduced	39750	2506	18.65	19.50	1.216	62.9	1.006	0.18	0.686	0.839
	LTE Band 41	20M	QPSK	1	99	Right Cheek	0mm	Ant 3	DSI 18	Reduced	40185	2549.5	18.52	19.50	1.253	62.9	1.006	0.06	0.665	0.838
	LTE Band 41	20M	QPSK	1	99	Right Cheek	0mm	Ant 3	DSI 18	Reduced	41055	2636.5	18.56	19.50	1.242	62.9	1.006	-0.18	0.491	0.613
	LTE Band 41	20M	QPSK	1	99	Right Cheek	0mm	Ant 3	DSI 18	Reduced	41490	2680	18.60	19.50	1.230	62.9	1.006	0.05	0.511	0.632
	LTE Band 41	20M	QPSK	1	99	Right Tilted	0mm	Ant 3	DSI 18	Reduced	39750	2506	18.65	19.50	1.216	62.9	1.006	0.11	0.852	1.042
	LTE Band 41	20M	QPSK	1	99	Right Tilted	0mm	Ant 3	DSI 18	Reduced	40185	2549.5	18.52	19.50	1.253	62.9	1.006	0.07	0.834	1.051
	LTE Band 41	20M	QPSK	1	99	Right Tilted	0mm	Ant 3	DSI 18	Reduced	41055	2636.5	18.56	19.50	1.242	62.9	1.006	-0.01	0.632	0.789
	LTE Band 41	20M	QPSK	1	99	Right Tilted	0mm	Ant 3	DSI 18	Reduced	41490	2680	18.60	19.50	1.230	62.9	1.006	-0.11	0.598	0.740
	LTE Band 41	20M	QPSK	1	99	Left Tilted	0mm	Ant 3	DSI 18	Reduced	39750	2506	18.65	19.50	1.216	62.9	1.006	0.14	0.692	0.847
	LTE Band 41	20M	QPSK	1	99	Left Tilted	0mm	Ant 3	DSI 18	Reduced	40185	2549.5	18.52	19.50	1.253	62.9	1.006	0.02	0.757	0.954
	LTE Band 41	20M	QPSK	1	99	Left Tilted	0mm	Ant 3	DSI 18	Reduced	41055	2636.5	18.56	19.50	1.242	62.9	1.006	0.11	0.494	0.617
	LTE Band 41	20M	QPSK	1	99	Left Tilted	0mm	Ant 3	DSI 18	Reduced	41490	2680	18.60	19.50	1.230	62.9	1.006	0.16	0.393	0.486
	LTE Band 41	20M	QPSK	50	24	Right Cheek	0mm	Ant 3	DSI 18	Reduced	40620	2593	18.59	19.50	1.233	62.9	1.006	-0.09	0.613	0.760
	LTE Band 41	20M	QPSK	50	24	Right Tilted	0mm	Ant 3	DSI 18	Reduced	40620	2593	18.59	19.50	1.233	62.9	1.006	0.02	0.769	0.954
	LTE Band 41	20M	QPSK	50	24	Left Cheek	0mm	Ant 3	DSI 18	Reduced	40620	2593	18.59	19.50	1.233	62.9	1.006	-0.12	0.470	0.583
	LTE Band 41	20M	QPSK	50	24	Left Tilted	0mm	Ant 3	DSI 18	Reduced	40620	2593	18.59	19.50	1.233	62.9	1.006	-0.1	0.679	0.842
	LTE Band 41	20M	QPSK	50	24	Right Cheek	0mm	Ant 3	DSI 18	Reduced	39750	2506	18.56	19.50	1.242	62.9	1.006	0.11	0.711	0.888
	LTE Band 41	20M	QPSK	50	24	Right Cheek	0mm	Ant 3	DSI 18	Reduced	40185	2549.5	18.49	19.50	1.262	62.9	1.006	0.1	0.691	0.877
	LTE Band 41	20M	QPSK	50	24	Right Cheek	0mm	Ant 3	DSI 18	Reduced	41055	2636.5	18.50	19.50	1.259	62.9	1.006	-0.09	0.572	0.724
	LTE Band 41	20M	QPSK	50	24	Right Cheek	0mm	Ant 3	DSI 18	Reduced	41490	2680	18.52	19.50	1.253	62.9	1.006	0.12	0.543	0.685
	LTE Band 41	20M	QPSK	50	24	Right Tilted	0mm	Ant 3	DSI 18	Reduced	39750	2506	18.56	19.50	1.242	62.9	1.006	0.15	0.820	1.024
	LTE Band 41	20M	QPSK	50	24	Right Tilted	0mm	Ant 3	DSI 18	Reduced	40185	2549.5	18.49	19.50	1.262	62.9	1.006	-0.05	0.795	1.009
	LTE Band 41	20M	QPSK	50	24	Right Tilted	0mm	Ant 3	DSI 18	Reduced	41055	2636.5	18.50	19.50	1.259	62.9	1.006	-0.01	0.547	0.693

	LTE Band 41	20M	QPSK	50	24	Right Tilted	0mm	Ant 3	DSI 18	Reduced	41490	2680	18.52	19.50	1.253	62.9	1.006	0.11	0.570	0.719
	LTE Band 41	20M	QPSK	50	24	Left Tilted	0mm	Ant 3	DSI 18	Reduced	39750	2506	18.56	19.50	1.242	62.9	1.006	-0.15	0.754	0.942
	LTE Band 41	20M	QPSK	50	24	Left Tilted	0mm	Ant 3	DSI 18	Reduced	40185	2549.5	18.49	19.50	1.262	62.9	1.006	0.17	0.778	0.988
	LTE Band 41	20M	QPSK	50	24	Left Tilted	0mm	Ant 3	DSI 18	Reduced	41055	2636.5	18.50	19.50	1.259	62.9	1.006	0.07	0.568	0.719
	LTE Band 41	20M	QPSK	50	24	Left Tilted	0mm	Ant 3	DSI 18	Reduced	41490	2680	18.52	19.50	1.253	62.9	1.006	0.01	0.440	0.555
	LTE Band 41	20M	QPSK	100	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	40620	2593	18.51	19.50	1.256	62.9	1.006	-0.12	0.588	0.743
	LTE Band 41	20M	QPSK	100	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	40620	2593	18.51	19.50	1.256	62.9	1.006	-0.12	0.752	0.950
	LTE Band 41	20M	QPSK	100	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	40620	2593	18.51	19.50	1.256	62.9	1.006	-0.11	0.545	0.689
	LTE Band 41	20M	QPSK	1	99	Right Cheek	0mm	Ant 4	DSI 18	Full	40620	2593	23.78	24.00	1.052	62.9	1.006	0.16	0.067	0.071
	LTE Band 41C	20M	QPSK	1	99	Right Cheek	0mm	Ant 4	DSI 18	Full	40620+ 40422	2593+ 2573.2	22.72	24.00	1.343	62.9	1.006	0.08	0.059	0.080
	LTE Band 41	20M	QPSK	1	99	Right Tilted	0mm	Ant 4	DSI 18	Full	40620	2593	23.78	24.00	1.052	62.9	1.006	0.09	0.040	0.042
	LTE Band 41	20M	QPSK	1	99	Left Cheek	0mm	Ant 4	DSI 18	Full	40620	2593	23.78	24.00	1.052	62.9	1.006	0.16	0.047	0.050
	LTE Band 41	20M	QPSK	1	99	Left Tilted	0mm	Ant 4	DSI 18	Full	40620	2593	23.78	24.00	1.052	62.9	1.006	-0.13	0.054	0.057
	LTE Band 41	20M	QPSK	50	24	Right Cheek	0mm	Ant 4	DSI 18	Full	40620	2593	22.73	23.00	1.064	62.9	1.006	-0.18	0.055	0.059
	LTE Band 41	20M	QPSK	50	24	Right Tilted	0mm	Ant 4	DSI 18	Full	40620	2593	22.73	23.00	1.064	62.9	1.006	-	n/a	n/a
	LTE Band 41	20M	QPSK	50	24	Left Cheek	0mm	Ant 4	DSI 18	Full	40620	2593	22.73	23.00	1.064	62.9	1.006	-	n/a	n/a
	LTE Band 41	20M	QPSK	50	24	Left Tilted	0mm	Ant 4	DSI 18	Full	40620	2593	22.73	23.00	1.064	62.9	1.006	0.18	0.045	0.048
	LTE Band 41-PC2	20M	QPSK	1	99	Right Cheek	0mm	Ant 3	DSI 18	Reduced	40620	2593	20.93	21.50	1.140	42.9	1.009	-0.16	0.630	0.725
13	LTE Band 41-PC2	20M	QPSK	1	99	Right Tilted	0mm	Ant 3	DSI 18	Reduced	40620	2593	20.93	21.50	1.140	42.9	1.009	0.01	0.952	**1.095**
	LTE Band 41-PC2	20M	QPSK	1	99	Left Cheek	0mm	Ant 3	DSI 18	Reduced	40620	2593	20.93	21.50	1.140	42.9	1.009	-0.11	0.505	0.581
	LTE Band 41-PC2	20M	QPSK	1	99	Left Tilted	0mm	Ant 3	DSI 18	Reduced	40620	2593	20.93	21.50	1.140	42.9	1.009	-0.03	0.713	0.820
	LTE Band 41-PC2	20M	QPSK	1	99	Right Cheek	0mm	Ant 3	DSI 18	Reduced	39750	2506	20.80	21.50	1.175	42.9	1.009	-0.04	0.733	0.869
	LTE Band 41-PC2	20M	QPSK	1	99	Right Cheek	0mm	Ant 3	DSI 18	Reduced	40185	2549.5	20.81	21.50	1.172	42.9	1.009	-0.13	0.706	0.835
	LTE Band 41-PC2	20M	QPSK	1	99	Right Cheek	0mm	Ant 3	DSI 18	Reduced	41055	2636.5	20.78	21.50	1.180	42.9	1.009	-0.18	0.534	0.636
	LTE Band 41-PC2	20M	QPSK	1	99	Right Cheek	0mm	Ant 3	DSI 18	Reduced	41490	2680	20.92	21.50	1.143	42.9	1.009	-0.19	0.579	0.668
	LTE Band 41-PC2	20M	QPSK	1	99	Right Tilted	0mm	Ant 3	DSI 18	Reduced	39750	2506	20.80	21.50	1.175	42.9	1.009	-0.15	0.853	1.011
	LTE Band 41-PC2	20M	QPSK	1	99	Right Tilted	0mm	Ant 3	DSI 18	Reduced	40185	2549.5	20.81	21.50	1.172	42.9	1.009	-0.13	0.818	0.967
	LTE Band 41-PC2	20M	QPSK	1	99	Right Tilted	0mm	Ant 3	DSI 18	Reduced	41055	2636.5	20.78	21.50	1.180	42.9	1.009	0.06	0.551	0.656
	LTE Band 41-PC2	20M	QPSK	1	99	Right Tilted	0mm	Ant 3	DSI 18	Reduced	41490	2680	20.92	21.50	1.143	42.9	1.009	-0.16	0.598	0.690
	LTE Band 41-PC2	20M	QPSK	1	99	Left Tilted	0mm	Ant 3	DSI 18	Reduced	39750	2506	20.80	21.50	1.175	42.9	1.009	0.05	0.772	0.915
	LTE Band 41-PC2	20M	QPSK	1	99	Left Tilted	0mm	Ant 3	DSI 18	Reduced	40185	2549.5	20.81	21.50	1.172	42.9	1.009	0.01	0.820	0.970
	LTE Band 41-PC2	20M	QPSK	1	99	Left Tilted	0mm	Ant 3	DSI 18	Reduced	41055	2636.5	20.78	21.50	1.180	42.9	1.009	0.07	0.525	0.625
	LTE Band 41-PC2	20M	QPSK	1	99	Left Tilted	0mm	Ant 3	DSI 18	Reduced	41490	2680	20.92	21.50	1.143	42.9	1.009	-0.04	0.463	0.534
	LTE Band 41-PC2	20M	QPSK	50	24	Right Cheek	0mm	Ant 3	DSI 18	Reduced	40620	2593	20.89	21.50	1.151	42.9	1.009	-0.03	0.653	0.758
	LTE Band 41-PC2	20M	QPSK	50	24	Right Tilted	0mm	Ant 3	DSI 18	Reduced	40620	2593	20.89	21.50	1.151	42.9	1.009	0.14	0.888	1.031
	LTE Band 41-PC2	20M	QPSK	50	24	Left Cheek	0mm	Ant 3	DSI 18	Reduced	40620	2593	20.89	21.50	1.151	42.9	1.009	0.17	0.512	0.595
	LTE Band 41-PC2	20M	QPSK	50	24	Left Tilted	0mm	Ant 3	DSI 18	Reduced	40620	2593	20.89	21.50	1.151	42.9	1.009	-0.16	0.734	0.852
	LTE Band 41-PC2	20M	QPSK	50	24	Right Cheek	0mm	Ant 3	DSI 18	Reduced	39750	2506	20.86	21.50	1.159	42.9	1.009	-0.05	0.783	0.915
	LTE Band 41-PC2	20M	QPSK	50	24	Right Cheek	0mm	Ant 3	DSI 18	Reduced	40185	2549.5	20.73	21.50	1.194	42.9	1.009	-0.09	0.760	0.916
	LTE Band 41-PC2	20M	QPSK	50	24	Right Cheek	0mm	Ant 3	DSI 18	Reduced	41055	2636.5	20.69	21.50	1.205	42.9	1.009	0.09	0.611	0.743
	LTE Band 41-PC2	20M	QPSK	50	24	Right Cheek	0mm	Ant 3	DSI 18	Reduced	41490	2680	20.88	21.50	1.153	42.9	1.009	-0.08	0.600	0.698
	LTE Band 41-PC2	20M	QPSK	50	24	Right Tilted	0mm	Ant 3	DSI 18	Reduced	39750	2506	20.86	21.50	1.159	42.9	1.009	0.03	0.898	1.050
	LTE Band 41-PC2	20M	QPSK	50	24	Right Tilted	0mm	Ant 3	DSI 18	Reduced	40185	2549.5	20.73	21.50	1.194	42.9	1.009	0.03	0.881	1.061
	LTE Band 41-PC2	20M	QPSK	50	24	Right Tilted	0mm	Ant 3	DSI 18	Reduced	41055	2636.5	20.69	21.50	1.205	42.9	1.009	-0.14	0.656	0.798
	LTE Band 41-PC2	20M	QPSK	50	24	Right Tilted	0mm	Ant 3	DSI 18	Reduced	41490	2680	20.88	21.50	1.153	42.9	1.009	0.17	0.631	0.734
	LTE Band 41-PC2	20M	QPSK	50	24	Left Tilted	0mm	Ant 3	DSI 18	Reduced	39750	2506	20.86	21.50	1.159	42.9	1.009	-0.18	0.835	0.976
	LTE Band 41-PC2	20M	QPSK	50	24	Left Tilted	0mm	Ant 3	DSI 18	Reduced	40185	2549.5	20.73	21.50	1.194	42.9	1.009	0.17	0.856	1.031
	LTE Band 41-PC2	20M	QPSK	50	24	Left Tilted	0mm	Ant 3	DSI 18	Reduced	41055	2636.5	20.69	21.50	1.205	42.9	1.009	0.04	0.619	0.753
	LTE Band 41-PC2	20M	QPSK	50	24	Left Tilted	0mm	Ant 3	DSI 18	Reduced	41490	2680	20.88	21.50	1.153	42.9	1.009	-0.11	0.494	0.575
	LTE Band 41-PC2	20M	QPSK	100	0	Right Cheek	0mm	Ant 3	DSI 18	Reduced	40620	2593	20.82	21.50	1.169	42.9	1.009	0.11	0.622	0.734
	LTE Band 41-PC2	20M	QPSK	100	0	Right Tilted	0mm	Ant 3	DSI 18	Reduced	40620	2593	20.82	21.50	1.169	42.9	1.009	0.07	0.911	1.075
	LTE Band 41-PC2	20M	QPSK	100	0	Left Tilted	0mm	Ant 3	DSI 18	Reduced	40620	2593	20.82	21.50	1.169	42.9	1.009	0.18	0.699	0.825
	LTE Band 41-PC2	20M	QPSK	1	0	Right Cheek	0mm	Ant 4	DSI 18	Full	40620	2593	25.52	26.00	1.117	42.9	1.009	0.19	0.068	0.077
	LTE Band 41-PC2	20M	QPSK	1	0	Right Tilted	0mm	Ant 4	DSI 18	Full	40620	2593	25.52	26.00	1.117	42.9	1.009	-0.06	0.046	0.052
	LTE Band 41-PC2	20M	QPSK	1	0	Left Cheek	0mm	Ant 4	DSI 18	Full	40620	2593	25.52	26.00	1.117	42.9	1.009	-0.09	0.052	0.059
	LTE Band 41-PC2	20M	QPSK	1	0	Left Tilted	0mm	Ant 4	DSI 18	Full	40620	2593	25.52	26.00	1.117	42.9	1.009	-0.15	0.058	0.065

	LTE Band 41-PC2	20M	QPSK	50	24	Right Cheek	0mm	Ant 4	DSI 18	Full	40620	2593	24.51	25.00	1.119	42.9	1.009	-0.17	0.053	0.060
	LTE Band 41-PC2	20M	QPSK	50	24	Right Tilted	0mm	Ant 4	DSI 18	Full	40620	2593	24.51	25.00	1.119	42.9	1.009	-0.08	0.038	0.043
	LTE Band 41-PC2	20M	QPSK	50	24	Left Cheek	0mm	Ant 4	DSI 18	Full	40620	2593	24.51	25.00	1.119	42.9	1.009	0.15	0.041	0.046
	LTE Band 41-PC2	20M	QPSK	50	24	Left Tilted	0mm	Ant 4	DSI 18	Full	40620	2593	24.51	25.00	1.119	42.9	1.009	-0.05	0.045	0.051

<5GNR SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Power Reduction	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)
	FR1 n12	15M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 0	DSI 18	Full	141500	707.5	23.26	24.20	1.242	0.02	0.227	0.282
	FR1 n12	15M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 0	DSI 18	Full	141500	707.5	23.26	24.20	1.242	0.17	0.047	0.058
	FR1 n12	15M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 0	DSI 18	Full	141500	707.5	23.26	24.20	1.242	-0.17	0.367	0.456
	FR1 n12	15M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 0	DSI 18	Full	141500	707.5	23.26	24.20	1.242	0.18	0.050	0.061
	FR1 n12	15M	QPSK	36	22	DFT-15	Right Cheek	0mm	Ant 0	DSI 18	Full	141500	707.5	23.22	24.20	1.253	0.07	0.302	0.378
	FR1 n12	15M	QPSK	36	22	DFT-15	Right Tilted	0mm	Ant 0	DSI 18	Full	141500	707.5	23.22	24.20	1.253	0.07	0.056	0.070
14	FR1 n12	15M	QPSK	36	22	DFT-15	Left Cheek	0mm	Ant 0	DSI 18	Full	141500	707.5	23.22	24.20	1.253	-0.09	0.456	**0.571**
	FR1 n12	15M	QPSK	36	22	DFT-15	Left Tilted	0mm	Ant 0	DSI 18	Full	141500	707.5	23.22	24.20	1.253	0.01	0.061	0.076
	FR1 n12	15M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 1	DSI 18	Full	141500	707.5	22.91	24.20	1.346	-0.06	0.022	0.030
	FR1 n12	15M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 1	DSI 18	Full	141500	707.5	22.91	24.20	1.346	0.07	0.011	0.014
	FR1 n12	15M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 1	DSI 18	Full	141500	707.5	22.91	24.20	1.346	-0.08	0.020	0.027
	FR1 n12	15M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 1	DSI 18	Full	141500	707.5	22.91	24.20	1.346	0.1	0.012	0.015
	FR1 n12	15M	QPSK	36	22	DFT-15	Right Cheek	0mm	Ant 1	DSI 18	Full	141500	707.5	22.78	24.20	1.387	-0.07	0.020	0.028
	FR1 n12	15M	QPSK	36	22	DFT-15	Right Tilted	0mm	Ant 1	DSI 18	Full	141500	707.5	22.78	24.20	1.387	0.05	0.010	0.014
	FR1 n12	15M	QPSK	36	22	DFT-15	Left Cheek	0mm	Ant 1	DSI 18	Full	141500	707.5	22.78	24.20	1.387	-0.01	0.018	0.025
	FR1 n12	15M	QPSK	36	22	DFT-15	Left Tilted	0mm	Ant 1	DSI 18	Full	141500	707.5	22.78	24.20	1.387	-0.1	0.011	0.015
	FR1 n13	10M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 0	DSI 18	Full	156400	782	23.05	24.20	1.303	-0.07	0.142	0.185
	FR1 n13	10M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 0	DSI 18	Full	156400	782	23.05	24.20	1.303	-	n/a	n/a
	FR1 n13	10M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 0	DSI 18	Full	156400	782	23.05	24.20	1.303	-0.13	0.279	0.364
	FR1 n13	10M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 0	DSI 18	Full	156400	782	23.05	24.20	1.303	-	n/a	n/a
	FR1 n13	10M	QPSK	25	14	DFT-15	Right Cheek	0mm	Ant 0	DSI 18	Full	156400	782	23.04	24.20	1.306	0.05	0.145	0.189
	FR1 n13	10M	QPSK	25	14	DFT-15	Right Tilted	0mm	Ant 0	DSI 18	Full	156400	782	23.04	24.20	1.306	-	n/a	n/a
15	FR1 n13	10M	QPSK	25	14	DFT-15	Left Cheek	0mm	Ant 0	DSI 18	Full	156400	782	23.04	24.20	1.306	0.05	0.292	**0.381**
	FR1 n13	10M	QPSK	25	14	DFT-15	Left Tilted	0mm	Ant 0	DSI 18	Full	156400	782	23.04	24.20	1.306	-	n/a	n/a
	FR1 n13	10M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 1	DSI 18	Full	156400	782	22.84	24.20	1.368	0.04	0.095	0.130
	FR1 n13	10M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 1	DSI 18	Full	156400	782	22.84	24.20	1.368	-0.08	0.052	0.071
	FR1 n13	10M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 1	DSI 18	Full	156400	782	22.84	24.20	1.368	-0.14	0.059	0.081
	FR1 n13	10M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 1	DSI 18	Full	156400	782	22.84	24.20	1.368	0.18	0.049	0.067
	FR1 n13	10M	QPSK	25	14	DFT-15	Right Cheek	0mm	Ant 1	DSI 18	Full	156400	782	22.82	24.20	1.374	0.04	0.091	0.125
	FR1 n13	10M	QPSK	25	14	DFT-15	Right Tilted	0mm	Ant 1	DSI 18	Full	156400	782	22.82	24.20	1.374	0.14	0.050	0.069
	FR1 n13	10M	QPSK	25	14	DFT-15	Left Cheek	0mm	Ant 1	DSI 18	Full	156400	782	22.82	24.20	1.374	-0.14	0.054	0.074
	FR1 n13	10M	QPSK	25	14	DFT-15	Left Tilted	0mm	Ant 1	DSI 18	Full	156400	782	22.82	24.20	1.374	-	n/a	n/a
	FR1 n5	20M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 0	DSI 18	Full	167300	836.5	23.05	24.20	1.303	0.12	0.237	0.309
	FR1 n5	20M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 0	DSI 18	Full	167300	836.5	23.05	24.20	1.303	0.09	0.041	0.053
	FR1 n5	20M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 0	DSI 18	Full	167300	836.5	23.05	24.20	1.303	0.19	0.488	0.636
	FR1 n5	20M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 0	DSI 18	Full	167300	836.5	23.05	24.20	1.303	0.01	0.052	0.068
	FR1 n5	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 0	DSI 18	Full	167300	836.5	22.95	24.20	1.334	-0.02	0.243	0.324
	FR1 n5	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 0	DSI 18	Full	167300	836.5	22.95	24.20	1.334	0.13	0.043	0.057
16	FR1 n5	20M	QPSK	50	28	DFT-15	Left Cheek	0mm	Ant 0	DSI 18	Full	167300	836.5	22.95	24.20	1.334	-0.06	0.503	**0.671**
	FR1 n5	20M	QPSK	50	28	DFT-15	Left Tilted	0mm	Ant 0	DSI 18	Full	167300	836.5	22.95	24.20	1.334	0.02	0.055	0.073
	FR1 n5	20M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 1	DSI 18	Full	167300	836.5	23.20	24.20	1.259	-0.09	0.122	0.154
	FR1 n5	20M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 1	DSI 18	Full	167300	836.5	23.20	24.20	1.259	-0.02	0.058	0.073
	FR1 n5	20M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 1	DSI 18	Full	167300	836.5	23.20	24.20	1.259	0.07	0.071	0.089
	FR1 n5	20M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 1	DSI 18	Full	167300	836.5	23.20	24.20	1.259	-0.15	0.048	0.060
	FR1 n5	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 1	DSI 18	Full	167300	836.5	23.04	24.20	1.306	-0.14	0.131	0.171
	FR1 n5	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 1	DSI 18	Full	167300	836.5	23.04	24.20	1.306	0.13	0.065	0.085
	FR1 n5	20M	QPSK	50	28	DFT-15	Left Cheek	0mm	Ant 1	DSI 18	Full	167300	836.5	23.04	24.20	1.306	-0.02	0.079	0.103
	FR1 n5	20M	QPSK	50	28	DFT-15	Left Tilted	0mm	Ant 1	DSI 18	Full	167300	836.5	23.04	24.20	1.306	-0.04	0.056	0.073

											ENDC								
	FR1 n5	20M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 0	DSI 18	Reduced	167300	836.5	17.44	18.70	1.337	0.03	0.065	0.087
	FR1 n5	20M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 0	DSI 18	Reduced	167300	836.5	17.44	18.70	1.337	-	n/a	n/a
	FR1 n5	20M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 0	DSI 18	Reduced	167300	836.5	17.44	18.70	1.337	0.01	0.119	0.159
	FR1 n5	20M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 0	DSI 18	Reduced	167300	836.5	17.44	18.70	1.337	-	n/a	n/a
	FR1 n5	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 0	DSI 18	Reduced	167300	836.5	17.38	18.70	1.355	-0.11	0.062	0.084
	FR1 n5	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 0	DSI 18	Reduced	167300	836.5	17.38	18.70	1.355	-	n/a	n/a
	FR1 n5	20M	QPSK	50	28	DFT-15	Left Cheek	0mm	Ant 0	DSI 18	Reduced	167300	836.5	17.38	18.70	1.355	0.02	0.108	0.146
	FR1 n5	20M	QPSK	50	28	DFT-15	Left Tilted	0mm	Ant 0	DSI 18	Reduced	167300	836.5	17.38	18.70	1.355	-	n/a	n/a
	FR1 n5	20M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 1	DSI 18	Reduced	167300	836.5	20.81	21.70	1.227	-	n/a	n/a
	FR1 n5	20M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 1	DSI 18	Reduced	167300	836.5	20.81	21.70	1.227	-	n/a	n/a
	FR1 n5	20M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 1	DSI 18	Reduced	167300	836.5	20.81	21.70	1.227	-	n/a	n/a
	FR1 n5	20M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 1	DSI 18	Reduced	167300	836.5	20.81	21.70	1.227	-	n/a	n/a
	FR1 n5	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 1	DSI 18	Reduced	167300	836.5	20.79	21.70	1.233	-	n/a	n/a
	FR1 n5	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 1	DSI 18	Reduced	167300	836.5	20.79	21.70	1.233	-	n/a	n/a
	FR1 n5	20M	QPSK	50	28	DFT-15	Left Cheek	0mm	Ant 1	DSI 18	Reduced	167300	836.5	20.79	21.70	1.233	-	n/a	n/a
	FR1 n5	20M	QPSK	50	28	DFT-15	Left Tilted	0mm	Ant 1	DSI 18	Reduced	167300	836.5	20.79	21.70	1.233	-	n/a	n/a
	FR1 n26	20M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 0	DSI 18	Full	166300	831.5	23.10	24.20	1.288	-0.16	0.051	0.066
	FR1 n26	20M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 0	DSI 18	Full	166300	831.5	23.10	24.20	1.288	-	n/a	n/a
	FR1 n26	20M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 0	DSI 18	Full	166300	831.5	23.10	24.20	1.288	0.13	0.115	0.148
	FR1 n26	20M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 0	DSI 18	Full	166300	831.5	23.10	24.20	1.288	-	n/a	n/a
	FR1 n26	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 0	DSI 18	Full	166300	831.5	22.92	24.20	1.343	-0.09	0.054	0.073
	FR1 n26	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 0	DSI 18	Full	166300	831.5	22.92	24.20	1.343	-	n/a	n/a
17	FR1 n26	20M	QPSK	50	28	DFT-15	Left Cheek	0mm	Ant 0	DSI 18	Full	166300	831.5	22.92	24.20	1.343	0.19	0.121	**0.162**
	FR1 n26	20M	QPSK	50	28	DFT-15	Left Tilted	0mm	Ant 0	DSI 18	Full	166300	831.5	22.92	24.20	1.343	-	n/a	n/a
	FR1 n26	20M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 1	DSI 18	Full	166300	831.5	23.31	24.20	1.227	0.13	0.049	0.060
	FR1 n26	20M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 1	DSI 18	Full	166300	831.5	23.31	24.20	1.227	-	n/a	n/a
	FR1 n26	20M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 1	DSI 18	Full	166300	831.5	23.31	24.20	1.227	-	n/a	n/a
	FR1 n26	20M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 1	DSI 18	Full	166300	831.5	23.31	24.20	1.227	-	n/a	n/a
	FR1 n26	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 1	DSI 18	Full	166300	831.5	23.28	24.20	1.236	-0.16	0.050	0.062
	FR1 n26	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 1	DSI 18	Full	166300	831.5	23.28	24.20	1.236	-	n/a	n/a
	FR1 n26	20M	QPSK	50	28	DFT-15	Left Cheek	0mm	Ant 1	DSI 18	Full	166300	831.5	23.28	24.20	1.236	-	n/a	n/a
	FR1 n26	20M	QPSK	50	28	DFT-15	Left Tilted	0mm	Ant 1	DSI 18	Full	166300	831.5	23.28	24.20	1.236	-	n/a	n/a
	FR1 n66	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 3	DSI 18	Reduced	349000	1745	14.58	16.20	1.452	0.14	0.205	0.298
	FR1 n66	40M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 3	DSI 18	Reduced	349000	1745	14.58	16.20	1.452	-0.19	0.221	0.321
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 3	DSI 18	Reduced	349000	1745	14.58	16.20	1.452	0.17	0.148	0.215
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 3	DSI 18	Reduced	349000	1745	14.58	16.20	1.452	0.15	0.189	0.274
	FR1 n66	40M	QPSK	108	54	DFT-15	Right Cheek	0mm	Ant 3	DSI 18	Reduced	349000	1745	14.55	16.20	1.462	-0.02	0.223	0.326
18	FR1 n66	40M	QPSK	108	54	DFT-15	Right Tilted	0mm	Ant 3	DSI 18	Reduced	349000	1745	14.55	16.20	1.462	0.01	0.345	**0.504**
	FR1 n66	40M	QPSK	108	54	DFT-15	Left Cheek	0mm	Ant 3	DSI 18	Reduced	349000	1745	14.55	16.20	1.462	-0.12	0.159	0.232
	FR1 n66	40M	QPSK	108	54	DFT-15	Left Tilted	0mm	Ant 3	DSI 18	Reduced	349000	1745	14.55	16.20	1.462	-0.04	0.209	0.306
	FR1 n66	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 4	DSI 18	Full	349000	1745	23.19	24.20	1.262	0.1	0.102	0.129
	FR1 n66	40M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 4	DSI 18	Full	349000	1745	23.19	24.20	1.262	0.18	0.048	0.061
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 4	DSI 18	Full	349000	1745	23.19	24.20	1.262	0.18	0.050	0.063
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 4	DSI 18	Full	349000	1745	23.19	24.20	1.262	0.17	0.047	0.059
	FR1 n66	40M	QPSK	108	54	DFT-15	Right Cheek	0mm	Ant 4	DSI 18	Full	349000	1745	22.97	24.20	1.327	0.07	0.100	0.133
	FR1 n66	40M	QPSK	108	54	DFT-15	Right Tilted	0mm	Ant 4	DSI 18	Full	349000	1745	22.97	24.20	1.327	-0.08	0.049	0.065
	FR1 n66	40M	QPSK	108	54	DFT-15	Left Cheek	0mm	Ant 4	DSI 18	Full	349000	1745	22.97	24.20	1.327	-0.18	0.050	0.066
	FR1 n66	40M	QPSK	108	54	DFT-15	Left Tilted	0mm	Ant 4	DSI 18	Full	349000	1745	22.97	24.20	1.327	-0.08	0.046	0.061
											ENDC								
	FR1 n66	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 3	DSI 18	Reduced	349000	1745	13.12	14.20	1.282	0.11	0.156	0.200
	FR1 n66	40M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 3	DSI 18	Reduced	349000	1745	13.12	14.20	1.282	-0.1	0.211	0.271
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 3	DSI 18	Reduced	349000	1745	13.12	14.20	1.282	-0.03	0.105	0.135
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 3	DSI 18	Reduced	349000	1745	13.12	14.20	1.282	-0.01	0.110	0.141
	FR1 n66	40M	QPSK	108	54	DFT-15	Right Cheek	0mm	Ant 3	DSI 18	Reduced	349000	1745	13.08	14.20	1.294	0.11	0.182	0.236
	FR1 n66	40M	QPSK	108	54	DFT-15	Right Tilted	0mm	Ant 3	DSI 18	Reduced	349000	1745	13.08	14.20	1.294	-0.05	0.253	0.327

	FR1 n66	40M	QPSK	108	54	DFT-15	Left Cheek	0mm	Ant 3	DSI 18	Reduced	349000	1745	13.08	14.20	1.294	-0.13	0.134	0.173
	FR1 n66	40M	QPSK	108	54	DFT-15	Left Tilted	0mm	Ant 3	DSI 18	Reduced	349000	1745	13.08	14.20	1.294	0.1	0.156	0.202
	FR1 n66	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 6	DSI 18	Reduced	349000	1745	17.94	18.70	1.191	-0.1	0.167	0.199
	FR1 n66	40M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 6	DSI 18	Reduced	349000	1745	17.94	18.70	1.191	-	n/a	n/a
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 6	DSI 18	Reduced	349000	1745	17.94	18.70	1.191	-0.1	0.170	0.203
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 6	DSI 18	Reduced	349000	1745	17.94	18.70	1.191	-	n/a	n/a
	FR1 n66	40M	QPSK	108	54	DFT-15	Right Cheek	0mm	Ant 6	DSI 18	Reduced	349000	1745	17.87	18.70	1.211	-0.07	0.180	0.218
	FR1 n66	40M	QPSK	108	54	DFT-15	Right Tilted	0mm	Ant 6	DSI 18	Reduced	349000	1745	17.87	18.70	1.211	-	n/a	n/a
	FR1 n66	40M	QPSK	108	54	DFT-15	Left Cheek	0mm	Ant 6	DSI 18	Reduced	349000	1745	17.87	18.70	1.211	-0.02	0.153	0.185
	FR1 n66	40M	QPSK	108	54	DFT-15	Left Tilted	0mm	Ant 6	DSI 18	Reduced	349000	1745	17.87	18.70	1.211	-	n/a	n/a
	FR1 n2	20M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 3	DSI 18	Reduced	376000	1880	15.75	16.70	1.245	-0.04	0.486	0.605
	FR1 n2	20M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 3	DSI 18	Reduced	376000	1880	15.75	16.70	1.245	-0.14	0.495	0.616
	FR1 n2	20M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 3	DSI 18	Reduced	376000	1880	15.75	16.70	1.245	-0.05	0.384	0.478
	FR1 n2	20M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 3	DSI 18	Reduced	376000	1880	15.75	16.70	1.245	-0.1	0.411	0.511
	FR1 n2	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 3	DSI 18	Reduced	376000	1880	15.68	16.70	1.265	-0.01	0.499	0.631
19	FR1 n2	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 3	DSI 18	Reduced	376000	1880	15.68	16.70	1.265	-0.03	0.511	**0.646**
	FR1 n2	20M	QPSK	50	28	DFT-15	Left Cheek	0mm	Ant 3	DSI 18	Reduced	376000	1880	15.68	16.70	1.265	-0.12	0.372	0.470
	FR1 n2	20M	QPSK	50	28	DFT-15	Left Tilted	0mm	Ant 3	DSI 18	Reduced	376000	1880	15.68	16.70	1.265	-0.18	0.398	0.503
	FR1 n2	20M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 4	DSI 18	Full	376000	1880	22.76	24.20	1.393	0.02	0.049	0.068
	FR1 n2	20M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 4	DSI 18	Full	376000	1880	22.76	24.20	1.393	-	n/a	n/a
	FR1 n2	20M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 4	DSI 18	Full	376000	1880	22.76	24.20	1.393	0.12	0.052	0.072
	FR1 n2	20M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 4	DSI 18	Full	376000	1880	22.76	24.20	1.393	-	n/a	n/a
	FR1 n2	20M	QPSK	50	28	DFT-15	Right Cheek	0mm	Ant 4	DSI 18	Full	376000	1880	22.69	24.20	1.416	0.13	0.053	0.075
	FR1 n2	20M	QPSK	50	28	DFT-15	Right Tilted	0mm	Ant 4	DSI 18	Full	376000	1880	22.69	24.20	1.416	-	n/a	n/a
	FR1 n2	20M	QPSK	50	28	DFT-15	Left Cheek	0mm	Ant 4	DSI 18	Full	376000	1880	22.69	24.20	1.416	-0.05	0.054	0.076
	FR1 n2	20M	QPSK	50	28	DFT-15	Left Tilted	0mm	Ant 4	DSI 18	Full	376000	1880	22.69	24.20	1.416	-	n/a	n/a
	FR1 n25	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 3	DSI 18	Reduced	376500	1882.5	15.35	16.70	1.365	0.06	0.141	0.192
	FR1 n25	40M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 3	DSI 18	Reduced	376500	1882.5	15.35	16.70	1.365	-0.04	0.173	0.236
	FR1 n25	40M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 3	DSI 18	Reduced	376500	1882.5	15.35	16.70	1.365	-0.18	0.088	0.120
	FR1 n25	40M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 3	DSI 18	Reduced	376500	1882.5	15.35	16.70	1.365	0.19	0.108	0.147
	FR1 n25	40M	QPSK	108	54	DFT-15	Right Cheek	0mm	Ant 3	DSI 18	Reduced	376500	1882.5	15.28	16.70	1.387	-0.18	0.136	0.189
20	FR1 n25	40M	QPSK	108	54	DFT-15	Right Tilted	0mm	Ant 3	DSI 18	Reduced	376500	1882.5	15.28	16.70	1.387	0.14	0.183	**0.254**
	FR1 n25	40M	QPSK	108	54	DFT-15	Left Cheek	0mm	Ant 3	DSI 18	Reduced	376500	1882.5	15.28	16.70	1.387	-0.02	0.086	0.119
	FR1 n25	40M	QPSK	108	54	DFT-15	Left Tilted	0mm	Ant 3	DSI 18	Reduced	376500	1882.5	15.28	16.70	1.387	-0.01	0.105	0.146
	FR1 n25	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 4	DSI 18	Full	376500	1882.5	23.01	24.20	1.315	0.17	0.035	0.046
	FR1 n25	40M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 4	DSI 18	Full	376500	1882.5	23.01	24.20	1.315	0.05	0.018	0.023
	FR1 n25	40M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 4	DSI 18	Full	376500	1882.5	23.01	24.20	1.315	0.07	0.024	0.031
	FR1 n25	40M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 4	DSI 18	Full	376500	1882.5	23.01	24.20	1.315	0.08	0.019	0.025
	FR1 n25	40M	QPSK	108	54	DFT-15	Right Cheek	0mm	Ant 4	DSI 18	Full	376500	1882.5	22.85	24.20	1.365	-0.18	0.032	0.044
	FR1 n25	40M	QPSK	108	54	DFT-15	Right Tilted	0mm	Ant 4	DSI 18	Full	376500	1882.5	22.85	24.20	1.365	-0.03	0.016	0.022
	FR1 n25	40M	QPSK	108	54	DFT-15	Left Cheek	0mm	Ant 4	DSI 18	Full	376500	1882.5	22.85	24.20	1.365	-0.04	0.021	0.029
	FR1 n25	40M	QPSK	108	54	DFT-15	Left Tilted	0mm	Ant 4	DSI 18	Full	376500	1882.5	22.85	24.20	1.365	-0.17	0.018	0.025
	FR1 n7	50M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 3	DSI 18	Reduced	507000	2535	15.25	15.70	1.109	-0.19	0.526	0.583
	FR1 n7	50M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 3	DSI 18	Reduced	507000	2535	15.25	15.70	1.109	-0.04	0.591	0.656
	FR1 n7	50M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 3	DSI 18	Reduced	507000	2535	15.25	15.70	1.109	-0.05	0.416	0.461
	FR1 n7	50M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 3	DSI 18	Reduced	507000	2535	15.25	15.70	1.109	0.06	0.508	0.563
	FR1 n7	50M	QPSK	135	68	DFT-15	Right Cheek	0mm	Ant 3	DSI 18	Reduced	507000	2535	15.14	15.70	1.138	0.15	0.502	0.571
21	FR1 n7	50M	QPSK	135	68	DFT-15	Right Tilted	0mm	Ant 3	DSI 18	Reduced	507000	2535	15.14	15.70	1.138	0.05	0.769	**0.875**
	FR1 n7	50M	QPSK	135	68	DFT-15	Left Cheek	0mm	Ant 3	DSI 18	Reduced	507000	2535	15.14	15.70	1.138	0.15	0.416	0.473
	FR1 n7	50M	QPSK	135	68	DFT-15	Left Tilted	0mm	Ant 3	DSI 18	Reduced	507000	2535	15.14	15.70	1.138	-0.06	0.556	0.633
	FR1 n7	50M	QPSK	270	0	DFT-15	Right Tilted	0mm	Ant 3	DSI 18	Reduced	507000	2535	15.11	15.70	1.146	0.05	0.701	0.803
	FR1 n7	50M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 4	DSI 18	Full	507000	2535	22.60	24.20	1.445	-0.02	0.101	0.146
	FR1 n7	50M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 4	DSI 18	Full	507000	2535	22.60	24.20	1.445	-0.16	0.095	0.137
	FR1 n7	50M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 4	DSI 18	Full	507000	2535	22.60	24.20	1.445	-0.17	0.076	0.110
	FR1 n7	50M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 4	DSI 18	Full	507000	2535	22.60	24.20	1.445	-0.05	0.091	0.132
	FR1 n7	50M	QPSK	135	68	DFT-15	Right Cheek	0mm	Ant 4	DSI 18	Full	507000	2535	22.55	24.20	1.462	-0.04	0.104	0.152

	FR1 n7	50M	QPSK	135	68	DFT-15	Right Tilted	0mm	Ant 4	DSI 18	Full	507000	2535	22.55	24.20	1.462	-0.17	0.097	0.142
	FR1 n7	50M	QPSK	135	68	DFT-15	Left Cheek	0mm	Ant 4	DSI 18	Full	507000	2535	22.55	24.20	1.462	-0.18	0.076	0.111
	FR1 n7	50M	QPSK	135	68	DFT-15	Left Tilted	0mm	Ant 4	DSI 18	Full	507000	2535	22.55	24.20	1.462	0.03	0.088	0.129
ENDC																			
	FR1 n7	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 3	DSI 18	Reduced	507000	2535	12.20	13.20	1.259	0.11	0.246	0.310
	FR1 n7	40M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 3	DSI 18	Reduced	507000	2535	12.20	13.20	1.259	-0.07	0.401	0.505
	FR1 n7	40M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 3	DSI 18	Reduced	507000	2535	12.20	13.20	1.259	-0.12	0.189	0.238
	FR1 n7	40M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 3	DSI 18	Reduced	507000	2535	12.20	13.20	1.259	-0.11	0.249	0.313
	FR1 n7	40M	QPSK	108	54	DFT-15	Right Cheek	0mm	Ant 3	DSI 18	Reduced	507000	2535	12.13	13.20	1.279	-0.01	0.239	0.306
	FR1 n7	40M	QPSK	108	54	DFT-15	Right Tilted	0mm	Ant 3	DSI 18	Reduced	507000	2535	12.13	13.20	1.279	-0.09	0.375	0.480
	FR1 n7	40M	QPSK	108	54	DFT-15	Left Cheek	0mm	Ant 3	DSI 18	Reduced	507000	2535	12.13	13.20	1.279	-0.12	0.191	0.244
	FR1 n7	40M	QPSK	108	54	DFT-15	Left Tilted	0mm	Ant 3	DSI 18	Reduced	507000	2535	12.13	13.20	1.279	0.07	0.240	0.307
	FR1 n7	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 6	DSI 18	Reduced	507000	2535	16.33	17.20	1.222	0.04	0.161	0.197
	FR1 n7	40M	QPSK	1	1	DFT-15	Right Tilted	0mm	Ant 6	DSI 18	Reduced	507000	2535	16.33	17.20	1.222	-	n/a	n/a
	FR1 n7	40M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 6	DSI 18	Reduced	507000	2535	16.33	17.20	1.222	0.16	0.119	0.145
	FR1 n7	40M	QPSK	1	1	DFT-15	Left Tilted	0mm	Ant 6	DSI 18	Reduced	507000	2535	16.33	17.20	1.222	-	n/a	n/a
	FR1 n7	40M	QPSK	108	54	DFT-15	Right Cheek	0mm	Ant 6	DSI 18	Reduced	507000	2535	16.25	17.20	1.245	0.12	0.242	0.301
	FR1 n7	40M	QPSK	108	54	DFT-15	Right Tilted	0mm	Ant 6	DSI 18	Reduced	507000	2535	16.25	17.20	1.245	-	n/a	n/a
	FR1 n7	40M	QPSK	108	54	DFT-15	Left Cheek	0mm	Ant 6	DSI 18	Reduced	507000	2535	16.25	17.20	1.245	-0.19	0.170	0.212
	FR1 n7	40M	QPSK	108	54	DFT-15	Left Tilted	0mm	Ant 6	DSI 18	Reduced	507000	2535	16.25	17.20	1.245	-	n/a	n/a
	FR1 n38	30M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 3	DSI 18	Reduced	519000	2595	13.98	15.20	1.324	-0.17	0.292	0.387
	FR1 n38	30M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 3	DSI 18	Reduced	519000	2595	13.98	15.20	1.324	0.12	0.332	0.440
	FR1 n38	30M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 3	DSI 18	Reduced	519000	2595	13.98	15.20	1.324	-0.16	0.249	0.330
	FR1 n38	30M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 3	DSI 18	Reduced	519000	2595	13.98	15.20	1.324	-0.02	0.327	0.433
	FR1 n38	30M	QPSK	36	18	DFT-30	Right Cheek	0mm	Ant 3	DSI 18	Reduced	519000	2595	13.95	15.20	1.334	-0.11	0.289	0.385
22	FR1 n38	30M	QPSK	36	18	DFT-30	Right Tilted	0mm	Ant 3	DSI 18	Reduced	519000	2595	13.95	15.20	1.334	-0.13	0.479	**0.639**
	FR1 n38	30M	QPSK	36	18	DFT-30	Left Cheek	0mm	Ant 3	DSI 18	Reduced	519000	2595	13.95	15.20	1.334	0.04	0.238	0.317
	FR1 n38	30M	QPSK	36	18	DFT-30	Left Tilted	0mm	Ant 3	DSI 18	Reduced	519000	2595	13.95	15.20	1.334	0.15	0.314	0.419
	FR1 n38	30M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 4	DSI 18	Full	519000	2595	23.08	24.20	1.294	-0.18	0.088	0.114
	FR1 n38	30M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 4	DSI 18	Full	519000	2595	23.08	24.20	1.294	0.11	0.068	0.088
	FR1 n38	30M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 4	DSI 18	Full	519000	2595	23.08	24.20	1.294	-0.12	0.070	0.091
	FR1 n38	30M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 4	DSI 18	Full	519000	2595	23.08	24.20	1.294	0.07	0.082	0.106
	FR1 n38	30M	QPSK	36	18	DFT-30	Right Cheek	0mm	Ant 4	DSI 18	Full	519000	2595	22.93	24.20	1.340	-0.15	0.089	0.119
	FR1 n38	30M	QPSK	36	18	DFT-30	Right Tilted	0mm	Ant 4	DSI 18	Full	519000	2595	22.93	24.20	1.340	-0.15	0.068	0.091
	FR1 n38	30M	QPSK	36	18	DFT-30	Left Cheek	0mm	Ant 4	DSI 18	Full	519000	2595	22.93	24.20	1.340	0.1	0.071	0.095
	FR1 n38	30M	QPSK	36	18	DFT-30	Left Tilted	0mm	Ant 4	DSI 18	Full	519000	2595	22.93	24.20	1.340	-0.15	0.083	0.111
	FR1 n41	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 3	DSI 18	Reduced	518598	2592.99	13.99	15.20	1.321	0.16	0.403	0.532
23	FR1 n41	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 3	DSI 18	Reduced	518598	2592.99	13.99	15.20	1.321	-0.08	0.646	**0.854**
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 3	DSI 18	Reduced	518598	2592.99	13.99	15.20	1.321	-0.07	0.316	0.418
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 3	DSI 18	Reduced	518598	2592.99	13.99	15.20	1.321	-0.08	0.451	0.596
	FR1 n41	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 3	DSI 18	Reduced	518598	2592.99	13.89	15.20	1.352	0.18	0.349	0.472
	FR1 n41	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 3	DSI 18	Reduced	518598	2592.99	13.89	15.20	1.352	-0.17	0.523	0.707
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 3	DSI 18	Reduced	518598	2592.99	13.89	15.20	1.352	0.12	0.297	0.402
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 3	DSI 18	Reduced	518598	2592.99	13.89	15.20	1.352	0.17	0.399	0.539
	FR1 n41	100M	QPSK	270	0	DFT-30	Right Tilted	0mm	Ant 3	DSI 18	Reduced	518598	2592.99	13.83	15.20	1.371	-0.15	0.495	0.679
	FR1 n41	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 4	DSI 18	Full	518598	2592.99	23.12	24.20	1.282	-0.14	0.098	0.126
	FR1 n41	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 4	DSI 18	Full	518598	2592.99	23.12	24.20	1.282	-0.16	0.056	0.072
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 4	DSI 18	Full	518598	2592.99	23.12	24.20	1.282	-0.07	0.077	0.099
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 4	DSI 18	Full	518598	2592.99	23.12	24.20	1.282	-0.03	0.085	0.109
	FR1 n41	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 4	DSI 18	Full	518598	2592.99	22.78	24.20	1.387	-0.12	0.095	0.132
	FR1 n41	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 4	DSI 18	Full	518598	2592.99	22.78	24.20	1.387	-0.12	0.066	0.092
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 4	DSI 18	Full	518598	2592.99	22.78	24.20	1.387	0.02	0.071	0.098
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 4	DSI 18	Full	518598	2592.99	22.78	24.20	1.387	-0.12	0.088	0.122
	FR1 n41_MIMO	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 3	DSI 18	Reduced	518598	2592.99	13.99	15.20	1.321	0.16	0.403	0.532
	FR1 n41_MIMO	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 3	DSI 18	Reduced	518598	2592.99	13.99	15.20	1.321	-0.08	0.646	0.854
	FR1 n41_MIMO	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 3	DSI 18	Reduced	518598	2592.99	13.99	15.20	1.321	-0.07	0.316	0.418

	FR1 n41_MIMO	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 3	DSI 18	Reduced	518598	2592.99	13.99	15.20	1.321	-0.08	0.451	0.596
	FR1 n41_MIMO	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 3	DSI 18	Reduced	518598	2592.99	13.89	15.20	1.352	0.18	0.349	0.472
	FR1 n41_MIMO	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 3	DSI 18	Reduced	518598	2592.99	13.89	15.20	1.352	-0.17	0.523	0.707
	FR1 n41_MIMO	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 3	DSI 18	Reduced	518598	2592.99	13.89	15.20	1.352	0.12	0.297	0.402
	FR1 n41_MIMO	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 3	DSI 18	Reduced	518598	2592.99	13.89	15.20	1.352	0.17	0.399	0.539
	FR1 n41_MIMO	100M	QPSK	270	0	DFT-30	Right Tilted	0mm	Ant 3	DSI 18	Reduced	518598	2592.99	13.83	15.20	1.371	-0.15	0.495	0.679
	FR1 n41_MIMO	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 4	DSI 18	Reduced	518598	2592.99	17.15	18.20	1.274	0.04	0.025	0.032
	FR1 n41_MIMO	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 4	DSI 18	Reduced	518598	2592.99	17.15	18.20	1.274	0.02	0.011	0.014
	FR1 n41_MIMO	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 4	DSI 18	Reduced	518598	2592.99	17.15	18.20	1.274	0.01	0.016	0.020
	FR1 n41_MIMO	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 4	DSI 18	Reduced	518598	2592.99	17.15	18.20	1.274	0.09	0.017	0.022
	FR1 n41_MIMO	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 4	DSI 18	Reduced	518598	2592.99	16.92	18.20	1.343	-0.02	0.026	0.035
	FR1 n41_MIMO	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 4	DSI 18	Reduced	518598	2592.99	16.92	18.20	1.343	-0.09	0.014	0.019
	FR1 n41_MIMO	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 4	DSI 18	Reduced	518598	2592.99	16.92	18.20	1.343	0.03	0.017	0.023
	FR1 n41_MIMO	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 4	DSI 18	Reduced	518598	2592.99	16.92	18.20	1.343	0.11	0.019	0.026
	FR1 n41_MIMO	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 5	DSI 18	Reduced	518598	2592.99	11.84	13.20	1.368	-0.04	0.326	0.446
	FR1 n41_MIMO	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 5	DSI 18	Reduced	518598	2592.99	11.84	13.20	1.368	-0.15	0.188	0.257
	FR1 n41_MIMO	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 5	DSI 18	Reduced	518598	2592.99	11.84	13.20	1.368	0.14	0.079	0.108
	FR1 n41_MIMO	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 5	DSI 18	Reduced	518598	2592.99	11.84	13.20	1.368	0.09	0.052	0.071
	FR1 n41_MIMO	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 5	DSI 18	Reduced	518598	2592.99	11.75	13.20	1.396	-0.11	0.336	0.469
	FR1 n41_MIMO	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 5	DSI 18	Reduced	518598	2592.99	11.75	13.20	1.396	0.05	0.198	0.276
	FR1 n41_MIMO	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 5	DSI 18	Reduced	518598	2592.99	11.75	13.20	1.396	0.14	0.085	0.119
	FR1 n41_MIMO	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 5	DSI 18	Reduced	518598	2592.99	11.75	13.20	1.396	0.02	0.055	0.077
ENDC																			
	FR1 n41	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 5	DSI 18	Reduced	518598	2592.99	12.46	13.70	1.330	-0.07	0.201	0.267
	FR1 n41	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 5	DSI 18	Reduced	518598	2592.99	12.46	13.70	1.330	0.17	0.071	0.094
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 5	DSI 18	Reduced	518598	2592.99	12.46	13.70	1.330	-0.06	0.048	0.064
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 5	DSI 18	Reduced	518598	2592.99	12.46	13.70	1.330	-	n/a	n/a
	FR1 n41	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 5	DSI 18	Reduced	518598	2592.99	12.37	13.70	1.358	0.18	0.241	0.327
	FR1 n41	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 5	DSI 18	Reduced	518598	2592.99	12.37	13.70	1.358	-0.08	0.083	0.113
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 5	DSI 18	Reduced	518598	2592.99	12.37	13.70	1.358	-0.18	0.057	0.077
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 5	DSI 18	Reduced	518598	2592.99	12.37	13.70	1.358	-	n/a	n/a

<WLAN2.4G SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power Reduction	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	Right Cheek	0mm	Ant 7	Standalone	6	2437	15.50	16.00	1.122	100	1.000	-0.05	0.451	0.506
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 7	Standalone	6	2437	15.50	16.00	1.122	100	1.000	0.01	0.546	0.613
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 7	Standalone	6	2437	15.50	16.00	1.122	100	1.000	-0.16	0.591	0.663
24	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 7	Standalone	6	2437	15.50	16.00	1.122	100	1.000	0.08	0.677	**0.760**
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 7	Simultaneous	6	2437	10.00	10.50	1.122	100	1.000	0.12	0.085	0.095
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 7	Simultaneous	6	2437	10.00	10.50	1.122	100	1.000	0.13	0.079	0.089
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 7	Simultaneous	6	2437	10.00	10.50	1.122	100	1.000	0.14	0.149	0.167
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 7	Simultaneous	6	2437	10.00	10.50	1.122	100	1.000	-0.03	0.189	0.212
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 6	Standalone	6	2437	15.70	16.00	1.072	100	1.000	0.18	0.125	0.134
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 6	Standalone	6	2437	15.70	16.00	1.072	100	1.000	-	n/a	n/a
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 6	Standalone	6	2437	15.70	16.00	1.072	100	1.000	-0.05	0.104	0.111
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 6	Standalone	6	2437	15.70	16.00	1.072	100	1.000	-	n/a	n/a

<WLAN5G SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power Reduction	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)
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 8	Standalone	58	5290	14.55	15.00	1.109	100	1.000	0.08	0.289	0.321
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 8	Standalone	58	5290	14.55	15.00	1.109	100	1.000	0.14	0.284	0.315
25	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 8	Standalone	58	5290	14.55	15.00	1.109	100	1.000	0.11	0.915	**1.015**
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 8	Standalone	58	5290	14.55	15.00	1.109	100	1.000	-0.15	0.542	0.601
	WLAN5.3GHz	802.11ac-VHT160 MCS0	Right Cheek	0mm	Ant 8	Simultaneous	50	5250	8.03	8.50	1.114	100	1.000	-0.18	0.067	0.075
	WLAN5.3GHz	802.11ac-VHT160 MCS0	Right Tilted	0mm	Ant 8	Simultaneous	50	5250	8.03	8.50	1.114	100	1.000	-0.09	0.068	0.076
	WLAN5.3GHz	802.11ac-VHT160 MCS0	Left Cheek	0mm	Ant 8	Simultaneous	50	5250	8.03	8.50	1.114	100	1.000	0.14	0.201	0.224
	WLAN5.3GHz	802.11ac-VHT160 MCS0	Left Tilted	0mm	Ant 8	Simultaneous	50	5250	8.03	8.50	1.114	100	1.000	-0.11	0.120	0.134
	WLAN5.3GHz	802.11a 6Mbps	Right Cheek	0mm	Ant 10	Standalone	60	5300	16.32	17.50	1.312	99.04	1.010	-0.08	0.185	0.245
	WLAN5.3GHz	802.11a 6Mbps	Right Tilted	0mm	Ant 10	Standalone	60	5300	16.32	17.50	1.312	99.04	1.010	0.02	0.047	0.062
	WLAN5.3GHz	802.11a 6Mbps	Left Cheek	0mm	Ant 10	Standalone	60	5300	16.32	17.50	1.312	99.04	1.010	-0.03	0.064	0.085
	WLAN5.3GHz	802.11a 6Mbps	Left Tilted	0mm	Ant 10	Standalone	60	5300	16.32	17.50	1.312	99.04	1.010	0.01	0.068	0.090
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 10	Simultaneous	58	5290	14.25	15.50	1.334	100	1.000	0.03	0.102	0.136
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 10	Simultaneous	58	5290	14.25	15.50	1.334	100	1.000	-	n/a	n/a
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 10	Simultaneous	58	5290	14.25	15.50	1.334	100	1.000	-0.09	0.082	0.109
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 10	Simultaneous	58	5290	14.25	15.50	1.334	100	1.000	0.03	0.075	0.100
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 8	Standalone	106	5530	14.35	15.00	1.161	100	1.000	-0.08	0.313	0.364
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 8	Standalone	106	5530	14.35	15.00	1.161	100	1.000	0.05	0.290	0.337
26	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 8	Standalone	106	5530	14.35	15.00	1.161	100	1.000	-0.18	1.010	**1.173**
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 8	Standalone	106	5530	14.35	15.00	1.161	100	1.000	-0.03	0.581	0.675
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 8	Standalone	122	5610	14.23	15.00	1.194	100	1.000	0.01	0.543	0.648
	WLAN5.5GHz	802.11ac-VHT160 MCS0	Right Cheek	0mm	Ant 8	Simultaneous	114	5570	8.42	9.00	1.143	100	1.000	-0.03	0.070	0.080
	WLAN5.5GHz	802.11ac-VHT160 MCS0	Right Tilted	0mm	Ant 8	Simultaneous	114	5570	8.42	9.00	1.143	100	1.000	0.15	0.062	0.071
	WLAN5.5GHz	802.11ac-VHT160 MCS0	Left Cheek	0mm	Ant 8	Simultaneous	114	5570	8.42	9.00	1.143	100	1.000	0.01	0.182	0.208
	WLAN5.5GHz	802.11ac-VHT160 MCS0	Left Tilted	0mm	Ant 8	Simultaneous	114	5570	8.42	9.00	1.143	100	1.000	0.1	0.132	0.151
	WLAN5.5GHz	802.11a 6Mbps	Right Cheek	0mm	Ant 10	Full	100	5500	16.43	17.50	1.279	99.04	1.010	0.19	0.180	0.232
	WLAN5.5GHz	802.11a 6Mbps	Right Tilted	0mm	Ant 10	Full	100	5500	16.43	17.50	1.279	99.04	1.010	0.14	0.123	0.159
	WLAN5.5GHz	802.11a 6Mbps	Left Cheek	0mm	Ant 10	Full	100	5500	16.43	17.50	1.279	99.04	1.010	-0.04	0.093	0.120
	WLAN5.5GHz	802.11a 6Mbps	Left Tilted	0mm	Ant 10	Full	100	5500	16.43	17.50	1.279	99.04	1.010	-0.09	0.068	0.088
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 8	Standalone	155	5775	15.31	15.50	1.045	100	1.000	0.12	0.242	0.253
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 8	Standalone	155	5775	15.31	15.50	1.045	100	1.000	0.1	0.203	0.212
27	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 8	Standalone	155	5775	15.31	15.50	1.045	100	1.000	-0.03	0.993	**1.037**
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 8	Standalone	155	5775	15.31	15.50	1.045	100	1.000	-0.16	0.475	0.496
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 8	Simultaneous	155	5775	8.42	8.50	1.019	100	1.000	0.15	0.088	0.090

	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 8	Simultaneous	155	5775	8.42	8.50	1.019	100	1.000	-0.15	0.076	0.077
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 8	Simultaneous	155	5775	8.42	8.50	1.019	100	1.000	-0.02	0.198	0.202
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 8	Simultaneous	155	5775	8.42	8.50	1.019	100	1.000	-0.04	0.096	0.098
	WLAN5.8GHz	802.11a 6Mbps	Right Cheek	0mm	Ant 10	Full	149	5745	16.21	17.50	1.345	99.04	1.010	-0.16	0.321	0.436
	WLAN5.8GHz	802.11a 6Mbps	Right Tilted	0mm	Ant 10	Full	149	5745	16.21	17.50	1.345	99.04	1.010	0.18	0.068	0.092
	WLAN5.8GHz	802.11a 6Mbps	Left Cheek	0mm	Ant 10	Full	149	5745	16.21	17.50	1.345	99.04	1.010	-0.19	0.110	0.149
	WLAN5.8GHz	802.11a 6Mbps	Left Tilted	0mm	Ant 10	Full	149	5745	16.21	17.50	1.345	99.04	1.010	0.18	0.058	0.079
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 10	Simultaneous	155	5775	13.74	14.50	1.191	100	1.000	-0.04	0.171	0.204
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 10	Simultaneous	155	5775	13.74	14.50	1.191	100	1.000	-0.18	0.070	0.083
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 10	Simultaneous	155	5775	13.74	14.50	1.191	100	1.000	0.03	0.096	0.114
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 10	Simultaneous	155	5775	13.74	14.50	1.191	100	1.000	0.13	0.058	0.069

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power Reduction	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)
	Bluetooth	DH5 1Mbps	Right Cheek	0mm	Ant 7	Full	0	2402	15.10	16.50	1.380	76.87	1.301	0.01	0.358	0.643
	Bluetooth	DH5 1Mbps	Right Tilted	0mm	Ant 7	Full	0	2402	15.10	16.50	1.380	76.87	1.301	0.03	0.356	0.639
	Bluetooth	DH5 1Mbps	Left Cheek	0mm	Ant 7	Full	0	2402	15.10	16.50	1.380	76.87	1.301	0.09	0.457	0.821
	Bluetooth	DH5 1Mbps	Left Tilted	0mm	Ant 7	Full	0	2402	15.10	16.50	1.380	76.87	1.301	-0.05	0.422	0.758
	Bluetooth	DH5 1Mbps	Left Cheek	0mm	Ant 7	Full	39	2441	14.70	16.50	1.514	76.87	1.301	0.06	0.442	0.870
28	Bluetooth	DH5 1Mbps	Left Cheek	0mm	Ant 7	Full	78	2480	14.70	16.50	1.514	76.87	1.301	0.02	0.443	**0.872**
	Bluetooth	DH5 1Mbps	Right Cheek	0mm	Ant 7	Simultaneous	0	2402	5.60	7.00	1.380	76.87	1.301	-0.12	0.055	0.098
	Bluetooth	DH5 1Mbps	Right Tilted	0mm	Ant 7	Simultaneous	0	2402	5.60	7.00	1.380	76.87	1.301	-0.09	0.041	0.074
	Bluetooth	DH5 1Mbps	Left Cheek	0mm	Ant 7	Simultaneous	0	2402	5.60	7.00	1.380	76.87	1.301	-0.07	0.085	0.153
	Bluetooth	DH5 1Mbps	Left Tilted	0mm	Ant 7	Simultaneous	0	2402	5.60	7.00	1.380	76.87	1.301	0.16	0.061	0.110

16.2 Hotspot SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Power Reduction	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(3 Tx slots)	Front	10mm	Ant 0	DSI 17	Full	189	836.4	29.34	30.50	1.306	0.1	0.257	0.336
	GSM850	GPRS(3 Tx slots)	Back	10mm	Ant 0	DSI 17	Full	189	836.4	29.34	30.50	1.306	-0.07	0.339	0.443
	GSM850	GPRS(3 Tx slots)	Left Side	10mm	Ant 0	DSI 17	Full	189	836.4	29.34	30.50	1.306	0.1	0.702	0.917
	GSM850	GPRS(3 Tx slots)	Top Side	10mm	Ant 0	DSI 17	Full	189	836.4	29.34	30.50	1.306	-0.04	0.012	0.015
29	GSM850	GPRS(3 Tx slots)	Left Side	10mm	Ant 0	DSI 17	Full	128	824.2	28.76	30.50	1.493	0.16	0.655	**0.978**
	GSM850	GPRS(3 Tx slots)	Left Side	10mm	Ant 0	DSI 17	Full	251	848.8	29.18	30.50	1.355	-0.16	0.611	0.828
	GSM850	DTM Multi-slot class 11	Left Side	10mm	Ant 0	DSI 17	Full	128	824.2	23.36	26.24	1.941	0.05	0.450	0.873
	GSM850	GPRS(3 Tx slots)	Front	10mm	Ant 1	DSI 17	Full	189	836.4	29.41	30.50	1.285	0.02	0.422	0.542
	GSM850	GPRS(3 Tx slots)	Back	10mm	Ant 1	DSI 17	Full	189	836.4	29.41	30.50	1.285	0.1	0.512	0.658
	GSM850	DTM Multi-slot class 11	Back	10mm	Ant 1	DSI 17	Full	189	836.4	24.95	26.24	1.346	-0.08	0.371	0.499
	GSM850	GPRS(3 Tx slots)	Left Side	10mm	Ant 1	DSI 17	Full	189	836.4	29.41	30.50	1.285	0.19	0.080	0.103
	GSM850	GPRS(3 Tx slots)	Right Side	10mm	Ant 1	DSI 17	Full	189	836.4	29.41	30.50	1.285	-0.1	0.180	0.231
	GSM850	GPRS(3 Tx slots)	Bottom Side	10mm	Ant 1	DSI 17	Full	189	836.4	29.41	30.50	1.285	0.06	0.295	0.379
	GSM1900	GPRS(4 Tx slots)	Front	10mm	Ant 3	DSI 17	Full	512	1850.2	24.56	25.00	1.107	-0.12	0.649	0.718
	GSM1900	GPRS(4 Tx slots)	Back	10mm	Ant 3	DSI 17	Full	512	1850.2	24.56	25.00	1.107	0.14	0.523	0.579
	GSM1900	GPRS(4 Tx slots)	Left Side	10mm	Ant 3	DSI 17	Full	512	1850.2	24.56	25.00	1.107	0.06	0.092	0.102
30	GSM1900	GPRS(4 Tx slots)	Top Side	10mm	Ant 3	DSI 17	Full	512	1850.2	24.56	25.00	1.107	-0.17	0.848	**0.938**
	GSM1900	GPRS(4 Tx slots)	Top Side	10mm	Ant 3	DSI 17	Full	661	1880	24.39	25.00	1.151	0.17	0.742	0.854
	GSM1900	GPRS(4 Tx slots)	Top Side	10mm	Ant 3	DSI 17	Full	810	1909.8	23.99	25.00	1.262	0.16	0.625	0.789
	GSM1900	DTM Multi-slot class 11	Top Side	10mm	Ant 3	DSI 17	Full	512	1850.2	21.62	21.96	1.081	0.08	0.679	0.734
	GSM1900	GPRS(4 Tx slots)	Front	10mm	Ant 4	DSI 17	Full	512	1850.2	25.54	26.00	1.112	-0.07	0.202	0.225
	GSM1900	GPRS(4 Tx slots)	Back	10mm	Ant 4	DSI 17	Full	512	1850.2	25.54	26.00	1.112	-0.09	0.254	0.282
	GSM1900	GPRS(4 Tx slots)	Right Side	10mm	Ant 4	DSI 17	Full	512	1850.2	25.54	26.00	1.112	-0.02	0.145	0.161
	GSM1900	GPRS(4 Tx slots)	Bottom Side	10mm	Ant 4	DSI 17	Full	512	1850.2	25.54	26.00	1.112	-0.11	0.531	0.590
	GSM1900	DTM Multi-slot class 11	Bottom Side	10mm	Ant 4	DSI 17	Full	512	1850.2	22.39	22.74	1.084	0.03	0.378	0.410

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Power Reduction	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 V	RMC 12.2Kbps	Front	10mm	Ant 0	DSI 17	Full	4182	836.4	24.27	25.00	1.183	-0.02	0.306	0.362
	WCDMA V	RMC 12.2Kbps	Back	10mm	Ant 0	DSI 17	Full	4182	836.4	24.27	25.00	1.183	0.15	0.385	0.455
31	WCDMA V	RMC 12.2Kbps	Left Side	10mm	Ant 0	DSI 17	Full	4182	836.4	24.27	25.00	1.183	-0.03	0.687	**0.813**
	WCDMA V	RMC 12.2Kbps	Top Side	10mm	Ant 0	DSI 17	Full	4182	836.4	24.27	25.00	1.183	-0.16	0.012	0.014
	WCDMA V	RMC 12.2Kbps	Left Side	10mm	Ant 0	DSI 17	Full	4132	826.4	24.24	25.00	1.191	-0.11	0.652	0.777
	WCDMA V	RMC 12.2Kbps	Left Side	10mm	Ant 0	DSI 17	Full	4233	846.6	24.21	25.00	1.199	0.14	0.646	0.775
	WCDMA V	RMC 12.2Kbps	Front	10mm	Ant 1	DSI 17	Full	4182	836.4	24.36	25.00	1.159	0.01	0.337	0.391
	WCDMA V	RMC 12.2Kbps	Back	10mm	Ant 1	DSI 17	Full	4182	836.4	24.36	25.00	1.159	0.08	0.397	0.460
	WCDMA V	RMC 12.2Kbps	Left Side	10mm	Ant 1	DSI 17	Full	4182	836.4	24.36	25.00	1.159	0.15	0.081	0.094
	WCDMA V	RMC 12.2Kbps	Right Side	10mm	Ant 1	DSI 17	Full	4182	836.4	24.36	25.00	1.159	-0.04	0.159	0.184
	WCDMA V	RMC 12.2Kbps	Bottom Side	10mm	Ant 1	DSI 17	Full	4182	836.4	24.36	25.00	1.159	-0.11	0.246	0.285
	WCDMA IV	RMC 12.2Kbps	Front	10mm	Ant 3	DSI 17	Reduced	1413	1732.6	19.91	20.50	1.146	0.12	0.607	0.695
	WCDMA IV	RMC 12.2Kbps	Back	10mm	Ant 3	DSI 17	Reduced	1413	1732.6	19.91	20.50	1.146	-0.1	0.394	0.451
	WCDMA IV	RMC 12.2Kbps	Left Side	10mm	Ant 3	DSI 17	Reduced	1413	1732.6	19.91	20.50	1.146	0.13	0.118	0.135
	WCDMA IV	RMC 12.2Kbps	Top Side	10mm	Ant 3	DSI 17	Reduced	1413	1732.6	19.91	20.50	1.146	-0.18	0.647	0.741
	WCDMA IV	RMC 12.2Kbps	Front	10mm	Ant 4	DSI 17	Reduced	1413	1732.6	21.56	22.00	1.107	0.08	0.393	0.435
	WCDMA IV	RMC 12.2Kbps	Back	10mm	Ant 4	DSI 17	Reduced	1413	1732.6	21.56	22.00	1.107	0.13	0.415	0.459
	WCDMA IV	RMC 12.2Kbps	Right Side	10mm	Ant 4	DSI 17	Reduced	1413	1732.6	21.56	22.00	1.107	0.03	0.178	0.197
32	WCDMA IV	RMC 12.2Kbps	Bottom Side	10mm	Ant 4	DSI 17	Reduced	1413	1732.6	21.56	22.00	1.107	-0.07	0.762	**0.843**
	WCDMA IV	RMC 12.2Kbps	Bottom Side	10mm	Ant 4	DSI 17	Reduced	1312	1712.4	21.36	22.00	1.159	-0.09	0.711	0.824
	WCDMA IV	RMC 12.2Kbps	Bottom Side	10mm	Ant 4	DSI 17	Reduced	1513	1752.6	21.35	22.00	1.161	0.14	0.711	0.826
	WCDMA II	RMC 12.2Kbps	Front	10mm	Ant 3	DSI 17	Reduced	9400	1880	19.76	20.50	1.186	0.03	0.548	0.650
	WCDMA II	RMC 12.2Kbps	Back	10mm	Ant 3	DSI 17	Reduced	9400	1880	19.76	20.50	1.186	0.14	0.388	0.460
	WCDMA II	RMC 12.2Kbps	Left Side	10mm	Ant 3	DSI 17	Reduced	9400	1880	19.76	20.50	1.186	-0.09	0.105	0.125
33	WCDMA II	RMC 12.2Kbps	Top Side	10mm	Ant 3	DSI 17	Reduced	9400	1880	19.76	20.50	1.186	0.05	0.623	**0.739**
	WCDMA II	RMC 12.2Kbps	Front	10mm	Ant 4	DSI 17	Reduced	9400	1880	21.89	22.00	1.026	-0.06	0.266	0.273
	WCDMA II	RMC 12.2Kbps	Back	10mm	Ant 4	DSI 17	Reduced	9400	1880	21.89	22.00	1.026	0.19	0.322	0.330
	WCDMA II	RMC 12.2Kbps	Right Side	10mm	Ant 4	DSI 17	Reduced	9400	1880	21.89	22.00	1.026	-0.04	0.163	0.167
	WCDMA II	RMC 12.2Kbps	Bottom Side	10mm	Ant 4	DSI 17	Reduced	9400	1880	21.89	22.00	1.026	0.17	0.607	0.623

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna	Power State	Power Reduction	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 12	10M	QPSK	1	0	Front	10mm	Ant 0	DSI 17	Reduced	23095	707.5	23.58	24.50	1.236	-0.03	0.251	0.310
	LTE Band 12	10M	QPSK	1	0	Back	10mm	Ant 0	DSI 17	Reduced	23095	707.5	23.58	24.50	1.236	-0.05	0.356	0.440
34	LTE Band 12	10M	QPSK	1	0	Left Side	10mm	Ant 0	DSI 17	Reduced	23095	707.5	23.58	24.50	1.236	0.14	0.681	**0.842**
	LTE Band 12	10M	QPSK	1	0	Top Side	10mm	Ant 0	DSI 17	Reduced	23095	707.5	23.58	24.50	1.236	-0.03	0.008	0.009
	LTE Band 12	10M	QPSK	25	0	Front	10mm	Ant 0	DSI 17	Reduced	23095	707.5	22.96	24.00	1.271	-0.15	0.236	0.300
	LTE Band 12	10M	QPSK	25	0	Back	10mm	Ant 0	DSI 17	Reduced	23095	707.5	22.96	24.00	1.271	-0.17	0.308	0.391
	LTE Band 12	10M	QPSK	25	0	Left Side	10mm	Ant 0	DSI 17	Reduced	23095	707.5	22.96	24.00	1.271	0.07	0.563	0.715
	LTE Band 12	10M	QPSK	25	0	Top Side	10mm	Ant 0	DSI 17	Reduced	23095	707.5	22.96	24.00	1.271	-0.05	0.007	0.009
	LTE Band 12	10M	QPSK	50	0	Left Side	10mm	Ant 0	DSI 17	Reduced	23095	707.5	22.89	24.00	1.291	0.12	0.511	0.660
	LTE Band 12	10M	QPSK	1	0	Front	10mm	Ant 1	DSI 17	Full	23095	707.5	24.24	25.00	1.191	-0.11	0.268	0.319
	LTE Band 12	10M	QPSK	1	0	Back	10mm	Ant 1	DSI 17	Full	23095	707.5	24.24	25.00	1.191	0.1	0.329	0.392
	LTE Band 12	10M	QPSK	1	0	Left Side	10mm	Ant 1	DSI 17	Full	23095	707.5	24.24	25.00	1.191	0.17	0.110	0.131
	LTE Band 12	10M	QPSK	1	0	Right Side	10mm	Ant 1	DSI 17	Full	23095	707.5	24.24	25.00	1.191	0.01	0.230	0.274
	LTE Band 12	10M	QPSK	1	0	Bottom Side	10mm	Ant 1	DSI 17	Full	23095	707.5	24.24	25.00	1.191	-0.08	0.172	0.205
	LTE Band 12	10M	QPSK	25	0	Front	10mm	Ant 1	DSI 17	Full	23095	707.5	23.18	24.00	1.208	-0.04	0.218	0.263
	LTE Band 12	10M	QPSK	25	0	Back	10mm	Ant 1	DSI 17	Full	23095	707.5	23.18	24.00	1.208	-0.17	0.248	0.300
	LTE Band 12	10M	QPSK	25	0	Left Side	10mm	Ant 1	DSI 17	Full	23095	707.5	23.18	24.00	1.208	-0.03	0.086	0.104
	LTE Band 12	10M	QPSK	25	0	Right Side	10mm	Ant 1	DSI 17	Full	23095	707.5	23.18	24.00	1.208	-0.1	0.183	0.221
	LTE Band 12	10M	QPSK	25	0	Bottom Side	10mm	Ant 1	DSI 17	Full	23095	707.5	23.18	24.00	1.208	-0.03	0.139	0.168
	LTE Band 13	10M	QPSK	1	0	Front	10mm	Ant 0	DSI 17	Full	23230	782	23.04	24.00	1.247	-0.06	0.221	0.276
	LTE Band 13	10M	QPSK	1	0	Back	10mm	Ant 0	DSI 17	Full	23230	782	23.04	24.00	1.247	-0.16	0.342	0.427
35	LTE Band 13	10M	QPSK	1	0	Left Side	10mm	Ant 0	DSI 17	Full	23230	782	23.04	24.00	1.247	-0.06	0.557	**0.695**
	LTE Band 13	10M	QPSK	1	0	Top Side	10mm	Ant 0	DSI 17	Full	23230	782	23.04	24.00	1.247	0.18	0.010	0.012
	LTE Band 13	10M	QPSK	25	0	Front	10mm	Ant 0	DSI 17	Full	23230	782	22.02	23.00	1.253	-0.06	0.174	0.218
	LTE Band 13	10M	QPSK	25	0	Back	10mm	Ant 0	DSI 17	Full	23230	782	22.02	23.00	1.253	0.12	0.219	0.274
	LTE Band 13	10M	QPSK	25	0	Left Side	10mm	Ant 0	DSI 17	Full	23230	782	22.02	23.00	1.253	0.06	0.363	0.455
	LTE Band 13	10M	QPSK	25	0	Top Side	10mm	Ant 0	DSI 17	Full	23230	782	22.02	23.00	1.253	0.12	0.007	0.009
	LTE Band 13	10M	QPSK	1	0	Front	10mm	Ant 1	DSI 17	Full	23230	782	23.31	24.00	1.172	-0.19	0.194	0.227
	LTE Band 13	10M	QPSK	1	0	Back	10mm	Ant 1	DSI 17	Full	23230	782	23.31	24.00	1.172	0.02	0.248	0.291
	LTE Band 13	10M	QPSK	1	0	Left Side	10mm	Ant 1	DSI 17	Full	23230	782	23.31	24.00	1.172	0.12	0.049	0.057
	LTE Band 13	10M	QPSK	1	0	Right Side	10mm	Ant 1	DSI 17	Full	23230	782	23.31	24.00	1.172	0.1	0.109	0.128
	LTE Band 13	10M	QPSK	1	0	Bottom Side	10mm	Ant 1	DSI 17	Full	23230	782	23.31	24.00	1.172	-0.11	0.134	0.157
	LTE Band 13	10M	QPSK	25	0	Front	10mm	Ant 1	DSI 17	Full	23230	782	22.19	23.00	1.205	0.11	0.150	0.181
	LTE Band 13	10M	QPSK	25	0	Back	10mm	Ant 1	DSI 17	Full	23230	782	22.19	23.00	1.205	0.15	0.183	0.221
	LTE Band 13	10M	QPSK	25	0	Left Side	10mm	Ant 1	DSI 17	Full	23230	782	22.19	23.00	1.205	-0.13	0.038	0.046
	LTE Band 13	10M	QPSK	25	0	Right Side	10mm	Ant 1	DSI 17	Full	23230	782	22.19	23.00	1.205	0.19	0.082	0.099
	LTE Band 13	10M	QPSK	25	0	Bottom Side	10mm	Ant 1	DSI 17	Full	23230	782	22.19	23.00	1.205	-0.1	0.105	0.127
	LTE Band 26	15M	QPSK	1	0	Front	10mm	Ant 0	DSI 17	Full	26865	831.5	23.86	25.00	1.300	-0.19	0.257	0.334
	LTE Band 26	15M	QPSK	1	0	Back	10mm	Ant 0	DSI 17	Full	26865	831.5	23.86	25.00	1.300	-0.05	0.352	0.458
36	LTE Band 26	15M	QPSK	1	0	Left Side	10mm	Ant 0	DSI 17	Full	26865	831.5	23.86	25.00	1.300	0.11	0.614	**0.798**
	LTE Band 26	15M	QPSK	1	0	Top Side	10mm	Ant 0	DSI 17	Full	26865	831.5	23.86	25.00	1.300	0.15	0.011	0.014
	LTE Band 26	15M	QPSK	36	0	Front	10mm	Ant 0	DSI 17	Full	26865	831.5	22.98	24.00	1.265	-0.01	0.214	0.271
	LTE Band 26	15M	QPSK	36	0	Back	10mm	Ant 0	DSI 17	Full	26865	831.5	22.98	24.00	1.265	-0.03	0.263	0.333
	LTE Band 26	15M	QPSK	36	0	Left Side	10mm	Ant 0	DSI 17	Full	26865	831.5	22.98	24.00	1.265	-0.03	0.537	0.679
	LTE Band 26	15M	QPSK	36	0	Top Side	10mm	Ant 0	DSI 17	Full	26865	831.5	22.98	24.00	1.265	0.01	0.009	0.011
	LTE Band 26	15M	QPSK	1	0	Front	10mm	Ant 1	DSI 17	Full	26865	831.5	24.22	25.00	1.197	0.1	0.298	0.357
	LTE Band 26	15M	QPSK	1	0	Back	10mm	Ant 1	DSI 17	Full	26865	831.5	24.22	25.00	1.197	-0.05	0.427	0.511
	LTE Band 26	15M	QPSK	1	0	Left Side	10mm	Ant 1	DSI 17	Full	26865	831.5	24.22	25.00	1.197	-0.05	0.076	0.091
	LTE Band 26	15M	QPSK	1	0	Right Side	10mm	Ant 1	DSI 17	Full	26865	831.5	24.22	25.00	1.197	0.04	0.159	0.190
	LTE Band 26	15M	QPSK	1	0	Bottom Side	10mm	Ant 1	DSI 17	Full	26865	831.5	24.22	25.00	1.197	-0.1	0.219	0.262
	LTE Band 26	15M	QPSK	36	0	Front	10mm	Ant 1	DSI 17	Full	26865	831.5	23.25	24.00	1.189	-0.13	0.245	0.291
	LTE Band 26	15M	QPSK	36	0	Back	10mm	Ant 1	DSI 17	Full	26865	831.5	23.25	24.00	1.189	0.19	0.318	0.378