FCC SAR Test Report

APPLICANT	:	Motorola Mobility LLC
EQUIPMENT	:	Mobile Cellular Phone
BRAND NAME	:	Motorola
MODEL NAME	:	XT2143-1
FCC ID	:	IHDT56ZP3
STANDARD	:	FCC 47 CFR Part 2 (2.1093)

We, Sporton International (ShenZhen) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures 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 (ShenZhen) Inc., the test report shall not be reproduced except in full.

Hank Huang

Reviewed by: Hank Huang / Supervisor

Johnny Chen

Approved by: Johnny Chen / Manager

ilac-MRA ACCREDITED Cert #5145.01

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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA151701	Rev. 01	Initial issue of report.	Jul. 02, 2021
FA151701	Rev. 02	Updated the power and tune up of GSM850 ant0 EDGE DSI3.	Jul. 08, 2021
FA151701	Rev. 03	Added note on power table that for WLAN transmit in MIMO antenna mode only.	Jul. 21, 2021

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Motorola Mobility LLC, Mobile Cellular Phone, XT2143-1,** are as follows.

Highest 1g SAR Summary						
Equipment Class	Frequency Band		Head (Separation 0mm)	Hotspot (Separation 5mm)	Body-worn (Separation 5mm)	Highest Simultaneous Transmission 1g SAR (W/kg)
			1g SAR (W/kg)			
Licensed	GSM	GSM850	0.86	1.23	1.23	1.56
		GSM1900	0.21	1.22	1.13	
	WCDMA	Band V	1.23	**1.26**	1.26	
		Band IV	0.16	1.11	1.10	
		Band II	0.13	1.20	1.19	
	LTE	Band 5	0.17	1.22	1.22	
		Band 12	1.23	0.83	1.12	
		Band 26/Band 5	1.25	0.93	1.05	
		Band 66/ Band 4	1.15	1.14	1.14	
		Band 2	0.12	1.06	1.11	
		Band 7	1.16	1.19	1.23	
		Band 41/ Band 38	0.12	1.06	1.03	
		Band 42	1.25	0.94	1.24	
	5G NR	n5	1.23	0.87	1.08	
		n66	1.12	1.20	1.20	
		n7	0.13	1.21	1.23	
		n41	0.24	1.15	1.15	
		n78	0.74	0.63	0.75	
DTS	WLAN	2.4GHz WLAN	**1.33**	0.44	**1.31**	1.48
NII		5GHz WLAN	1.08	0.30	1.05	1.56
		6GHz WLAN	<0.10		0.11	1.51
DSS	Bluetooth	2.4GHz Bluetooth	0.26	0.15	0.15	1.50

Highest 10g SAR Summary				
Equipment Class	Frequency Band		Product Specific 10g SAR (W/kg) (Separation 0mm)	Highest Simultaneous Transmission 10g SAR (W/kg)
Licensed	GSM	GSM850	0.68	3.96
		GSM1900	2.25	
	WCDMA	WCDMA V	2.91	
		WCDMA IV	2.68	
		WCDMA II	2.90	
	LTE	Band 5	1.17	
		Band 26/Band 5	2.40	
		Band 66/ Band 4	**2.99**	
		Band 2	2.46	
		Band 7	2.95	
		Band 41/ Band 38	2.25	
		Band 42	2.81	
	5G NR	FR1 n66	2.95	
		FR1 n7	2.93	
		FR1 n41	2.84	
		FR1 n78	2.84	

DTS	WLAN	2.4GHz WLAN	1.01	3.96
NII		5GHz WLAN	2.33	3.94
		6GHz WLAN	<0.10	2.99
Date of Testing:			2021/5/19 ~ 2021/6/20	

Remark:

1. This device supports LTE B4 / B38 and B66 / B41. Since the supported frequency span for LTE B4 / B38 falls completely within the supports frequency span for LTE B66 / B41, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE B66 / B41.
2. This device supports LTE B5 and B26 at Antenna 1. Since the supported frequency span for LTE B5 falls completely within the supports frequency span for LTE B26 at Antenna 1, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE B26 at Antenna 1.

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg for Partial-Body 1g SAR, 4.0 W/kg for Product Specific 10g SAR) 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 (Shenzhen) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Testing Laboratory		
Test Firm	Sporton International (Shenzhen) Inc.	
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595	
Test Site No.	FCC Designation No.	FCC Test Firm Registration No.
	CN1256	421272

Applicant	
Company Name	Motorola Mobility LLC
Address	222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

Manufacturer	
Company Name	Motorola Mobility LLC
Address	222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

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
- IEC/IEEE 62209-1528:2020
- 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 616217 D04 SAR for laptop and tablets v01r02
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D05A Rel.10 LTE SAR Test Guidance v01r02
- FCC KDB 941225 D06 Hotspot Mode SAR v02r01

4. Equipment Under Test (EUT) Information

4.1 General Information

Product Feature & Specification	
Equipment Name	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT2143-1
FCC ID	IHDT56ZP3
IMEI Code	SIM1: 353121920025415 SIM2: 353121920025423
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 26: 814 MHz ~ 849 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 42: 3450 MHz ~ 3550MHz LTE Band 66: 1710 MHz ~ 1780 MHz 5G NR n5: 824 MHz ~ 849 MHz 5G NR n7: 2500 MHz ~ 2570 MHz 5G NR n41: 2496 MHz ~ 2690 MHz 5G NR n66: 1710 MHz ~ 1780 MHz 5G NR n78: 3450 MHz ~ 3550 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 ~ 5700 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz WLAN 6E U-NII-5: 5925 MHz ~ 6425 MHz WLAN 6E U-NII-6: 6425 MHz ~ 6525 MHz WLAN 6E U-NII-7: 6525 MHz ~ 6875 MHz WLAN 6E U-NII-8: 6875 MHz ~ 7125 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC: 13.56 MHz
Mode	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+(16QAM uplink is not supported) LTE: QPSK, 16QAM, 64QAM 5G NR : CP-OFDM / DFT-s-OFDM, PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM WLAN 2.4GHz: 802.11b/g/n HT20 WLAN 2.4GHz: 802.11ac/ax VHT20/HE20 WLAN 5GHz: 802.11a/n HT20/HT40 WLAN 5GHz: 802.11ac VHT20/VHT40/VHT80/VHT160 WLAN 5GHz: 802.11ax HE20/HE40/HE80/HE160 WLAN 6E : 802.11a/n HT20/HT40 WLAN 6E : 802.11ac VHT20/VHT40/VHT80/VHT160 WLAN 6E : 802.11ax HE20/HE40/HE80/HE160 Bluetooth BR/EDR/LE NFC:ASK
HW Version	DVT2

SW Version	RRG31.35
GSM / (E)GPRS Transfer mode	Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network.
EUT Stage	Identical Prototype

Remark:

1. 802.11n HT40 is not supported in 2.4G WLAN.
2. This device supports VoIP in GPRS, EGPRS, WCDMA and LTE (e.g. for 3rd-party VoIP), LTE supports VoLTE operation.
3. This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications.
4. This device 5.2GHz WLAN/5.8GHz WLAN support hotspot operation, and 5.2GHz WLAN/5.8GHz WLAN supports WiFi Direct (GC/GO), and 5.3GHz / 5.5GHz supports WiFi Direct (GC only).
5. The 2.4GHz/5GHz/6GHz WLAN can transmit in MIMO antenna mode only and it has no SISO antenna mode.
6. This device does not support DTM operation and supports GPRS/EGPRS mode up to multi-slot class 12.
7. 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.
8. The device implements the power management and proximity sensor /receiver detection/hotspot mode for SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity) and the Qualcomm smart transmit will manage to ensure the power level not exceeding the associated power table. Details about the power management decision and sensor detection are provided in the operational description. And the device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to power table at appendix E.
9. For WLAN when transmit simultaneous with WWAN, power reduction will be activated to head, body-worn, hotspot, extremity.
10. For some WWAN bands, receiver off/sensor on reduced power level is higher than hotspot reduced power level, so front/back receiver off SAR can represent hotspot conservatively.
11. This device implements antenna tuning techniques for several WWAN (cellular) operating modes and frequencies for the purpose of improving antenna efficiency over a broad range of frequencies. Specifically, these techniques are employed in the WCDMA, LTE and 5GNR modes. In this report SAR was measured according to the normally required SAR configurations with the tuner active and worst tune state (auto tune) was used for SAR testing. The detail descriptions of the antenna tuner and supplemental data for additional information can be referred to section 18 and appendix F.
12. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
13. 5GNR n41/ n78 supports HPUE, HPUE power and SAR testing performed separately.
14. NSA and SA mode should perform SAR separately. For the maximum power of NSA mode is the same as SA total power level, so SA SAR can represent NSA mode SAR.
15. 5GNR NSA mode, the power level is the same as 5GNR SA mode, so 5GNR NSA mode and SA mode power table only show one time.
16. 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.
17. 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.
18. This device supports 5GNR FR1 bands as following table, including NSA mode and SA mode. NSA and SA mode performed SAR separately.
19. The device has four headsets. For headset 1/2/3/4 difference did not affect the testing, so we chose headset 1 to perform full SAR testing.
20. SAR Power density test report for WIFI 6E U-NII-5/6/7/8 will be separately submitted. About co-located SAR with WWAN/Bluetooth, always chose higher SAR of WLAN5G U-NII-1/2A/2C/3 and U-NII-5/6/7/8.

<5G NR>

Mode	Band	Duplex	SCS(KHz)	Bandwidths(BW)
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
	n78	TDD	30	20, 30, 40, 50, 60, 70, 80, 90, 100
SA	n41	TDD	30	20, 30, 40, 50, 60, 80, 90, 100
	n78	TDD	30	20, 30, 40, 50, 60, 70, 80, 90, 100

4.2 General LTE SAR Test and Reporting Considerations

<table>
<tr><th colspan="2">Summarized necessary items addressed in KDB 941225 D05 v02r05</th></tr>
<tr><td>FCC ID</td><td>IHDT56ZP3</td></tr>
<tr><td>Equipment Name</td><td>Mobile Cellular Phone</td></tr>
<tr><td>Operating Frequency Range of each LTE transmission band</td><td>LTE Band 2: 1850 MHz ~ 1910 MHz
LTE Band 4: 1710 MHz ~ 1755 MHz
LTE Band 5: 824 MHz ~ 849 MHz
LTE Band 7: 2500 MHz ~ 2570 MHz
LTE Band 12: 699 MHz ~ 716 MHz
LTE Band 26: 814 MHz ~ 849 MHz
LTE Band 38: 2570 MHz ~ 2620 MHz
LTE Band 41: 2496 MHz ~ 2690 MHz
LTE Band 42: 3450 MHz ~ 3550 MHz
LTE Band 66: 1710 MHz ~ 1780 MHz</td></tr>
<tr><td>Channel Bandwidth</td><td>LTE Band 2:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 4:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 5:1.4MHz, 3MHz, 5MHz, 10MHz
LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 12:1.4MHz, 3MHz, 5MHz, 10MHz
LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz
LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 42: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 66:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz</td></tr>
<tr><td>uplink modulations used</td><td>QPSK / 16QAM / 64QAM</td></tr>
<tr><td>LTE Voice / Data requirements</td><td>Voice and Data</td></tr>
<tr><td>LTE Release Version</td><td>R15, Cat12</td></tr>
<tr><td>CA Support</td><td>Supported, Uplink and Downlink</td></tr>
<tr><td>LTE MPR permanently built-in by design</td><td>Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3
<table>
<tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th><th rowspan="2">MPR (dB)</th></tr>
<tr><th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr>
<tr><td>QPSK</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 3</td></tr>
<tr><td>256 QAM</td><td colspan="6">≥ 1</td><td>≤ 5</td></tr>
</table></td></tr>
<tr><td>LTE A-MPR</td><td>In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)</td></tr>
<tr><td>Spectrum plots for RB configuration</td><td>A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.</td></tr>
<tr><td>Power reduction applied to satisfy SAR compliance</td><td>Yes, head/body-worn/ hotspot/extremity will trigger reduced power for some LTE bands, the detail please referred to section 14.</td></tr>
<tr><td>LTE Carrier Aggregation Combinations</td><td>Inter-Band and Intra-Band possible combinations and the detail power verification please referred to section 14.</td></tr>
<tr><td>LTE Carrier Aggregation Additional Information</td><td>1. This device supports LTE Carrier Aggregation (CA) in the uplink for 7C/41C with two component carriers in the uplink. SAR Measurements and conducted powers were evaluated per FCC Guidance.
2. This device supports maximum of 4 carriers in the downlink and 2 carriers in the uplink.</td></tr>
</table>

Transmission (H, M, L) channel numbers and frequencies in each LTE band												
LTE Band 2												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855	18675	1857.5	18700	1860
M	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905	19125	1902.5	19100	1900
LTE Band 4												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715	20025	1717.5	20050	1720
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750	20325	1747.5	20300	1745
LTE Band 5												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)				
L	20407	824.7	20415	825.5	20425	826.5	20450	829				
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5				
H	20643	848.3	20635	847.5	20625	846.5	20600	844				
LTE Band 7												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)				
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510				
M	21100	2535	21100	2535	21100	2535	21100	2535				
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560				
LTE Band 12												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)				
L	23017	699.7	23025	700.5	23035	701.5	23060	704				
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5				
H	23173	715.3	23165	714.5	23155	713.5	23130	711				
LTE Band 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 42								
	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	42115	3452.5	42140	3455	42165	3457.5	42190	3460
M	42590	3500	42590	3500	42590	3500	42590	3500
H	43065	3547.5	43040	3545	43015	3542.5	42990	3540

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 Information	
Operating Frequency Range of each 5G NR transmission band	5G NR n5 : 824 MHz ~ 849 MHz 5G NR n7 : 2500 MHz ~ 2570 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n78 : 3450 MHz ~ 3550MHz
Channel Bandwidth	5G NR n5: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n7: 5MHz, 10MHz, 15MHz, 20MHz, 25MHz, 30MHz, 40MHz 5G NR n41: 20MHz, 30MHz, 40MHz, 50MHz, 60MHz, 80MHz, 90MHz, 100MHz 5G NR n66: 5MHz, 10MHz, 15MHz, 20MHz, 30MHz, 40MHz 5G NR n78: 20MHz, 30MHz, 40MHz, 50MHz, 60MHz, 70MHz, 80MHz, 90MHz, 100MHz
SCS	FDD: SCS15KHz, TDD: SCS30KHz
uplink modulations used	DFT-s-OFDM: PI/2 BPSK / 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 n66	LTE B5/7
LTE Anchor Bands for n78	LTE B5/7/38/66

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

NR Band 5

	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

	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 66

	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 41

	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

NR Band 78

	Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		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)	Ch. #	Freq. (MHz)
L	630668	3460.02	631000	3465	631334	3470.01	631668	3475.02	632000	3480	632334	3485.01	632668	3490.02	633000	3495		
M	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01
H	636000	3540	635666	3534.99	635332	3529.98	635000	3525	634666	3519.99	634332	3514.98	634000	3510	633666	3504.99		

5. Smart Transmit feature for RF Exposure compliance

The RF exposure limit is defined based on time-averaged RF exposure. The product implements Qualcomm Smart Transmit feature which controls the instantaneous transmitting power for WWAN transmitter to ensure the product in compliance with RF exposure limit over a defined time window, for SAR (transmit frequency ≤ 6GHz). To control and manage transmitting power in real time and to ensure at all times the time-averaged RF exposure is compliant to the regulation requirement.

This report describes the procedures for the SAR char generation, and the parameters obtained from SAR characterization (referred to as SAR char, respectively) will be used as input for Smart Transmit. SAR char will be entered via the Embedded File System (EFS) to enable the Smart Transmit Feature.

<Terminologies in this report>

P_{limit}	The time-averaged RF power which corresponds to SAR_design_target.
P_{max}	Maximum target power level
SAR_design_target:	The design target for SAR compliance. It should be less than regulatory SAR limit to account for all device design related uncertainty.
SAR char	P_{limit} for all the technologies/bands for all applicable DSI

<SAR Characterization>

SAR char must be generated to cover all radio configurations and usage scenarios that the wireless device supports for operating at 6 GHz or below. It will then be used as input for Smart Transmit to control and manage RF exposure for f < 6 GHz.

<SAR design target and uncertainty>

	Uncertainty dB (k=2)
Total uncertainty	1.5

To account for total uncertainty, SAR_design_target should be determined as:

$$SAR_design_target < SAR_{regulatory_limit} \times 10^{\frac{-total\ u\ ncertainty}{10}}$$

The Smart Transmit algorithm maintains the time-averaged transmit power, in turn, time-averaged RF exposure of SAR_design_target, below the predefined time-averaged power limit, for each characterized technology and band.

Smart Transmit allows the device to transmit at higher power instantaneously, as high as Pmax, when needed, but enforces power limiting to maintain time-averaged transmit power to Plimit. Below table shows Plimit EFS settings and maximum tune up output power Pmax configured for this EUT for various transmit conditions (Device State Index DSI).

<P_{limit} for supported technologies and bands (P_{limit} in EFS file)>

Band	Antenna	Head DSI 2 Standalone	Head DSI 2 Simultaneous	Body Worn DSI 3 Standalone	Body Worn DSI 3 Simultaneous	Hotspot On DSI 3	Extremely DSI6 Standalone	Extremely DSI6 Simultaneous	Sensor Off DSI 4	Pmax
GSM850(3 Tx slots)**	0	34.9	34.9	22.7	22.7	22.7	31.1	31.1	23.7	23.7
GSM850(3 Tx slots)**	1	25.9	24.8	26.0	25.0	25.0	23.2	23.2	23.2	23.2
GSM1900(3 Tx slots)**	0	30.1	30.1	17.2	16.2	16.2	21.2	21.2	21.2	21.2
WCDMA V	0	30.1	30.1	22.0	22.0	22.0	25.1	25.1	24.0	24.0
WCDMA V	1	22.5	21.5	22.5	21.5	21.5	25.6	25.2	24.0	24.0
WCDMA IV	0	34.0	34.0	17.5	16.0	16.0	20.0	20.0	24.0	24.0
WCDMA II	0	34.7	34.7	16.5	15.5	15.5	20.0	20.0	24.0	24.0
LTE B5	0	32.6	32.6	24.1	24.1	24.1	23.2	23.2	23.0	23.0
LTE B12	1	23.0	22.0	24.4	22.0	22.0	23.2	23.2	23.0	23.0
LTE B26/5	1	23.0	22.0	23.0	21.5	21.5	24.6	24.3	23.0	23.0
LTE B66/4	0	33.7	33.7	17.0	15.5	15.5	20.5	20.5	23.0	23.0
LTE B66	1	16.0	15.5	16.0	15.0	15.0	21.0	20.5	23.0	23.0
LTE B2	0	34.5	34.5	15.5	14.0	14.0	19.5	19.5	23.0	23.0
LTE B7	0	33.3	33.3	17.5	15.0	15.0	23.0	23.0	23.0	23.0
LTE B7	1	17.5	16.5	19.5	16.5	16.5	22.3	22.0	21.0	21.0
LTE B41/38(PC3)**	0	32.1	32.1	17.0	15.5	15.5	23.0	23.0	21.0	21.0
LTE B42(PC3)**	3	17.0	16.0	15.0	14.0	14.0	18.5	18.0	21.0	21.0
n5	1	24.0	22.0	24.6	22.0	22.0	23.2	23.2	23.0	23.0
n66	0	33.3	33.3	17.5	16.5	16.5	21.5	21.5	23.0	23.0
n66	1	16.0	15.0	16.0	15.0	15.0	21.0	20.5	23.0	23.0
n7	0	33.7	33.7	16.5	15.5	15.5	21.5	21.5	23.0	23.0
n41(PC3)**	0	33.9	33.9	17.5	16.0	16.0	21.5	21.5	23.0	23.0
n41(PC2)**	0								26.0	26.0
n78(PC3)**	3	15.5	14.5	14.0	13.0	13.0	18.0	17.5	23.0	23.0
n78(PC2)**	3								26.0	26.0

*P_{max} is used for RF tune up procedure. The maximum allowed output power is equal to Pmax + 1.0 dB uncertainty.

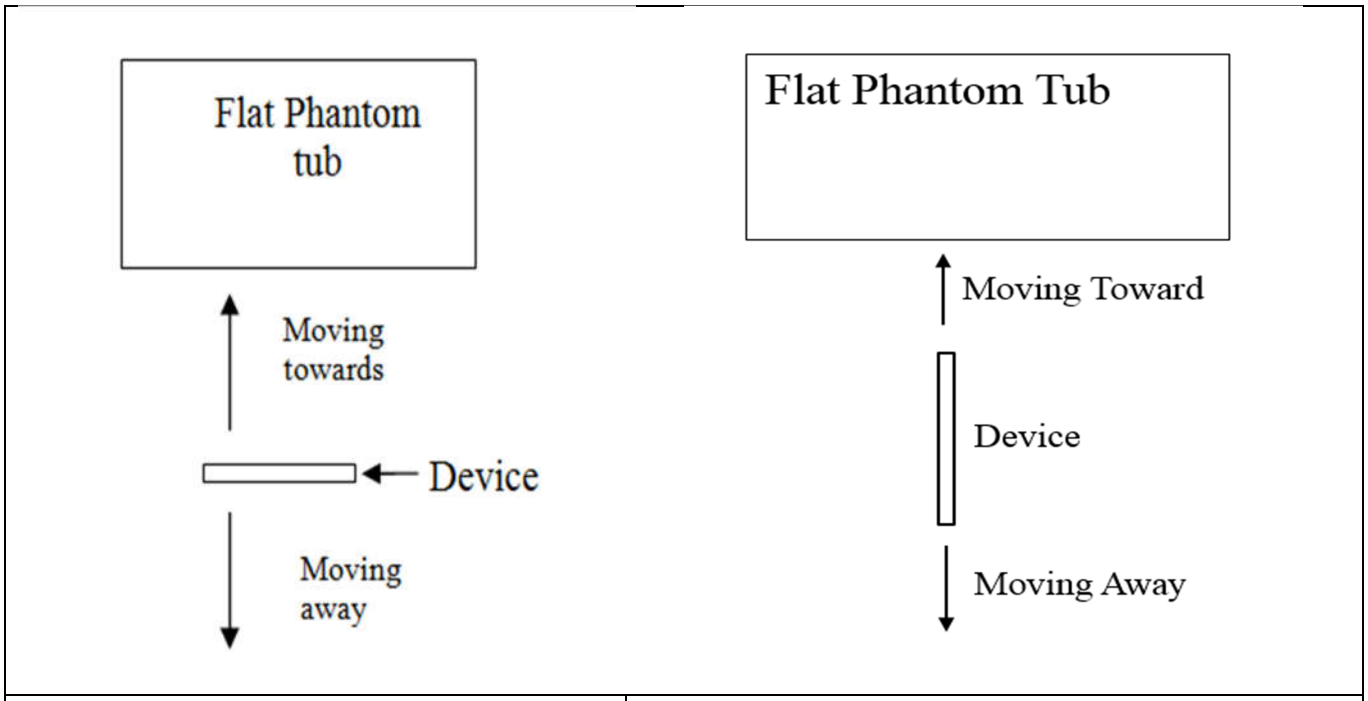
**All P_{limit} power levels entered in the Table correspond to average power levels after accounting for duty cycle in the case TDD modulation schemes (for e.g., GSM).

The max allowed output power is the P_{limit} + 1.0 dB device uncertainty, and if P_{limit} is higher than P_{max}, the device output power will be P_{max} instead.

6. Proximity Sensor Triggering Test

<Proximity Sensor Triggering Distance>:

1. Proximity sensor triggering distance testing was performed according and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed and the tissue-equivalent medium for highest frequency (5850MHz) and lowest (750MHz) frequency was used for proximity sensor triggering testing.
2. Capacitive proximity sensors placed coincident with antenna elements at the top and bottom ends of the phone are utilized to determine when the device comes in proximity of the user's body at the front or back of the device.
3. The output power will reduce to body worn power level when top and bottom sensor pad be detected.
4. The sensors used to detect the proximity of the user's body at the front or back surface of the device use a detection threshold distance. The data shown in the sections below shows the distance(s). When front or back body worn condition is detected reduced power will be active.
5. The device employs proximity sensors also can detect the presence of the user's a finger or hand when handheld state at the front/back/top/bottom/left/right side of the device. When front/back/top/bottom/left/right side of handheld condition is detected reduced power will be active.
6. For verification of compliance of power reduction scheme, additional SAR testing with EUT transmitting at full RF power at a conservative trigger distance -1mm was performed:



Sensor detection test set-up, front and back faces	Sensor detection test set-up, top, bottom, left and right sides

<P-Sensor>

Proximity Sensor Triggering Distance (mm)				
Position	Front		Back	
	Moving towards	Moving away	Moving towards	Moving away
Minimum	16	20	21	24

<Handheld for Antenna 0>

Proximity Sensor Triggering Distance (mm)						
Position	Front		Back		Bottom Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	8	13	14	16	13	18

<Handheld for Antenna 1>

Proximity Sensor Triggering Distance (mm)								
Position	Front		Back		Right Side		Top Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	9	15	13	17	8	12	11	17

<Handheld for Antenna 3>

Proximity Sensor Triggering Distance (mm)				
Position	Back		Left Side	
	Moving towards	Moving away	Moving towards	Moving away
Minimum	16	20	7	9

<Handheld for Antenna 4>

Proximity Sensor Triggering Distance (mm)		
Position	Back	
	Moving towards	Moving away
Minimum	8	13

<Handheld for Antenna 12>

Proximity Sensor Triggering Distance (mm)		
Position	Back	
	Moving towards	Moving away
Minimum	9	15

7. RF Exposure Limits

7.1 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.

7.2 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.

7.3 RF Exposure limit for below 6GHz

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

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

7.4 RF Exposure limit for above 6GHz

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Peak Spatially Averaged Power Density was evaluated over a circular area of 4cm^2 per interim FCC Guidance for near-field power density evaluations per October 2018 TCB Workshop notes

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f2)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

8. Specific Absorption Rate (SAR)

8.1 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.

8.2 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:

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

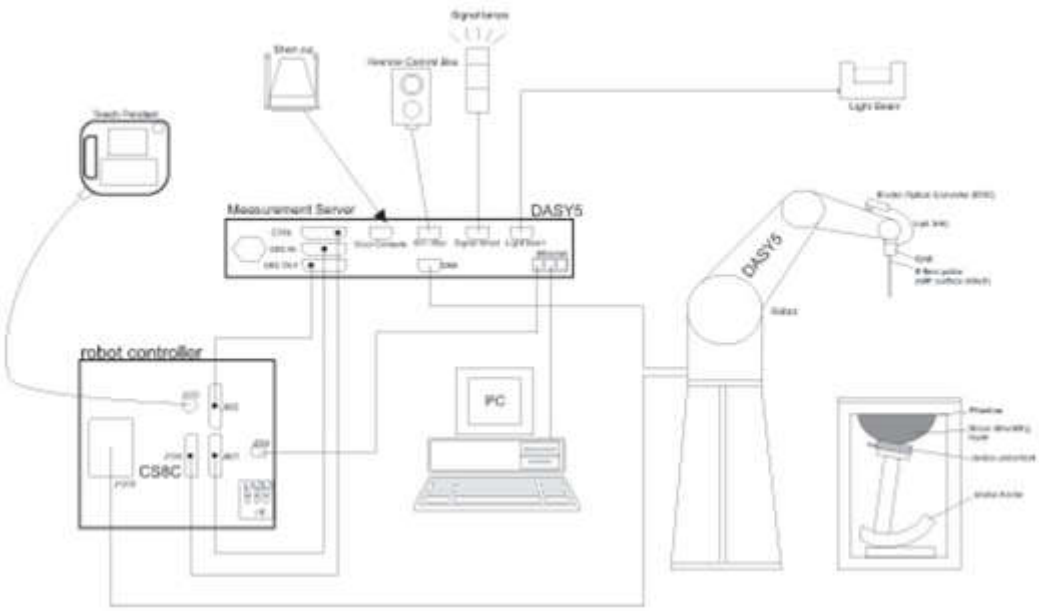
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

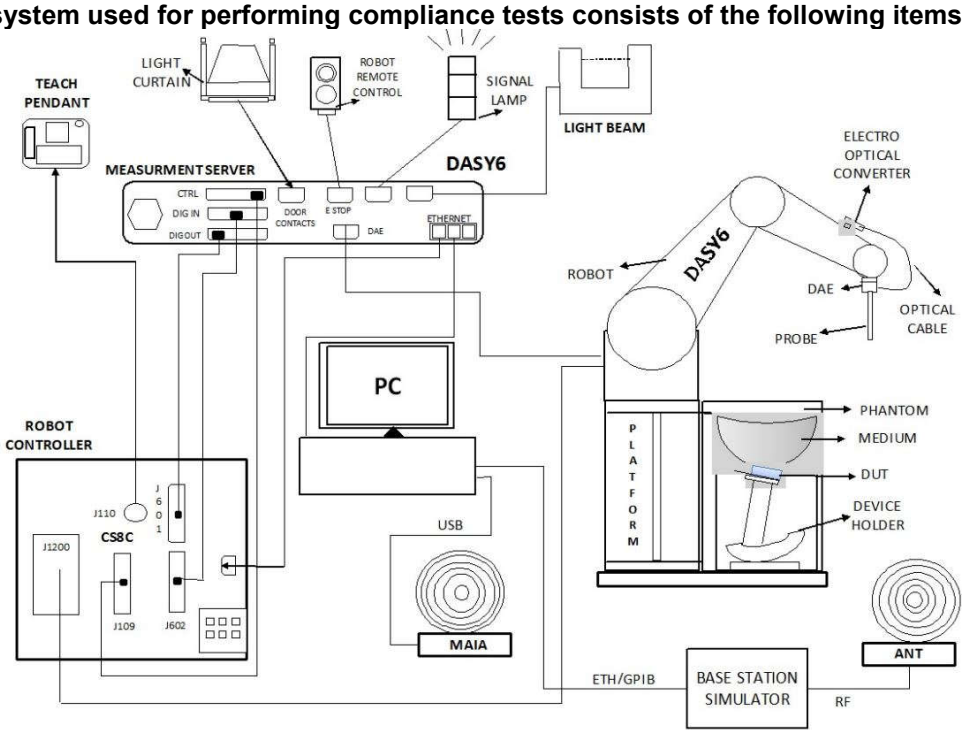
9. System Description and Setup

The DASY5 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 Win10 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.

The DASY6 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 Windows 10 and the DASY6 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.

9.1 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	

9.2 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.

Photo of DAE

9.3 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

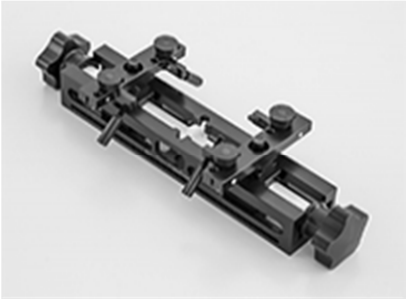
The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

9.4 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

10. 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

10.1 Spatial Peak SAR Evaluation

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

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

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

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

10.2 Power Reference Measurement

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

10.3 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.	

10.4 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	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$	
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.

10.5 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.

10.6 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.

11. 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	1137	Jul. 30, 2018	Jul. 22, 2021
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, 2021
SPEAG	2600MHz System Validation Kit	D2600V2	1070	Dec. 07, 2018	Nov. 24, 2021
SPEAG	3500MHz System Validation Kit	D3500V2	1076	Apr. 29, 2019	Apr. 14, 2022
SPEAG	5000MHz System Validation Kit	D5GHzV2	1167	Aug. 03, 2018	Aug. 02, 2021
SPEAG	6500MHz System Validation Kit	D6.5GHzV2	1026	Jan. 29, 2021	Jan. 28, 2024
SPEAG	Data Acquisition Electronics	DAE4	715	Jul. 27, 2020	Jul. 26, 2021
SPEAG	Dosimetric E-Field Probe	EX3DV4	7577	Sep. 30, 2020	Sep. 29, 2021
SPEAG	Dosimetric E-Field Probe	EX3DV4	7576	Apr. 26, 2021	Apr. 25, 2022
SPEAG	SAM Twin Phantom	QD 000 P40 CD	1670	NCR	NCR
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Anritsu	Radio communication analyzer	MT8820C	6201300653	Jul. 21, 2020	Jul. 20, 2021
Anritsu	Radio communication analyzer	MT8820C	6201341952	Dec. 25, 2020	Dec. 24, 2021
Anritsu	Radio communication analyzer	MT8820C	6201563813	Dec. 25, 2020	Dec. 24, 2021
Anritsu	Radio communication analyzer	MT8821C	6201588577	Apr. 08, 2021	Apr. 07, 2022
Agilent	Wireless Communication Test Set	E5515C	MY50267224	Jul. 21, 2020	Jul. 20, 2021
Agilent	Network Analyzer	E5071C	MY46523671	Oct. 15, 2020	Oct. 14, 2021
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 Senor	MA2411B	1306099	Dec. 25, 2020	Dec. 24, 2021
Anritsu	Power Meter	ML2495A	1349001	Jul. 21, 2020	Jul. 20, 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	CBT BLUETOOTH TESTER	CBT	100963	Dec. 25, 2020	Dec. 24, 2021
R&S	Spectrum Analyzer	FSP7	100818	Jul. 21, 2020	Jul. 20, 2021
TES	Hygrometer	1310	200505600	Jul. 30, 2020	Jul. 29, 2021
Anymetre	Thermo-Hygrometer	JR593	2015030903	Jan. 05, 2021	Jan. 04, 2022
AR	Amplifier	5S1G4	0333096	Note 1	
mini-circuits	Amplifier	ZVE-3W-83+	599201528	Note 1	
SPEAG	Device Holder	N/A	N/A	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	

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
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.

12. System Verification

12.1 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. 11.1. 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. 11.2.

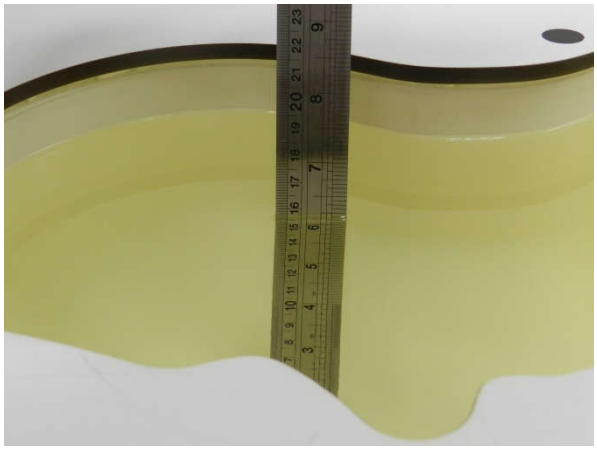


Fig 11.1 Photo of Liquid Height for Head SAR

Fig 11.2 Photo of Liquid Height for Body SAR

12.2 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	22.5	0.894	41.019	0.89	41.90	0.45	-2.10	±5	2021/5/19
750	Head	22.3	0.880	40.797	0.89	41.90	-1.12	-2.63	±5	2021/5/30
835	Head	22.5	0.915	41.980	0.90	41.50	1.67	1.16	±5	2021/5/20
835	Head	22.4	0.913	40.859	0.90	41.50	1.44	-1.54	±5	2021/5/31
1750	Head	22.6	1.380	40.206	1.37	40.10	0.73	0.26	±5	2021/5/21
1750	Head	22.3	1.377	41.359	1.37	40.10	0.51	3.14	±5	2021/6/1
1900	Head	22.7	1.420	41.133	1.40	40.00	1.43	2.83	±5	2021/5/23
1900	Head	22.5	1.440	40.038	1.40	40.00	2.86	0.09	±5	2021/6/3
2450	Head	22.4	1.861	39.575	1.80	39.20	3.39	0.96	±5	2021/5/25
2450	Head	22.8	1.758	39.247	1.80	39.20	-2.33	0.12	±5	2021/6/6
2600	Head	22.7	1.894	40.240	1.96	39.00	-3.37	3.18	±5	2021/5/26
2600	Head	22.5	1.922	39.818	1.96	39.00	-1.94	2.10	±5	2021/6/7
3500	Head	22.4	2.892	36.651	2.91	37.90	-0.62	-3.30	±5	2021/6/17
5250	Head	22.3	4.767	36.978	4.71	35.95	1.21	2.86	±5	2021/6/9
5250	Head	22.4	4.744	36.854	4.71	35.95	0.72	2.51	±5	2021/6/14
5600	Head	22.7	5.182	36.105	5.07	35.50	2.21	1.70	±5	2021/6/10
5600	Head	22.7	5.006	36.080	5.07	35.50	-1.26	1.63	±5	2021/6/16
5750	Head	22.4	5.384	35.949	5.22	35.35	3.14	1.69	±5	2021/6/12
5750	Head	22.7	5.357	35.815	5.22	35.35	2.62	1.32	±5	2021/6/17
6500	Head	22.3	5.984	35.949	6.07	34.50	-1.42	4.20	±5	2021/6/20

12.3 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 (%)
2021/5/19	750	Head	250	1099	7577	715	2.22	8.52	8.88	4.23
2021/5/30	750	Head	250	1099	7577	715	2.18	8.52	8.72	2.35
2021/5/20	835	Head	250	4d162	7577	715	2.54	9.61	10.16	5.72
2021/5/31	835	Head	250	4d162	7577	715	2.53	9.61	10.12	5.31
2021/5/21	1750	Head	250	1137	7577	715	9.69	36.50	38.76	6.19
2021/6/1	1750	Head	250	1137	7577	715	9.45	36.50	37.8	3.56
2021/5/23	1900	Head	250	5d182	7577	715	10.40	39.60	41.6	5.05
2021/6/3	1900	Head	250	5d182	7577	715	10.30	39.60	41.2	4.04
2021/5/25	2450	Head	250	924	7577	715	13.80	51.40	55.2	7.39
2021/6/6	2450	Head	250	924	7577	715	13.00	51.40	52	1.17
2021/5/26	2600	Head	250	1070	7577	715	14.10	58.10	56.4	-2.93
2021/6/7	2600	Head	250	1070	7577	715	14.30	58.10	57.2	-1.55
2021/6/17	3500	Head	100	1076	7577	715	6.74	67.90	67.4	-0.74
2021/6/9	5250	Head	100	1167	7577	715	8.37	77.00	83.7	8.70
2021/6/14	5250	Head	100	1167	7577	715	8.07	77.00	80.7	4.81
2021/6/10	5600	Head	100	1167	7577	715	7.92	80.80	79.2	-1.98
2021/6/16	5600	Head	100	1167	7577	715	8.09	80.80	80.9	0.12
2021/6/12	5750	Head	100	1167	7577	715	8.11	76.90	81.1	5.46
2021/6/17	5750	Head	100	1167	7577	715	7.99	76.90	79.9	3.90
2021/6/20	6500	Head	100	1026	7576	715	27.20	290.00	272	-6.21

<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 (%)
2021/5/20	835	Head	250	4d162	7577	715	1.66	6.35	6.64	4.57
2021/5/31	835	Head	250	4d162	7577	715	1.65	6.35	6.6	3.94
2021/5/21	1750	Head	250	1137	7577	715	5.22	19.50	20.88	7.08
2021/6/1	1750	Head	250	1137	7577	715	5.02	19.50	20.08	2.97
2021/5/23	1900	Head	250	5d182	7577	715	5.35	20.70	21.4	3.38
2021/6/3	1900	Head	250	5d182	7577	715	5.30	20.70	21.2	2.42
2021/5/25	2450	Head	250	924	7577	715	6.38	24.00	25.52	6.33
2021/6/6	2450	Head	250	924	7577	715	6.02	24.00	24.08	0.33
2021/5/26	2600	Head	250	1070	7577	715	6.25	26.10	25	-4.21
2021/6/7	2600	Head	250	1070	7577	715	6.35	26.10	25.4	-2.68
2021/6/17	3500	Head	100	1076	7577	715	2.53	25.30	25.3	0.00
2021/6/9	5250	Head	100	1167	7577	715	2.33	22.00	23.3	5.91
2021/6/14	5250	Head	100	1167	7577	715	2.21	22.00	22.1	0.45
2021/6/10	5600	Head	100	1167	7577	715	2.28	23.20	22.8	-1.72
2021/6/16	5600	Head	100	1167	7577	715	2.38	23.20	23.8	2.59
2021/6/12	5750	Head	100	1167	7577	715	2.25	21.60	22.5	4.17
2021/6/17	5750	Head	100	1167	7577	715	2.22	21.60	22.2	2.78
2021/6/20	6500	Head	100	1026	7576	715	4.90	53.40	49	-8.24

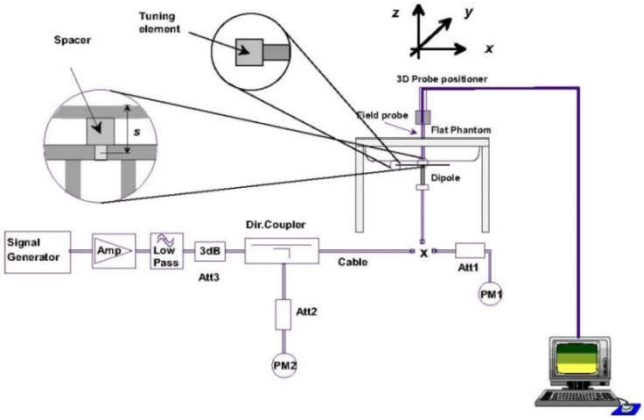


Fig 11.3.1 System Performance Check Setup

Fig 11.3.2 Setup Photo

13. RF Exposure Positions

13.1 Ear and handset reference point

Figure 12.1.1 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 12.1.2 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 12.1.3). 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 12.1.2. The ear truncation is introduced to preclude the ear lobe from interfering with handset tilt, which could lead to unstable positioning at the cheek.

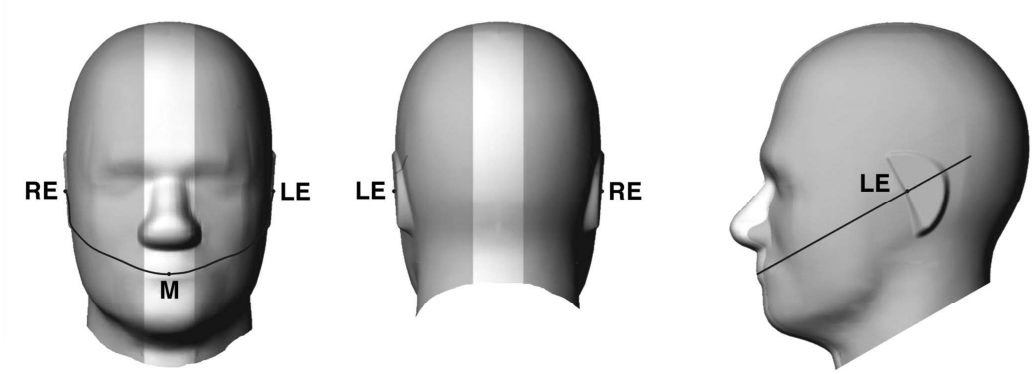


Fig 12.1.1 Front, back, and side views of SAM twin phantom

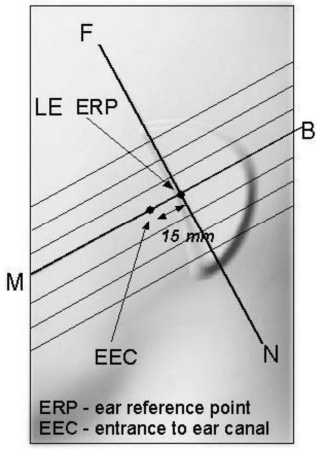


Fig 12.1.2 Close-up side view of phantom showing the ear region.

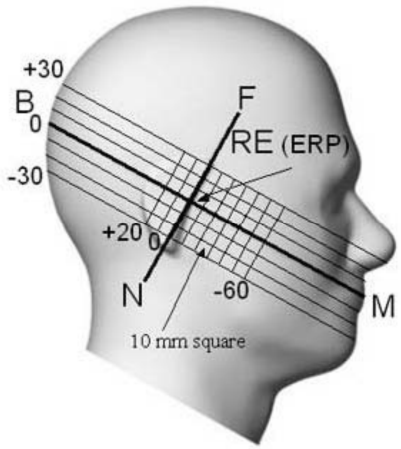


Fig 12.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

13.2 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 12.2.1 and Figure 12.2.2), 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 12.2.1). 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 12.2.2), 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 12.2.3), 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 12.2.3. The actual rotation angles should be documented in the test report.

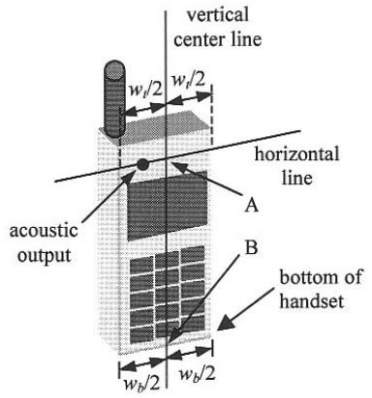


Fig 12.2.1 Handset vertical and horizontal reference lines—"fixed case

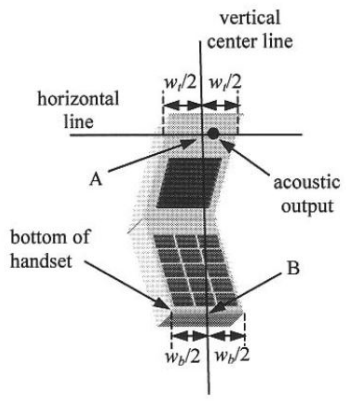


Fig 12.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

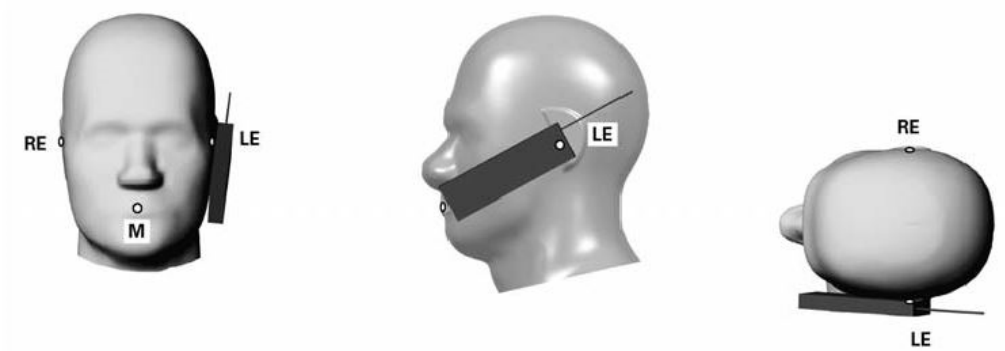


Fig 12.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

13.3 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 12.3.1. 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

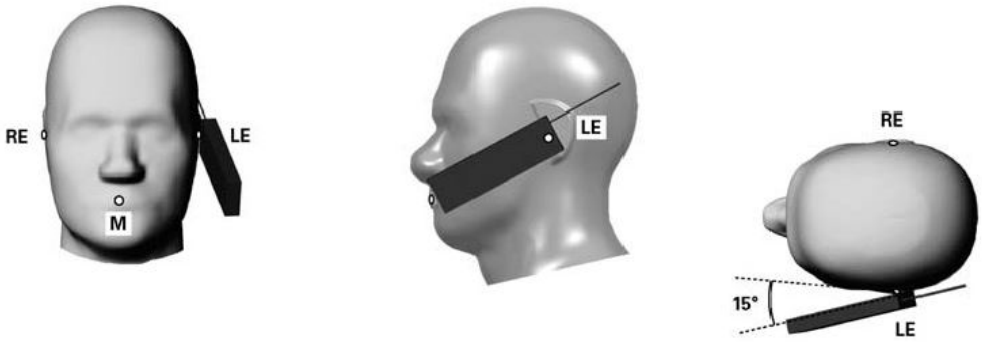


Fig 12.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

13.4 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 12.4). 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.

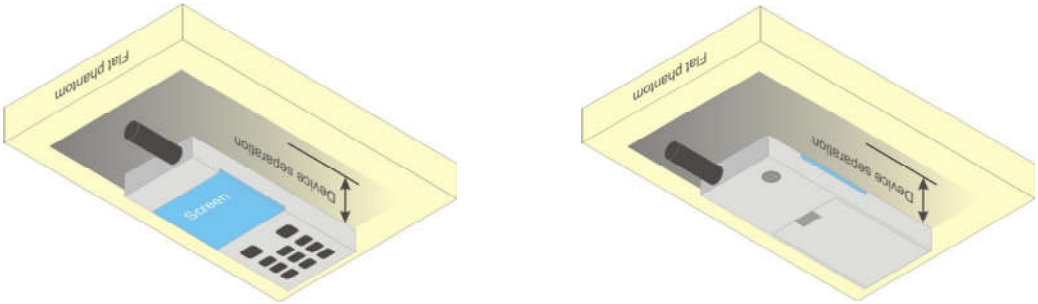


Fig 12.4 Body Worn Position

13.5 Product Specific 10g SAR 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.

13.6 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.

14. Conducted RF Output Power (Unit: dBm)

The detailed conducted power table can refer to Appendix E.

<GSM Conducted Power>

1. Per KDB 447498 D01v06, the maximum output power channel is used for SAR testing and for further SAR test reduction.
2. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE 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 and GSM1900 are considered as the primary mode.
3. Other configurations of GSM / GPRS / EDGE are considered as secondary modes. 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, 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 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	Processes	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.		

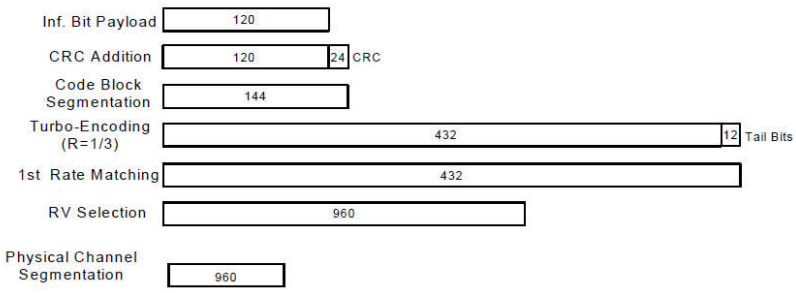


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

Setup Configuration

<WCDMA Conducted Power>

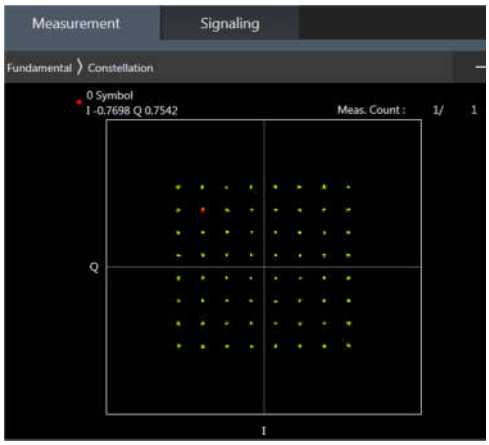
General Note:

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/64QAM 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/64QAM 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 / 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 B4 / B38 SAR test was covered by B66 / B41 and LTE B5 SAR test was covered by B26 at Antenna 1; 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.

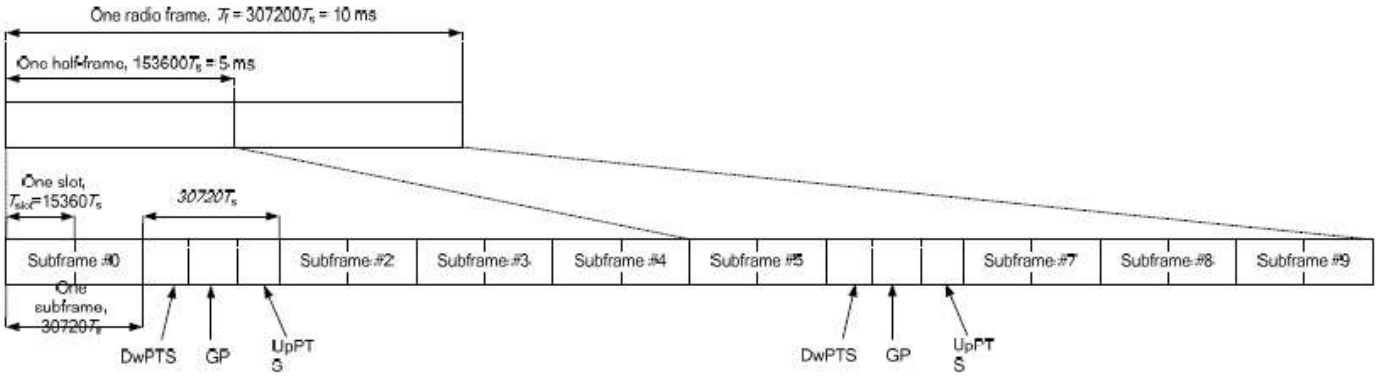


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

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:

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.

<LTE Carrier Aggregation>

General Note:

1. This device supports Carrier Aggregation on downlink for inter and intra band. For the device supports bands and bandwidths and configurations are provided as follow table was according to 3GPP.
2. In applying the existing power measurement procedures of KDB 941225 D05A for DL CA SAR test exclusion, only the subset with the largest number of combinations of frequency bands and CCs in each row need combination, and for this device that all the configurations were choose to power measurement.
3. The gray color table is covered by other combinations and no need to verify power.

2CC Downlink Carrier Aggregation					3CC Downlink Carrier Aggregation					4CC Downlink Carrier Aggregation				
Number	Combination	4X4 MIMO	Restriction	Covered by Measurement Superset	Number	Combination	4X4 MIMO	Restriction	Covered by Measurement Superset	Number	Combination	4X4 MIMO	Restriction	Covered by Measurement Superset
1	CA_2A-4A				1	CA_7C-66A	7C,66A		4CC-1	1	CA_7C-66A-66A	7C,66A		
2	CA_2A-5A				2	CA_7A-66A-66A	7A,66A							
3	CA_2A-7A				3	CA_26A-41C								
4	CA_4A-4A				4	CA_41D	41D							
5	CA_4A-5A													
6	CA_4A-7A													
7	CA_5A-7A	7A												
8	CA_5A-38A													
9	CA_5A-41A													
10	CA_7B	7B												
11	CA_7C	7C		3CC-1										
12	CA_7A-7A	7A-7A												
13	CA_7A-66A	7A,66A		3CC-2										
14	CA_26A-41A													
15	CA_38C	38C												
16	CA_41C	41C		3CC-3										
17	CA_41A-41A													
18	CA_66B	66B												
19	CA_66C	66C												
20	CA_66A-66A	66A		3CC-2										

LTE 4x4 MIMO (Downlink)

This device supports downlink 4x4 MIMO operations for LTE Bands 7/66/38/41 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	WWAN Band
	LTE Band: B7 / B66/ B38 / B41

LTE Carrier Aggregation Conducted Power (Downlink)

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 four 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 inter-band CA, the SCC selected highest bandwidth and near the middle of its transmission band. For SCC DL RB size and offset will base on the PCC corresponding RB allocation.

vi. 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.

vii. 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.

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

LTE Carrier Aggregation Conducted Power (Uplink)

1. This device supports uplink carrier aggregation for LTE CA_7C, LTE CA_41C 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. For the non-contiguously allocated resource blocks which the MPR level is determined by various RB separation and RB sizes requirement, and the allowed MPR levels, settings and the conducted powers are permanently implemented in this device per the 3GPP 36.36.101 section 6.2.3A.1.3 requirements.
2. According to FCC guidance, the output power with uplink CA active was measured for the high / middle / low channel configuration with the highest reported SAR for each exposure condition, the power was measured with wideband signal integration over both component carriers.
3. In applying the power measurement procedures of KDB 941225 D05A for DL CA to qualify for UL SAR test exclusion, power measurement is required only for the subset in each row with the largest combination of frequency bands and CCs
4. Maximum output power measurement is required for each UL CA configuration for the required test channels described in KDB 941225 D05. The required test channel should be associated with the UL PCC. For channels at the ends of a frequency band, the SCC and subsequent CCs are added to the side within the transmission band. Otherwise, the CCs should be added alternatively to either side of the PCC.

<Power Measurement Setup>

5G NR Output Power (Unit: dBm)

General Note:

1. 5G NR n5 / n7 / n66 / n78 is NSA mode.
2. 5G NR n41 / n78 is SA mode.
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- PI/2 BPSK and the reported SAR for the DFT- PI/2 BPSK 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 QPSK/16QAM/64QMA/256QAM and smaller bandwidth output power will spot check largest channel bandwidth worst RB configuration to ensure the QPSK/16QAM/64QMA/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 PI/2 BPSK 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 PI/2 BPSK SAR testing follows 1RB PI/2 BPSK allocation procedure.
   e. PI/2 BPSK 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. QPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in PI/2 BPSK, also reported SAR for the PI/2 BPSK configuration is less than 1.45 W/kg, QPSK/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.
5. 5GNR n41/ n78 supports HPUE, HPUE power and SAR testing performed separately.
6. NSA and SA mode should perform SAR separately. For the maximum power of NSA mode is the same as SA total power level, so SA SAR can represent NSA mode SAR.
7. 5GNR NSA mode, the power level is the same as 5GNR SA mode, so 5GNR NSA mode and SA mode power table only show one time.
8. 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.
9. 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.

<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		

FR 1	EN-DC	LTE UL	5G-NR UL
n5	DC_7A-n5A	Ant0	Ant1
	DC_7C-n5A	Ant0	Ant1
n7	DC_5A-n7A	Ant1/Ant0	Ant0/Ant1
	DC_66 A-n7A	Ant1	Ant0
n66	DC_5A-n66A	Ant1	Ant0
	DC_7A-n66A	Ant0	Ant1
n78	DC_5A-n78A	Ant0/Ant1	Ant3
	DC_7A-n78A	Ant0	Ant3
	DC_7C-n78A	Ant0	Ant3
	DC_38A-n78A	Ant0	Ant3
	DC_66A-n78A	Ant0	Ant3

<WLAN Conducted Power>

General Note:

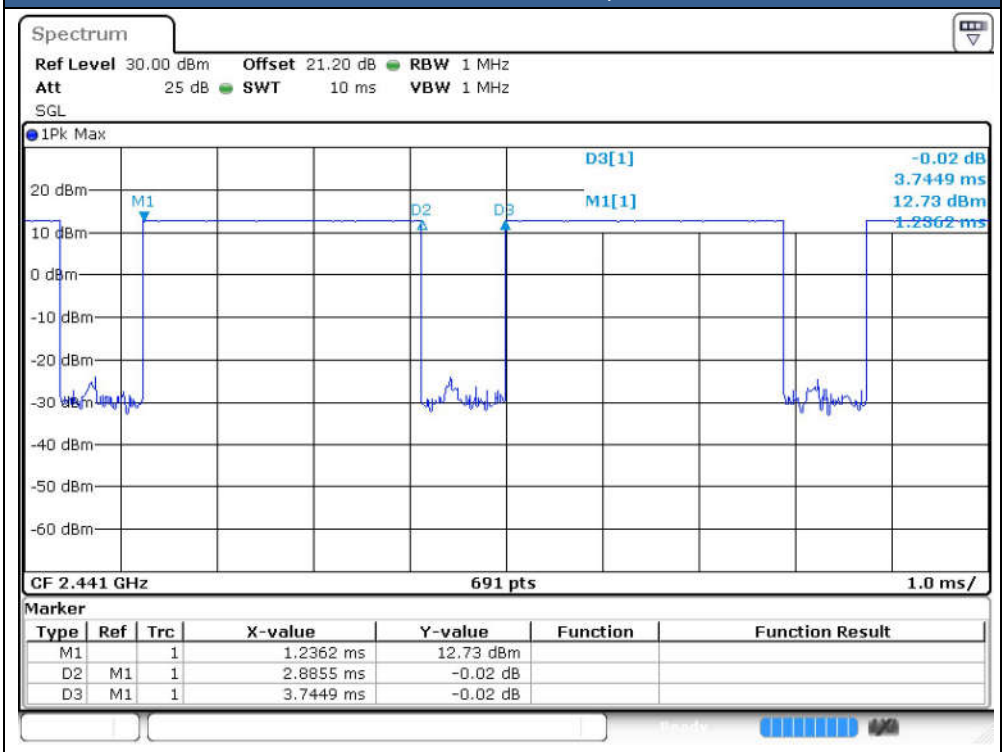
1. Per KDB 248227 D01v02r02, SAR test reduction is determined according to 802.11 transmission mode configurations and certain exposure conditions with multiple test positions. In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements. For OFDM, in both 2.4 and 5 GHz bands, an initial test configuration must be determined for each standalone and aggregated frequency band, according to the transmission mode configuration with the highest maximum output power specified for production units to perform SAR measurements. If the same highest maximum output power applies to different combinations of channel bandwidths, modulations and data rates, additional procedures are applied to determine which test configurations require SAR measurement. When applicable, an initial test position may be applied to reduce the number of SAR measurements required for next to the ear, UMPC mini-tablet or hotspot mode configurations with multiple test positions.
2. For 2.4 GHz 802.11b DSSS, either the initial test position procedure for multiple exposure test positions or the DSSS procedure for fixed exposure position is applied; these are mutually exclusive. For 2.4 GHz and 5 GHz OFDM configurations, the initial test configuration is applied to measure SAR using either the initial test position procedure for multiple exposure test position configurations or the initial test configuration procedures for fixed exposure test conditions. Based on the reported SAR of the measured configurations and maximum output power of the transmission mode configurations that are not included in the initial test configuration, the subsequent test configuration and initial test position procedures are applied to determine if SAR measurements are required for the remaining OFDM transmission configurations. In general, the number of test channels that require SAR measurement is minimized based on maximum output power measured for the test sample(s).
3. For OFDM transmission configurations in the 2.4 GHz and 5 GHz bands, When the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel for each frequency band.
4. DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures.18 The initial test position procedure is described in the following:
   a. When the reported SAR of the initial test position is ≤ 0.4 W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band.
   b. When the reported SAR of the test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is ≤ 0.8 W/kg or all required test position are tested.
   c. For all positions/configurations, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.
5. 802.11ax supports full tone size and partial tone size, for full tone size with higher power level, So only chose full tone size to perform SAR testing.
6. The 2.4GHz/5GHz/6GHz WLAN can transmit in MIMO antenna mode only and it has no SISO antenna mode.

<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 77.05 % 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 to100% for Bluetooth reported SAR calculation

Bluetooth time-domain plot



15. Antenna Location

The detailed antenna location information can refer to SAR Test Setup Photos.

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, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The Reported TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
   - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
   - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
   - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required 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. 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.
5. The device implements the power management and proximity sensor /receiver detection/hotspot mode for SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity) and the Qualcomm smart transmit will manage to ensure the power level not exceeding the associated power table. Details about the power management decision and sensor detection are provided in the operational description. And the device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to power table at appendix E.
6. For WLAN when transmit simultaneous with WWAN, power reduction will be activated to head, body-worn, hotspot, extremity.
7. For some WWAN bands, receiver off/sensor off reduced power level is higher than hotspot reduced power level, so front/back receiver off SAR can represent hotspot conservatively.
8. This device implements antenna tuning techniques for several WWAN (cellular) operating modes and frequencies for the purpose of improving antenna efficiency over a broad range of frequencies. Specifically, these techniques are employed in the WCDMA, LTE and 5GNR modes. In this report SAR was measured according to the normally required SAR configurations with the tuner active and worst tune state (auto tune) was used for SAR testing. The detail descriptions of the antenna tuner and supplemental data for additional information can be referred to section 18 and appendix F.
9. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
10. 5GNR n41/ n78 supports HPUE, HPUE power and SAR testing performed separately.
11. NSA and SA mode should perform SAR separately. For the maximum power of NSA mode is the same as SA total power level, so SA SAR can represent NSA mode SAR.
12. 5GNR NSA mode, the power level is the same as 5GNR SA mode, so 5GNR NSA mode and SA mode power table only show one time.
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 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.
15. This device supports 5GNR FR1 bands, including NSA mode and SA mode. NSA and SA mode performed SAR separately.
16. The device has four headsets. For headset 1/2/3/4 difference did not affect the testing, so we chose headset 1 to perform full SAR testing.
17. 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 extremity 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.
    a. For this device SAR for WWAN/WLAN transmitter scaled to maximum output power mode for product specific 10g SAR

is higher than 1.2W/kg of GSM850/1900, WCDMA Band II/IV/V, LTE Band 2/4/5/7/26/66/38/41/42, 5GNR n7/n66/n41/n78, WLAN 2.4GHz/5.2GHz/5.8GHz, therefore product specific 10g SAR is necessary.

b. WLAN 5.3/5.5/6GHz tested the product specific 10g SAR since it has no hotspot mode.

c. 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.

18. The following table“n/a”means the measured SAR is too small to find the 1g cube SAR.
19. Per FCC guidance, SAR was performed using 6.5 GHz SAR probe calibration factors.
20. Per October 2020 TCB Workshop Interim procedures, start instead with a minimum of 5 test channels across the full band, then adapt and apply conducted power and SAR test reduction procedures of KDB Pub. 248227 v02r02
21. Absorbed power density (APD) using a 4cm^2 averaging area is reported based on SAR measurements.

GSM Note:

1. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE 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 and GSM1900 are considered as the primary mode.
2. Other configurations of GSM / GPRS / EDGE are considered as secondary modes. 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, SAR measurement is not required for the secondary mode.

WCDMA 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 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/64QAM 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/64QAM 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 / 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 B4 / B38 SAR test was covered by LTE B66 / B41 and LTE B5 SAR test was covered by B26 at Antenna 1; 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

5G NR Note:

1. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
   a. SAR testing start with the largest channel bandwidth and measure SAR for PI/2 BPSK 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.
   b. 50% RB allocation for PI/2 BPSK SAR testing follows 1RB PI/2 BPSK allocation procedure.
   c. PI/2 BPSK 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.
   d. QPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in PI/2 BPSK, also reported SAR for the PI/2 BPSK configuration is less than 1.45 W/kg, QPSK /16QAM/64QAM/256QAM SAR testing are not required.
   e. 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
   f. For 5G FR1 n5 the maximum bandwidth does not support three non-overlapping channels, 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.

WLAN/Bluetooth 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 SAR testing is not required when the U-NII-2A band highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band.
3. When the reported SAR of the test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is ≤ 0.8 W/kg or all required test position are tested.
4. For all positions / configurations, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions / configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.
5. During SAR testing the WLAN transmission was verified using a spectrum analyzer.
6. The 2.4GHz/5GHz/6GHz WLAN can transmit in MIMO antenna mode only and it has no SISO antenna mode.

DSI status description:

The device has the following DSI state which used at different exposure condition.
This WWAN bands enabled with Qualcomm Smart Transmit feature which located at chapter 5. The default power is Pmax power, When Plimit power higher than Pmax power, the output power will be limited at Pmax, and so the SAR will use Pmax power to do the testing.

Exposure Condition	DSI
Head SAR-Standalone	DSI 2
Head SAR-Simultaneous	DSI 2
Body worn Mode SAR-Standalone	DSI 3
Body worn Mode SAR- Simultaneous	DSI 3
Hotspot Mode SAR	DSI 3
Extremity(Handheld) SAR-Standalone	DSI 6
Extremity(Handheld) SAR- Simultaneous	DSI 6
Sensor off SAR	DSI 4

16.1 Head SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	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	Ant 0	DSI 2	Full	128	824.2	28.39	29.00	1.151	-0.18	0.105	0.121
	GSM850	GPRS (3 Tx slots)	Right Tilted	Ant 0	DSI 2	Full	128	824.2	28.39	29.00	1.151	-0.07	0.067	0.077
	GSM850	GPRS (3 Tx slots)	Left Cheek	Ant 0	DSI 2	Full	128	824.2	28.39	29.00	1.151	0.02	0.096	0.110
	GSM850	GPRS (3 Tx slots)	Left Tilted	Ant 0	DSI 2	Full	128	824.2	28.39	29.00	1.151	-0.07	0.052	0.060
	GSM850	GPRS (3 Tx slots)	Right Cheek	Ant 1	DSI 2	Full	128	824.2	27.52	28.50	1.253	-0.13	0.402	0.504
	GSM850	GPRS (3 Tx slots)	Right Tilted	Ant 1	DSI 2	Full	128	824.2	27.52	28.50	1.253	-0.18	0.392	0.491
	GSM850	GPRS (3 Tx slots)	Left Cheek	Ant 1	DSI 2	Full	128	824.2	27.52	28.50	1.253	0.16	0.642	0.805
	GSM850	GPRS (3 Tx slots)	Left Tilted	Ant 1	DSI 2	Full	128	824.2	27.52	28.50	1.253	-0.18	0.553	0.693
	GSM850	GPRS (3 Tx slots)	Left Cheek	Ant 1	DSI 2	Full	189	836.4	27.51	28.50	1.256	0.09	0.606	0.761
01	GSM850	GPRS (3 Tx slots)	Left Cheek	Ant 1	DSI 2	Full	251	848.8	27.38	28.50	1.294	0.13	0.664	**0.859**
	GSM1900	GPRS (3 Tx slots)	Right Cheek	Ant 0	DSI 2	Full	512	1850.2	25.58	26.50	1.236	0.07	0.087	0.107
	GSM1900	GPRS (3 Tx slots)	Right Tilted	Ant 0	DSI 2	Full	512	1850.2	25.58	26.50	1.236	0.02	0.085	0.105
02	GSM1900	GPRS (3 Tx slots)	Left Cheek	Ant 0	DSI 2	Full	512	1850.2	25.58	26.50	1.236	0.17	0.166	**0.205**
	GSM1900	GPRS (3 Tx slots)	Left Tilted	Ant 0	DSI 2	Full	512	1850.2	25.58	26.50	1.236	0.11	0.076	0.094

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	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	Ant 0	DSI 2	Full	4233	846.6	23.82	25.00	1.312	0.09	0.288	0.378
	WCDMA V	RMC 12.2Kbps	Right Tilted	Ant 0	DSI 2	Full	4233	846.6	23.82	25.00	1.312	0.03	0.155	0.203
	WCDMA V	RMC 12.2Kbps	Left Cheek	Ant 0	DSI 2	Full	4233	846.6	23.82	25.00	1.312	0.13	0.177	0.232
	WCDMA V	RMC 12.2Kbps	Left Tilted	Ant 0	DSI 2	Full	4233	846.6	23.82	25.00	1.312	-0.04	0.129	0.169
	WCDMA V	RMC 12.2Kbps	Right Cheek	Ant 1	DSI 2	Standalone	4233	846.6	22.52	23.50	1.253	0.1	0.644	0.807
	WCDMA V	RMC 12.2Kbps	Right Tilted	Ant 1	DSI 2	Standalone	4233	846.6	22.52	23.50	1.253	0.18	0.602	0.754
03	WCDMA V	RMC 12.2Kbps	Left Cheek	Ant 1	DSI 2	Standalone	4233	846.6	22.52	23.50	1.253	-0.12	0.981	**1.229**
	WCDMA V	RMC 12.2Kbps	Left Tilted	Ant 1	DSI 2	Standalone	4233	846.6	22.52	23.50	1.253	0.1	0.915	1.147
	WCDMA V	RMC 12.2Kbps	Right Cheek	Ant 1	DSI 2	Standalone	4132	826.4	22.34	23.50	1.306	0.04	0.591	0.772
	WCDMA V	RMC 12.2Kbps	Right Cheek	Ant 1	DSI 2	Standalone	4182	836.4	22.37	23.50	1.297	-0.18	0.641	0.831
	WCDMA V	RMC 12.2Kbps	Left Cheek	Ant 1	DSI 2	Standalone	4132	826.4	22.34	23.50	1.306	-0.14	0.919	1.200
	WCDMA V	RMC 12.2Kbps	Left Cheek	Ant 1	DSI 2	Standalone	4182	836.4	22.37	23.50	1.297	-0.17	0.932	1.209
	WCDMA V	RMC 12.2Kbps	Left Tilted	Ant 1	DSI 2	Standalone	4132	826.4	22.34	23.50	1.306	0.02	0.855	1.117
	WCDMA V	RMC 12.2Kbps	Left Tilted	Ant 1	DSI 2	Standalone	4182	836.4	22.37	23.50	1.297	0.13	0.886	1.149
	WCDMA V	RMC 12.2Kbps	Right Cheek	Ant 1	DSI 2	Simultaneous	4233	846.6	21.52	22.50	1.253	-0.09	0.494	0.619
	WCDMA V	RMC 12.2Kbps	Right Tilted	Ant 1	DSI 2	Simultaneous	4233	846.6	21.52	22.50	1.253	0.13	0.485	0.608
	WCDMA V	RMC 12.2Kbps	Left Cheek	Ant 1	DSI 2	Simultaneous	4233	846.6	21.52	22.50	1.253	-0.18	0.647	0.811
	WCDMA V	RMC 12.2Kbps	Left Tilted	Ant 1	DSI 2	Simultaneous	4233	846.6	21.52	22.50	1.253	-0.03	0.601	0.753
	WCDMA V	RMC 12.2Kbps	Left Cheek	Ant 1	DSI 2	Simultaneous	4132	826.4	21.37	22.50	1.297	0.07	0.590	0.765
	WCDMA V	RMC 12.2Kbps	Left Cheek	Ant 1	DSI 2	Simultaneous	4182	836.4	21.40	22.50	1.288	-0.03	0.611	0.787
	WCDMA IV	RMC 12.2Kbps	Right Cheek	Ant 0	DSI 2	Full	1413	1732.6	24.11	25.00	1.227	-0.16	0.078	0.095
	WCDMA IV	RMC 12.2Kbps	Right Tilted	Ant 0	DSI 2	Full	1413	1732.6	24.11	25.00	1.227	0.02	0.061	0.074
04	WCDMA IV	RMC 12.2Kbps	Left Cheek	Ant 0	DSI 2	Full	1413	1732.6	24.11	25.00	1.227	0.03	0.129	**0.158**
	WCDMA IV	RMC 12.2Kbps	Left Tilted	Ant 0	DSI 2	Full	1413	1732.6	24.11	25.00	1.227	0.18	0.052	0.064
	WCDMA II	RMC 12.2Kbps	Right Cheek	Ant 0	DSI 2	Full	9538	1907.6	23.81	25.00	1.315	0.15	0.066	0.087
	WCDMA II	RMC 12.2Kbps	Right Tilted	Ant 0	DSI 2	Full	9538	1907.6	23.81	25.00	1.315	0.02	0.032	0.042
05	WCDMA II	RMC 12.2Kbps	Left Cheek	Ant 0	DSI 2	Full	9538	1907.6	23.81	25.00	1.315	0.19	0.102	**0.134**
	WCDMA II	RMC 12.2Kbps	Left Tilted	Ant 0	DSI 2	Full	9538	1907.6	23.81	25.00	1.315	-0.05	0.040	0.053

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	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)
06	LTE Band 5	10M	QPSK	1	0	Right Cheek	Ant 0	DSI 2	Full	20525	836.5	22.86	24.00	1.300	0.13	0.133	**0.173**
	LTE Band 5	10M	QPSK	1	0	Right Tilted	Ant 0	DSI 2	Full	20525	836.5	22.86	24.00	1.300	0.12	0.065	0.085
	LTE Band 5	10M	QPSK	1	0	Left Cheek	Ant 0	DSI 2	Full	20525	836.5	22.86	24.00	1.300	-0.02	0.081	0.105
	LTE Band 5	10M	QPSK	1	0	Left Tilted	Ant 0	DSI 2	Full	20525	836.5	22.86	24.00	1.300	0.09	0.055	0.072
	LTE Band 5	10M	QPSK	25	0	Right Cheek	Ant 0	DSI 2	Full	20525	836.5	22.03	23.00	1.250	-0.02	0.099	0.124
	LTE Band 5	10M	QPSK	25	0	Right Tilted	Ant 0	DSI 2	Full	20525	836.5	22.03	23.00	1.250	-0.04	0.052	0.065
	LTE Band 5	10M	QPSK	25	0	Left Cheek	Ant 0	DSI 2	Full	20525	836.5	22.03	23.00	1.250	-0.05	0.066	0.083
	LTE Band 5	10M	QPSK	25	0	Left Tilted	Ant 0	DSI 2	Full	20525	836.5	22.03	23.00	1.250	-0.15	0.046	0.058
	LTE Band 12	10M	QPSK	1	0	Right Cheek	Ant 1	DSI 2	Full	23095	707.5	22.62	24.00	1.374	0.08	0.485	0.666
	LTE Band 12	10M	QPSK	1	0	Right Tilted	Ant 1	DSI 2	Full	23095	707.5	22.62	24.00	1.374	-0.01	0.473	0.650
07	LTE Band 12	10M	QPSK	1	0	Left Cheek	Ant 1	DSI 2	Full	23095	707.5	22.62	24.00	1.374	-0.14	0.896	**1.231**
	LTE Band 12	10M	QPSK	1	0	Left Tilted	Ant 1	DSI 2	Full	23095	707.5	22.62	24.00	1.374	-0.01	0.793	1.090
	LTE Band 12	10M	QPSK	25	0	Right Cheek	Ant 1	DSI 2	Full	23095	707.5	21.63	23.00	1.371	0.16	0.377	0.517
	LTE Band 12	10M	QPSK	25	0	Right Tilted	Ant 1	DSI 2	Full	23095	707.5	21.63	23.00	1.371	-0.12	0.369	0.506
	LTE Band 12	10M	QPSK	25	0	Left Cheek	Ant 1	DSI 2	Full	23095	707.5	21.63	23.00	1.371	-0.1	0.659	0.903
	LTE Band 12	10M	QPSK	25	0	Left Tilted	Ant 1	DSI 2	Full	23095	707.5	21.63	23.00	1.371	-0.14	0.609	0.835
	LTE Band 12	10M	QPSK	50	0	Left Cheek	Ant 1	DSI 2	Full	23095	707.5	21.60	23.00	1.380	0.16	0.599	0.827
	LTE Band 12	10M	QPSK	50	0	Left Tilted	Ant 1	DSI 2	Full	23095	707.5	21.60	23.00	1.380	0.11	0.590	0.814
	LTE Band 12	10M	QPSK	1	0	Right Cheek	Ant 1	DSI 2	Simultaneous	23095	707.5	21.76	23.00	1.330	-0.15	0.380	0.506
	LTE Band 12	10M	QPSK	1	0	Right Tilted	Ant 1	DSI 2	Simultaneous	23095	707.5	21.76	23.00	1.330	0.18	0.373	0.496
	LTE Band 12	10M	QPSK	1	0	Left Cheek	Ant 1	DSI 2	Simultaneous	23095	707.5	21.76	23.00	1.330	0.11	0.745	0.991
	LTE Band 12	10M	QPSK	1	0	Left Tilted	Ant 1	DSI 2	Simultaneous	23095	707.5	21.76	23.00	1.330	-0.11	0.630	0.838
	LTE Band 12	10M	QPSK	25	0	Right Cheek	Ant 1	DSI 2	Simultaneous	23095	707.5	21.27	23.00	1.489	-0.09	0.360	0.536
	LTE Band 12	10M	QPSK	25	0	Right Tilted	Ant 1	DSI 2	Simultaneous	23095	707.5	21.27	23.00	1.489	0.15	0.356	0.530
	LTE Band 12	10M	QPSK	25	0	Left Cheek	Ant 1	DSI 2	Simultaneous	23095	707.5	21.27	23.00	1.489	-0.18	0.633	0.943
	LTE Band 12	10M	QPSK	25	0	Left Tilted	Ant 1	DSI 2	Simultaneous	23095	707.5	21.27	23.00	1.489	0.16	0.590	0.879
	LTE Band 12	10M	QPSK	50	0	Left Cheek	Ant 1	DSI 2	Simultaneous	23095	707.5	21.26	23.00	1.493	-0.05	0.590	0.881
	LTE Band 12	10M	QPSK	50	0	Left Tilted	Ant 1	DSI 2	Simultaneous	23095	707.5	21.26	23.00	1.493	-0.18	0.563	0.840
	LTE Band 26	15M	QPSK	1	0	Right Cheek	Ant 1	DSI 2	Full	26865	831.5	22.89	24.00	1.291	0.18	0.657	0.848
	LTE Band 26	15M	QPSK	1	0	Right Tilted	Ant 1	DSI 2	Full	26865	831.5	22.89	24.00	1.291	0.13	0.352	0.455
08	LTE Band 26	15M	QPSK	1	0	Left Cheek	Ant 1	DSI 2	Full	26865	831.5	22.89	24.00	1.291	0.15	0.965	**1.246**
	LTE Band 26	15M	QPSK	1	0	Left Tilted	Ant 1	DSI 2	Full	26865	831.5	22.89	24.00	1.291	0.11	0.942	1.216
	LTE Band 26	15M	QPSK	36	0	Right Cheek	Ant 1	DSI 2	Full	26865	831.5	21.53	23.00	1.403	-0.1	0.733	1.028
	LTE Band 26	15M	QPSK	36	0	Right Tilted	Ant 1	DSI 2	Full	26865	831.5	21.53	23.00	1.403	-0.16	0.399	0.560
	LTE Band 26	15M	QPSK	36	0	Left Cheek	Ant 1	DSI 2	Full	26865	831.5	21.53	23.00	1.403	-0.09	0.881	1.236
	LTE Band 26	15M	QPSK	36	0	Left Tilted	Ant 1	DSI 2	Full	26865	831.5	21.53	23.00	1.403	-0.16	0.887	1.244
	LTE Band 26	15M	QPSK	75	0	Right Cheek	Ant 1	DSI 2	Full	26865	831.5	21.52	23.00	1.406	-0.13	0.726	1.021
	LTE Band 26	15M	QPSK	75	0	Left Cheek	Ant 1	DSI 2	Full	26865	831.5	21.52	23.00	1.406	0.11	0.884	1.243
	LTE Band 26	15M	QPSK	75	0	Left Tilted	Ant 1	DSI 2	Full	26865	831.5	21.52	23.00	1.406	0.15	0.860	1.209
	LTE Band 26	15M	QPSK	1	0	Right Cheek	Ant 1	DSI 2	Simultaneous	26865	831.5	21.89	23.00	1.291	-0.01	0.273	0.353
	LTE Band 26	15M	QPSK	1	0	Right Tilted	Ant 1	DSI 2	Simultaneous	26865	831.5	21.89	23.00	1.291	0.06	0.449	0.580
	LTE Band 26	15M	QPSK	1	0	Left Cheek	Ant 1	DSI 2	Simultaneous	26865	831.5	21.89	23.00	1.291	0.04	0.772	0.997
	LTE Band 26	15M	QPSK	1	0	Left Tilted	Ant 1	DSI 2	Simultaneous	26865	831.5	21.89	23.00	1.291	-0.08	0.664	0.857
	LTE Band 26	15M	QPSK	36	0	Right Cheek	Ant 1	DSI 2	Simultaneous	26865	831.5	21.48	23.00	1.419	-0.17	0.311	0.441
	LTE Band 26	15M	QPSK	36	0	Right Tilted	Ant 1	DSI 2	Simultaneous	26865	831.5	21.48	23.00	1.419	0.02	0.471	0.668
	LTE Band 26	15M	QPSK	36	0	Left Cheek	Ant 1	DSI 2	Simultaneous	26865	831.5	21.48	23.00	1.419	0.14	0.698	0.991
	LTE Band 26	15M	QPSK	36	0	Left Tilted	Ant 1	DSI 2	Simultaneous	26865	831.5	21.48	23.00	1.419	0.01	0.676	0.959
	LTE Band 26	15M	QPSK	75	0	Left Cheek	Ant 1	DSI 2	Simultaneous	26865	831.5	21.36	23.00	1.459	0.14	0.681	0.993
	LTE Band 26	15M	QPSK	75	0	Left Tilted	Ant 1	DSI 2	Simultaneous	26865	831.5	21.36	23.00	1.459	0.17	0.674	0.983
	LTE Band 66	20M	QPSK	1	0	Right Cheek	Ant 0	DSI 2	Full	132322	1745	22.42	24.00	1.439	-0.05	0.054	0.078
	LTE Band 66	20M	QPSK	1	0	Right Tilted	Ant 0	DSI 2	Full	132322	1745	22.42	24.00	1.439	-0.15	0.050	0.072
	LTE Band 66	20M	QPSK	1	0	Left Cheek	Ant 0	DSI 2	Full	132322	1745	22.42	24.00	1.439	-0.06	0.093	0.134

	LTE Band 66	20M	QPSK	1	0	Left Tilted	Ant 0	DSI 2	Full	132322	1745	22.42	24.00	1.439	-0.02	0.053	0.076
	LTE Band 66	20M	QPSK	50	0	Right Cheek	Ant 0	DSI 2	Full	132322	1745	21.75	23.00	1.334	-	n/a	n/a
	LTE Band 66	20M	QPSK	50	0	Right Tilted	Ant 0	DSI 2	Full	132322	1745	21.75	23.00	1.334	-	n/a	n/a
	LTE Band 66	20M	QPSK	50	0	Left Cheek	Ant 0	DSI 2	Full	132322	1745	21.75	23.00	1.334	0.12	0.048	0.064
	LTE Band 66	20M	QPSK	50	0	Left Tilted	Ant 0	DSI 2	Full	132322	1745	21.75	23.00	1.334	-	n/a	n/a
	LTE Band 66	20M	QPSK	1	0	Right Cheek	Ant 1	DSI 2	Standalone	132322	1745	16.28	17.00	1.180	-0.03	0.333	0.393
	LTE Band 66	20M	QPSK	1	0	Right Tilted	Ant 1	DSI 2	Standalone	132322	1745	16.28	17.00	1.180	-0.07	0.441	0.521
	LTE Band 66	20M	QPSK	1	0	Left Cheek	Ant 1	DSI 2	Standalone	132322	1745	16.28	17.00	1.180	-0.15	0.828	0.977
	LTE Band 66	20M	QPSK	1	0	Left Tilted	Ant 1	DSI 2	Standalone	132322	1745	16.28	17.00	1.180	-0.09	0.907	1.071
	LTE Band 66	20M	QPSK	1	0	Left Cheek	Ant 1	DSI 2	Standalone	132072	1720	16.04	17.00	1.247	0.19	0.856	1.068
	LTE Band 66	20M	QPSK	1	0	Left Cheek	Ant 1	DSI 2	Standalone	132572	1770	16.25	17.00	1.189	0.02	0.706	0.839
09	LTE Band 66	20M	QPSK	1	0	Left Tilted	Ant 1	DSI 2	Standalone	132072	1720	16.04	17.00	1.247	-0.11	0.923	**1.151**
	LTE Band 66	20M	QPSK	1	0	Left Tilted	Ant 1	DSI 2	Standalone	132572	1770	16.25	17.00	1.189	0.06	0.788	0.937
	LTE Band 66	20M	QPSK	50	0	Right Cheek	Ant 1	DSI 2	Standalone	132322	1745	16.15	17.00	1.216	-0.17	0.343	0.417
	LTE Band 66	20M	QPSK	50	0	Right Tilted	Ant 1	DSI 2	Standalone	132322	1745	16.15	17.00	1.216	0.02	0.449	0.546
	LTE Band 66	20M	QPSK	50	0	Left Cheek	Ant 1	DSI 2	Standalone	132322	1745	16.15	17.00	1.216	-0.14	0.799	0.972
	LTE Band 66	20M	QPSK	50	0	Left Tilted	Ant 1	DSI 2	Standalone	132322	1745	16.15	17.00	1.216	-0.07	0.865	1.052
	LTE Band 66	20M	QPSK	50	0	Left Cheek	Ant 1	DSI 2	Standalone	132072	1720	15.85	17.00	1.303	0.08	0.736	0.959
	LTE Band 66	20M	QPSK	50	0	Left Cheek	Ant 1	DSI 2	Standalone	132572	1770	16.14	17.00	1.219	-0.13	0.643	0.784
	LTE Band 66	20M	QPSK	50	0	Left Tilted	Ant 1	DSI 2	Standalone	132072	1720	15.85	17.00	1.303	0.19	0.841	1.096
	LTE Band 66	20M	QPSK	50	0	Left Tilted	Ant 1	DSI 2	Standalone	132572	1770	16.14	17.00	1.219	0.02	0.692	0.844
	LTE Band 66	20M	QPSK	100	0	Left Cheek	Ant 1	DSI 2	Standalone	132322	1745	16.11	17.00	1.227	-0.13	0.749	0.919
	LTE Band 66	20M	QPSK	100	0	Left Tilted	Ant 1	DSI 2	Standalone	132322	1745	16.11	17.00	1.227	0.09	0.812	0.997
	LTE Band 66	20M	QPSK	1	0	Right Cheek	Ant 1	DSI 2	Simultaneous	132322	1745	15.65	16.50	1.216	-0.19	0.282	0.343
	LTE Band 66	20M	QPSK	1	0	Right Tilted	Ant 1	DSI 2	Simultaneous	132322	1745	15.65	16.50	1.216	0.07	0.351	0.427
	LTE Band 66	20M	QPSK	1	0	Left Cheek	Ant 1	DSI 2	Simultaneous	132322	1745	15.65	16.50	1.216	0.07	0.642	0.781
	LTE Band 66	20M	QPSK	1	0	Left Tilted	Ant 1	DSI 2	Simultaneous	132322	1745	15.65	16.50	1.216	0.16	0.716	0.871
	LTE Band 66	20M	QPSK	1	0	Left Tilted	Ant 1	DSI 2	Simultaneous	132072	1720	15.25	16.50	1.334	-0.19	0.736	0.981
	LTE Band 66	20M	QPSK	1	0	Left Tilted	Ant 1	DSI 2	Simultaneous	132572	1770	15.60	16.50	1.230	0.07	0.676	0.832
	LTE Band 66	20M	QPSK	50	0	Right Cheek	Ant 1	DSI 2	Simultaneous	132322	1745	15.63	16.50	1.222	0.16	0.302	0.369
	LTE Band 66	20M	QPSK	50	0	Right Tilted	Ant 1	DSI 2	Simultaneous	132322	1745	15.63	16.50	1.222	-0.01	0.394	0.481
	LTE Band 66	20M	QPSK	50	0	Left Cheek	Ant 1	DSI 2	Simultaneous	132322	1745	15.63	16.50	1.222	0.15	0.650	0.794
	LTE Band 66	20M	QPSK	50	0	Left Tilted	Ant 1	DSI 2	Simultaneous	132322	1745	15.63	16.50	1.222	-0.06	0.694	0.848
	LTE Band 66	20M	QPSK	50	0	Left Tilted	Ant 1	DSI 2	Simultaneous	132072	1720	15.41	16.50	1.285	0.02	0.713	0.916
	LTE Band 66	20M	QPSK	50	0	Left Tilted	Ant 1	DSI 2	Simultaneous	132572	1770	15.47	16.50	1.268	-0.14	0.642	0.814
	LTE Band 66	20M	QPSK	100	0	Left Tilted	Ant 1	DSI 2	Simultaneous	132322	1745	15.55	16.50	1.245	0.08	0.717	0.892
	LTE Band 2	20M	QPSK	1	0	Right Cheek	Ant 0	DSI 2	Full	18700	1860	22.66	24.00	1.361	-0.17	0.058	0.079
	LTE Band 2	20M	QPSK	1	0	Right Tilted	Ant 0	DSI 2	Full	18700	1860	22.66	24.00	1.361	-0.19	0.053	0.072
10	LTE Band 2	20M	QPSK	1	0	Left Cheek	Ant 0	DSI 2	Full	18700	1860	22.66	24.00	1.361	0.15	0.090	**0.123**
	LTE Band 2	20M	QPSK	1	0	Left Tilted	Ant 0	DSI 2	Full	18700	1860	22.66	24.00	1.361	0.02	0.056	0.076
	LTE Band 2	20M	QPSK	50	0	Right Cheek	Ant 0	DSI 2	Full	18700	1860	21.69	23.00	1.352	0.11	0.048	0.065
	LTE Band 2	20M	QPSK	50	0	Right Tilted	Ant 0	DSI 2	Full	18700	1860	21.69	23.00	1.352	0.04	0.039	0.053
	LTE Band 2	20M	QPSK	50	0	Left Cheek	Ant 0	DSI 2	Full	18700	1860	21.69	23.00	1.352	0.02	0.053	0.071
	LTE Band 2	20M	QPSK	50	0	Left Tilted	Ant 0	DSI 2	Full	18700	1860	21.69	23.00	1.352	-0.09	0.048	0.065
	LTE Band 7	20M	QPSK	1	99	Right Cheek	Ant 0	DSI 2	Full	21350	2560	23.34	24.00	1.164	0.06	0.117	0.136
	LTE Band 7C	20M	QPSK	1	0	Right Cheek	Ant 0	DSI 2	Full	21350(SCC)+ 21152(PCC)	2560+ 2540.2	22.67	24.00	1.358	0.17	0.072	0.098
	LTE Band 7	20M	QPSK	1	99	Right Tilted	Ant 0	DSI 2	Full	21350	2560	23.34	24.00	1.164	0.1	0.052	0.061
	LTE Band 7	20M	QPSK	1	99	Left Cheek	Ant 0	DSI 2	Full	21350	2560	23.34	24.00	1.164	0.15	0.063	0.073
	LTE Band 7	20M	QPSK	1	99	Left Tilted	Ant 0	DSI 2	Full	21350	2560	23.34	24.00	1.164	-0.05	0.059	0.069
	LTE Band 7	20M	QPSK	50	50	Right Cheek	Ant 0	DSI 2	Full	21350	2560	22.07	23.00	1.239	-0.09	0.068	0.084
	LTE Band 7	20M	QPSK	50	50	Right Tilted	Ant 0	DSI 2	Full	21350	2560	22.07	23.00	1.239	0.04	0.038	0.047
	LTE Band 7	20M	QPSK	50	50	Left Cheek	Ant 0	DSI 2	Full	21350	2560	22.07	23.00	1.239	-0.1	0.043	0.053
	LTE Band 7	20M	QPSK	50	50	Left Tilted	Ant 0	DSI 2	Full	21350	2560	22.07	23.00	1.239	0.08	0.040	0.050
	LTE Band 7	20M	QPSK	1	99	Right Cheek	Ant 1	DSI 2	Standalone	20850	2510	16.81	18.50	1.476	-0.19	0.568	0.838
	LTE Band 7	20M	QPSK	1	99	Right Tilted	Ant 1	DSI 2	Standalone	20850	2510	16.81	18.50	1.476	0.15	0.523	0.772
	LTE Band 7	20M	QPSK	1	99	Left Cheek	Ant 1	DSI 2	Standalone	20850	2510	16.81	18.50	1.476	0.01	0.588	0.868

11	LTE Band 7	20M	QPSK	1	99	Left Tilted	Ant 1	DSI 2	Standalone	20850	2510	16.81	18.50	1.476	-0.19	0.789	**1.164**
	LTE Band 7C	20M	QPSK	1	99	Left Tilted	Ant 1	DSI 2	Standalone	20850(SCC)+ 21048(PCC)	2510+ 2529.8	16.74	18.50	1.500	-0.05	0.662	0.993
	LTE Band 7	20M	QPSK	1	99	Right Cheek	Ant 1	DSI 2	Standalone	21100	2535	16.68	18.50	1.521	0.08	0.547	0.832
	LTE Band 7	20M	QPSK	1	99	Right Cheek	Ant 1	DSI 2	Standalone	21350	2560	16.64	18.50	1.535	0.19	0.396	0.608
	LTE Band 7	20M	QPSK	1	99	Left Cheek	Ant 1	DSI 2	Standalone	21100	2535	16.68	18.50	1.521	-0.17	0.612	0.931
	LTE Band 7	20M	QPSK	1	99	Left Cheek	Ant 1	DSI 2	Standalone	21350	2560	16.64	18.50	1.535	0.18	0.586	0.899
	LTE Band 7	20M	QPSK	1	99	Left Tilted	Ant 1	DSI 2	Standalone	21100	2535	16.68	18.50	1.521	-0.16	0.727	1.105
	LTE Band 7	20M	QPSK	1	99	Left Tilted	Ant 1	DSI 2	Standalone	21350	2560	16.64	18.50	1.535	-0.05	0.743	1.140
	LTE Band 7	20M	QPSK	50	0	Right Cheek	Ant 1	DSI 2	Standalone	20850	2510	16.78	18.50	1.486	0.08	0.581	0.863
	LTE Band 7	20M	QPSK	50	0	Right Tilted	Ant 1	DSI 2	Standalone	20850	2510	16.78	18.50	1.486	0.19	0.513	0.762
	LTE Band 7	20M	QPSK	50	0	Left Cheek	Ant 1	DSI 2	Standalone	20850	2510	16.78	18.50	1.486	0.12	0.656	0.975
	LTE Band 7	20M	QPSK	50	0	Left Tilted	Ant 1	DSI 2	Standalone	20850	2510	16.78	18.50	1.486	-0.12	0.782	1.162
	LTE Band 7	20M	QPSK	50	0	Right Cheek	Ant 1	DSI 2	Standalone	21100	2535	16.71	18.50	1.510	0.19	0.496	0.749
	LTE Band 7	20M	QPSK	50	0	Right Cheek	Ant 1	DSI 2	Standalone	21350	2560	16.58	18.50	1.556	-0.15	0.476	0.741
	LTE Band 7	20M	QPSK	50	0	Left Cheek	Ant 1	DSI 2	Standalone	21100	2535	16.71	18.50	1.510	-0.17	0.548	0.828
	LTE Band 7	20M	QPSK	50	0	Left Cheek	Ant 1	DSI 2	Standalone	21350	2560	16.58	18.50	1.556	0.08	0.509	0.792
	LTE Band 7	20M	QPSK	50	0	Left Tilted	Ant 1	DSI 2	Standalone	21100	2535	16.71	18.50	1.510	0.15	0.688	1.039
	LTE Band 7	20M	QPSK	50	0	Left Tilted	Ant 1	DSI 2	Standalone	21350	2560	16.58	18.50	1.556	0.17	0.653	1.016
	LTE Band 7	20M	QPSK	100	0	Right Cheek	Ant 1	DSI 2	Standalone	20850	2510	16.77	18.50	1.489	-0.12	0.615	0.916
	LTE Band 7	20M	QPSK	100	0	Left Cheek	Ant 1	DSI 2	Standalone	20850	2510	16.77	18.50	1.489	0.08	0.642	0.956
	LTE Band 7	20M	QPSK	100	0	Left Tilted	Ant 1	DSI 2	Standalone	20850	2510	16.77	18.50	1.489	0.17	0.745	1.110
	LTE Band 7	20M	QPSK	1	99	Right Cheek	Ant 1	DSI 2	Simultaneous	20850	2510	15.89	17.50	1.449	-0.07	0.439	0.636
	LTE Band 7	20M	QPSK	1	99	Right Tilted	Ant 1	DSI 2	Simultaneous	20850	2510	15.89	17.50	1.449	0.08	0.407	0.590
	LTE Band 7	20M	QPSK	1	99	Left Cheek	Ant 1	DSI 2	Simultaneous	20850	2510	15.89	17.50	1.449	0.07	0.479	0.694
	LTE Band 7	20M	QPSK	1	99	Left Tilted	Ant 1	DSI 2	Simultaneous	20850	2510	15.89	17.50	1.449	0.08	0.667	0.966
	LTE Band 7C	20M	QPSK	1	99	Left Tilted	Ant 1	DSI 2	Simultaneous	20850(SCC)+ 21048(PCC)	2510+ 2529.8	15.92	17.50	1.439	-0.08	0.631	0.908
	LTE Band 7	20M	QPSK	1	99	Left Tilted	Ant 1	DSI 2	Simultaneous	21100	2535	15.75	17.50	1.496	0.06	0.475	0.711
	LTE Band 7	20M	QPSK	1	99	Left Tilted	Ant 1	DSI 2	Simultaneous	21350	2560	15.72	17.50	1.507	0.04	0.455	0.686
	LTE Band 7	20M	QPSK	50	0	Right Cheek	Ant 1	DSI 2	Simultaneous	20850	2510	15.88	17.50	1.452	0.12	0.476	0.691
	LTE Band 7	20M	QPSK	50	0	Right Tilted	Ant 1	DSI 2	Simultaneous	20850	2510	15.88	17.50	1.452	0.01	0.429	0.623
	LTE Band 7	20M	QPSK	50	0	Left Cheek	Ant 1	DSI 2	Simultaneous	20850	2510	15.88	17.50	1.452	0.18	0.524	0.761
	LTE Band 7	20M	QPSK	50	0	Left Tilted	Ant 1	DSI 2	Simultaneous	20850	2510	15.88	17.50	1.452	0.17	0.645	0.937
	LTE Band 7	20M	QPSK	50	0	Left Tilted	Ant 1	DSI 2	Simultaneous	21100	2535	15.81	17.50	1.476	-0.18	0.538	0.794
	LTE Band 7	20M	QPSK	50	0	Left Tilted	Ant 1	DSI 2	Simultaneous	21350	2560	15.86	17.50	1.459	0.18	0.510	0.744
	LTE Band 7	20M	QPSK	100	0	Left Tilted	Ant 1	DSI 2	Simultaneous	20850	2510	15.85	17.50	1.462	0.01	0.627	0.917

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	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)
12	LTE Band 41	20M	QPSK	1	99	Right Cheek	Ant 0	DSI 2	Full	40620	2593	22.98	24.00	1.265	62.9	1.006	-0.02	0.096	**0.122**
	LTE Band 41C	20M	QPSK	1	0	Right Cheek	Ant 0	DSI 2	Full	40620(PCC)+ 40422(SCC)	2593+ 2573.2	22.77	24.00	1.327	62.9	1.006	0.11	0.067	0.089
	LTE Band 41	20M	QPSK	1	99	Right Tilted	Ant 0	DSI 2	Full	40620	2593	22.98	24.00	1.265	62.9	1.006	0.07	0.038	0.048
	LTE Band 41	20M	QPSK	1	99	Left Cheek	Ant 0	DSI 2	Full	40620	2593	22.98	24.00	1.265	62.9	1.006	0.08	0.049	0.062
	LTE Band 41	20M	QPSK	1	99	Left Tilted	Ant 0	DSI 2	Full	40620	2593	22.98	24.00	1.265	62.9	1.006	-0.17	0.058	0.074
	LTE Band 41	20M	QPSK	50	50	Right Cheek	Ant 0	DSI 2	Full	40620	2593	21.99	23.00	1.262	62.9	1.006	0.03	0.070	0.089
	LTE Band 41	20M	QPSK	50	50	Right Tilted	Ant 0	DSI 2	Full	40620	2593	21.99	23.00	1.262	62.9	1.006	-	n/a	n/a
	LTE Band 41	20M	QPSK	50	50	Left Cheek	Ant 0	DSI 2	Full	40620	2593	21.99	23.00	1.262	62.9	1.006	-	n/a	n/a
	LTE Band 41	20M	QPSK	50	50	Left Tilted	Ant 0	DSI 2	Full	40620	2593	21.99	23.00	1.262	62.9	1.006	-	n/a	n/a
	LTE Band 42	20M	QPSK	1	99	Right Cheek	Ant 3	DSI 2	Standalone	42590	3500	19.05	20.00	1.245	62.9	1.006	-0.14	0.800	1.002
	LTE Band 42	20M	QPSK	1	99	Right Tilted	Ant 3	DSI 2	Standalone	42590	3500	19.05	20.00	1.245	62.9	1.006	-0.16	0.564	0.706
	LTE Band 42	20M	QPSK	1	99	Left Cheek	Ant 3	DSI 2	Standalone	42590	3500	19.05	20.00	1.245	62.9	1.006	0.04	0.253	0.317
	LTE Band 42	20M	QPSK	1	99	Left Tilted	Ant 3	DSI 2	Standalone	42590	3500	19.05	20.00	1.245	62.9	1.006	-0.15	0.187	0.234
13	LTE Band 42	20M	QPSK	1	99	Right Cheek	Ant 3	DSI 2	Standalone	42190	3460	18.91	20.00	1.285	62.9	1.006	0.17	0.963	**1.245**
	LTE Band 42	20M	QPSK	1	99	Right Cheek	Ant 3	DSI 2	Standalone	42990	3540	18.88	20.00	1.294	62.9	1.006	-0.06	0.622	0.810
	LTE Band 42	20M	QPSK	50	50	Right Cheek	Ant 3	DSI 2	Standalone	42590	3500	18.93	20.00	1.279	62.9	1.006	-0.13	0.771	0.992
	LTE Band 42	20M	QPSK	50	50	Right Tilted	Ant 3	DSI 2	Standalone	42590	3500	18.93	20.00	1.279	62.9	1.006	0.13	0.579	0.745
	LTE Band 42	20M	QPSK	50	50	Left Cheek	Ant 3	DSI 2	Standalone	42590	3500	18.93	20.00	1.279	62.9	1.006	0.06	0.254	0.327
	LTE Band 42	20M	QPSK	50	50	Left Tilted	Ant 3	DSI 2	Standalone	42590	3500	18.93	20.00	1.279	62.9	1.006	-0.05	0.193	0.248
	LTE Band 42	20M	QPSK	50	50	Right Cheek	Ant 3	DSI 2	Standalone	42190	3460	18.91	20.00	1.285	62.9	1.006	-0.04	0.853	1.103
	LTE Band 42	20M	QPSK	50	50	Right Cheek	Ant 3	DSI 2	Standalone	42990	3540	18.92	20.00	1.282	62.9	1.006	-0.16	0.624	0.805
	LTE Band 42	20M	QPSK	100	0	Right Cheek	Ant 3	DSI 2	Standalone	42590	3500	18.92	20.00	1.282	62.9	1.006	-0.16	0.794	1.024
	LTE Band 42	20M	QPSK	1	99	Right Cheek	Ant 3	DSI 2	Simultaneous	42590	3500	18.02	19.00	1.253	62.9	1.006	-0.05	0.662	0.835
	LTE Band 42	20M	QPSK	1	99	Right Tilted	Ant 3	DSI 2	Simultaneous	42590	3500	18.02	19.00	1.253	62.9	1.006	0.09	0.429	0.541
	LTE Band 42	20M	QPSK	1	99	Left Cheek	Ant 3	DSI 2	Simultaneous	42590	3500	18.02	19.00	1.253	62.9	1.006	0.07	0.202	0.255
	LTE Band 42	20M	QPSK	1	99	Left Tilted	Ant 3	DSI 2	Simultaneous	42590	3500	18.02	19.00	1.253	62.9	1.006	-0.04	0.158	0.199
	LTE Band 42	20M	QPSK	1	99	Right Cheek	Ant 3	DSI 2	Simultaneous	42190	3460	17.91	19.00	1.285	62.9	1.006	-0.1	0.708	0.915
	LTE Band 42	20M	QPSK	1	99	Right Cheek	Ant 3	DSI 2	Simultaneous	42990	3540	17.93	19.00	1.279	62.9	1.006	0.18	0.496	0.638
	LTE Band 42	20M	QPSK	50	50	Right Cheek	Ant 3	DSI 2	Simultaneous	42590	3500	17.95	19.00	1.274	62.9	1.006	0.16	0.628	0.805
	LTE Band 42	20M	QPSK	50	50	Right Tilted	Ant 3	DSI 2	Simultaneous	42590	3500	17.95	19.00	1.274	62.9	1.006	-0.16	0.442	0.566
	LTE Band 42	20M	QPSK	50	50	Left Cheek	Ant 3	DSI 2	Simultaneous	42590	3500	17.95	19.00	1.274	62.9	1.006	-0.16	0.208	0.266
	LTE Band 42	20M	QPSK	50	50	Left Tilted	Ant 3	DSI 2	Simultaneous	42590	3500	17.95	19.00	1.274	62.9	1.006	-0.1	0.176	0.225
	LTE Band 42	20M	QPSK	50	50	Right Cheek	Ant 3	DSI 2	Simultaneous	42190	3460	17.88	19.00	1.294	62.9	1.006	-0.06	0.661	0.861
	LTE Band 42	20M	QPSK	50	50	Right Cheek	Ant 3	DSI 2	Simultaneous	42990	3540	17.94	19.00	1.276	62.9	1.006	0.08	0.444	0.570
	LTE Band 42	20M	QPSK	100	0	Right Cheek	Ant 3	DSI 2	Simultaneous	42590	3500	17.91	19.00	1.285	62.9	1.006	0.02	0.600	0.776

<5GNR SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	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 n5	20M	BPSK	1	1	Right Cheek	Ant 1	DSI 2	Full	167300	836.5	23.18	24.00	1.208	0.09	0.623	0.752
	FR1 n5	20M	BPSK	1	1	Right Tilted	Ant 1	DSI 2	Full	167300	836.5	23.18	24.00	1.208	-0.15	0.599	0.723
14	FR1 n5	20M	BPSK	1	1	Left Cheek	Ant 1	DSI 2	Full	167300	836.5	23.18	24.00	1.208	-0.11	1.020	**1.232**
	FR1 n5	20M	BPSK	1	1	Left Tilted	Ant 1	DSI 2	Full	167300	836.5	23.18	24.00	1.208	-0.06	0.995	1.202
	FR1 n5	20M	BPSK	50	28	Right Cheek	Ant 1	DSI 2	Full	167300	836.5	23.20	24.00	1.202	-0.07	0.596	0.717
	FR1 n5	20M	BPSK	50	28	Right Tilted	Ant 1	DSI 2	Full	167300	836.5	23.20	24.00	1.202	-0.13	0.590	0.709
	FR1 n5	20M	BPSK	50	28	Left Cheek	Ant 1	DSI 2	Full	167300	836.5	23.20	24.00	1.202	0.08	0.795	0.956
	FR1 n5	20M	BPSK	50	28	Left Tilted	Ant 1	DSI 2	Full	167300	836.5	23.20	24.00	1.202	-0.17	0.699	0.840
	FR1 n5	20M	BPSK	100	0	Left Cheek	Ant 1	DSI 2	Full	167300	836.5	22.68	23.50	1.208	0.14	0.543	0.656
	FR1 n5	20M	BPSK	100	0	Left Tilted	Ant 1	DSI 2	Full	167300	836.5	22.68	23.50	1.208	-0.16	0.715	0.864
	FR1 n5	20M	BPSK	1	1	Right Cheek	Ant 1	DSI 2	Simultaneous	167300	836.5	22.40	23.00	1.148	0.06	0.552	0.634
	FR1 n5	20M	BPSK	1	1	Right Tilted	Ant 1	DSI 2	Simultaneous	167300	836.5	22.40	23.00	1.148	-0.05	0.542	0.622
	FR1 n5	20M	BPSK	1	1	Left Cheek	Ant 1	DSI 2	Simultaneous	167300	836.5	22.40	23.00	1.148	-0.17	0.797	0.915
	FR1 n5	20M	BPSK	1	1	Left Tilted	Ant 1	DSI 2	Simultaneous	167300	836.5	22.40	23.00	1.148	-0.05	0.757	0.869
	FR1 n5	20M	BPSK	50	28	Right Cheek	Ant 1	DSI 2	Simultaneous	167300	836.5	22.33	23.00	1.167	-0.07	0.410	0.478
	FR1 n5	20M	BPSK	50	28	Right Tilted	Ant 1	DSI 2	Simultaneous	167300	836.5	22.33	23.00	1.167	-0.12	0.404	0.471
	FR1 n5	20M	BPSK	50	28	Left Cheek	Ant 1	DSI 2	Simultaneous	167300	836.5	22.33	23.00	1.167	0.1	0.609	0.711
	FR1 n5	20M	BPSK	50	28	Left Tilted	Ant 1	DSI 2	Simultaneous	167300	836.5	22.33	23.00	1.167	0.06	0.513	0.599
	FR1 n5	20M	BPSK	100	0	Left Cheek	Ant 1	DSI 2	Simultaneous	167300	836.5	22.31	23.00	1.172	0.01	0.357	0.418
	FR1 n5	20M	BPSK	100	0	Left Tilted	Ant 1	DSI 2	Simultaneous	167300	836.5	22.31	23.00	1.172	-0.08	0.529	0.620
	FR1 n66	40M	BPSK	1	1	Right Cheek	Ant 0	DSI 2	Full	349000	1745	22.92	24.00	1.282	0.07	0.045	0.058
	FR1 n66	40M	BPSK	1	1	Right Tilted	Ant 0	DSI 2	Full	349000	1745	22.92	24.00	1.282	-	n/a	n/a
	FR1 n66	40M	BPSK	1	1	Left Cheek	Ant 0	DSI 2	Full	349000	1745	22.92	24.00	1.282	-0.1	0.063	0.081
	FR1 n66	40M	BPSK	1	1	Left Tilted	Ant 0	DSI 2	Full	349000	1745	22.92	24.00	1.282	-0.06	0.044	0.056
	FR1 n66	40M	BPSK	108	54	Right Cheek	Ant 0	DSI 2	Full	349000	1745	22.36	24.00	1.459	-0.04	0.043	0.063
	FR1 n66	40M	BPSK	108	54	Right Tilted	Ant 0	DSI 2	Full	349000	1745	22.36	24.00	1.459	-	n/a	n/a
	FR1 n66	40M	BPSK	108	54	Left Cheek	Ant 0	DSI 2	Full	349000	1745	22.36	24.00	1.459	0.04	0.100	0.146
	FR1 n66	40M	BPSK	108	54	Left Tilted	Ant 0	DSI 2	Full	349000	1745	22.36	24.00	1.459	-0.16	0.041	0.060
	FR1 n66	40M	BPSK	1	1	Right Cheek	Ant 1	DSI 2	Standalone	349000	1745	15.95	17.00	1.274	-0.05	0.286	0.364
	FR1 n66	40M	BPSK	1	1	Right Tilted	Ant 1	DSI 2	Standalone	349000	1745	15.95	17.00	1.274	0.09	0.355	0.452
	FR1 n66	40M	BPSK	1	1	Left Cheek	Ant 1	DSI 2	Standalone	349000	1745	15.95	17.00	1.274	0.07	0.749	0.954
	FR1 n66	40M	BPSK	1	1	Left Tilted	Ant 1	DSI 2	Standalone	349000	1745	15.95	17.00	1.274	-0.16	0.827	1.053
	FR1 n66	40M	BPSK	1	1	Left Cheek	Ant 1	DSI 2	Standalone	346000	1730	15.81	17.00	1.315	-0.02	0.829	1.090
	FR1 n66	40M	BPSK	1	1	Left Cheek	Ant 1	DSI 2	Standalone	352000	1760	15.81	17.00	1.315	-0.15	0.617	0.811
15	FR1 n66	40M	BPSK	1	1	Left Tilted	Ant 1	DSI 2	Standalone	346000	1730	15.81	17.00	1.315	0.09	0.848	**1.115**
	FR1 n66	40M	BPSK	1	1	Left Tilted	Ant 1	DSI 2	Standalone	352000	1760	15.81	17.00	1.315	-0.17	0.646	0.850
	FR1 n66	40M	BPSK	108	54	Right Cheek	Ant 1	DSI 2	Standalone	349000	1745	15.43	17.00	1.435	-0.12	0.225	0.323
	FR1 n66	40M	BPSK	108	54	Right Tilted	Ant 1	DSI 2	Standalone	349000	1745	15.43	17.00	1.435	0.08	0.285	0.409
	FR1 n66	40M	BPSK	108	54	Left Cheek	Ant 1	DSI 2	Standalone	349000	1745	15.43	17.00	1.435	-0.12	0.607	0.871
	FR1 n66	40M	BPSK	108	54	Left Tilted	Ant 1	DSI 2	Standalone	349000	1745	15.43	17.00	1.435	-0.08	0.661	0.949
	FR1 n66	40M	BPSK	108	54	Left Cheek	Ant 1	DSI 2	Standalone	346000	1730	15.41	17.00	1.442	0.07	0.621	0.896
	FR1 n66	40M	BPSK	108	54	Left Cheek	Ant 1	DSI 2	Standalone	352000	1760	15.27	17.00	1.489	0.01	0.496	0.739
	FR1 n66	40M	BPSK	108	54	Left Tilted	Ant 1	DSI 2	Standalone	346000	1730	15.41	17.00	1.442	-0.07	0.762	1.099
	FR1 n66	40M	BPSK	108	54	Left Tilted	Ant 1	DSI 2	Standalone	352000	1760	15.27	17.00	1.489	0.17	0.571	0.850
	FR1 n66	40M	BPSK	216	0	Left Cheek	Ant 1	DSI 2	Standalone	349000	1745	15.42	17.00	1.439	0.08	0.627	0.902
	FR1 n66	40M	BPSK	216	0	Left Tilted	Ant 1	DSI 2	Standalone	349000	1745	15.42	17.00	1.439	0.07	0.687	0.988
	FR1 n66	40M	BPSK	1	1	Right Cheek	Ant 1	DSI 2	Simultaneous	349000	1745	14.95	16.00	1.274	-0.17	0.221	0.281
	FR1 n66	40M	BPSK	1	1	Right Tilted	Ant 1	DSI 2	Simultaneous	349000	1745	14.95	16.00	1.274	-0.04	0.283	0.360
	FR1 n66	40M	BPSK	1	1	Left Cheek	Ant 1	DSI 2	Simultaneous	349000	1745	14.95	16.00	1.274	0.01	0.597	0.760
	FR1 n66	40M	BPSK	1	1	Left Tilted	Ant 1	DSI 2	Simultaneous	349000	1745	14.95	16.00	1.274	-0.19	0.656	0.835
	FR1 n66	40M	BPSK	1	1	Left Tilted	Ant 1	DSI 2	Simultaneous	346000	1730	14.87	16.00	1.297	0.11	0.693	0.899
	FR1 n66	40M	BPSK	1	1	Left Tilted	Ant 1	DSI 2	Simultaneous	352000	1760	14.87	16.00	1.297	-0.16	0.512	0.664

	FR1 n66	40M	BPSK	108	54	Right Cheek	Ant 1	DSI 2	Simultaneous	349000	1745	14.43	16.00	1.435	0.03	0.176	0.253
	FR1 n66	40M	BPSK	108	54	Right Tilted	Ant 1	DSI 2	Simultaneous	349000	1745	14.43	16.00	1.435	-0.08	0.219	0.314
	FR1 n66	40M	BPSK	108	54	Left Cheek	Ant 1	DSI 2	Simultaneous	349000	1745	14.43	16.00	1.435	-0.13	0.480	0.689
	FR1 n66	40M	BPSK	108	54	Left Tilted	Ant 1	DSI 2	Simultaneous	349000	1745	14.43	16.00	1.435	-0.13	0.531	0.762
	FR1 n66	40M	BPSK	216	0	Left Tilted	Ant 1	DSI 2	Simultaneous	349000	1745	14.42	16.00	1.439	-0.04	0.550	0.791
	FR1 n7	40M	BPSK	1	108	Right Cheek	Ant 0	DSI 2	Full	504000	2520	23.29	24.00	1.178	-0.09	0.094	0.111
	FR1 n7	40M	BPSK	1	108	Right Tilted	Ant 0	DSI 2	Full	504000	2520	23.29	24.00	1.178	-	n/a	n/a
	FR1 n7	40M	BPSK	1	108	Left Cheek	Ant 0	DSI 2	Full	504000	2520	23.29	24.00	1.178	-0.01	0.058	0.068
	FR1 n7	40M	BPSK	1	108	Left Tilted	Ant 0	DSI 2	Full	504000	2520	23.29	24.00	1.178	0.15	0.049	0.058
16	FR1 n7	40M	BPSK	108	54	Right Cheek	Ant 0	DSI 2	Full	504000	2520	23.27	24.00	1.183	0.12	0.113	**0.134**
	FR1 n7	40M	BPSK	108	54	Right Tilted	Ant 0	DSI 2	Full	504000	2520	23.27	24.00	1.183	-	n/a	n/a
	FR1 n7	40M	BPSK	108	54	Left Cheek	Ant 0	DSI 2	Full	504000	2520	23.27	24.00	1.183	0.02	0.060	0.071
	FR1 n7	40M	BPSK	108	54	Left Tilted	Ant 0	DSI 2	Full	504000	2520	23.27	24.00	1.183	-0.05	0.048	0.057
	FR1 n41-PC3	100M	BPSK	1	1	Right Cheek	Ant 0	DSI 2	Full	509202	2546.01	23.26	24.00	1.186	0.14	0.107	0.127
	FR1 n41-PC3	100M	BPSK	1	1	Right Tilted	Ant 0	DSI 2	Full	509202	2546.01	23.26	24.00	1.186	-	n/a	n/a
	FR1 n41-PC3	100M	BPSK	1	1	Left Cheek	Ant 0	DSI 2	Full	509202	2546.01	23.26	24.00	1.186	-0.09	0.049	0.058
	FR1 n41-PC3	100M	BPSK	1	1	Left Tilted	Ant 0	DSI 2	Full	509202	2546.01	23.26	24.00	1.186	0.15	0.038	0.045
	FR1 n41-PC3	100M	BPSK	135	69	Right Cheek	Ant 0	DSI 2	Full	509202	2546.01	23.08	24.00	1.236	0.14	0.084	0.104
	FR1 n41-PC3	100M	BPSK	135	69	Right Tilted	Ant 0	DSI 2	Full	509202	2546.01	23.08	24.00	1.236	-	n/a	n/a
	FR1 n41-PC3	100M	BPSK	135	69	Left Cheek	Ant 0	DSI 2	Full	509202	2546.01	23.08	24.00	1.236	-0.11	0.058	0.072
	FR1 n41-PC3	100M	BPSK	135	69	Left Tilted	Ant 0	DSI 2	Full	509202	2546.01	23.08	24.00	1.236	0.06	0.042	0.052
17	FR1 n41-PC2	100M	BPSK	1	137	Right Cheek	Ant 0	DSI 2	Full	509202	2546.01	25.56	27.00	1.393	0.16	0.171	**0.238**
	FR1 n41-PC2	100M	BPSK	1	137	Right Tilted	Ant 0	DSI 2	Full	509202	2546.01	25.56	27.00	1.393	0.11	0.052	0.072
	FR1 n41-PC2	100M	BPSK	1	137	Left Cheek	Ant 0	DSI 2	Full	509202	2546.01	25.56	27.00	1.393	0.03	0.099	0.138
	FR1 n41-PC2	100M	BPSK	1	137	Left Tilted	Ant 0	DSI 2	Full	509202	2546.01	25.56	27.00	1.393	0.19	0.084	0.117
	FR1 n41-PC2	100M	BPSK	135	69	Right Cheek	Ant 0	DSI 2	Full	509202	2546.01	25.38	27.00	1.452	0.14	0.153	0.222
	FR1 n41-PC2	100M	BPSK	135	69	Right Tilted	Ant 0	DSI 2	Full	509202	2546.01	25.38	27.00	1.452	0.17	0.048	0.070
	FR1 n41-PC2	100M	BPSK	135	69	Left Cheek	Ant 0	DSI 2	Full	509202	2546.01	25.38	27.00	1.452	-0.11	0.093	0.135
	FR1 n41-PC2	100M	BPSK	135	69	Left Tilted	Ant 0	DSI 2	Full	509202	2546.01	25.38	27.00	1.452	-0.09	0.079	0.115
	FR1 n78-PC3	100M	BPSK	1	137	Right Cheek	Ant 3	DSI 2	Standalone	633334	3500.01	15.82	16.50	1.169	0.15	0.511	0.598
	FR1 n78-PC3	100M	BPSK	1	137	Right Tilted	Ant 3	DSI 2	Standalone	633334	3500.01	15.82	16.50	1.169	0.14	0.397	0.464
	FR1 n78-PC3	100M	BPSK	1	137	Left Cheek	Ant 3	DSI 2	Standalone	633334	3500.01	15.82	16.50	1.169	-0.01	0.166	0.194
	FR1 n78-PC3	100M	BPSK	1	137	Left Tilted	Ant 3	DSI 2	Standalone	633334	3500.01	15.82	16.50	1.169	-0.05	0.139	0.163
18	FR1 n78-PC3	100M	BPSK	135	69	Right Cheek	Ant 3	DSI 2	Standalone	633334	3500.01	15.79	16.50	1.178	0.03	0.630	**0.742**
	FR1 n78-PC3	100M	BPSK	135	69	Right Tilted	Ant 3	DSI 2	Standalone	633334	3500.01	15.79	16.50	1.178	-0.09	0.328	0.386
	FR1 n78-PC3	100M	BPSK	135	69	Left Cheek	Ant 3	DSI 2	Standalone	633334	3500.01	15.79	16.50	1.178	0.01	0.147	0.173
	FR1 n78-PC3	100M	BPSK	135	69	Left Tilted	Ant 3	DSI 2	Standalone	633334	3500.01	15.79	16.50	1.178	-0.11	0.127	0.150
	FR1 n78-PC3	100M	BPSK	1	137	Right Cheek	Ant 3	DSI 2	Simultaneous	633334	3500.01	14.77	15.50	1.183	-0.13	0.478	0.565
	FR1 n78-PC3	100M	BPSK	1	137	Right Tilted	Ant 3	DSI 2	Simultaneous	633334	3500.01	14.77	15.50	1.183	0.19	0.302	0.357
	FR1 n78-PC3	100M	BPSK	1	137	Left Cheek	Ant 3	DSI 2	Simultaneous	633334	3500.01	14.77	15.50	1.183	-0.12	0.131	0.155
	FR1 n78-PC3	100M	BPSK	1	137	Left Tilted	Ant 3	DSI 2	Simultaneous	633334	3500.01	14.77	15.50	1.183	0.19	0.105	0.124
	FR1 n78-PC3	100M	BPSK	135	69	Right Cheek	Ant 3	DSI 2	Simultaneous	633334	3500.01	14.74	15.50	1.191	0.13	0.439	0.523
	FR1 n78-PC3	100M	BPSK	135	69	Right Tilted	Ant 3	DSI 2	Simultaneous	633334	3500.01	14.74	15.50	1.191	-0.03	0.262	0.312
	FR1 n78-PC3	100M	BPSK	135	69	Left Cheek	Ant 3	DSI 2	Simultaneous	633334	3500.01	14.74	15.50	1.191	0.01	0.112	0.133
	FR1 n78-PC3	100M	BPSK	135	69	Left Tilted	Ant 3	DSI 2	Simultaneous	633334	3500.01	14.74	15.50	1.191	0.09	0.096	0.114
	FR1 n78-PC2	100M	BPSK	1	137	Right Cheek	Ant 3	DSI 2	Standalone	633334	3500.01	15.82	16.50	1.169	0.15	0.511	0.598
	FR1 n78-PC2	100M	BPSK	1	137	Right Tilted	Ant 3	DSI 2	Standalone	633334	3500.01	15.82	16.50	1.169	0.14	0.397	0.464
	FR1 n78-PC2	100M	BPSK	1	137	Left Cheek	Ant 3	DSI 2	Standalone	633334	3500.01	15.82	16.50	1.169	-0.01	0.166	0.194
	FR1 n78-PC2	100M	BPSK	1	137	Left Tilted	Ant 3	DSI 2	Standalone	633334	3500.01	15.82	16.50	1.169	-0.05	0.139	0.163
	FR1 n78-PC2	100M	BPSK	135	69	Right Cheek	Ant 3	DSI 2	Standalone	633334	3500.01	15.79	16.50	1.178	0.03	0.630	0.742
	FR1 n78-PC2	100M	BPSK	135	69	Right Tilted	Ant 3	DSI 2	Standalone	633334	3500.01	15.79	16.50	1.178	-0.09	0.328	0.386
	FR1 n78-PC2	100M	BPSK	135	69	Left Cheek	Ant 3	DSI 2	Standalone	633334	3500.01	15.79	16.50	1.178	0.01	0.147	0.173
	FR1 n78-PC2	100M	BPSK	135	69	Left Tilted	Ant 3	DSI 2	Standalone	633334	3500.01	15.79	16.50	1.178	-0.11	0.127	0.150
	FR1 n78-PC2	100M	BPSK	1	137	Right Cheek	Ant 3	DSI 2	Simultaneous	633334	3500.01	14.77	15.50	1.183	-0.13	0.478	0.565
	FR1 n78-PC2	100M	BPSK	1	137	Right Tilted	Ant 3	DSI 2	Simultaneous	633334	3500.01	14.77	15.50	1.183	0.19	0.302	0.357
	FR1 n78-PC2	100M	BPSK	1	137	Left Cheek	Ant 3	DSI 2	Simultaneous	633334	3500.01	14.77	15.50	1.183	-0.12	0.131	0.155

	FR1 n78-PC2	100M	BPSK	1	137	Left Tilted	Ant 3	DSI 2	Simultaneous	633334	3500.01	14.77	15.50	1.183	0.19	0.105	0.124
	FR1 n78-PC2	100M	BPSK	135	69	Right Cheek	Ant 3	DSI 2	Simultaneous	633334	3500.01	14.74	15.50	1.191	0.13	0.439	0.523
	FR1 n78-PC2	100M	BPSK	135	69	Right Tilted	Ant 3	DSI 2	Simultaneous	633334	3500.01	14.74	15.50	1.191	-0.03	0.262	0.312
	FR1 n78-PC2	100M	BPSK	135	69	Left Cheek	Ant 3	DSI 2	Simultaneous	633334	3500.01	14.74	15.50	1.191	0.01	0.112	0.133
	FR1 n78-PC2	100M	BPSK	135	69	Left Tilted	Ant 3	DSI 2	Simultaneous	633334	3500.01	14.74	15.50	1.191	0.09	0.096	0.114

<WLAN2.4G SAR>

Plot No.	Band	Mode	Test Position	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	Ant 2+4	Standalone	11	2462	20.34	21.50	1.306	97.82	1.022	-0.1	0.767	1.024
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	Ant 2+4	Standalone	11	2462	20.34	21.50	1.306	97.82	1.022	-0.16	0.727	0.970
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	Ant 2+4	Standalone	11	2462	20.34	21.50	1.306	97.82	1.022	0.02	0.558	0.745
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	Ant 2+4	Standalone	11	2462	20.34	21.50	1.306	97.82	1.022	0.04	0.533	0.712
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	Ant 2+4	Standalone	1	2412	20.29	21.50	1.321	97.82	1.022	0.03	0.894	1.207
19	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	Ant 2+4	Standalone	6	2437	20.18	21.50	1.355	97.82	1.022	-0.1	0.958	**1.327**
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	Ant 2+4	Standalone	1	2412	20.29	21.50	1.321	97.82	1.022	-0.19	0.671	0.906
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	Ant 2+4	Simultaneous	11	2462	16.31	17.50	1.314	97.82	1.022	-0.18	0.301	0.404
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	Ant 2+4	Simultaneous	11	2462	16.31	17.50	1.314	97.82	1.022	0.19	0.231	0.310
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	Ant 2+4	Simultaneous	11	2462	16.31	17.50	1.314	97.82	1.022	0.13	0.168	0.226
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	Ant 2+4	Simultaneous	11	2462	16.31	17.50	1.314	97.82	1.022	-0.11	0.155	0.208

<WLAN5G SAR>

Plot No.	Band	Mode	Test Position	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)
20	WLAN5.3GHz	802.11a 6Mbps	Right Cheek	Ant 4+12	Full	52	5260	20.87	22.00	1.296	97.95	1.021	0.06	0.740	**0.979**
	WLAN5.3GHz	802.11a 6Mbps	Right Tilted	Ant 4+12	Full	52	5260	20.87	22.00	1.296	97.95	1.021	0.09	0.382	0.505
	WLAN5.3GHz	802.11a 6Mbps	Left Cheek	Ant 4+12	Full	52	5260	20.87	22.00	1.296	97.95	1.021	0.11	0.268	0.355
	WLAN5.3GHz	802.11a 6Mbps	Left Tilted	Ant 4+12	Full	52	5260	20.87	22.00	1.296	97.95	1.021	0.02	0.270	0.357
	WLAN5.3GHz	802.11a 6Mbps	Right Cheek	Ant 4+12	Full	60	5300	20.83	22.00	1.308	97.95	1.021	0.14	0.471	0.629
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Cheek	Ant 4+12	Simultaneous	58	5290	16.89	18.00	1.291	100	1.000	0.07	0.231	0.298
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Tilted	Ant 4+12	Simultaneous	58	5290	16.89	18.00	1.291	100	1.000	-0.06	0.175	0.226
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Cheek	Ant 4+12	Simultaneous	58	5290	16.89	18.00	1.291	100	1.000	0.11	0.115	0.148
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Tilted	Ant 4+12	Simultaneous	58	5290	16.89	18.00	1.291	100	1.000	0.06	0.099	0.128
21	WLAN5.5GHz	802.11n-HT40 MCS0	Right Cheek	Ant 4+12	Standalone	102	5510	18.62	19.50	1.225	100	1.000	0.02	0.885	**1.084**
	WLAN5.5GHz	802.11n-HT40 MCS0	Right Tilted	Ant 4+12	Standalone	102	5510	18.62	19.50	1.225	100	1.000	-0.11	0.627	0.768
	WLAN5.5GHz	802.11n-HT40 MCS0	Left Cheek	Ant 4+12	Standalone	102	5510	18.62	19.50	1.225	100	1.000	-0.12	0.405	0.496
	WLAN5.5GHz	802.11n-HT40 MCS0	Left Tilted	Ant 4+12	Standalone	102	5510	18.62	19.50	1.225	100	1.000	0.13	0.434	0.531
	WLAN5.5GHz	802.11n-HT40 MCS0	Right Cheek	Ant 4+12	Standalone	134	5670	18.58	19.50	1.236	100	1.000	0.06	0.466	0.576
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Cheek	Ant 4+12	Simultaneous	106	5530	12.67	13.50	1.211	100	1.000	0.06	0.209	0.253
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Tilted	Ant 4+12	Simultaneous	106	5530	12.67	13.50	1.211	100	1.000	-0.14	0.170	0.206
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	Ant 4+12	Simultaneous	106	5530	12.67	13.50	1.211	100	1.000	0.16	0.107	0.130
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Tilted	Ant 4+12	Simultaneous	106	5530	12.67	13.50	1.211	100	1.000	-0.13	0.118	0.143
22	WLAN5.8GHz	802.11a 6Mbps	Right Cheek	Ant 4+12	Full	157	5785	20.55	21.50	1.245	97.95	1.021	0.01	0.373	**0.474**
	WLAN5.8GHz	802.11a 6Mbps	Right Tilted	Ant 4+12	Full	157	5785	20.55	21.50	1.245	97.95	1.021	0.16	0.148	0.188
	WLAN5.8GHz	802.11a 6Mbps	Left Cheek	Ant 4+12	Full	157	5785	20.55	21.50	1.245	97.95	1.021	-0.04	0.135	0.172
	WLAN5.8GHz	802.11a 6Mbps	Left Tilted	Ant 4+12	Full	157	5785	20.55	21.50	1.245	97.95	1.021	-0.18	0.124	0.158
	WLAN5.8GHz	802.11n-HT40 MCS0	Right Cheek	Ant 4+12	Simultaneous	159	5795	19.93	21.00	1.278	100	1.000	0.09	0.178	0.227
	WLAN5.8GHz	802.11n-HT40 MCS0	Right Tilted	Ant 4+12	Simultaneous	159	5795	19.93	21.00	1.278	100	1.000	0.03	0.123	0.157
	WLAN5.8GHz	802.11n-HT40 MCS0	Left Cheek	Ant 4+12	Simultaneous	159	5795	19.93	21.00	1.278	100	1.000	0.16	0.109	0.139
	WLAN5.8GHz	802.11n-HT40 MCS0	Left Tilted	Ant 4+12	Simultaneous	159	5795	19.93	21.00	1.278	100	1.000	-0.06	0.091	0.116

<WLAN6G SAR>

Plot No.	Band	Mode	Test Position	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)	Measured APD 4cm^2 (W/m^2)
	WLAN6GHz	802.11ac-VHT160 MCS0	Right Cheek	Ant 4+12	Full	15	6025	15.88	16.50	1.153	100	1.000	-0.03	0.006	0.007	0.033
23	WLAN6GHz	802.11ac-VHT160 MCS0	Right Tilted	Ant 4+12	Full	15	6025	15.88	16.50	1.153	100	1.000	0.07	0.016	**0.018**	0.12
	WLAN6GHz	802.11ac-VHT160 MCS0	Left Cheek	Ant 4+12	Full	15	6025	15.88	16.50	1.153	100	1.000	-0.11	0.002	0.002	0.005
	WLAN6GHz	802.11ac-VHT160 MCS0	Left Tilted	Ant 4+12	Full	15	6025	15.88	16.50	1.153	100	1.000	0.06	0.004	0.005	0.013

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	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)
24	Bluetooth	DH5 1Mbps	Right Cheek	Ant 2	Full	0	2402	10.00	11.00	1.259	77.05	1.298	-0.04	0.156	**0.255**
	Bluetooth	DH5 1Mbps	Right Tilted	Ant 2	Full	0	2402	10.00	11.00	1.259	77.05	1.298	0.16	0.132	0.216
	Bluetooth	DH5 1Mbps	Left Cheek	Ant 2	Full	0	2402	10.00	11.00	1.259	77.05	1.298	-0.09	0.086	0.141
	Bluetooth	DH5 1Mbps	Left Tilted	Ant 2	Full	0	2402	10.00	11.00	1.259	77.05	1.298	0.11	0.097	0.159

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	5mm	Ant 0	DSI 3	Simultaneous	128	824.2	26.86	28.00	1.300	0.03	0.754	0.980
	GSM850	GPRS(3 Tx slots)	Back	5mm	Ant 0	DSI 3	Simultaneous	128	824.2	26.86	28.00	1.300	-0.14	0.942	1.225
	GSM850	GPRS(3 Tx slots)	Left Side	5mm	Ant 0	DSI 3	Simultaneous	128	824.2	26.86	28.00	1.300	-0.03	0.178	0.231
	GSM850	GPRS(3 Tx slots)	Right Side	5mm	Ant 0	DSI 3	Simultaneous	128	824.2	26.86	28.00	1.300	0.11	0.334	0.434
	GSM850	GPRS(3 Tx slots)	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	128	824.2	26.86	28.00	1.300	-0.11	0.700	0.910
	GSM850	GPRS(3 Tx slots)	Front	5mm	Ant 0	DSI 3	Simultaneous	189	836.4	26.69	28.00	1.352	-0.07	0.757	1.024
	GSM850	GPRS(3 Tx slots)	Front	5mm	Ant 0	DSI 3	Simultaneous	251	848.8	26.85	28.00	1.303	-0.05	0.791	1.031
	GSM850	GPRS(3 Tx slots)	Back	5mm	Ant 0	DSI 3	Simultaneous	189	836.4	26.69	28.00	1.352	0.14	0.907	1.226
25	GSM850	GPRS(3 Tx slots)	Back	5mm	Ant 0	DSI 3	Simultaneous	251	848.8	26.85	28.00	1.303	-0.12	0.946	**1.233**
	GSM850	GPRS(3 Tx slots)	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	189	836.4	26.69	28.00	1.352	0.06	0.615	0.832
	GSM850	GPRS(3 Tx slots)	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	251	848.8	26.85	28.00	1.303	0.03	0.607	0.791
	GSM850	GPRS(3 Tx slots)	Front	5mm	Ant 1	DSI 4	Full	128	824.2	27.52	28.50	1.253	0.19	0.357	0.447
	GSM850	GPRS(3 Tx slots)	Back	5mm	Ant 1	DSI 4	Full	128	824.2	27.52	28.50	1.253	-0.04	0.651	0.816
	GSM850	GPRS(3 Tx slots)	Left Side	5mm	Ant 1	DSI 4	Full	128	824.2	27.52	28.50	1.253	0.06	0.090	0.113
	GSM850	GPRS(3 Tx slots)	Right Side	5mm	Ant 1	DSI 4	Full	128	824.2	27.52	28.50	1.253	-0.07	0.216	0.271
	GSM850	GPRS(3 Tx slots)	Top Side	5mm	Ant 1	DSI 4	Full	128	824.2	27.52	28.50	1.253	0.02	0.510	0.639
	GSM850	GPRS(3 Tx slots)	Back	5mm	Ant 1	DSI 4	Full	189	836.4	27.51	28.50	1.256	0.1	0.512	0.643
	GSM850	GPRS(3 Tx slots)	Back	5mm	Ant 1	DSI 4	Full	251	848.8	27.38	28.50	1.294	0.03	0.640	0.828
	GSM1900	GPRS(3 Tx slots)	Front	5mm	Ant 0	DSI 3	Simultaneous	512	1850.2	20.36	21.50	1.300	-0.08	0.229	0.298
	GSM1900	GPRS(3 Tx slots)	Back	5mm	Ant 0	DSI 3	Simultaneous	512	1850.2	20.36	21.50	1.300	0.09	0.565	0.735
	GSM1900	GPRS(3 Tx slots)	Left Side	5mm	Ant 0	DSI 3	Simultaneous	512	1850.2	20.36	21.50	1.300	-	n/a	n/a
	GSM1900	GPRS(3 Tx slots)	Right Side	5mm	Ant 0	DSI 3	Simultaneous	512	1850.2	20.36	21.50	1.300	-	n/a	n/a
	GSM1900	GPRS(3 Tx slots)	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	512	1850.2	20.36	21.50	1.300	0.19	0.663	0.862
	GSM1900	GPRS(3 Tx slots)	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	661	1880	20.32	21.50	1.312	0.09	0.744	0.976
26	GSM1900	GPRS(3 Tx slots)	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	810	1909.8	20.04	21.50	1.400	0.05	0.872	**1.220**

<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	5mm	Ant 0	DSI 3	Simultaneous	4233	846.6	22.22	23.00	1.197	0.17	0.574	0.687
27	WCDMA V	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	Simultaneous	4233	846.6	22.22	23.00	1.197	-0.05	1.050	**1.257**
	WCDMA V	RMC 12.2Kbps	Left Side	5mm	Ant 0	DSI 3	Simultaneous	4233	846.6	22.22	25.00	1.897	0.13	0.102	0.193
	WCDMA V	RMC 12.2Kbps	Right Side	5mm	Ant 0	DSI 3	Simultaneous	4233	846.6	22.22	23.00	1.197	-0.03	0.196	0.235
	WCDMA V	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	4233	846.6	22.22	23.00	1.197	0.18	0.506	0.606
	WCDMA V	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	Simultaneous	4132	826.4	22.10	23.00	1.230	0.12	0.744	0.915
	WCDMA V	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	Simultaneous	4182	836.4	22.09	23.00	1.233	0.13	0.821	1.012
	WCDMA V	RMC 12.2Kbps	Front	5mm	Ant 1	DSI 3	Simultaneous	4233	846.6	21.52	22.50	1.253	-0.07	0.582	0.729
	WCDMA V	RMC 12.2Kbps	Back	5mm	Ant 1	DSI 3	Simultaneous	4233	846.6	21.52	22.50	1.253	0.01	0.739	0.926
	WCDMA V	RMC 12.2Kbps	Left Side	5mm	Ant 1	DSI 3	Simultaneous	4233	846.6	21.52	22.50	1.253	0.17	0.097	0.122
	WCDMA V	RMC 12.2Kbps	Right Side	5mm	Ant 1	DSI 3	Simultaneous	4233	846.6	21.52	22.50	1.253	0.12	0.225	0.282
	WCDMA V	RMC 12.2Kbps	Top Side	5mm	Ant 1	DSI 3	Simultaneous	4233	846.6	21.52	22.50	1.253	-0.07	0.642	0.805
	WCDMA V	RMC 12.2Kbps	Back	5mm	Ant 1	DSI 3	Simultaneous	4132	826.4	21.37	22.50	1.297	0.15	0.736	0.955
	WCDMA V	RMC 12.2Kbps	Back	5mm	Ant 1	DSI 3	Simultaneous	4182	836.4	21.40	22.50	1.288	0.15	0.751	0.967
	WCDMA V	RMC 12.2Kbps	Top Side	5mm	Ant 1	DSI 3	Simultaneous	4132	826.4	21.37	22.50	1.297	0.03	0.573	0.743
	WCDMA V	RMC 12.2Kbps	Top Side	5mm	Ant 1	DSI 3	Simultaneous	4182	836.4	21.40	22.50	1.288	-0.15	0.600	0.773
	WCDMA IV	RMC 12.2Kbps	Front	5mm	Ant 0	DSI 3	Simultaneous	1413	1732.6	16.12	17.00	1.225	0.14	0.358	0.438
	WCDMA IV	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	Simultaneous	1413	1732.6	16.12	17.00	1.225	0.02	0.591	0.724
	WCDMA IV	RMC 12.2Kbps	Left Side	5mm	Ant 0	DSI 3	Simultaneous	1413	1732.6	16.12	17.00	1.225	-	n/a	n/a
	WCDMA IV	RMC 12.2Kbps	Right Side	5mm	Ant 0	DSI 3	Simultaneous	1413	1732.6	16.12	17.00	1.225	-0.03	0.046	0.056
	WCDMA IV	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	1413	1732.6	16.12	17.00	1.225	0.02	0.808	0.989
	WCDMA IV	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	1312	1712.4	16.11	17.00	1.227	-0.18	0.764	0.938
28	WCDMA IV	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	1513	1752.6	15.78	17.00	1.324	-0.03	0.840	**1.112**
	WCDMA II	RMC 12.2Kbps	Front	5mm	Ant 0	DSI 3	Simultaneous	9538	1907.6	15.44	16.50	1.276	0.12	0.310	0.396
	WCDMA II	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	Simultaneous	9538	1907.6	15.44	16.50	1.276	-0.18	0.550	0.702
	WCDMA II	RMC 12.2Kbps	Left Side	5mm	Ant 0	DSI 3	Simultaneous	9538	1907.6	15.44	16.50	1.276	-	n/a	n/a
	WCDMA II	RMC 12.2Kbps	Right Side	5mm	Ant 0	DSI 3	Simultaneous	9538	1907.6	15.44	16.50	1.276	-	n/a	n/a
	WCDMA II	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	9538	1907.6	15.44	16.50	1.276	-0.16	0.808	1.031
	WCDMA II	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	9262	1852.4	15.26	16.50	1.330	0.03	0.745	0.991
29	WCDMA II	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	9400	1880	15.31	16.50	1.315	-0.09	0.915	**1.203**

<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 5	10M	QPSK	1	0	Front	5mm	Ant 0	DSI 4	Full	20525	836.5	22.86	24.00	1.300	0.12	0.487	0.633
30	LTE Band 5	10M	QPSK	1	0	Back	5mm	Ant 0	DSI 4	Full	20525	836.5	22.86	24.00	1.300	0.1	0.939	**1.221**
	LTE Band 5	10M	QPSK	1	0	Left Side	5mm	Ant 0	DSI 4	Full	20525	836.5	22.86	24.00	1.300	0.13	0.091	0.118
	LTE Band 5	10M	QPSK	1	0	Right Side	5mm	Ant 0	DSI 4	Full	20525	836.5	22.86	24.00	1.300	-0.01	0.172	0.224
	LTE Band 5	10M	QPSK	1	0	Bottom Side	5mm	Ant 0	DSI 4	Full	20525	836.5	22.86	24.00	1.300	0.05	0.457	0.594
	LTE Band 5	10M	QPSK	25	0	Front	5mm	Ant 0	DSI 4	Full	20525	836.5	22.03	23.00	1.250	-0.04	0.389	0.486
	LTE Band 5	10M	QPSK	25	0	Back	5mm	Ant 0	DSI 4	Full	20525	836.5	22.03	23.00	1.250	0.09	0.660	0.825
	LTE Band 5	10M	QPSK	25	0	Left Side	5mm	Ant 0	DSI 4	Full	20525	836.5	22.03	23.00	1.250	-0.16	0.071	0.089
	LTE Band 5	10M	QPSK	25	0	Right Side	5mm	Ant 0	DSI 4	Full	20525	836.5	22.03	23.00	1.250	0.15	0.131	0.164
	LTE Band 5	10M	QPSK	25	0	Bottom Side	5mm	Ant 0	DSI 4	Full	20525	836.5	22.03	23.00	1.250	0.13	0.314	0.393
	LTE Band 5	10M	QPSK	50	0	Back	5mm	Ant 0	DSI 4	Full	20525	836.5	21.96	23.00	1.271	0.06	0.847	1.076
	LTE Band 12	10M	QPSK	1	0	Front	5mm	Ant 1	DSI 3	Simultaneous	23095	707.5	21.76	23.00	1.330	0.16	0.460	0.612
31	LTE Band 12	10M	QPSK	1	0	Back	5mm	Ant 1	DSI 3	Simultaneous	23095	707.5	21.76	23.00	1.330	0.08	0.621	**0.826**
	LTE Band 12	10M	QPSK	1	0	Left Side	5mm	Ant 1	DSI 3	Simultaneous	23095	707.5	21.76	23.00	1.330	0.06	0.140	0.186
	LTE Band 12	10M	QPSK	1	0	Right Side	5mm	Ant 1	DSI 3	Simultaneous	23095	707.5	21.76	23.00	1.330	-0.04	0.380	0.506
	LTE Band 12	10M	QPSK	1	0	Top Side	5mm	Ant 1	DSI 3	Simultaneous	23095	707.5	21.76	23.00	1.330	-0.01	0.600	0.798
	LTE Band 12	10M	QPSK	25	0	Front	5mm	Ant 1	DSI 3	Simultaneous	23095	707.5	21.27	23.00	1.489	0.08	0.279	0.416
	LTE Band 12	10M	QPSK	25	0	Back	5mm	Ant 1	DSI 3	Simultaneous	23095	707.5	21.27	23.00	1.489	0.15	0.470	0.700
	LTE Band 12	10M	QPSK	25	0	Left Side	5mm	Ant 1	DSI 3	Simultaneous	23095	707.5	21.27	23.00	1.489	0.1	0.100	0.149
	LTE Band 12	10M	QPSK	25	0	Right Side	5mm	Ant 1	DSI 3	Simultaneous	23095	707.5	21.27	23.00	1.489	-0.04	0.282	0.420
	LTE Band 12	10M	QPSK	25	0	Top Side	5mm	Ant 1	DSI 3	Simultaneous	23095	707.5	21.27	23.00	1.489	0.1	0.466	0.694
	LTE Band 12	10M	QPSK	50	0	Back	5mm	Ant 1	DSI 3	Simultaneous	23095	707.5	21.26	23.00	1.493	0.08	0.454	0.678
	LTE Band 26	15M	QPSK	1	0	Front	5mm	Ant 1	DSI 3	Simultaneous	26865	831.5	21.68	22.50	1.208	-0.01	0.488	0.589
32	LTE Band 26	15M	QPSK	1	0	Back	5mm	Ant 1	DSI 3	Simultaneous	26865	831.5	21.68	22.50	1.208	-0.07	0.773	**0.934**
	LTE Band 26	15M	QPSK	1	0	Left Side	5mm	Ant 1	DSI 3	Simultaneous	26865	831.5	21.68	22.50	1.208	0.08	0.058	0.070
	LTE Band 26	15M	QPSK	1	0	Right Side	5mm	Ant 1	DSI 3	Simultaneous	26865	831.5	21.68	22.50	1.208	-0.05	0.182	0.220
	LTE Band 26	15M	QPSK	1	0	Top Side	5mm	Ant 1	DSI 3	Simultaneous	26865	831.5	21.68	22.50	1.208	0.04	0.710	0.858
	LTE Band 26	15M	QPSK	36	0	Front	5mm	Ant 1	DSI 3	Simultaneous	26865	831.5	21.59	22.50	1.233	0.08	0.499	0.615
	LTE Band 26	15M	QPSK	36	0	Back	5mm	Ant 1	DSI 3	Simultaneous	26865	831.5	21.59	22.50	1.233	0.14	0.716	0.883
	LTE Band 26	15M	QPSK	36	0	Left Side	5mm	Ant 1	DSI 3	Simultaneous	26865	831.5	21.59	22.50	1.233	0.08	0.062	0.076
	LTE Band 26	15M	QPSK	36	0	Right Side	5mm	Ant 1	DSI 3	Simultaneous	26865	831.5	21.59	22.50	1.233	0.09	0.174	0.215
	LTE Band 26	15M	QPSK	36	0	Top Side	5mm	Ant 1	DSI 3	Simultaneous	26865	831.5	21.59	22.50	1.233	0.14	0.549	0.677
	LTE Band 26	15M	QPSK	75	0	Back	5mm	Ant 1	DSI 3	Simultaneous	26865	831.5	21.53	22.50	1.250	-0.19	0.708	0.885
	LTE Band 26	15M	QPSK	75	0	Top Side	5mm	Ant 1	DSI 3	Simultaneous	26865	831.5	21.53	22.50	1.250	-0.19	0.596	0.745
	LTE Band 66	20M	QPSK	1	0	Front	5mm	Ant 0	DSI 3	Simultaneous	132322	1745	15.61	16.50	1.227	0.01	0.281	0.345
	LTE Band 66	20M	QPSK	1	0	Back	5mm	Ant 0	DSI 3	Simultaneous	132322	1745	15.61	16.50	1.227	0.08	0.615	0.755
	LTE Band 66	20M	QPSK	1	0	Left Side	5mm	Ant 0	DSI 3	Simultaneous	132322	1745	15.61	16.50	1.227	-	n/a	n/a
	LTE Band 66	20M	QPSK	1	0	Right Side	5mm	Ant 0	DSI 3	Simultaneous	132322	1745	15.61	16.50	1.227	0.13	0.059	0.072
	LTE Band 66	20M	QPSK	1	0	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	132322	1745	15.61	16.50	1.227	-0.19	0.810	0.994
	LTE Band 66	20M	QPSK	1	0	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	132072	1720	15.56	16.50	1.242	0.08	0.546	0.678
33	LTE Band 66	20M	QPSK	1	0	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	132572	1770	15.18	16.50	1.355	0.16	0.842	**1.141**
	LTE Band 66	20M	QPSK	50	0	Front	5mm	Ant 0	DSI 3	Simultaneous	132322	1745	15.59	16.50	1.233	0.01	0.295	0.364
	LTE Band 66	20M	QPSK	50	0	Back	5mm	Ant 0	DSI 3	Simultaneous	132322	1745	15.59	16.50	1.233	0.07	0.635	0.783
	LTE Band 66	20M	QPSK	50	0	Left Side	5mm	Ant 0	DSI 3	Simultaneous	132322	1745	15.59	16.50	1.233	-	n/a	n/a
	LTE Band 66	20M	QPSK	50	0	Right Side	5mm	Ant 0	DSI 3	Simultaneous	132322	1745	15.59	16.50	1.233	0.18	0.057	0.070
	LTE Band 66	20M	QPSK	50	0	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	132322	1745	15.59	16.50	1.233	-0.03	0.822	1.014
	LTE Band 66	20M	QPSK	50	0	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	132072	1720	15.51	16.50	1.256	0.08	0.555	0.697
	LTE Band 66	20M	QPSK	50	0	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	132572	1770	15.41	16.50	1.285	-0.14	0.837	1.076
	LTE Band 66	20M	QPSK	100	0	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	132322	1745	15.55	16.50	1.245	0.02	0.819	1.019
	LTE Band 66	20M	QPSK	1	0	Front	5mm	Ant 1	DSI 3	Simultaneous	132322	1745	15.25	16.00	1.189	-0.14	0.476	0.566
	LTE Band 66	20M	QPSK	1	0	Back	5mm	Ant 1	DSI 3	Simultaneous	132322	1745	15.25	16.00	1.189	0.04	0.733	0.871
	LTE Band 66	20M	QPSK	1	0	Left Side	5mm	Ant 1	DSI 3	Standalone	132322	1745	15.25	16.00	1.189	-	n/a	n/a

	LTE Band 66	20M	QPSK	1	0	Right Side	5mm	Ant 1	DSI 3	Simultaneous	132322	1745	15.25	16.00	1.189	0.09	0.109	0.130
	LTE Band 66	20M	QPSK	1	0	Top Side	5mm	Ant 1	DSI 3	Simultaneous	132322	1745	15.25	16.00	1.189	0.09	0.707	0.840
	LTE Band 66	20M	QPSK	1	0	Back	5mm	Ant 1	DSI 3	Simultaneous	132072	1720	15.01	16.00	1.256	0.07	0.673	0.845
	LTE Band 66	20M	QPSK	1	0	Back	5mm	Ant 1	DSI 3	Simultaneous	132572	1770	15.22	16.00	1.197	0.18	0.703	0.841
	LTE Band 66	20M	QPSK	1	0	Top Side	5mm	Ant 1	DSI 3	Simultaneous	132072	1720	15.01	16.00	1.256	0.01	0.718	0.902
	LTE Band 66	20M	QPSK	1	0	Top Side	5mm	Ant 1	DSI 3	Simultaneous	132572	1770	15.22	16.00	1.197	-0.04	0.731	0.875
	LTE Band 66	20M	QPSK	50	0	Front	5mm	Ant 1	DSI 3	Simultaneous	132322	1745	15.12	16.00	1.225	0.05	0.429	0.525
	LTE Band 66	20M	QPSK	50	0	Back	5mm	Ant 1	DSI 3	Simultaneous	132322	1745	15.12	16.00	1.225	-0.07	0.680	0.833
	LTE Band 66	20M	QPSK	50	0	Left Side	5mm	Ant 1	DSI 3	Simultaneous	132322	1745	15.12	16.00	1.225	-	n/a	n/a
	LTE Band 66	20M	QPSK	50	0	Right Side	5mm	Ant 1	DSI 3	Simultaneous	132322	1745	15.12	16.00	1.225	0.16	0.100	0.122
	LTE Band 66	20M	QPSK	50	0	Top Side	5mm	Ant 1	DSI 3	Simultaneous	132322	1745	15.12	16.00	1.225	-0.09	0.706	0.865
	LTE Band 66	20M	QPSK	50	0	Back	5mm	Ant 1	DSI 3	Simultaneous	132072	1720	14.82	16.00	1.312	-0.01	0.645	0.846
	LTE Band 66	20M	QPSK	50	0	Back	5mm	Ant 1	DSI 3	Simultaneous	132572	1770	15.11	16.00	1.227	0.05	0.656	0.805
	LTE Band 66	20M	QPSK	50	0	Top Side	5mm	Ant 1	DSI 3	Simultaneous	132072	1720	14.82	16.00	1.312	0.03	0.687	0.901
	LTE Band 66	20M	QPSK	50	0	Top Side	5mm	Ant 1	DSI 3	Simultaneous	132572	1770	15.11	16.00	1.227	0.09	0.683	0.838
	LTE Band 66	20M	QPSK	100	0	Back	5mm	Ant 1	DSI 3	Simultaneous	132322	1745	15.08	16.00	1.236	-0.01	0.709	0.876
	LTE Band 66	20M	QPSK	100	0	Top Side	5mm	Ant 1	DSI 3	Simultaneous	132322	1745	15.08	16.00	1.236	-0.06	0.701	0.866
	LTE Band 2	20M	QPSK	1	0	Front	5mm	Ant 0	DSI 3	Simultaneous	18700	1860	14.11	15.00	1.227	-0.05	0.256	0.314
	LTE Band 2	20M	QPSK	1	0	Back	5mm	Ant 0	DSI 3	Simultaneous	18700	1860	14.11	15.00	1.227	-0.18	0.505	0.620
	LTE Band 2	20M	QPSK	1	0	Left Side	5mm	Ant 0	DSI 3	Simultaneous	18700	1860	14.11	15.00	1.227	-	n/a	n/a
	LTE Band 2	20M	QPSK	1	0	Right Side	5mm	Ant 0	DSI 3	Simultaneous	18700	1860	14.11	15.00	1.227	-	n/a	n/a
	LTE Band 2	20M	QPSK	1	0	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	18700	1860	14.11	15.00	1.227	-0.01	0.735	0.902
	LTE Band 2	20M	QPSK	1	0	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	18900	1880	14.07	15.00	1.239	0.01	0.623	0.772
34	LTE Band 2	20M	QPSK	1	0	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	19100	1900	13.89	15.00	1.291	0.15	0.824	**1.064**
	LTE Band 2	20M	QPSK	50	0	Front	5mm	Ant 0	DSI 3	Simultaneous	18700	1860	14.02	15.00	1.253	-0.05	0.266	0.333
	LTE Band 2	20M	QPSK	50	0	Back	5mm	Ant 0	DSI 3	Simultaneous	18700	1860	14.02	15.00	1.253	-0.11	0.509	0.638
	LTE Band 2	20M	QPSK	50	0	Left Side	5mm	Ant 0	DSI 3	Simultaneous	18700	1860	14.02	15.00	1.253	-	n/a	n/a
	LTE Band 2	20M	QPSK	50	0	Right Side	5mm	Ant 0	DSI 3	Simultaneous	18700	1860	14.02	15.00	1.253	-	n/a	n/a
	LTE Band 2	20M	QPSK	50	0	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	18700	1860	14.02	15.00	1.253	-0.04	0.702	0.880
	LTE Band 2	20M	QPSK	50	0	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	18900	1880	13.95	15.00	1.274	0.04	0.742	0.945
	LTE Band 2	20M	QPSK	50	0	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	19100	1900	13.97	15.00	1.268	-0.02	0.756	0.958
	LTE Band 2	20M	QPSK	100	0	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	18700	1860	13.91	15.00	1.285	0.08	0.708	0.910
	LTE Band 7	20M	QPSK	1	99	Front	5mm	Ant 0	DSI 3	Simultaneous	21350	2560	15.16	16.00	1.213	0.09	0.260	0.315
	LTE Band 7	20M	QPSK	1	99	Back	5mm	Ant 0	DSI 3	Simultaneous	21350	2560	15.16	16.00	1.213	0.05	0.586	0.711
	LTE Band 7	20M	QPSK	1	99	Left Side	5mm	Ant 0	DSI 3	Simultaneous	21350	2560	15.16	16.00	1.213	-	n/a	n/a
	LTE Band 7	20M	QPSK	1	99	Right Side	5mm	Ant 0	DSI 3	Simultaneous	21350	2560	15.16	16.00	1.213	-0.17	0.070	0.085
	LTE Band 7	20M	QPSK	1	99	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	21350	2560	15.16	16.00	1.213	-0.01	0.889	1.079
	LTE Band 7	20M	QPSK	1	99	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	20850	2510	14.86	16.00	1.300	0.14	0.858	1.116
	LTE Band 7C	20M	QPSK	1	99	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	20850(SCC) +21048(PCC)	2510 +2529.8	15.30	16.00	1.175	-0.05	0.824	0.968
	LTE Band 7	20M	QPSK	1	99	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	21100	2535	15.14	16.00	1.219	0.1	0.834	1.017
	LTE Band 7	20M	QPSK	50	50	Front	5mm	Ant 0	DSI 3	Simultaneous	21350	2560	15.13	16.00	1.222	-0.14	0.298	0.364
	LTE Band 7	20M	QPSK	50	50	Back	5mm	Ant 0	DSI 3	Simultaneous	21350	2560	15.13	16.00	1.222	-0.14	0.603	0.737
	LTE Band 7	20M	QPSK	50	50	Left Side	5mm	Ant 0	DSI 3	Simultaneous	21350	2560	15.13	16.00	1.222	-	n/a	n/a
	LTE Band 7	20M	QPSK	50	50	Right Side	5mm	Ant 0	DSI 3	Simultaneous	21350	2560	15.13	16.00	1.222	0.09	0.079	0.097
	LTE Band 7	20M	QPSK	50	50	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	21350	2560	15.13	16.00	1.222	0.01	0.932	1.139
	LTE Band 7	20M	QPSK	50	50	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	20850	2510	14.98	16.00	1.265	-0.05	0.831	1.051
	LTE Band 7	20M	QPSK	50	50	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	21100	2535	15.12	16.00	1.225	0.18	0.851	1.042
	LTE Band 7	20M	QPSK	100	0	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	21350	2560	15.08	16.00	1.236	-0.04	0.900	1.112
	LTE Band 7	20M	QPSK	1	99	Front	5mm	Ant 1	DSI 3	Simultaneous	20850	2510	15.89	17.50	1.449	-0.15	0.241	0.349
	LTE Band 7	20M	QPSK	1	99	Back	5mm	Ant 1	DSI 3	Simultaneous	20850	2510	15.89	17.50	1.449	0.05	0.471	0.682
	LTE Band 7	20M	QPSK	1	99	Left Side	5mm	Ant 1	DSI 3	Simultaneous	20850	2510	15.89	17.50	1.449	-	n/a	n/a
	LTE Band 7	20M	QPSK	1	99	Right Side	5mm	Ant 1	DSI 3	Simultaneous	20850	2510	15.89	17.50	1.449	-0.07	0.073	0.106
35	LTE Band 7	20M	QPSK	1	99	Top Side	5mm	Ant 1	DSI 3	Simultaneous	20850	2510	15.89	17.50	1.449	-0.05	0.819	**1.187**
	LTE Band 7C	20M	QPSK	1	99	Top Side	5mm	Ant 1	DSI 3	Simultaneous	20850(SCC) +21048(PCC)	2510 +2529.8	15.92	17.50	1.439	-0.18	0.798	1.148
	LTE Band 7	20M	QPSK	1	99	Top Side	5mm	Ant 1	DSI 3	Simultaneous	21100	2535	15.75	17.50	1.496	0.15	0.707	1.058

	LTE Band 7	20M	QPSK	1	99	Top Side	5mm	Ant 1	DSI 3	Simultaneous	21350	2560	15.72	17.50	1.507	-0.19	0.733	1.104
	LTE Band 7	20M	QPSK	50	0	Front	5mm	Ant 1	DSI 3	Simultaneous	20850	2510	15.88	21.00	3.251	0.13	0.296	0.962
	LTE Band 7	20M	QPSK	50	0	Back	5mm	Ant 1	DSI 3	Simultaneous	20850	2510	15.88	17.50	1.452	0.08	0.435	0.632
	LTE Band 7	20M	QPSK	50	0	Left Side	5mm	Ant 1	DSI 3	Simultaneous	20850	2510	15.88	17.50	1.452	-	n/a	n/a
	LTE Band 7	20M	QPSK	50	0	Right Side	5mm	Ant 1	DSI 3	Simultaneous	20850	2510	15.81	17.50	1.476	0.01	0.105	0.155
	LTE Band 7	20M	QPSK	50	0	Top Side	5mm	Ant 1	DSI 3	Simultaneous	20850	2510	15.86	17.50	1.459	0.05	0.732	1.068
	LTE Band 7	20M	QPSK	50	0	Top Side	5mm	Ant 1	DSI 3	Simultaneous	21100	2535	15.81	17.50	1.476	-0.1	0.703	1.037
	LTE Band 7	20M	QPSK	50	0	Top Side	5mm	Ant 1	DSI 3	Simultaneous	21350	2560	15.86	17.50	1.459	0.01	0.689	1.005
	LTE Band 7	20M	QPSK	100	0	Top Side	5mm	Ant 1	DSI 3	Simultaneous	20850	2510	15.85	17.50	1.462	0.02	0.770	1.126

<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 41	20M	QPSK	1	99	Front	5mm	Ant 0	DSI 3	Simultaneous	40620	2593	17.59	18.50	1.233	62.9	1.006	-0.17	0.279	0.346
	LTE Band 41	20M	QPSK	1	99	Back	5mm	Ant 0	DSI 3	Simultaneous	40620	2593	17.59	18.50	1.233	62.9	1.006	0.11	0.546	0.677
	LTE Band 41	20M	QPSK	1	99	Left Side	5mm	Ant 0	DSI 3	Simultaneous	40620	2593	17.59	18.50	1.233	62.9	1.006	-	n/a	n/a
	LTE Band 41	20M	QPSK	1	99	Right Side	5mm	Ant 0	DSI 3	Simultaneous	40620	2593	17.59	18.50	1.233	62.9	1.006	-0.12	0.089	0.110
	LTE Band 41	20M	QPSK	1	99	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	40620	2593	17.59	18.50	1.233	62.9	1.006	0.01	0.790	0.980
36	LTE Band 41	20M	QPSK	1	99	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	39750	2506	17.42	18.50	1.282	62.9	1.006	0.18	0.819	**1.057**
	LTE Band 41C	20M	QPSK	1	99	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	39750(PCC) +39948(SCC)	2506 +2525.8	17.38	18.50	1.294	62.9	1.006	-0.12	0.775	1.009
	LTE Band 41	20M	QPSK	1	99	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	40185	2549.5	17.53	18.50	1.250	62.9	1.006	0.01	0.810	1.019
	LTE Band 41	20M	QPSK	1	99	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	41055	2636.5	17.53	18.50	1.250	62.9	1.006	0.06	0.355	0.447
	LTE Band 41	20M	QPSK	1	99	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	41490	2680	17.49	18.50	1.262	62.9	1.006	0.06	0.661	0.839
	LTE Band 41	20M	QPSK	1	99	Back	5mm	Ant 0	DSI 3	Simultaneous	39750	2506	17.42	18.50	1.282	62.9	1.006	0.03	0.605	0.780
	LTE Band 41	20M	QPSK	1	99	Back	5mm	Ant 0	DSI 3	Simultaneous	40185	2549.5	17.53	18.50	1.250	62.9	1.006	0.12	0.576	0.724
	LTE Band 41	20M	QPSK	1	99	Back	5mm	Ant 0	DSI 3	Simultaneous	41055	2636.5	17.53	18.50	1.250	62.9	1.006	0.02	0.302	0.380
	LTE Band 41	20M	QPSK	1	99	Back	5mm	Ant 0	DSI 3	Simultaneous	41490	2680	17.49	18.50	1.262	62.9	1.006	0.09	0.553	0.702
	LTE Band 41	20M	QPSK	50	50	Front	5mm	Ant 0	DSI 3	Simultaneous	40620	2593	17.57	18.50	1.239	62.9	1.006	-0.05	0.275	0.343
	LTE Band 41	20M	QPSK	50	50	Back	5mm	Ant 0	DSI 3	Simultaneous	40620	2593	17.57	18.50	1.239	62.9	1.006	-0.19	0.631	0.786
	LTE Band 41	20M	QPSK	50	50	Left Side	5mm	Ant 0	DSI 3	Simultaneous	40620	2593	17.57	18.50	1.239	62.9	1.006	-	n/a	n/a
	LTE Band 41	20M	QPSK	50	50	Right Side	5mm	Ant 0	DSI 3	Simultaneous	40620	2593	17.57	18.50	1.239	62.9	1.006	-0.13	0.135	0.168
	LTE Band 41	20M	QPSK	50	50	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	40620	2593	17.57	18.50	1.239	62.9	1.006	0.18	0.821	1.023
	LTE Band 41	20M	QPSK	50	50	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	39750	2506	17.47	18.50	1.268	62.9	1.006	0.08	0.819	1.044
	LTE Band 41	20M	QPSK	50	50	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	40185	2549.5	17.51	18.50	1.256	62.9	1.006	0.02	0.760	0.960
	LTE Band 41	20M	QPSK	50	50	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	41055	2636.5	17.48	18.50	1.265	62.9	1.006	0.06	0.355	0.452
	LTE Band 41	20M	QPSK	50	50	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	41490	2680	17.39	18.50	1.291	62.9	1.006	-0.14	0.601	0.781
	LTE Band 41	20M	QPSK	50	50	Back	5mm	Ant 0	DSI 3	Simultaneous	39750	2506	17.47	18.50	1.268	62.9	1.006	0.02	0.602	0.768
	LTE Band 41	20M	QPSK	50	50	Back	5mm	Ant 0	DSI 3	Simultaneous	40185	2549.5	17.51	18.50	1.256	62.9	1.006	0.01	0.523	0.661
	LTE Band 41	20M	QPSK	50	50	Back	5mm	Ant 0	DSI 3	Simultaneous	41055	2636.5	17.48	18.50	1.265	62.9	1.006	0.01	0.312	0.397
	LTE Band 41	20M	QPSK	50	50	Back	5mm	Ant 0	DSI 3	Simultaneous	41490	2680	17.39	18.50	1.291	62.9	1.006	-0.12	0.570	0.740
	LTE Band 41	20M	QPSK	100	0	Back	5mm	Ant 0	DSI 3	Simultaneous	40620	2593	17.58	18.50	1.236	62.9	1.006	-0.08	0.559	0.695
	LTE Band 41	20M	QPSK	100	0	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	40620	2593	17.58	18.50	1.236	62.9	1.006	-0.13	0.799	0.993
	LTE Band 42	20M	QPSK	1	99	Front	5mm	Ant 3	DSI 3	Simultaneous	42590	3500	16.11	17.00	1.227	62.9	1.006	-0.11	0.191	0.236
	LTE Band 42	20M	QPSK	1	99	Back	5mm	Ant 3	DSI 3	Simultaneous	42590	3500	16.11	17.00	1.227	62.9	1.006	0.09	0.539	0.666
	LTE Band 42	20M	QPSK	1	99	Left Side	5mm	Ant 3	DSI 3	Simultaneous	42590	3500	16.11	17.00	1.227	62.9	1.006	0.02	0.466	0.575
	LTE Band 42	20M	QPSK	1	99	Right Side	5mm	Ant 3	DSI 3	Simultaneous	42590	3500	16.11	17.00	1.227	62.9	1.006	-	n/a	n/a
	LTE Band 42	20M	QPSK	1	99	Top Side	5mm	Ant 3	DSI 3	Simultaneous	42590	3500	16.11	17.00	1.227	62.9	1.006	-0.08	0.192	0.237
37	LTE Band 42	20M	QPSK	1	99	Back	5mm	Ant 3	DSI 3	Simultaneous	42190	3460	16.02	17.00	1.253	62.9	1.006	0.01	0.744	**0.938**
	LTE Band 42	20M	QPSK	1	99	Back	5mm	Ant 3	DSI 3	Simultaneous	42990	3540	16.04	17.00	1.247	62.9	1.006	0.02	0.456	0.572
	LTE Band 42	20M	QPSK	50	50	Front	5mm	Ant 3	DSI 3	Simultaneous	42590	3500	16.05	17.00	1.245	62.9	1.006	-0.05	0.191	0.239
	LTE Band 42	20M	QPSK	50	50	Back	5mm	Ant 3	DSI 3	Simultaneous	42590	3500	16.05	17.00	1.245	62.9	1.006	-0.06	0.478	0.598
	LTE Band 42	20M	QPSK	50	50	Left Side	5mm	Ant 3	DSI 3	Simultaneous	42590	3500	16.05	17.00	1.245	62.9	1.006	0.08	0.467	0.585
	LTE Band 42	20M	QPSK	50	50	Right Side	5mm	Ant 3	DSI 3	Simultaneous	42590	3500	16.05	17.00	1.245	62.9	1.006	-	n/a	n/a
	LTE Band 42	20M	QPSK	50	50	Top Side	5mm	Ant 3	DSI 3	Simultaneous	42590	3500	16.05	17.00	1.245	62.9	1.006	0.04	0.189	0.237
	LTE Band 42	20M	QPSK	100	0	Back	5mm	Ant 3	DSI 3	Simultaneous	42590	3500	16.02	17.00	1.253	62.9	1.006	-0.19	0.493	0.622

<5GNR 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)
	FR1 n5	20M	BPSK	1	1	Front	5mm	Ant 1	DSI 3	Simultaneous	167300	836.5	22.40	23.00	1.148	0.15	0.395	0.454
38	FR1 n5	20M	BPSK	1	1	Back	5mm	Ant 1	DSI 3	Simultaneous	167300	836.5	22.40	23.00	1.148	0.05	0.756	**0.868**
	FR1 n5	20M	BPSK	1	1	Left Side	5mm	Ant 1	DSI 3	Simultaneous	167300	836.5	22.40	23.00	1.148	0.07	0.097	0.111
	FR1 n5	20M	BPSK	1	1	Right Side	5mm	Ant 1	DSI 3	Simultaneous	167300	836.5	22.40	23.00	1.148	-0.18	0.205	0.235
	FR1 n5	20M	BPSK	1	1	Top Side	5mm	Ant 1	DSI 3	Simultaneous	167300	836.5	22.40	23.00	1.148	0.05	0.623	0.715
	FR1 n5	20M	BPSK	50	28	Front	5mm	Ant 1	DSI 3	Simultaneous	167300	836.5	22.33	23.00	1.167	0.02	0.333	0.389
	FR1 n5	20M	BPSK	50	28	Back	5mm	Ant 1	DSI 3	Simultaneous	167300	836.5	22.33	23.00	1.167	0.06	0.500	0.583
	FR1 n5	20M	BPSK	50	28	Left Side	5mm	Ant 1	DSI 3	Simultaneous	167300	836.5	22.33	23.00	1.167	0.03	0.076	0.089
	FR1 n5	20M	BPSK	50	28	Right Side	5mm	Ant 1	DSI 3	Simultaneous	167300	836.5	22.33	23.00	1.167	-0.05	0.176	0.205
	FR1 n5	20M	BPSK	50	28	Top Side	5mm	Ant 1	DSI 3	Simultaneous	167300	836.5	22.33	23.00	1.167	0.09	0.539	0.629
	FR1 n5	20M	BPSK	100	0	Back	5mm	Ant 1	DSI 3	Simultaneous	167300	836.5	22.31	23.00	1.172	0.03	0.538	0.631
	FR1 n66	40M	BPSK	1	1	Front	5mm	Ant 0	DSI 3	Simultaneous	349000	1745	16.46	17.50	1.271	0.02	0.352	0.447
	FR1 n66	40M	BPSK	1	1	Back	5mm	Ant 0	DSI 3	Simultaneous	349000	1745	16.46	17.50	1.271	0.06	0.576	0.732
	FR1 n66	40M	BPSK	1	1	Left Side	5mm	Ant 0	DSI 3	Simultaneous	349000	1745	16.46	17.50	1.271	-	n/a	n/a
	FR1 n66	40M	BPSK	1	1	Right Side	5mm	Ant 0	DSI 3	Simultaneous	349000	1745	16.46	17.50	1.271	-0.14	0.059	0.075
	FR1 n66	40M	BPSK	1	1	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	349000	1745	16.46	17.50	1.271	0.04	0.941	1.196
39	FR1 n66	40M	BPSK	1	1	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	346000	1730	16.32	17.50	1.312	0.02	0.915	**1.201**
	FR1 n66	40M	BPSK	1	1	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	352000	1760	16.27	17.50	1.327	0.06	0.902	1.197
	FR1 n66	40M	BPSK	108	54	Front	5mm	Ant 0	DSI 3	Simultaneous	349000	1745	16.13	17.50	1.371	0.07	0.276	0.378
	FR1 n66	40M	BPSK	108	54	Back	5mm	Ant 0	DSI 3	Simultaneous	349000	1745	16.13	17.50	1.371	0.01	0.519	0.711
	FR1 n66	40M	BPSK	108	54	Left Side	5mm	Ant 0	DSI 3	Simultaneous	349000	1745	16.13	17.50	1.371	-	n/a	n/a
	FR1 n66	40M	BPSK	108	54	Right Side	5mm	Ant 0	DSI 3	Simultaneous	349000	1745	16.13	17.50	1.371	0.08	0.050	0.069
	FR1 n66	40M	BPSK	108	54	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	349000	1745	16.13	17.50	1.371	0.02	0.855	1.172
	FR1 n66	40M	BPSK	108	54	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	346000	1730	16.10	17.50	1.380	0.03	0.866	1.195
	FR1 n66	40M	BPSK	108	54	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	352000	1760	16.06	17.50	1.393	-0.09	0.845	1.177
	FR1 n66	40M	BPSK	216	0	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	349000	1745	15.74	17.50	1.500	0.05	0.752	1.128
	FR1 n66	40M	BPSK	1	1	Front	5mm	Ant 1	DSI 3	Simultaneous	349000	1745	14.95	16.00	1.274	-0.14	0.388	0.494
	FR1 n66	40M	BPSK	1	1	Back	5mm	Ant 1	DSI 3	Simultaneous	349000	1745	14.95	16.00	1.274	-0.17	0.644	0.820
	FR1 n66	40M	BPSK	1	1	Left Side	5mm	Ant 1	DSI 3	Simultaneous	349000	1745	14.95	16.00	1.274	-	n/a	n/a
	FR1 n66	40M	BPSK	1	1	Right Side	5mm	Ant 1	DSI 3	Simultaneous	349000	1745	14.95	16.00	1.274	0.14	0.096	0.122
	FR1 n66	40M	BPSK	1	1	Top Side	5mm	Ant 1	DSI 3	Simultaneous	349000	1745	14.95	16.00	1.274	0.07	0.667	0.849
	FR1 n66	40M	BPSK	1	1	Back	5mm	Ant 1	DSI 3	Simultaneous	346000	1730	14.87	16.00	1.297	-0.02	0.728	0.944
	FR1 n66	40M	BPSK	1	1	Back	5mm	Ant 1	DSI 3	Simultaneous	352000	1760	14.87	16.00	1.297	0.11	0.506	0.656
	FR1 n66	40M	BPSK	1	1	Top Side	5mm	Ant 1	DSI 3	Simultaneous	346000	1730	14.87	16.00	1.297	-0.17	0.675	0.876
	FR1 n66	40M	BPSK	1	1	Top Side	5mm	Ant 1	DSI 3	Simultaneous	352000	1760	14.87	16.00	1.297	0.07	0.519	0.673
	FR1 n66	40M	BPSK	108	54	Front	5mm	Ant 1	DSI 3	Simultaneous	349000	1745	14.43	16.00	1.435	0.12	0.293	0.421
	FR1 n66	40M	BPSK	108	54	Back	5mm	Ant 1	DSI 3	Simultaneous	349000	1745	14.43	16.00	1.435	0.09	0.529	0.759
	FR1 n66	40M	BPSK	108	54	Left Side	5mm	Ant 1	DSI 3	Simultaneous	349000	1745	14.43	16.00	1.435	-	n/a	n/a
	FR1 n66	40M	BPSK	108	54	Right Side	5mm	Ant 1	DSI 3	Simultaneous	349000	1745	14.43	16.00	1.435	-0.16	0.078	0.112
	FR1 n66	40M	BPSK	108	54	Top Side	5mm	Ant 1	DSI 3	Simultaneous	349000	1745	14.43	16.00	1.435	-0.02	0.532	0.764
	FR1 n66	40M	QPSK	216	0	Back	5mm	Ant 1	DSI 3	Simultaneous	349000	1745	14.42	16.00	1.439	0.01	0.561	0.807
	FR1 n66	40M	QPSK	216	0	Top Side	5mm	Ant 1	DSI 3	Simultaneous	349000	1745	14.42	16.00	1.439	-0.1	0.553	0.796
	FR1 n7	40M	BPSK	1	108	Front	5mm	Ant 0	DSI 3	Simultaneous	504000	2520	15.53	16.50	1.250	-0.03	0.165	0.206
	FR1 n7	40M	BPSK	1	108	Back	5mm	Ant 0	DSI 3	Simultaneous	504000	2520	15.53	16.50	1.250	0.02	0.631	0.789
	FR1 n7	40M	BPSK	1	108	Left Side	5mm	Ant 0	DSI 3	Simultaneous	504000	2520	15.53	16.50	1.250	-	n/a	n/a
	FR1 n7	40M	BPSK	1	108	Right Side	5mm	Ant 0	DSI 3	Simultaneous	504000	2520	15.53	16.50	1.250	0.07	0.084	0.105
40	FR1 n7	40M	BPSK	1	108	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	504000	2520	15.53	16.50	1.250	0.17	0.970	**1.213**
	FR1 n7	40M	BPSK	1	108	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	507000	2535	15.49	16.50	1.262	0.05	0.940	1.186
	FR1 n7	40M	BPSK	1	108	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	510000	2550	15.43	16.50	1.279	-0.08	0.542	0.693
	FR1 n7	40M	BPSK	108	54	Front	5mm	Ant 0	DSI 3	Simultaneous	504000	2520	15.48	16.50	1.265	0.06	0.165	0.209
	FR1 n7	40M	BPSK	108	54	Back	5mm	Ant 0	DSI 3	Simultaneous	504000	2520	15.48	16.50	1.265	0.05	0.625	0.790
	FR1 n7	40M	BPSK	108	54	Left Side	5mm	Ant 0	DSI 3	Simultaneous	504000	2520	15.48	16.50	1.265	-	n/a	n/a

	FR1 n7	40M	BPSK	108	54	Right Side	5mm	Ant 0	DSI 3	Simultaneous	504000	2520	15.48	16.50	1.265	-0.07	0.085	0.108
	FR1 n7	40M	BPSK	108	54	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	504000	2520	15.48	16.50	1.265	0.18	0.906	1.146
	FR1 n7	40M	BPSK	108	54	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	507000	2535	15.36	16.50	1.300	0.04	0.908	1.181
	FR1 n7	40M	BPSK	108	54	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	510000	2550	15.38	16.50	1.294	0.06	0.541	0.700
	FR1 n7	40M	BPSK	216	0	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	504000	2520	15.45	16.50	1.274	0.05	0.920	1.172
	FR1 n41-PC3	100M	BPSK	1	1	Front	5mm	Ant 0	DSI 3	Simultaneous	509202	2546.01	15.48	17.00	1.419	0.05	0.119	0.169
	FR1 n41-PC3	100M	BPSK	1	1	Back	5mm	Ant 0	DSI 3	Simultaneous	509202	2546.01	15.48	17.00	1.419	0.08	0.548	0.778
	FR1 n41-PC3	100M	BPSK	1	1	Left Side	5mm	Ant 0	DSI 3	Simultaneous	509202	2546.01	15.48	17.00	1.419	-	n/a	n/a
	FR1 n41-PC3	100M	BPSK	1	1	Right Side	5mm	Ant 0	DSI 3	Simultaneous	509202	2546.01	15.48	17.00	1.419	0.09	0.061	0.087
41	FR1 n41-PC3	100M	BPSK	1	1	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	509202	2546.01	15.48	17.00	1.419	0.06	0.812	**1.152**
	FR1 n41-PC3	100M	BPSK	1	1	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	518598	2592.99	15.43	17.00	1.435	-0.12	0.682	0.979
	FR1 n41-PC3	100M	BPSK	1	1	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	528000	2640	15.41	17.00	1.442	0.06	0.726	1.047
	FR1 n41-PC3	100M	BPSK	135	69	Front	5mm	Ant 0	DSI 3	Simultaneous	509202	2546.01	15.45	17.00	1.429	0.03	0.119	0.170
	FR1 n41-PC3	100M	BPSK	135	69	Back	5mm	Ant 0	DSI 3	Simultaneous	509202	2546.01	15.45	17.00	1.429	0.08	0.548	0.783
	FR1 n41-PC3	100M	BPSK	135	69	Left Side	5mm	Ant 0	DSI 3	Simultaneous	509202	2546.01	15.45	17.00	1.429	-	n/a	n/a
	FR1 n41-PC3	100M	BPSK	135	69	Right Side	5mm	Ant 0	DSI 3	Simultaneous	509202	2546.01	15.45	17.00	1.429	0.05	0.057	0.081
	FR1 n41-PC3	100M	BPSK	135	69	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	509202	2546.01	15.45	17.00	1.429	-0.12	0.801	1.145
	FR1 n41-PC3	100M	BPSK	135	69	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	518598	2592.99	15.43	17.00	1.435	-0.17	0.495	0.711
	FR1 n41-PC3	100M	BPSK	135	69	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	528000	2640	15.39	17.00	1.449	-0.13	0.528	0.765
	FR1 n41-PC3	100M	BPSK	270	0	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	509202	2546.01	15.41	17.00	1.442	0.15	0.743	1.071
	FR1 n41-PC2	100M	BPSK	1	1	Front	5mm	Ant 0	DSI 3	Simultaneous	509202	2546.01	15.48	17.00	1.419	0.05	0.119	0.169
	FR1 n41-PC2	100M	BPSK	1	1	Back	5mm	Ant 0	DSI 3	Simultaneous	509202	2546.01	15.48	17.00	1.419	0.08	0.548	0.778
	FR1 n41-PC2	100M	BPSK	1	1	Left Side	5mm	Ant 0	DSI 3	Simultaneous	509202	2546.01	15.48	17.00	1.419	-	n/a	n/a
	FR1 n41-PC2	100M	BPSK	1	1	Right Side	5mm	Ant 0	DSI 3	Simultaneous	509202	2546.01	15.48	17.00	1.419	0.09	0.061	0.087
	FR1 n41-PC2	100M	BPSK	1	1	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	509202	2546.01	15.48	17.00	1.419	0.06	0.812	1.152
	FR1 n41-PC2	100M	BPSK	1	1	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	518598	2592.99	15.43	17.00	1.435	-0.12	0.682	0.979
	FR1 n41-PC2	100M	BPSK	1	1	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	528000	2640	15.41	17.00	1.442	0.06	0.726	1.047
	FR1 n41-PC2	100M	BPSK	135	69	Front	5mm	Ant 0	DSI 3	Simultaneous	509202	2546.01	15.45	17.00	1.429	0.03	0.119	0.170
	FR1 n41-PC2	100M	BPSK	135	69	Back	5mm	Ant 0	DSI 3	Simultaneous	509202	2546.01	15.45	17.00	1.429	0.08	0.548	0.783
	FR1 n41-PC2	100M	BPSK	135	69	Left Side	5mm	Ant 0	DSI 3	Simultaneous	509202	2546.01	15.45	17.00	1.429	-	n/a	n/a
	FR1 n41-PC2	100M	BPSK	135	69	Right Side	5mm	Ant 0	DSI 3	Simultaneous	509202	2546.01	15.45	17.00	1.429	0.05	0.057	0.081
	FR1 n41-PC2	100M	BPSK	135	69	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	509202	2546.01	15.45	17.00	1.429	-0.12	0.801	1.145
	FR1 n41-PC2	100M	BPSK	135	69	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	518598	2592.99	15.43	17.00	1.435	-0.17	0.495	0.711
	FR1 n41-PC2	100M	BPSK	135	69	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	528000	2640	15.39	17.00	1.449	-0.13	0.528	0.765
	FR1 n41-PC2	100M	BPSK	270	0	Bottom Side	5mm	Ant 0	DSI 3	Simultaneous	509202	2546.01	15.41	17.00	1.442	0.15	0.743	1.071
	FR1 n78-PC3	100M	BPSK	1	137	Front	5mm	Ant 3	DSI 3	Simultaneous	633334	3500.01	13.27	14.00	1.183	0.03	0.137	0.162
	FR1 n78-PC3	100M	BPSK	1	137	Back	5mm	Ant 3	DSI 3	Simultaneous	633334	3500.01	13.27	14.00	1.183	0.09	0.449	0.531
	FR1 n78-PC3	100M	BPSK	1	137	Left Side	5mm	Ant 3	DSI 3	Simultaneous	633334	3500.01	13.27	14.00	1.183	0.04	0.386	0.457
	FR1 n78-PC3	100M	BPSK	1	137	Right Side	5mm	Ant 3	DSI 3	Simultaneous	633334	3500.01	13.27	14.00	1.183	-	n/a	n/a
	FR1 n78-PC3	100M	BPSK	1	137	Top Side	5mm	Ant 3	DSI 3	Simultaneous	633334	3500.01	13.27	14.00	1.183	0.06	0.135	0.160
	FR1 n78-PC3	100M	BPSK	135	69	Front	5mm	Ant 3	DSI 3	Simultaneous	633334	3500.01	13.25	14.00	1.189	0.14	0.134	0.159
42	FR1 n78-PC3	100M	BPSK	135	69	Back	5mm	Ant 3	DSI 3	Simultaneous	633334	3500.01	13.25	14.00	1.189	0.05	0.530	**0.630**
	FR1 n78-PC3	100M	BPSK	135	69	Left Side	5mm	Ant 3	DSI 3	Simultaneous	633334	3500.01	13.25	14.00	1.189	0.03	0.401	0.477
	FR1 n78-PC3	100M	BPSK	135	69	Right Side	5mm	Ant 3	DSI 3	Simultaneous	633334	3500.01	13.25	14.00	1.189	-	n/a	n/a
	FR1 n78-PC3	100M	BPSK	135	69	Top Side	5mm	Ant 3	DSI 3	Simultaneous	633334	3500.01	13.25	14.00	1.189	0.14	0.138	0.164
	FR1 n78-PC2	100M	BPSK	1	137	Front	5mm	Ant 3	DSI 3	Simultaneous	633334	3500.01	13.27	14.00	1.183	0.03	0.137	0.162
	FR1 n78-PC2	100M	BPSK	1	137	Back	5mm	Ant 3	DSI 3	Simultaneous	633334	3500.01	13.27	14.00	1.183	0.09	0.449	0.531
	FR1 n78-PC2	100M	BPSK	1	137	Left Side	5mm	Ant 3	DSI 3	Simultaneous	633334	3500.01	13.27	14.00	1.183	0.04	0.386	0.457
	FR1 n78-PC2	100M	BPSK	1	137	Right Side	5mm	Ant 3	DSI 3	Simultaneous	633334	3500.01	13.27	14.00	1.183	-	n/a	n/a
	FR1 n78-PC2	100M	BPSK	1	137	Top Side	5mm	Ant 3	DSI 3	Simultaneous	633334	3500.01	13.27	14.00	1.183	0.06	0.135	0.160
	FR1 n78-PC2	100M	BPSK	135	69	Front	5mm	Ant 3	DSI 3	Simultaneous	633334	3500.01	13.25	14.00	1.189	0.14	0.134	0.159
	FR1 n78-PC2	100M	BPSK	135	69	Back	5mm	Ant 3	DSI 3	Simultaneous	633334	3500.01	13.25	14.00	1.189	0.05	0.530	0.630
	FR1 n78-PC2	100M	BPSK	135	69	Left Side	5mm	Ant 3	DSI 3	Simultaneous	633334	3500.01	13.25	14.00	1.189	0.03	0.401	0.477
	FR1 n78-PC2	100M	BPSK	135	69	Right Side	5mm	Ant 3	DSI 3	Simultaneous	633334	3500.01	13.25	14.00	1.189	-	n/a	n/a
	FR1 n78-PC2	100M	BPSK	135	69	Top Side	5mm	Ant 3	DSI 3	Simultaneous	633334	3500.01	13.25	14.00	1.189	0.14	0.138	0.164

<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	Front	5mm	Ant 2+4	Simultaneous	11	2462	16.89	18.00	1.291	97.82	1.022	0.04	0.156	0.206
43	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 2+4	Simultaneous	11	2462	16.89	18.00	1.291	97.82	1.022	0.16	0.331	**0.437**
	WLAN2.4GHz	802.11b 1Mbps	Left Side	5mm	Ant 2+4	Standalone	11	2462	16.89	18.00	1.291	97.82	1.022	0.05	0.039	0.051
	WLAN2.4GHz	802.11b 1Mbps	Right Side	5mm	Ant 2+4	Standalone	11	2462	16.89	18.00	1.291	97.82	1.022	-	n/a	n/a
	WLAN2.4GHz	802.11b 1Mbps	Top Side	5mm	Ant 2+4	Standalone	11	2462	16.89	18.00	1.291	97.82	1.022	0.04	0.218	0.288

<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)
	WLAN5.2 GHz	802.11ac-VHT160 MCS0	Front	5mm	Ant 4+12	Simultaneous	50	5250	12.46	14.00	1.426	100	1.000	-0.02	0.049	0.070
44	WLAN5.2GHz	802.11ac-VHT160 MCS0	Back	5mm	Ant 4+12	Simultaneous	50	5250	12.46	14.00	1.426	100	1.000	-0.16	0.179	**0.255**
	WLAN5.2 GHz	802.11ac-VHT160 MCS0	Left Side	5mm	Ant 4+12	Standalone	50	5250	12.46	14.00	1.426	100	1.000	0.07	0.023	0.033
	WLAN5.2GHz	802.11ac-VHT160 MCS0	Right Side	5mm	Ant 4+12	Standalone	50	5250	12.46	14.00	1.426	100	1.000	0.08	0.041	0.058
	WLAN5.2 GHz	802.11ac-VHT160 MCS0	Top Side	5mm	Ant 4+12	Standalone	50	5250	12.46	14.00	1.426	100	1.000	-0.03	0.052	0.074
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 4+12	Simultaneous	155	5775	11.88	13.00	1.294	100	1.000	-0.02	0.012	0.016
45	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 4+12	Simultaneous	155	5775	11.88	13.00	1.294	100	1.000	0.08	0.232	**0.300**
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Side	5mm	Ant 4+12	Standalone	155	5775	11.88	13.00	1.294	100	1.000	-	n/a	n/a
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Side	5mm	Ant 4+12	Standalone	155	5775	11.88	13.00	1.294	100	1.000	-	n/a	n/a
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Top Side	5mm	Ant 4+12	Standalone	155	5775	11.88	13.00	1.294	100	1.000	0.04	0.093	0.120

<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	Front	5mm	Ant 2	Full	0	2402	10.00	11.00	1.259	77.05	1.298	0.1	0.064	0.104
46	Bluetooth	DH5 1Mbps	Back	5mm	Ant 2	Full	0	2402	10.00	11.00	1.259	77.05	1.298	0.07	0.091	**0.149**
	Bluetooth	DH5 1Mbps	Left Side	5mm	Ant 2	Full	0	2402	10.00	11.00	1.259	77.05	1.298	0.14	0.045	0.074
	Bluetooth	DH5 1Mbps	Right Side	5mm	Ant 2	Full	0	2402	10.00	11.00	1.259	77.05	1.298	0.07	0.031	0.051
	Bluetooth	DH5 1Mbps	Top Side	5mm	Ant 2	Full	0	2402	10.00	11.00	1.259	77.05	1.298	0.06	0.073	0.119

16.3 Body Worn Accessory SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Headset	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	5mm	Ant 0	-	DSI 3	Standalone	128	824.2	26.86	28.00	1.300	0.03	0.754	0.980
	GSM850	GPRS(3 Tx slots)	Back	5mm	Ant 0	-	DSI 3	Standalone	128	824.2	26.86	28.00	1.300	-0.14	0.942	1.225
	GSM850	GPRS(3 Tx slots)	Front	5mm	Ant 0	-	DSI 3	Standalone	189	836.4	26.69	28.00	1.352	-0.07	0.757	1.024
	GSM850	GPRS(3 Tx slots)	Front	5mm	Ant 0	-	DSI 3	Standalone	251	848.8	26.85	28.00	1.303	-0.05	0.791	1.031
	GSM850	GPRS(3 Tx slots)	Back	5mm	Ant 0	-	DSI 3	Standalone	189	836.4	26.69	28.00	1.352	0.14	0.907	1.226
47	GSM850	GPRS(3 Tx slots)	Back	5mm	Ant 0	-	DSI 3	Standalone	251	848.8	26.85	28.00	1.303	-0.12	0.946	**1.233**
	GSM850	GPRS(3 Tx slots)	Back	5mm	Ant 0	Headset	DSI 3	Standalone	251	848.8	26.85	28.00	1.303	0.02	0.611	0.796
	GSM850	GPRS(3 Tx slots)	Front	15mm	Ant 0	-	DSI 4	Full	251	848.8	28.35	29.00	1.161	0.06	0.341	0.396
	GSM850	GPRS(3 Tx slots)	Back	20mm	Ant 0	-	DSI 4	Full	251	848.8	28.35	29.00	1.161	-0.04	0.430	0.499
	GSM850	GPRS(3 Tx slots)	Front	5mm	Ant 1	-	DSI 4	Full	128	824.2	27.52	28.50	1.253	0.19	0.357	0.447
	GSM850	GPRS(3 Tx slots)	Back	5mm	Ant 1	-	DSI 4	Full	128	824.2	27.52	28.50	1.253	-0.04	0.651	0.816
	GSM850	GPRS(3 Tx slots)	Back	5mm	Ant 1	-	DSI 4	Full	189	836.4	27.51	28.50	1.256	0.1	0.512	0.643
	GSM850	GPRS(3 Tx slots)	Back	5mm	Ant 1	-	DSI 4	Full	251	848.8	27.38	28.50	1.294	0.03	0.640	0.828
	GSM1900	GPRS(3 Tx slots)	Front	5mm	Ant 0	-	DSI 3	Standalone	512	1850.2	21.38	22.50	1.294	-0.08	0.329	0.426
	GSM1900	GPRS(3 Tx slots)	Back	5mm	Ant 0	-	DSI 3	Standalone	512	1850.2	21.38	22.50	1.294	0.09	0.665	0.861
	GSM1900	GPRS(3 Tx slots)	Back	5mm	Ant 0	-	DSI 3	Standalone	661	1880	21.37	22.50	1.298	0.07	0.667	0.866
48	GSM1900	GPRS(3 Tx slots)	Back	5mm	Ant 0	-	DSI 3	Standalone	810	1909.8	21.05	22.50	1.396	0.08	0.806	**1.125**
	GSM1900	GPRS(3 Tx slots)	Front	15mm	Ant 0	-	DSI 4	Full	512	1850.2	25.58	26.50	1.236	-0.19	0.205	0.253
	GSM1900	GPRS(3 Tx slots)	Back	20mm	Ant 0	-	DSI 4	Full	810	1909.8	25.10	26.50	1.380	0.15	0.300	0.414
	GSM1900	GPRS(3 Tx slots)	Front	5mm	Ant 0	-	DSI 3	Simultaneous	512	1850.2	20.36	21.50	1.300	-0.08	0.229	0.298
	GSM1900	GPRS(3 Tx slots)	Back	5mm	Ant 0	-	DSI 3	Simultaneous	512	1850.2	20.36	21.50	1.300	0.09	0.565	0.735

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Headset	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	5mm	Ant 0	-	DSI 3	Standalone	4233	846.6	22.22	23.00	1.197	0.17	0.574	0.687
49	WCDMA V	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	Standalone	4233	846.6	22.22	23.00	1.197	-0.05	1.050	**1.257**
	WCDMA V	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	Standalone	4132	826.4	22.10	23.00	1.230	0.12	0.744	0.915
	WCDMA V	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	Standalone	4182	836.4	22.09	23.00	1.233	0.13	0.821	1.012
	WCDMA V	RMC 12.2Kbps	Back	5mm	Ant 0	Headset	DSI 3	Standalone	4233	846.6	22.22	23.00	1.197	0.04	0.651	0.779
	WCDMA V	RMC 12.2Kbps	Front	15mm	Ant 0	-	DSI 4	Full	4233	846.6	24.29	25.00	1.178	-0.01	0.134	0.158
	WCDMA V	RMC 12.2Kbps	Back	20mm	Ant 0	-	DSI 4	Full	4233	846.6	24.29	25.00	1.178	0.14	0.261	0.307
	WCDMA V	RMC 12.2Kbps	Front	5mm	Ant 1	-	DSI 3	Standalone	4233	846.6	22.52	23.50	1.253	-0.02	0.469	0.588
	WCDMA V	RMC 12.2Kbps	Back	5mm	Ant 1	-	DSI 3	Standalone	4233	846.6	22.52	23.50	1.253	0.18	0.854	1.070
	WCDMA V	RMC 12.2Kbps	Back	5mm	Ant 1	-	DSI 3	Standalone	4132	826.4	22.34	23.50	1.306	-0.16	0.762	0.995
	WCDMA V	RMC 12.2Kbps	Back	5mm	Ant 1	-	DSI 3	Standalone	4182	836.4	22.37	23.50	1.297	0.12	0.849	1.101
	WCDMA V	RMC 12.2Kbps	Front	15mm	Ant 1	-	DSI 4	Full	4233	846.6	23.82	25.00	1.312	0.14	0.174	0.228
	WCDMA V	RMC 12.2Kbps	Back	20mm	Ant 1	-	DSI 4	Full	4182	836.4	23.76	25.00	1.330	0.08	0.144	0.192
	WCDMA V	RMC 12.2Kbps	Front	5mm	Ant 1	-	DSI 3	Simultaneous	4233	846.6	21.52	22.50	1.253	-0.07	0.582	0.729
	WCDMA V	RMC 12.2Kbps	Back	5mm	Ant 1	-	DSI 3	Simultaneous	4233	846.6	21.52	22.50	1.253	0.01	0.739	0.926
	WCDMA V	RMC 12.2Kbps	Back	5mm	Ant 1	-	DSI 3	Simultaneous	4132	826.4	21.37	22.50	1.297	0.15	0.736	0.955
	WCDMA V	RMC 12.2Kbps	Back	5mm	Ant 1	-	DSI 3	Simultaneous	4182	836.4	21.40	22.50	1.288	0.15	0.751	0.967
	WCDMA IV	RMC 12.2Kbps	Front	5mm	Ant 0	-	DSI 3	Standalone	1413	1732.6	17.74	18.50	1.191	0.14	0.558	0.665
	WCDMA IV	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	Standalone	1413	1732.6	17.74	18.50	1.191	0.02	0.791	0.942
50	WCDMA IV	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	Standalone	1312	1712.4	17.62	18.50	1.225	0.06	0.901	**1.103**
	WCDMA IV	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	Standalone	1513	1752.6	17.54	18.50	1.247	0.02	0.779	0.972
	WCDMA IV	RMC 12.2Kbps	Front	15mm	Ant 0	-	DSI 4	Full	1413	1732.6	24.11	25.00	1.227	0.02	0.529	0.649
	WCDMA IV	RMC 12.2Kbps	Back	20mm	Ant 0	-	DSI 4	Full	1312	1712.4	24.04	25.00	1.247	-0.01	0.497	0.620
	WCDMA IV	RMC 12.2Kbps	Front	5mm	Ant 0	-	DSI 3	Simultaneous	1413	1732.6	16.12	17.00	1.225	0.14	0.358	0.438

	WCDMA IV	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	Simultaneous	1413	1732.6	16.12	17.00	1.225	0.02	0.591	0.724
	WCDMA II	RMC 12.2Kbps	Front	5mm	Ant 0	-	DSI 3	Standalone	9538	1907.6	16.51	17.50	1.256	0.12	0.460	0.578
	WCDMA II	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	Standalone	9538	1907.6	16.51	17.50	1.256	-0.18	0.700	0.879
	WCDMA II	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	Standalone	9262	1852.4	16.45	17.50	1.274	0.03	0.646	0.823
51	WCDMA II	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	Standalone	9400	1880	16.48	17.50	1.265	0.18	0.941	**1.190**
	WCDMA II	RMC 12.2Kbps	Front	15mm	Ant 0	-	DSI 4	Full	9538	1907.6	23.81	25.00	1.315	0.09	0.578	0.760
	WCDMA II	RMC 12.2Kbps	Back	20mm	Ant 0	-	DSI 4	Full	9400	1880	23.73	25.00	1.340	-0.19	0.541	0.725
	WCDMA II	RMC 12.2Kbps	Front	5mm	Ant 0	-	DSI 3	Simultaneous	9538	1907.6	15.44	16.50	1.276	0.12	0.310	0.396
	WCDMA II	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	Simultaneous	9538	1907.6	15.44	16.50	1.276	-0.18	0.550	0.702

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna	Headset	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 5	10M	QPSK	1	0	Front	5mm	Ant 0	-	DSI 4	Full	20525	836.5	22.86	24.00	1.300	0.12	0.487	0.633
52	LTE Band 5	10M	QPSK	1	0	Back	5mm	Ant 0	-	DSI 4	Full	20525	836.5	22.86	24.00	1.300	0.1	0.939	**1.221**
	LTE Band 5	10M	QPSK	1	0	Back	5mm	Ant 0	Headset	DSI 4	Full	20525	836.5	22.86	24.00	1.300	0.07	0.525	0.683
	LTE Band 5	10M	QPSK	25	0	Front	5mm	Ant 0	-	DSI 4	Full	20525	836.5	22.03	23.00	1.250	-0.04	0.389	0.486
	LTE Band 5	10M	QPSK	25	0	Back	5mm	Ant 0	-	DSI 4	Full	20525	836.5	22.03	23.00	1.250	0.09	0.660	0.825
	LTE Band 5	10M	QPSK	50	0	Back	5mm	Ant 0	-	DSI 4	Full	20525	836.5	21.96	23.00	1.271	0.06	0.847	1.076
	LTE Band 12	10M	QPSK	1	0	Front	5mm	Ant 1	-	DSI 4	Full	23095	707.5	22.62	24.00	1.374	-0.16	0.484	0.665
53	LTE Band 12	10M	QPSK	1	0	Back	5mm	Ant 1	-	DSI 4	Full	23095	707.5	22.62	24.00	1.374	0.04	0.815	**1.120**
	LTE Band 12	10M	QPSK	25	0	Front	5mm	Ant 1	-	DSI 4	Full	23095	707.5	21.63	23.00	1.371	-0.08	0.284	0.389
	LTE Band 12	10M	QPSK	25	0	Back	5mm	Ant 1	-	DSI 4	Full	23095	707.5	21.63	23.00	1.371	-0.11	0.445	0.610
	LTE Band 12	10M	QPSK	50	0	Back	5mm	Ant 1	-	DSI 4	Full	23095	707.5	21.60	23.00	1.380	-0.03	0.441	0.609
	LTE Band 12	10M	QPSK	1	0	Front	5mm	Ant 1	-	DSI 3	Simultaneous	23095	707.5	21.76	23.00	1.330	0.16	0.460	0.612
	LTE Band 12	10M	QPSK	1	0	Back	5mm	Ant 1	-	DSI 3	Simultaneous	23095	707.5	21.76	23.00	1.330	0.14	0.621	0.826
	LTE Band 12	10M	QPSK	1	0	Front	15mm	Ant 1	-	DSI 4	Full	23095	707.5	22.62	24.00	1.374	-0.04	0.173	0.238
	LTE Band 12	10M	QPSK	1	0	Back	20mm	Ant 1	-	DSI 4	Full	23095	707.5	22.62	24.00	1.374	-0.12	0.190	0.261
	LTE Band 12	10M	QPSK	25	0	Front	5mm	Ant 1	-	DSI 3	Simultaneous	23095	707.5	21.27	23.00	1.489	0.08	0.279	0.416
	LTE Band 12	10M	QPSK	25	0	Back	5mm	Ant 1	-	DSI 3	Simultaneous	23095	707.5	21.27	23.00	1.489	0.15	0.470	0.700
	LTE Band 12	10M	QPSK	50	0	Back	5mm	Ant 1	-	DSI 3	Simultaneous	23095	707.5	21.26	23.00	1.493	0.08	0.454	0.678
	LTE Band 26	15M	QPSK	1	0	Front	5mm	Ant 1	-	DSI 3	Full	26865	831.5	22.89	24.00	1.291	-0.15	0.524	0.677
54	LTE Band 26	15M	QPSK	1	0	Back	5mm	Ant 1	-	DSI 3	Full	26865	831.5	22.89	24.00	1.291	0.03	0.812	**1.048**
	LTE Band 26	15M	QPSK	36	0	Front	5mm	Ant 1	-	DSI 3	Full	26865	831.5	21.53	23.00	1.403	-0.1	0.544	0.763
	LTE Band 26	15M	QPSK	36	0	Back	5mm	Ant 1	-	DSI 3	Full	26865	831.5	21.53	23.00	1.403	-0.07	0.743	1.042
	LTE Band 26	15M	QPSK	75	0	Back	5mm	Ant 1	-	DSI 3	Full	26865	831.5	21.52	23.00	1.406	-0.15	0.741	1.042
	LTE Band 26	15M	QPSK	1	0	Front	5mm	Ant 1	-	DSI 3	Simultaneous	26865	831.5	21.68	22.50	1.208	-0.01	0.488	0.589
	LTE Band 26	15M	QPSK	1	0	Back	5mm	Ant 1	-	DSI 3	Simultaneous	26865	831.5	21.68	22.50	1.208	0.03	0.773	0.934
	LTE Band 26	15M	QPSK	1	0	Front	15mm	Ant 1	-	DSI 4	Full	26865	831.5	22.89	24.00	1.291	0.13	0.187	0.241
	LTE Band 26	15M	QPSK	1	0	Back	20mm	Ant 1	-	DSI 4	Full	26865	831.5	22.89	24.00	1.291	-0.17	0.178	0.230
	LTE Band 26	15M	QPSK	36	0	Front	5mm	Ant 1	-	DSI 3	Simultaneous	26865	831.5	21.59	22.50	1.233	0.08	0.477	0.588
	LTE Band 26	15M	QPSK	36	0	Back	5mm	Ant 1	-	DSI 3	Simultaneous	26865	831.5	21.59	22.50	1.233	0.14	0.716	0.883
	LTE Band 26	15M	QPSK	75	0	Back	5mm	Ant 1	-	DSI 3	Simultaneous	26865	831.5	21.53	22.50	1.250	-0.19	0.708	0.885
	LTE Band 66	20M	QPSK	1	0	Front	5mm	Ant 0	-	DSI 3	Standalone	132322	1745	16.93	18.00	1.279	0.01	0.431	0.551
	LTE Band 66	20M	QPSK	1	0	Back	5mm	Ant 0	-	DSI 3	Standalone	132322	1745	16.93	18.00	1.279	0.08	0.765	0.979
55	LTE Band 66	20M	QPSK	1	0	Back	5mm	Ant 0	-	DSI 3	Standalone	132072	1720	16.54	18.00	1.400	0.01	0.811	**1.135**
	LTE Band 66	20M	QPSK	1	0	Back	5mm	Ant 0	-	DSI 3	Standalone	132572	1770	16.79	18.00	1.321	0.06	0.751	0.992
	LTE Band 66	20M	QPSK	1	0	Front	15mm	Ant 0	-	DSI 4	Full	132322	1745	22.42	24.00	1.439	0.08	0.401	0.577
	LTE Band 66	20M	QPSK	1	0	Back	20mm	Ant 0	-	DSI 4	Full	132072	1720	22.22	24.00	1.507	-0.01	0.481	0.725
	LTE Band 66	20M	QPSK	50	0	Front	5mm	Ant 0	-	DSI 3	Standalone	132322	1745	16.92	18.00	1.282	0.01	0.415	0.532
	LTE Band 66	20M	QPSK	50	0	Back	5mm	Ant 0	-	DSI 3	Standalone	132322	1745	16.92	18.00	1.282	0.07	0.785	1.007
	LTE Band 66	20M	QPSK	50	0	Back	5mm	Ant 0	-	DSI 3	Standalone	132072	1720	16.88	18.00	1.294	-0.06	0.760	0.984
	LTE Band 66	20M	QPSK	50	0	Back	5mm	Ant 0	-	DSI 3	Standalone	132572	1770	16.71	18.00	1.346	-0.05	0.768	1.034
	LTE Band 66	20M	QPSK	100	0	Back	5mm	Ant 0	-	DSI 3	Standalone	132322	1745	16.82	18.00	1.312	0.07	0.790	1.037
	LTE Band 66	20M	QPSK	1	0	Front	5mm	Ant 0	-	DSI 3	Simultaneous	132322	1745	15.61	16.50	1.227	0.01	0.281	0.345

	LTE Band 66	20M	QPSK	1	0	Back	5mm	Ant 0	-	DSI 3	Simultaneous	132322	1745	15.61	16.50	1.227	0.08	0.615	0.755
	LTE Band 66	20M	QPSK	50	0	Front	5mm	Ant 0	-	DSI 3	Simultaneous	132322	1745	15.59	16.50	1.233	0.01	0.295	0.364
	LTE Band 66	20M	QPSK	50	0	Back	5mm	Ant 0	-	DSI 3	Simultaneous	132322	1745	15.59	16.50	1.233	0.07	0.635	0.783
	LTE Band 66	20M	QPSK	1	0	Front	5mm	Ant 1	-	DSI 3	Standalone	132322	1745	16.28	17.00	1.180	0.01	0.544	0.642
	LTE Band 66	20M	QPSK	1	0	Back	5mm	Ant 1	-	DSI 3	Standalone	132322	1745	16.28	17.00	1.180	-0.03	0.886	1.046
	LTE Band 66	20M	QPSK	1	0	Back	5mm	Ant 1	-	DSI 3	Standalone	132072	1720	16.04	17.00	1.247	0.08	0.874	1.090
	LTE Band 66	20M	QPSK	1	0	Back	5mm	Ant 1	-	DSI 3	Standalone	132572	1770	16.25	17.00	1.189	0.1	0.850	1.010
	LTE Band 66	20M	QPSK	1	0	Front	15mm	Ant 1	-	DSI 4	Full	132322	1745	22.61	24.00	1.377	0.1	0.260	0.358
	LTE Band 66	20M	QPSK	1	0	Back	20mm	Ant 1	-	DSI 4	Full	132072	1720	22.33	24.00	1.469	-0.03	0.217	0.319
	LTE Band 66	20M	QPSK	50	0	Front	5mm	Ant 1	-	DSI 3	Standalone	132322	1745	16.15	17.00	1.216	0.04	0.522	0.635
	LTE Band 66	20M	QPSK	50	0	Back	5mm	Ant 1	-	DSI 3	Standalone	132322	1745	16.15	17.00	1.216	0.18	0.891	1.084
	LTE Band 66	20M	QPSK	50	0	Back	5mm	Ant 1	-	DSI 3	Standalone	132072	1720	15.85	17.00	1.303	0.09	0.834	1.087
	LTE Band 66	20M	QPSK	50	0	Back	5mm	Ant 1	-	DSI 3	Standalone	132572	1770	16.14	17.00	1.219	0.01	0.825	1.006
	LTE Band 66	20M	QPSK	100	0	Back	5mm	Ant 1	-	DSI 3	Standalone	132322	1745	16.11	17.00	1.227	0.14	0.832	1.021
	LTE Band 66	20M	QPSK	1	0	Front	5mm	Ant 1	-	DSI 3	Simultaneous	132322	1745	15.25	16.00	1.189	-0.14	0.476	0.566
	LTE Band 66	20M	QPSK	1	0	Back	5mm	Ant 1	-	DSI 3	Simultaneous	132322	1745	15.25	16.00	1.189	0.04	0.733	0.871
	LTE Band 66	20M	QPSK	1	0	Back	5mm	Ant 1	-	DSI 3	Simultaneous	132072	1720	15.01	16.00	1.256	0.07	0.673	0.845
	LTE Band 66	20M	QPSK	1	0	Back	5mm	Ant 1	-	DSI 3	Simultaneous	132572	1770	15.22	16.00	1.197	0.18	0.703	0.841
	LTE Band 66	20M	QPSK	50	0	Front	5mm	Ant 1	-	DSI 3	Simultaneous	132322	1745	15.12	16.00	1.225	0.05	0.429	0.525
	LTE Band 66	20M	QPSK	50	0	Back	5mm	Ant 1	-	DSI 3	Simultaneous	132322	1745	15.12	16.00	1.225	-0.07	0.680	0.833
	LTE Band 66	20M	QPSK	50	0	Back	5mm	Ant 1	-	DSI 3	Simultaneous	132072	1720	14.82	16.00	1.312	-0.01	0.645	0.846
	LTE Band 66	20M	QPSK	50	0	Back	5mm	Ant 1	-	DSI 3	Simultaneous	132572	1770	15.11	16.00	1.227	0.05	0.656	0.805
	LTE Band 66	20M	QPSK	100	0	Back	5mm	Ant 1	-	DSI 3	Simultaneous	132322	1745	15.08	16.00	1.236	-0.01	0.709	0.876
	LTE Band 2	20M	QPSK	1	0	Front	5mm	Ant 0	-	DSI 3	Standalone	18700	1860	15.51	16.50	1.256	-0.05	0.406	0.510
	LTE Band 2	20M	QPSK	1	0	Back	5mm	Ant 0	-	DSI 3	Standalone	18700	1860	15.51	16.50	1.256	-0.18	0.655	0.823
	LTE Band 2	20M	QPSK	1	0	Back	5mm	Ant 0	-	DSI 3	Standalone	18900	1880	15.49	16.50	1.262	-0.05	0.626	0.790
56	LTE Band 2	20M	QPSK	1	0	Back	5mm	Ant 0	-	DSI 3	Standalone	19100	1900	15.31	16.50	1.315	0.05	0.845	**1.111**
	LTE Band 2	20M	QPSK	1	0	Front	15mm	Ant 0	-	DSI 4	Full	18700	1860	22.66	24.00	1.361	-0.03	0.489	0.666
	LTE Band 2	20M	QPSK	1	0	Back	20mm	Ant 0	-	DSI 4	Full	19100	1900	22.60	24.00	1.380	0.02	0.526	0.726
	LTE Band 2	20M	QPSK	50	0	Front	5mm	Ant 0	-	DSI 3	Standalone	18700	1860	15.49	16.50	1.262	-0.05	0.386	0.487
	LTE Band 2	20M	QPSK	50	0	Back	5mm	Ant 0	-	DSI 3	Standalone	18700	1860	15.49	16.50	1.262	-0.11	0.659	0.832
	LTE Band 2	20M	QPSK	50	0	Back	5mm	Ant 0	-	DSI 3	Standalone	18900	1880	15.39	16.50	1.291	-0.11	0.659	0.851
	LTE Band 2	20M	QPSK	50	0	Back	5mm	Ant 0	-	DSI 3	Standalone	19100	1900	15.48	16.50	1.265	0.11	0.705	0.892
	LTE Band 2	20M	QPSK	100	0	Back	5mm	Ant 0	-	DSI 3	Standalone	18700	1860	15.38	16.50	1.294	0.11	0.666	0.862
	LTE Band 2	20M	QPSK	1	0	Front	5mm	Ant 0	-	DSI 3	Simultaneous	18700	1860	14.11	15.00	1.227	-0.05	0.256	0.314
	LTE Band 2	20M	QPSK	1	0	Back	5mm	Ant 0	-	DSI 3	Simultaneous	18700	1860	14.11	15.00	1.227	-0.18	0.505	0.620
	LTE Band 2	20M	QPSK	50	0	Front	5mm	Ant 0	-	DSI 3	Simultaneous	18700	1860	14.02	15.00	1.253	-0.05	0.266	0.333
	LTE Band 2	20M	QPSK	50	0	Back	5mm	Ant 0	-	DSI 3	Simultaneous	18700	1860	14.02	15.00	1.253	-0.11	0.509	0.638
	LTE Band 7	20M	QPSK	1	99	Front	5mm	Ant 0	-	DSI 3	Standalone	21350	2560	17.65	18.50	1.216	0.09	0.380	0.462
	LTE Band 7	20M	QPSK	1	99	Back	5mm	Ant 0	-	DSI 3	Standalone	21350	2560	17.65	18.50	1.216	0.05	0.706	0.859
57	LTE Band 7	20M	QPSK	1	99	Back	5mm	Ant 0	-	DSI 3	Standalone	20850	2510	17.22	18.50	1.343	0.06	0.918	**1.233**
	LTE Band 7C	20M	QPSK	1	99	Back	5mm	Ant 0	-	DSI 3	Standalone	20850(SCC) +21048(PCC)	2510 +2529.8	17.15	18.50	1.365	-0.05	0.824	1.124
	LTE Band 7	20M	QPSK	1	99	Back	5mm	Ant 0	-	DSI 3	Standalone	21100	2535	17.36	18.50	1.300	-0.07	0.804	1.045
	LTE Band 7	20M	QPSK	1	99	Back	5mm	Ant 0	Headset	DSI 3	Standalone	20850	2510	17.22	18.50	1.343	0.11	0.513	0.689
	LTE Band 7	20M	QPSK	1	99	Front	15mm	Ant 0	-	DSI 4	Full	21350	2560	23.34	24.00	1.164	0.04	0.370	0.431
	LTE Band 7	20M	QPSK	1	99	Back	20mm	Ant 0	-	DSI 4	Full	20850	2510	22.89	24.00	1.291	-0.06	0.446	0.576
	LTE Band 7	20M	QPSK	50	50	Front	5mm	Ant 0	-	DSI 3	Standalone	21350	2560	17.63	18.50	1.222	-0.14	0.358	0.437
	LTE Band 7	20M	QPSK	50	50	Back	5mm	Ant 0	-	DSI 3	Standalone	21350	2560	17.63	18.50	1.222	-0.14	0.723	0.883
	LTE Band 7	20M	QPSK	50	50	Back	5mm	Ant 0	-	DSI 3	Standalone	20850	2510	17.36	18.50	1.300	0.19	0.857	1.114
	LTE Band 7	20M	QPSK	50	50	Back	5mm	Ant 0	-	DSI 3	Standalone	21100	2535	17.52	18.50	1.253	-0.05	0.829	1.039
	LTE Band 7	20M	QPSK	100	0	Back	5mm	Ant 0	-	DSI 3	Standalone	21350	2560	17.59	18.50	1.233	-0.05	0.865	1.067
	LTE Band 7	20M	QPSK	1	99	Front	5mm	Ant 0	-	DSI 3	Simultaneous	21350	2560	15.16	16.00	1.213	0.09	0.260	0.315
	LTE Band 7	20M	QPSK	1	99	Back	5mm	Ant 0	-	DSI 3	Simultaneous	21350	2560	15.16	16.00	1.213	0.05	0.586	0.711
	LTE Band 7	20M	QPSK	50	50	Front	5mm	Ant 0	-	DSI 3	Simultaneous	21350	2560	15.13	16.00	1.222	-0.14	0.298	0.364
	LTE Band 7	20M	QPSK	50	50	Back	5mm	Ant 0	-	DSI 3	Simultaneous	21350	2560	15.13	16.00	1.222	-0.14	0.603	0.737
	LTE Band 7	20M	QPSK	1	99	Front	5mm	Ant 1	-	DSI 3	Standalone	20850	2510	19.24	20.50	1.337	0.14	0.645	0.862

	LTE Band 7	20M	QPSK	1	99	Back	5mm	Ant 1	-	DSI 3	Standalone	20850	2510	19.24	20.50	1.337	0.02	0.815	1.089
	LTE Band 7	20M	QPSK	1	99	Front	5mm	Ant 1	-	DSI 3	Standalone	21100	2535	19.07	20.50	1.390	0.16	0.582	0.809
	LTE Band 7	20M	QPSK	1	99	Front	5mm	Ant 1	-	DSI 3	Standalone	21350	2560	19.01	20.50	1.409	0.14	0.576	0.812
	LTE Band 7	20M	QPSK	1	99	Back	5mm	Ant 1	-	DSI 3	Standalone	21100	2535	19.07	20.50	1.390	-0.13	0.829	1.152
	LTE Band 7	20M	QPSK	1	99	Back	5mm	Ant 1	-	DSI 3	Standalone	21350	2560	19.01	20.50	1.409	0.12	0.852	1.201
	LTE Band 7C	20M	QPSK	1	0	Back	5mm	Ant 1	-	DSI 3	Standalone	21350(SCC) +21152(PCC)	2560 +2540.2	19.09	20.50	1.384	-0.09	0.758	1.049
	LTE Band 7	20M	QPSK	1	99	Back	5mm	Ant 1	Headset	DSI 3	Standalone	21350	2560	19.01	20.50	1.409	0.04	0.811	1.143
	LTE Band 7	20M	QPSK	1	99	Front	15mm	Ant 1	-	DSI 4	Full	20850	2510	20.42	22.00	1.439	-0.06	0.152	0.219
	LTE Band 7	20M	QPSK	1	99	Back	20mm	Ant 1	-	DSI 4	Full	21350	2560	20.06	22.00	1.563	0.04	0.176	0.275
	LTE Band 7	20M	QPSK	50	0	Front	5mm	Ant 1	-	DSI 3	Standalone	20850	2510	19.18	20.50	1.355	0.02	0.628	0.851
	LTE Band 7	20M	QPSK	50	0	Back	5mm	Ant 1	-	DSI 3	Standalone	20850	2510	19.18	20.50	1.355	0.16	0.815	1.104
	LTE Band 7	20M	QPSK	50	0	Front	5mm	Ant 1	-	DSI 3	Standalone	21100	2535	19.05	20.50	1.396	0.14	0.617	0.862
	LTE Band 7	20M	QPSK	50	0	Front	5mm	Ant 1	-	DSI 3	Standalone	21350	2560	18.99	20.50	1.416	-0.13	0.597	0.845
	LTE Band 7	20M	QPSK	50	0	Back	5mm	Ant 1	-	DSI 3	Standalone	21100	2535	19.05	20.50	1.396	-0.07	0.824	1.151
	LTE Band 7	20M	QPSK	50	0	Back	5mm	Ant 1	-	DSI 3	Standalone	21350	2560	18.99	20.50	1.416	-0.11	0.825	1.168
	LTE Band 7	20M	QPSK	100	0	Front	5mm	Ant 1	-	DSI 3	Standalone	20850	2510	19.12	20.50	1.374	-0.17	0.616	0.846
	LTE Band 7	20M	QPSK	100	0	Back	5mm	Ant 1	-	DSI 3	Standalone	20850	2510	19.12	20.50	1.374	0.16	0.800	1.099
	LTE Band 7	20M	QPSK	1	99	Front	5mm	Ant 1	-	DSI 3	Simultaneous	20850	2510	15.89	17.50	1.449	-0.15	0.241	0.349
	LTE Band 7	20M	QPSK	1	99	Back	5mm	Ant 1	-	DSI 3	Simultaneous	20850	2510	15.89	17.50	1.449	0.05	0.471	0.682
	LTE Band 7	20M	QPSK	50	0	Front	5mm	Ant 1	-	DSI 3	Simultaneous	20850	2510	15.88	17.50	1.452	0.13	0.296	0.430
	LTE Band 7	20M	QPSK	50	0	Back	5mm	Ant 1	-	DSI 3	Simultaneous	20850	2510	15.88	17.50	1.452	0.08	0.435	0.632

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna	Headset	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 41	20M	QPSK	1	99	Front	5mm	Ant 0	-	DSI 3	Standalone	40620	2593	19.19	20.00	1.205	62.9	1.006	-0.17	0.396	0.480
	LTE Band 41	20M	QPSK	1	99	Back	5mm	Ant 0	-	DSI 3	Standalone	40620	2593	19.19	20.00	1.205	62.9	1.006	0.11	0.676	0.819
58	LTE Band 41	20M	QPSK	1	99	Back	5mm	Ant 0	-	DSI 3	Standalone	39750	2506	18.94	20.00	1.276	62.9	1.006	0.07	0.802	**1.030**
	LTE Band 41C	20M	QPSK	1	99	Back	5mm	Ant 0	-	DSI 3	Standalone	39750(PCC) +39948(SCC)	2506 +2525.8	18.67	20.00	1.358	62.9	1.006	-0.12	0.742	1.014
	LTE Band 41	20M	QPSK	1	99	Back	5mm	Ant 0	-	DSI 3	Standalone	40185	2549.5	18.83	20.00	1.309	62.9	1.006	-0.13	0.709	0.934
	LTE Band 41	20M	QPSK	1	99	Back	5mm	Ant 0	-	DSI 3	Standalone	41055	2636.5	18.92	20.00	1.282	62.9	1.006	0.02	0.711	0.917
	LTE Band 41	20M	QPSK	1	99	Back	5mm	Ant 0	-	DSI 3	Standalone	41490	2680	19.14	20.00	1.219	62.9	1.006	-0.17	0.209	0.256
	LTE Band 41	20M	QPSK	1	99	Front	15mm	Ant 0	-	DSI 4	Full	40620	2593	22.98	24.00	1.265	62.9	1.006	0.05	0.313	0.398
	LTE Band 41	20M	QPSK	1	99	Back	20mm	Ant 0	-	DSI 4	Full	39750	2506	22.66	24.00	1.361	62.9	1.006	0.12	0.328	0.449
	LTE Band 41	20M	QPSK	50	50	Front	5mm	Ant 0	-	DSI 3	Standalone	40620	2593	19.15	20.00	1.216	62.9	1.006	-0.05	0.391	0.478
	LTE Band 41	20M	QPSK	50	50	Back	5mm	Ant 0	-	DSI 3	Standalone	40620	2593	19.15	20.00	1.216	62.9	1.006	-0.19	0.761	0.931
	LTE Band 41	20M	QPSK	50	50	Back	5mm	Ant 0	-	DSI 3	Standalone	39750	2506	19.10	20.00	1.230	62.9	1.006	-0.13	0.766	0.948
	LTE Band 41	20M	QPSK	50	50	Back	5mm	Ant 0	-	DSI 3	Standalone	40185	2549.5	19.06	20.00	1.242	62.9	1.006	0.01	0.749	0.936
	LTE Band 41	20M	QPSK	50	50	Back	5mm	Ant 0	-	DSI 3	Standalone	41055	2636.5	18.99	20.00	1.262	62.9	1.006	0.07	0.661	0.839
	LTE Band 41	20M	QPSK	50	50	Back	5mm	Ant 0	-	DSI 3	Standalone	41490	2680	19.14	20.00	1.219	62.9	1.006	0.01	0.229	0.281
	LTE Band 41	20M	QPSK	100	0	Back	5mm	Ant 0	-	DSI 3	Standalone	40620	2593	19.07	20.00	1.239	62.9	1.006	0.05	0.693	0.864
	LTE Band 41	20M	QPSK	1	99	Front	5mm	Ant 0	-	DSI 3	Simultaneous	40620	2593	17.59	18.50	1.233	62.9	1.006	-0.17	0.279	0.346
	LTE Band 41	20M	QPSK	1	99	Back	5mm	Ant 0	-	DSI 3	Simultaneous	40620	2593	17.59	18.50	1.233	62.9	1.006	0.11	0.546	0.677
	LTE Band 41	20M	QPSK	1	99	Back	5mm	Ant 0	-	DSI 3	Simultaneous	39750	2506	17.42	18.50	1.282	62.9	1.006	0.03	0.605	0.780
	LTE Band 41	20M	QPSK	1	99	Back	5mm	Ant 0	-	DSI 3	Simultaneous	40185	2549.5	17.53	18.50	1.250	62.9	1.006	0.12	0.576	0.724
	LTE Band 41	20M	QPSK	1	99	Back	5mm	Ant 0	-	DSI 3	Simultaneous	41055	2636.5	17.53	18.50	1.250	62.9	1.006	0.02	0.302	0.380
	LTE Band 41	20M	QPSK	1	99	Back	5mm	Ant 0	-	DSI 3	Simultaneous	41490	2680	17.49	18.50	1.262	62.9	1.006	0.09	0.553	0.702
	LTE Band 41	20M	QPSK	50	50	Front	5mm	Ant 0	-	DSI 3	Simultaneous	40620	2593	17.57	18.50	1.239	62.9	1.006	-0.05	0.275	0.343
	LTE Band 41	20M	QPSK	50	50	Back	5mm	Ant 0	-	DSI 3	Simultaneous	40620	2593	17.57	18.50	1.239	62.9	1.006	-0.19	0.631	0.786
	LTE Band 41	20M	QPSK	50	50	Back	5mm	Ant 0	-	DSI 3	Simultaneous	39750	2506	17.47	18.50	1.268	62.9	1.006	0.02	0.602	0.768
	LTE Band 41	20M	QPSK	50	50	Back	5mm	Ant 0	-	DSI 3	Simultaneous	40185	2549.5	17.51	18.50	1.256	62.9	1.006	0.01	0.523	0.661
	LTE Band 41	20M	QPSK	50	50	Back	5mm	Ant 0	-	DSI 3	Simultaneous	41055	2636.5	17.48	18.50	1.265	62.9	1.006	0.01	0.312	0.397
	LTE Band 41	20M	QPSK	50	50	Back	5mm	Ant 0	-	DSI 3	Simultaneous	41490	2680	17.39	18.50	1.291	62.9	1.006	-0.12	0.570	0.740
	LTE Band 41	20M	QPSK	100	0	Back	5mm	Ant 0		DSI 3	Simultaneous	40620	2593	17.58	18.50	1.236	62.9	1.006	-0.08	0.559	0.695
	LTE Band 42	20M	QPSK	1	99	Front	5mm	Ant 3	-	DSI 3	Standalone	42590	3500	17.02	18.00	1.253	62.9	1.006	0.05	0.233	0.294
	LTE Band 42	20M	QPSK	1	99	Back	5mm	Ant 3	-	DSI 3	Standalone	42590	3500	17.02	18.00	1.253	62.9	1.006	0.03	0.683	0.861
59	LTE Band 42	20M	QPSK	1	99	Back	5mm	Ant 3	-	DSI 3	Standalone	42190	3460	16.91	18.00	1.285	62.9	1.006	0.02	0.962	**1.244**
	LTE Band 42	20M	QPSK	1	99	Back	5mm	Ant 3	-	DSI 3	Standalone	42990	3540	16.89	18.00	1.291	62.9	1.006	0.06	0.493	0.640
	LTE Band 42	20M	QPSK	1	99	Back	5mm	Ant 3	Headset	DSI 3	Standalone	42190	3460	16.91	18.00	1.285	62.9	1.006	-0.08	0.921	1.191
	LTE Band 42	20M	QPSK	1	99	Front	15mm	Ant 3	-	DSI 4	Full	42590	3500	22.10	24.00	1.549	62.9	1.006	0.05	0.143	0.223
	LTE Band 42	20M	QPSK	1	99	Back	20mm	Ant 3	-	DSI 4	Full	42190	3460	22.02	24.00	1.578	62.9	1.006	-0.11	0.317	0.503
	LTE Band 42	20M	QPSK	50	50	Front	5mm	Ant 3	-	DSI 3	Standalone	42590	3500	16.99	18.00	1.262	62.9	1.006	-0.06	0.221	0.281
	LTE Band 42	20M	QPSK	50	50	Back	5mm	Ant 3	-	DSI 3	Standalone	42590	3500	16.99	18.00	1.262	62.9	1.006	0.07	0.719	0.913
	LTE Band 42	20M	QPSK	50	50	Back	5mm	Ant 3	-	DSI 3	Standalone	42190	3460	16.98	18.00	1.265	62.9	1.006	-0.07	0.803	1.022
	LTE Band 42	20M	QPSK	50	50	Back	5mm	Ant 3	-	DSI 3	Standalone	42990	3540	16.96	18.00	1.271	62.9	1.006	0.11	0.524	0.670
	LTE Band 42	20M	QPSK	100	0	Back	5mm	Ant 3	-	DSI 3	Standalone	42590	3500	16.97	18.00	1.268	62.9	1.006	0.05	0.651	0.830
	LTE Band 42	20M	QPSK	1	99	Front	5mm	Ant 3	-	DSI 3	Simultaneous	42590	3500	16.11	17.00	1.227	62.9	1.006	-0.11	0.197	0.243
	LTE Band 42	20M	QPSK	1	99	Back	5mm	Ant 3	-	DSI 3	Simultaneous	42590	3500	16.11	17.00	1.227	62.9	1.006	0.09	0.539	0.666
	LTE Band 42	20M	QPSK	1	99	Back	5mm	Ant 3	-	DSI 3	Simultaneous	42190	3460	16.02	17.00	1.253	62.9	1.006	0.06	0.744	0.938
	LTE Band 42	20M	QPSK	1	99	Back	5mm	Ant 3	-	DSI 3	Simultaneous	42990	3540	16.04	17.00	1.247	62.9	1.006	0.02	0.456	0.572
	LTE Band 42	20M	QPSK	50	50	Front	5mm	Ant 3	-	DSI 3	Simultaneous	42590	3500	16.05	17.00	1.245	62.9	1.006	-0.05	0.191	0.239
	LTE Band 42	20M	QPSK	50	50	Back	5mm	Ant 3	-	DSI 3	Simultaneous	42590	3500	16.05	17.00	1.245	62.9	1.006	-0.06	0.478	0.598
	LTE Band 42	20M	QPSK	100	0	Back	5mm	Ant 3	-	DSI 3	Simultaneous	42590	3500	16.02	17.00	1.253	62.9	1.006	-0.19	0.493	0.622

<5GNR SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna	Headset	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 n5	20M	BPSK	1	1	Front	5mm	Ant 1	-	DSI 4	Full	167300	836.5	23.18	24.00	1.208	0.17	0.603	0.728
60	FR1 n5	20M	BPSK	1	1	Back	5mm	Ant 1	-	DSI 4	Full	167300	836.5	23.18	24.00	1.208	0.12	0.891	**1.076**
	FR1 n5	20M	BPSK	50	28	Front	5mm	Ant 1	-	DSI 4	Full	167300	836.5	23.20	24.00	1.202	0.07	0.517	0.622
	FR1 n5	20M	BPSK	50	28	Back	5mm	Ant 1	-	DSI 4	Full	167300	836.5	23.20	24.00	1.202	-0.18	0.719	0.864
	FR1 n5	20M	BPSK	100	0	Back	5mm	Ant 1	-	DSI 4	Full	167300	836.5	22.68	23.50	1.208	-0.07	0.645	0.779
	FR1 n5	20M	BPSK	1	1	Front	5mm	Ant 1	-	DSI 3	Simultaneous	167300	836.5	22.40	23.00	1.148	0.15	0.395	0.454
	FR1 n5	20M	BPSK	1	1	Back	5mm	Ant 1	-	DSI 3	Simultaneous	167300	836.5	22.40	23.00	1.148	0.07	0.756	0.868
	FR1 n5	20M	BPSK	1	1	Front	15mm	Ant 1	-	DSI 4	Full	167300	836.5	23.18	24.00	1.208	-0.01	0.101	0.122
	FR1 n5	20M	BPSK	1	1	Back	20mm	Ant 1	-	DSI 4	Full	167300	836.5	23.18	24.00	1.208	0.08	0.084	0.101
	FR1 n5	20M	BPSK	50	28	Front	5mm	Ant 1	-	DSI 3	Simultaneous	167300	836.5	22.33	23.00	1.167	0.02	0.333	0.389
	FR1 n5	20M	BPSK	50	28	Back	5mm	Ant 1	-	DSI 3	Simultaneous	167300	836.5	22.33	23.00	1.167	0.06	0.500	0.583
	FR1 n5	20M	BPSK	100	0	Back	5mm	Ant 1	-	DSI 3	Simultaneous	167300	836.5	22.31	23.00	1.172	0.03	0.538	0.631
	FR1 n66	40M	BPSK	1	1	Front	5mm	Ant 0	-	DSI 3	Standalone	349000	1745	17.45	18.50	1.274	0.02	0.562	0.716
	FR1 n66	40M	BPSK	1	1	Back	5mm	Ant 0	-	DSI 3	Standalone	349000	1745	17.45	18.50	1.274	0.06	0.816	1.039
	FR1 n66	40M	BPSK	1	1	Back	5mm	Ant 0	-	DSI 3	Standalone	346000	1730	17.31	18.50	1.315	-0.14	0.772	1.015
	FR1 n66	40M	BPSK	1	1	Back	5mm	Ant 0	-	DSI 3	Standalone	352000	1760	17.38	18.50	1.294	-0.02	0.902	1.167
	FR1 n66	40M	BPSK	1	1	Front	15mm	Ant 0	-	DSI 4	Full	349000	1745	22.92	24.00	1.282	0.05	0.398	0.510
	FR1 n66	40M	BPSK	1	1	Back	20mm	Ant 0	-	DSI 4	Full	352000	1760	22.79	24.00	1.321	0.06	0.349	0.461
	FR1 n66	40M	BPSK	108	54	Front	5mm	Ant 0	-	DSI 3	Standalone	349000	1745	16.93	18.50	1.435	0.07	0.486	0.698
	FR1 n66	40M	BPSK	108	54	Back	5mm	Ant 0	-	DSI 3	Standalone	349000	1745	16.93	18.50	1.435	0.01	0.729	1.046
	FR1 n66	40M	BPSK	108	54	Back	5mm	Ant 0	-	DSI 3	Standalone	346000	1730	16.90	18.50	1.445	0.15	0.671	0.970
	FR1 n66	40M	BPSK	108	54	Back	5mm	Ant 0	-	DSI 3	Standalone	352000	1760	16.75	18.50	1.496	0.06	0.744	1.113
	FR1 n66	40M	BPSK	216	0	Back	5mm	Ant 0	-	DSI 3	Standalone	349000	1745	16.92	18.50	1.439	-0.12	0.731	1.052
	FR1 n66	40M	BPSK	1	1	Front	5mm	Ant 0	-	DSI 3	Simultaneous	349000	1745	16.46	17.50	1.271	0.02	0.352	0.447
	FR1 n66	40M	BPSK	1	1	Back	5mm	Ant 0	-	DSI 3	Simultaneous	349000	1745	16.46	17.50	1.271	0.06	0.576	0.732
	FR1 n66	40M	BPSK	108	54	Front	5mm	Ant 0	-	DSI 3	Simultaneous	349000	1745	16.13	17.50	1.371	0.07	0.276	0.378
	FR1 n66	40M	BPSK	108	54	Back	5mm	Ant 0	-	DSI 3	Simultaneous	349000	1745	16.13	17.50	1.371	0.01	0.519	0.711
	FR1 n66	40M	BPSK	1	1	Front	5mm	Ant 1	-	DSI 3	Standalone	349000	1745	15.95	17.00	1.274	-0.08	0.493	0.628
	FR1 n66	40M	BPSK	1	1	Back	5mm	Ant 1	-	DSI 3	Standalone	349000	1745	15.95	17.00	1.274	0.13	0.830	1.057
61	FR1 n66	40M	BPSK	1	1	Back	5mm	Ant 1	-	DSI 3	Standalone	346000	1730	15.81	17.00	1.315	0.07	0.914	**1.202**
	FR1 n66	40M	BPSK	1	1	Back	5mm	Ant 1	-	DSI 3	Standalone	352000	1760	15.81	17.00	1.315	0.16	0.631	0.830
	FR1 n66	40M	BPSK	1	1	Back	5mm	Ant 1	Headset	DSI 3	Standalone	346000	1730	15.81	17.00	1.315	0.02	0.879	1.156
	FR1 n66	40M	BPSK	1	1	Front	15mm	Ant 1	-	DSI 4	Full	349000	1745	22.88	24.00	1.294	-0.09	0.773	1.000
	FR1 n66	40M	BPSK	1	1	Back	20mm	Ant 1	-	DSI 4	Full	346000	1730	22.81	24.00	1.315	-0.05	0.416	0.547
	FR1 n66	40M	BPSK	108	54	Front	5mm	Ant 1	-	DSI 3	Standalone	349000	1745	15.43	17.00	1.435	0.16	0.389	0.558
	FR1 n66	40M	BPSK	108	54	Back	5mm	Ant 1	-	DSI 3	Standalone	349000	1745	15.43	17.00	1.435	0.01	0.655	0.940
	FR1 n66	40M	BPSK	108	54	Back	5mm	Ant 1	-	DSI 3	Standalone	346000	1730	15.41	17.00	1.442	0.04	0.728	1.050
	FR1 n66	40M	BPSK	108	54	Back	5mm	Ant 1	-	DSI 3	Standalone	352000	1760	15.27	17.00	1.489	-0.14	0.577	0.859
	FR1 n66	40M	QPSK	216	0	Back	5mm	Ant 1	-	DSI 3	Standalone	349000	1745	15.42	17.00	1.439	0.15	0.694	0.999
	FR1 n66	40M	BPSK	1	1	Front	5mm	Ant 1	-	DSI 3	Simultaneous	349000	1745	14.95	16.00	1.274	-0.14	0.388	0.494
	FR1 n66	40M	BPSK	1	1	Back	5mm	Ant 1	-	DSI 3	Simultaneous	349000	1745	14.95	16.00	1.274	-0.17	0.644	0.820
	FR1 n66	40M	BPSK	1	1	Back	5mm	Ant 1	-	DSI 3	Simultaneous	346000	1730	14.87	16.00	1.297	-0.02	0.728	0.944
	FR1 n66	40M	BPSK	1	1	Back	5mm	Ant 1	-	DSI 3	Simultaneous	352000	1760	14.87	16.00	1.297	0.11	0.506	0.656
	FR1 n66	40M	BPSK	108	54	Front	5mm	Ant 1	-	DSI 3	Simultaneous	349000	1745	14.43	16.00	1.435	0.12	0.293	0.421
	FR1 n66	40M	BPSK	108	54	Back	5mm	Ant 1	-	DSI 3	Simultaneous	349000	1745	14.43	16.00	1.435	0.09	0.529	0.759
	FR1 n66	40M	QPSK	216	0	Back	5mm	Ant 1	-	DSI 3	Simultaneous	349000	1745	14.42	16.00	1.439	0.01	0.561	0.807
	FR1 n7	40M	BPSK	1	108	Front	5mm	Ant 0	-	DSI 3	Standalone	504000	2520	16.66	17.50	1.213	-0.03	0.375	0.455
	FR1 n7	40M	BPSK	1	108	Back	5mm	Ant 0	-	DSI 3	Standalone	504000	2520	16.66	17.50	1.213	0.02	0.861	1.045
	FR1 n7	40M	BPSK	1	108	Back	5mm	Ant 0	-	DSI 3	Standalone	507000	2535	16.58	17.50	1.236	0.07	0.899	1.111
	FR1 n7	40M	BPSK	1	108	Back	5mm	Ant 0	-	DSI 3	Standalone	510000	2550	16.56	17.50	1.242	-0.17	0.416	0.517
	FR1 n7	40M	BPSK	1	108	Front	15mm	Ant 0	-	DSI 4	Full	504000	2520	23.29	24.00	1.178	0.12	0.254	0.299
	FR1 n7	40M	BPSK	1	108	Back	20mm	Ant 0	-	DSI 4	Full	507000	2535	23.18	24.00	1.208	0.18	0.246	0.297
	FR1 n7	40M	BPSK	108	54	Front	5mm	Ant 0	-	DSI 3	Standalone	504000	2520	16.62	17.50	1.225	0.06	0.375	0.459

	FR1 n7	40M	BPSK	108	54	Back	5mm	Ant 0	-	DSI 3	Standalone	504000	2520	16.62	17.50	1.225	0.05	0.865	1.059
62	FR1 n7	40M	BPSK	108	54	Back	5mm	Ant 0	-	DSI 3	Standalone	507000	2535	16.45	17.50	1.274	0.13	0.962	**1.225**
	FR1 n7	40M	BPSK	108	54	Back	5mm	Ant 0	-	DSI 3	Standalone	510000	2550	16.45	17.50	1.274	0.02	0.423	0.539
	FR1 n7	40M	BPSK	108	54	Back	5mm	Ant 0	Headset	DSI 3	Standalone	507000	2535	16.45	17.50	1.274	0.04	0.589	0.750
	FR1 n7	40M	BPSK	108	54	Front	15mm	Ant 0	-	DSI 4	Full	504000	2520	23.27	24.00	1.183	0.12	0.238	0.282
	FR1 n7	40M	BPSK	108	54	Back	20mm	Ant 0	-	DSI 4	Full	507000	2535	23.12	24.00	1.225	0.18	0.252	0.309
	FR1 n7	40M	BPSK	216	0	Back	5mm	Ant 0	-	DSI 3	Standalone	504000	2520	16.58	17.50	1.236	-0.13	0.916	1.132
	FR1 n7	40M	BPSK	1	108	Front	5mm	Ant 0	-	DSI 3	Simultaneous	504000	2520	15.53	16.50	1.250	-0.03	0.165	0.206
	FR1 n7	40M	BPSK	1	108	Back	5mm	Ant 0	-	DSI 3	Simultaneous	504000	2520	15.53	16.50	1.250	0.02	0.631	0.789
	FR1 n7	40M	BPSK	108	54	Front	5mm	Ant 0	-	DSI 3	Simultaneous	504000	2520	15.48	16.50	1.265	0.06	0.165	0.209
	FR1 n7	40M	BPSK	108	54	Back	5mm	Ant 0	-	DSI 3	Simultaneous	504000	2520	15.48	16.50	1.265	0.05	0.625	0.790
	FR1 n41-PC3	100M	BPSK	1	1	Front	5mm	Ant 0	-	DSI 3	Standalone	509202	2546.01	16.97	18.50	1.422	0.05	0.359	0.511
63	FR1 n41-PC3	100M	BPSK	1	1	Back	5mm	Ant 0	-	DSI 3	Standalone	509202	2546.01	16.97	18.50	1.422	0.08	0.808	**1.149**
	FR1 n41-PC3	100M	BPSK	1	1	Back	5mm	Ant 0	-	DSI 3	Standalone	518598	2592.99	16.93	18.50	1.435	0.17	0.639	0.917
	FR1 n41-PC3	100M	BPSK	1	1	Back	5mm	Ant 0	-	DSI 3	Standalone	528000	2640	16.78	18.50	1.486	0.03	0.664	0.987
	FR1 n41-PC2	100M	BPSK	1	137	Front	15mm	Ant 0	-	DSI 4	Full	509202	2546.01	25.56	27.00	1.393	-0.15	0.520	0.724
	FR1 n41-PC2	100M	BPSK	1	137	Back	20mm	Ant 0	-	DSI 4	Full	509202	2546.01	25.56	27.00	1.393	0.05	0.611	0.851
	FR1 n41-PC3	100M	BPSK	135	69	Front	5mm	Ant 0	-	DSI 3	Standalone	509202	2546.01	16.90	18.50	1.445	0.03	0.349	0.504
	FR1 n41-PC3	100M	BPSK	135	69	Back	5mm	Ant 0	-	DSI 3	Standalone	509202	2546.01	16.90	18.50	1.445	0.08	0.788	1.139
	FR1 n41-PC3	100M	BPSK	135	69	Back	5mm	Ant 0	-	DSI 3	Standalone	518598	2592.99	16.89	18.50	1.449	-0.05	0.455	0.659
	FR1 n41-PC3	100M	BPSK	135	69	Back	5mm	Ant 0	-	DSI 3	Standalone	528000	2640	16.86	18.50	1.459	0.14	0.481	0.702
	FR1 n41-PC3	100M	BPSK	270	0	Back	5mm	Ant 0	-	DSI 3	Standalone	509202	2546.01	16.88	18.50	1.452	-0.13	0.740	1.075
	FR1 n41-PC3	100M	BPSK	1	1	Front	5mm	Ant 0	-	DSI 3	Simultaneous	509202	2546.01	15.48	17.00	1.419	0.05	0.119	0.169
	FR1 n41-PC3	100M	BPSK	1	1	Back	5mm	Ant 0	-	DSI 3	Simultaneous	509202	2546.01	15.48	17.00	1.419	0.08	0.548	0.778
	FR1 n41-PC3	100M	BPSK	135	69	Front	5mm	Ant 0	-	DSI 3	Simultaneous	509202	2546.01	15.45	17.00	1.429	0.03	0.119	0.170
	FR1 n41-PC3	100M	BPSK	135	69	Back	5mm	Ant 0	-	DSI 3	Simultaneous	509202	2546.01	15.45	17.00	1.429	0.08	0.548	0.783
	FR1 n41-PC2	100M	BPSK	1	1	Front	5mm	Ant 0	-	DSI 3	Standalone	509202	2546.01	16.97	18.50	1.422	0.05	0.359	0.511
	FR1 n41-PC2	100M	BPSK	1	1	Back	5mm	Ant 0	-	DSI 3	Standalone	509202	2546.01	16.97	18.50	1.422	0.08	0.808	1.149
	FR1 n41-PC2	100M	BPSK	1	1	Back	5mm	Ant 0	-	DSI 3	Standalone	518598	2592.99	16.93	18.50	1.435	0.17	0.639	0.917
	FR1 n41-PC2	100M	BPSK	1	1	Back	5mm	Ant 0	-	DSI 3	Standalone	528000	2640	16.78	18.50	1.486	0.03	0.664	0.987
	FR1 n41-PC2	100M	BPSK	1	137	Front	15mm	Ant 0	-	DSI 4	Full	509202	2546.01	25.56	27.00	1.393	-0.15	0.520	0.724
	FR1 n41-PC2	100M	BPSK	1	137	Back	20mm	Ant 0	-	DSI 4	Full	509202	2546.01	25.56	27.00	1.393	0.05	0.611	0.851
	FR1 n41-PC2	100M	BPSK	135	69	Front	5mm	Ant 0	-	DSI 3	Standalone	509202	2546.01	16.90	18.50	1.445	0.03	0.349	0.504
	FR1 n41-PC2	100M	BPSK	135	69	Back	5mm	Ant 0	-	DSI 3	Standalone	509202	2546.01	16.90	18.50	1.445	0.08	0.788	1.139
	FR1 n41-PC2	100M	BPSK	135	69	Back	5mm	Ant 0	-	DSI 3	Standalone	518598	2592.99	16.89	18.50	1.449	-0.05	0.455	0.659
	FR1 n41-PC2	100M	BPSK	135	69	Back	5mm	Ant 0	-	DSI 3	Standalone	528000	2640	16.86	18.50	1.459	0.14	0.481	0.702
	FR1 n41-PC2	100M	BPSK	270	0	Back	5mm	Ant 0	-	DSI 3	Standalone	509202	2546.01	16.88	18.50	1.452	-0.13	0.740	1.075
	FR1 n41-PC2	100M	BPSK	1	1	Front	5mm	Ant 0	-	DSI 3	Simultaneous	509202	2546.01	15.48	17.00	1.419	0.05	0.119	0.169
	FR1 n41-PC2	100M	BPSK	1	1	Back	5mm	Ant 0	-	DSI 3	Simultaneous	509202	2546.01	15.48	17.00	1.419	0.08	0.548	0.778
	FR1 n41-PC2	100M	BPSK	135	69	Front	5mm	Ant 0	-	DSI 3	Simultaneous	509202	2546.01	15.45	17.00	1.429	0.03	0.119	0.170
	FR1 n41-PC2	100M	BPSK	135	69	Back	5mm	Ant 0	-	DSI 3	Simultaneous	509202	2546.01	15.45	17.00	1.429	0.08	0.548	0.783
	FR1 n78-PC3	100M	BPSK	1	137	Front	5mm	Ant 3	-	DSI 3	Standalone	633334	3500.01	14.30	15.00	1.175	0.06	0.173	0.203
	FR1 n78-PC3	100M	BPSK	1	137	Back	5mm	Ant 3	-	DSI 3	Standalone	633334	3500.01	14.30	15.00	1.175	0.13	0.544	0.639
	FR1 n78-PC3	100M	BPSK	135	69	Front	5mm	Ant 3	-	DSI 3	Standalone	633334	3500.01	14.28	15.00	1.180	0.12	0.170	0.201
64	FR1 n78-PC3	100M	BPSK	135	69	Back	5mm	Ant 3	-	DSI 3	Standalone	633334	3500.01	14.28	15.00	1.180	0.14	0.632	**0.746**
	FR1 n78-PC2	100M	BPSK	135	69	Front	15mm	Ant 3	-	DSI 4	Full	633334	3500.01	26.02	27.00	1.253	0.13	0.177	0.222
	FR1 n78-PC2	100M	BPSK	135	69	Back	20mm	Ant 3	-	DSI 4	Full	633334	3500.01	26.02	27.00	1.253	0.18	0.267	0.335
	FR1 n78-PC3	100M	BPSK	1	137	Front	5mm	Ant 3	-	DSI 3	Simultaneous	633334	3500.01	13.27	14.00	1.183	0.03	0.137	0.162
	FR1 n78-PC3	100M	BPSK	1	137	Back	5mm	Ant 3	-	DSI 3	Simultaneous	633334	3500.01	13.27	14.00	1.183	0.09	0.449	0.531
	FR1 n78-PC3	100M	BPSK	135	69	Front	5mm	Ant 3	-	DSI 3	Simultaneous	633334	3500.01	13.25	14.00	1.189	0.14	0.134	0.159
	FR1 n78-PC3	100M	BPSK	135	69	Back	5mm	Ant 3	-	DSI 3	Simultaneous	633334	3500.01	13.25	14.00	1.189	0.19	0.530	0.630
	FR1 n78-PC2	100M	BPSK	1	137	Front	5mm	Ant 3	-	DSI 3	Standalone	633334	3500.01	14.30	15.00	1.175	0.06	0.173	0.203
	FR1 n78-PC2	100M	BPSK	1	137	Back	5mm	Ant 3	-	DSI 3	Standalone	633334	3500.01	14.30	15.00	1.175	0.13	0.544	0.639
	FR1 n78-PC2	100M	BPSK	135	69	Front	5mm	Ant 3	-	DSI 3	Standalone	633334	3500.01	14.28	15.00	1.180	0.12	0.174	0.205
	FR1 n78-PC2	100M	BPSK	135	69	Back	5mm	Ant 3	-	DSI 3	Standalone	633334	3500.01	14.28	15.00	1.180	0.14	0.632	0.746
	FR1 n78-PC2	100M	BPSK	135	69	Front	15mm	Ant 3	-	DSI 4	Full	633334	3500.01	26.02	27.00	1.253	0.13	0.177	0.222
	FR1 n78-PC2	100M	BPSK	135	69	Back	20mm	Ant 3	-	DSI 4	Full	633334	3500.01	26.02	27.00	1.253	0.18	0.267	0.335

	FR1 n78-PC2	100M	BPSK	1	137	Front	5mm	Ant 3	-	DSI 3	Simultaneous	633334	3500.01	13.27	14.00	1.183	0.03	0.137	0.162
	FR1 n78-PC2	100M	BPSK	1	137	Back	5mm	Ant 3	-	DSI 3	Simultaneous	633334	3500.01	13.27	14.00	1.183	0.09	0.449	0.531
	FR1 n78-PC2	100M	BPSK	135	69	Front	5mm	Ant 3	-	DSI 3	Simultaneous	633334	3500.01	13.25	14.00	1.189	0.14	0.134	0.159
	FR1 n78-PC2	100M	BPSK	135	69	Back	5mm	Ant 3	-	DSI 3	Simultaneous	633334	3500.01	13.25	14.00	1.189	0.19	0.530	0.630

<WLAN2.4G SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Headset	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	Front	5mm	Ant 2+4	-	Standalone	11	2462	19.36	20.50	1.300	97.82	1.022	0.18	0.344	0.457
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 2+4	-	Standalone	11	2462	19.36	20.50	1.300	97.82	1.022	0.07	0.733	0.974
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 2+4	-	Standalone	1	2412	19.33	20.50	1.309	97.82	1.022	-0.02	0.897	1.200
65	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 2+4	-	Standalone	6	2437	19.15	20.50	1.365	97.82	1.022	0.15	0.937	**1.307**
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 2+4	Headset	Standalone	6	2437	19.15	20.50	1.365	97.82	1.022	0.02	0.851	1.187
	WLAN2.4GHz-	802.11b 1Mbps	Front	15mm	Ant 2+4	-	Full	11	2462	21.31	22.50	1.314	97.82	1.022	-0.06	0.094	0.126
	WLAN2.4GHz-	802.11b 1Mbps	Back	20mm	Ant 2+4	-	Full	6	2437	21.12	22.50	1.374	97.82	1.022	-0.03	0.137	0.192
	WLAN2.4GHz	802.11b 1Mbps	Front	5mm	Ant 2+4	-	Simultaneous	11	2462	16.89	18.00	1.291	97.82	1.022	0.04	0.156	0.206
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 2+4	-	Simultaneous	11	2462	16.89	18.00	1.291	97.82	1.022	0.16	0.331	0.437

<WLAN5G SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Headset	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	Front	5mm	Ant 4+12	-	Standalone	58	5290	18.41	19.50	1.285	100	1.000	-0.01	0.132	0.170
66	WLAN5.3GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 4+12	-	Standalone	58	5290	18.41	19.50	1.285	100	1.000	-0.06	0.815	**1.048**
	WLAN5.3GHz	802.11a 6Mbps	Front	15mm	Ant 4+12	-	Full	52	5260	20.87	22.00	1.296	97.95	1.021	0.09	0.065	0.086
	WLAN5.3GHz	802.11a 6Mbps	Back	20mm	Ant 4+12	-	Full	52	5260	20.87	22.00	1.296	97.95	1.021	-0.08	0.170	0.225
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 4+12	-	Simultaneous	58	5290	12.88	14.00	1.294	100	1.000	-0.01	0.052	0.067
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 4+12	-	Simultaneous	58	5290	12.88	14.00	1.294	100	1.000	-0.05	0.236	0.305
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 4+12	-	Standalone	106	5530	15.17	16.00	1.211	100	1.000	0.03	0.106	0.128
67	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 4+12	-	Standalone	106	5530	15.17	16.00	1.211	100	1.000	0.17	0.821	**0.994**
	WLAN5.5GHz	802.11a 6Mbps	Back	15mm	Ant 4+12	-	Full	132	5660	20.45	21.50	1.274	97.95	1.021	0.04	0.063	0.082
	WLAN5.5GHz	802.11a 6Mbps	Back	20mm	Ant 4+12	-	Full	132	5660	20.45	21.50	1.274	97.95	1.021	-0.12	0.509	0.662
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 4+12	-	Simultaneous	106	5530	9.18	10.00	1.208	100	1.000	0.06	0.018	0.022
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 4+12	-	Simultaneous	106	5530	9.18	10.00	1.208	100	1.000	0.17	0.193	0.233
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 4+12	-	Standalone	155	5775	17.35	18.00	1.161	100	1.000	0.15	0.052	0.060
68	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 4+12	-	Standalone	155	5775	17.35	18.00	1.161	100	1.000	0.06	0.859	**0.998**
	WLAN5.8GHz	802.11a 6Mbps	Front	15mm	Ant 4+12	-	Full	157	5785	20.55	21.50	1.245	97.95	1.021	-0.17	0.057	0.072
	WLAN5.8GHz	802.11a 6Mbps	Back	20mm	Ant 4+12	-	Full	157	5785	20.55	21.50	1.245	97.95	1.021	0.08	0.437	0.555
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 4+12	-	Simultaneous	155	5775	11.88	13.00	1.294	100	1.000	-0.02	0.012	0.016
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 4+12	-	Simultaneous	155	5775	11.88	13.00	1.294	100	1.000	0.08	0.232	0.300

<WLAN6G SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Headset	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)	Measured APD 4cm^2 (W/m^2)
	WLAN6GHz	802.11ac-VHT160 MCS0	Front	5mm	Ant 4+12	-	Full	15	6025	15.88	16.50	1.153	100	1.000	-0.06	0.004	0.005	0.022
69	WLAN6GHz	802.11ac-VHT160 MCS0	Back	5mm	Ant 4+12	-	Full	15	6025	15.88	16.50	1.153	100	1.000	0.17	0.093	**0.107**	0.598

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Headset	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	Front	5mm	Ant 2	-	Full	0	2402	10.00	11.00	1.259	77.05	1.298	0.1	0.064	0.104
70	Bluetooth	DH5 1Mbps	Back	5mm	Ant 2	-	Full	0	2402	10.00	11.00	1.259	77.05	1.298	0.07	0.091	**0.149**

16.4 Product specific 10g 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 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	GSM850	GPRS(3 Tx slots)	Front	0mm	Ant 0	DSI 4	Full	128	824.2	28.39	29.00	1.151	0.04	0.548	0.631
71	GSM850	GPRS(3 Tx slots)	Back	0mm	Ant 0	DSI 4	Full	128	824.2	28.39	29.00	1.151	0.11	0.592	**0.681**
	GSM1900	GPRS(3 Tx slots)	Back	0mm	Ant 0	DSI 6	Full	512	1850.2	25.58	26.50	1.236	-0.16	1.610	1.990
	GSM1900	GPRS(3 Tx slots)	Bottom Side	0mm	Ant 0	DSI 6	Full	512	1850.2	25.58	26.50	1.236	-0.11	1.660	2.052
72	GSM1900	GPRS(3 Tx slots)	Bottom Side	0mm	Ant 0	DSI 6	Full	661	1880	25.54	26.50	1.247	0.1	1.800	**2.245**
	GSM1900	GPRS(3 Tx slots)	Bottom Side	0mm	Ant 0	DSI 6	Full	810	1909.8	25.10	26.50	1.380	-0.08	1.420	1.960

<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 10g SAR (W/kg)	Reported 10g SAR (W/kg)
73	WCDMA V	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 4	Full	4233	846.6	24.29	25.00	1.178	0.02	2.470	**2.909**
	WCDMA V	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 4	Full	4132	826.4	24.24	25.00	1.191	0.18	1.620	1.930
	WCDMA V	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 4	Full	4182	836.4	24.28	25.00	1.180	-0.06	1.990	2.349
	WCDMA V	RMC 12.2Kbps	Front	0mm	Ant 1	DSI 4	Full	4233	846.6	23.82	25.00	1.312	0.04	1.300	1.706
	WCDMA V	RMC 12.2Kbps	Back	0mm	Ant 1	DSI 4	Full	4233	846.6	23.82	25.00	1.312	-0.17	0.871	1.143
	WCDMA V	RMC 12.2Kbps	Top Side	0mm	Ant 1	DSI 4	Full	4233	846.6	23.82	25.00	1.312	-0.06	1.990	2.611
	WCDMA V	RMC 12.2Kbps	Top Side	0mm	Ant 1	DSI 4	Full	4132	826.4	23.77	25.00	1.327	-0.16	1.930	2.562
	WCDMA V	RMC 12.2Kbps	Top Side	0mm	Ant 1	DSI 4	Full	4182	836.4	23.76	25.00	1.330	0.07	1.960	2.608
	WCDMA IV	RMC 12.2Kbps	Front	0mm	Ant 0	DSI 6	Standalone	1413	1732.6	20.02	21.00	1.253	-0.13	1.110	1.391
	WCDMA IV	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6	Standalone	1413	1732.6	20.02	21.00	1.253	-0.05	1.600	2.005
74	WCDMA IV	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSI 6	Standalone	1413	1732.6	20.02	21.00	1.253	-0.18	2.140	**2.682**
	WCDMA IV	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6	Standalone	1312	1712.4	19.86	21.00	1.300	0.16	1.790	2.327
	WCDMA IV	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6	Standalone	1513	1752.6	19.81	21.00	1.315	-0.19	1.820	2.394
	WCDMA IV	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSI 6	Standalone	1312	1712.4	19.86	21.00	1.300	0.11	1.880	2.444
	WCDMA IV	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSI 6	Standalone	1513	1752.6	19.81	21.00	1.315	0.05	1.700	2.236
	WCDMA IV	RMC 12.2Kbps	Front	7mm	Ant 0	DSI 4	Full	1413	1732.6	24.11	25.00	1.227	0.15	0.793	0.973
	WCDMA IV	RMC 12.2Kbps	Back	13mm	Ant 0	DSI 4	Full	1513	1752.6	23.96	25.00	1.271	-0.16	0.530	0.673
	WCDMA IV	RMC 12.2Kbps	Bottom Side	12mm	Ant 0	DSI 4	Full	1413	1732.6	24.11	25.00	1.227	0.07	0.843	1.035
	WCDMA II	RMC 12.2Kbps	Front	0mm	Ant 0	DSI 6	Standalone	9538	1907.6	19.80	21.00	1.318	-0.17	1.120	1.476
	WCDMA II	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6	Standalone	9538	1907.6	19.80	21.00	1.318	0.13	1.710	2.254
	WCDMA II	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSI 6	Standalone	9538	1907.6	19.80	21.00	1.318	0.14	1.810	2.386
	WCDMA II	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6	Standalone	9262	1852.4	19.66	21.00	1.361	0.12	1.840	2.505
	WCDMA II	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6	Standalone	9400	1880	19.72	21.00	1.343	0.18	1.980	2.659
	WCDMA II	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSI 6	Standalone	9262	1852.4	19.66	21.00	1.361	0.18	1.770	2.410
75	WCDMA II	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSI 6	Standalone	9400	1880	19.72	21.00	1.343	-0.18	2.160	**2.900**
	WCDMA II	RMC 12.2Kbps	Front	7mm	Ant 0	DSI 4	Full	9538	1907.6	23.81	25.00	1.315	0.04	0.902	1.186
	WCDMA II	RMC 12.2Kbps	Back	13mm	Ant 0	DSI 4	Full	9400	1880	23.73	25.00	1.340	-0.15	0.688	0.922
	WCDMA II	RMC 12.2Kbps	Bottom Side	12mm	Ant 0	DSI 4	Full	9400	1880	23.73	25.00	1.340	0.05	1.180	1.581

<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 10g SAR (W/kg)	Reported 10g SAR (W/kg)
76	LTE Band 5	10M	QPSK	1	0	Back	0mm	Ant 0	DSI 4	Full	20525	836.5	22.86	24.00	1.300	-0.11	0.898	**1.168**
	LTE Band 5	10M	QPSK	25	0	Back	0mm	Ant 0	DSI 4	Full	20525	836.5	22.03	23.00	1.250	0.17	0.726	0.908
	LTE Band 26	15M	QPSK	1	0	Back	0mm	Ant 1	DSI 4	Full	26865	831.5	22.89	24.00	1.291	0.15	0.884	1.141
77	LTE Band 26	15M	QPSK	1	0	Top Side	0mm	Ant 1	DSI 4	Full	26865	831.5	22.89	24.00	1.291	-0.09	1.860	**2.402**
	LTE Band 26	15M	QPSK	36	0	Back	0mm	Ant 1	DSI 4	Full	26865	831.5	21.53	23.00	1.403	-0.14	0.672	0.943
	LTE Band 26	15M	QPSK	36	0	Top Side	0mm	Ant 1	DSI 4	Full	26865	831.5	21.53	23.00	1.403	-0.11	1.530	2.146
	LTE Band 26	15M	QPSK	75	0	Top Side	0mm	Ant 1	DSI 4	Full	26865	831.5	21.52	23.00	1.406	-0.08	1.520	2.137
	LTE Band 66	20M	QPSK	1	0	Front	0mm	Ant 0	DSI 6	Standalone	132322	1745	20.52	21.50	1.253	-0.06	1.180	1.479
	LTE Band 66	20M	QPSK	1	0	Back	0mm	Ant 0	DSI 6	Standalone	132322	1745	20.52	21.50	1.253	-0.08	2.210	2.769
	LTE Band 66	20M	QPSK	1	0	Bottom Side	0mm	Ant 0	DSI 6	Standalone	132322	1745	20.52	21.50	1.253	0.14	2.340	2.932
	LTE Band 66	20M	QPSK	1	0	Back	0mm	Ant 0	DSI 6	Standalone	132072	1720	20.43	21.50	1.279	0.04	2.030	2.597
	LTE Band 66	20M	QPSK	1	0	Back	0mm	Ant 0	DSI 6	Standalone	132572	1770	20.31	21.50	1.315	0.04	2.060	2.709
	LTE Band 66	20M	QPSK	1	0	Bottom Side	0mm	Ant 0	DSI 6	Standalone	132072	1720	20.43	21.50	1.279	0.09	1.980	2.533
	LTE Band 66	20M	QPSK	1	0	Bottom Side	0mm	Ant 0	DSI 6	Standalone	132572	1770	20.31	21.50	1.315	0.03	2.210	2.907
	LTE Band 66	20M	QPSK	1	0	Front	7mm	Ant 0	DSI 4	Full	132322	1745	22.42	24.00	1.439	-0.08	0.574	0.826
	LTE Band 66	20M	QPSK	1	0	Back	13mm	Ant 0	DSI 4	Full	132322	1745	22.42	24.00	1.439	-0.08	0.550	0.791
	LTE Band 66	20M	QPSK	1	0	Bottom Side	12mm	Ant 0	DSI 4	Full	132322	1745	22.42	24.00	1.439	-0.15	0.815	1.173
	LTE Band 66	20M	QPSK	50	0	Front	0mm	Ant 0	DSI 6	Standalone	132322	1745	20.46	21.50	1.271	-0.16	1.180	1.499
	LTE Band 66	20M	QPSK	50	0	Back	0mm	Ant 0	DSI 6	Standalone	132322	1745	20.46	21.50	1.271	0.16	2.070	2.630
	LTE Band 66	20M	QPSK	50	0	Bottom Side	0mm	Ant 0	DSI 6	Standalone	132322	1745	20.46	21.50	1.271	0.08	2.290	2.910
	LTE Band 66	20M	QPSK	50	0	Back	0mm	Ant 0	DSI 6	Standalone	132072	1720	20.41	21.50	1.285	0.19	2.130	2.738
	LTE Band 66	20M	QPSK	50	0	Back	0mm	Ant 0	DSI 6	Standalone	132572	1770	20.32	21.50	1.312	-0.06	2.210	2.900
	LTE Band 66	20M	QPSK	50	0	Bottom Side	0mm	Ant 0	DSI 6	Standalone	132072	1720	20.41	21.50	1.285	0.07	2.130	2.738
	LTE Band 66	20M	QPSK	50	0	Bottom Side	0mm	Ant 0	DSI 6	Standalone	132572	1770	20.32	21.50	1.312	-0.08	2.190	2.874
	LTE Band 66	20M	QPSK	100	0	Back	0mm	Ant 0	DSI 6	Standalone	132322	1745	20.42	21.50	1.282	0.16	2.100	2.693
	LTE Band 66	20M	QPSK	100	0	Bottom Side	0mm	Ant 0	DSI 6	Standalone	132322	1745	20.42	21.50	1.282	0.17	2.200	2.821
	LTE Band 66	20M	QPSK	1	0	Front	0mm	Ant 1	DSI 6	Standalone	132322	1745	21.07	22.00	1.239	0.06	1.660	2.056
	LTE Band 66	20M	QPSK	1	0	Back	0mm	Ant 1	DSI 6	Standalone	132322	1745	21.07	22.00	1.239	-0.11	1.100	1.363
	LTE Band 66	20M	QPSK	1	0	Top Side	0mm	Ant 1	DSI 6	Standalone	132322	1745	21.07	22.00	1.239	-0.01	2.120	2.626
	LTE Band 66	20M	QPSK	1	0	Front	0mm	Ant 1	DSI 6	Standalone	132072	1720	20.88	22.00	1.294	0.05	1.770	2.291
	LTE Band 66	20M	QPSK	1	0	Front	0mm	Ant 1	DSI 6	Standalone	132572	1770	21.06	22.00	1.242	-0.17	1.430	1.776
78	LTE Band 66	20M	QPSK	1	0	Top Side	0mm	Ant 1	DSI 6	Standalone	132072	1720	20.97	22.00	1.268	0.05	2.360	**2.992**
	LTE Band 66	20M	QPSK	1	0	Top Side	0mm	Ant 1	DSI 6	Standalone	132572	1770	21.06	22.00	1.242	0.03	1.820	2.260
	LTE Band 66	20M	QPSK	1	0	Front	8mm	Ant 1	DSI 4	Full	132072	1720	22.33	24.00	1.469	-0.11	0.361	0.530
	LTE Band 66	20M	QPSK	1	0	Back	12mm	Ant 1	DSI 4	Full	132322	1745	22.61	24.00	1.377	0.18	0.319	0.439
	LTE Band 66	20M	QPSK	1	0	Top Side	10mm	Ant 1	DSI 4	Full	132072	1720	22.33	24.00	1.469	-0.16	0.435	0.639
	LTE Band 66	20M	QPSK	50	0	Front	0mm	Ant 1	DSI 6	Standalone	132322	1770	20.95	22.00	1.274	0.03	1.610	2.050
	LTE Band 66	20M	QPSK	50	0	Back	0mm	Ant 1	DSI 6	Standalone	132322	1770	20.95	22.00	1.274	-0.18	1.080	1.375
	LTE Band 66	20M	QPSK	50	0	Top Side	0mm	Ant 1	DSI 6	Standalone	132322	1770	20.95	22.00	1.274	-0.14	2.250	2.865
	LTE Band 66	20M	QPSK	50	0	Front	0mm	Ant 1	DSI 6	Standalone	132072	1720	20.88	22.00	1.294	0.05	1.715	2.220
	LTE Band 66	20M	QPSK	50	0	Front	0mm	Ant 1	DSI 6	Standalone	132572	1770	20.89	22.00	1.291	0.03	1.457	1.881
	LTE Band 66	20M	QPSK	50	0	Top Side	0mm	Ant 1	DSI 6	Standalone	132072	1720	20.88	22.00	1.294	-0.02	2.198	2.845
	LTE Band 66	20M	QPSK	50	0	Top Side	0mm	Ant 1	DSI 6	Standalone	132572	1770	20.89	22.00	1.291	0.18	1.960	2.531
	LTE Band 66	20M	QPSK	100	0	Front	0mm	Ant 1	DSI 6	Standalone	132322	1770	20.82	22.00	1.312	0.05	1.750	2.296
	LTE Band 66	20M	QPSK	100	0	Top Side	0mm	Ant 1	DSI 6	Standalone	132322	1770	20.82	22.00	1.312	0.09	2.140	2.808
	LTE Band 66	20M	QPSK	1	0	Front	0mm	Ant 1	DSI 6	Simultaneous	132322	1745	20.59	21.50	1.233	-0.05	1.480	1.825
	LTE Band 66	20M	QPSK	1	0	Back	0mm	Ant 1	DSI 6	Simultaneous	132322	1745	20.59	21.50	1.233	-0.16	0.978	1.206
	LTE Band 66	20M	QPSK	1	0	Top Side	0mm	Ant 1	DSI 6	Simultaneous	132322	1745	20.59	21.50	1.233	-0.07	1.900	2.343
	LTE Band 66	20M	QPSK	1	0	Top Side	0mm	Ant 1	DSI 6	Simultaneous	132072	1720	20.51	21.50	1.256	-0.02	2.210	2.776
	LTE Band 66	20M	QPSK	1	0	Top Side	0mm	Ant 1	DSI 6	Simultaneous	132572	1770	20.45	21.50	1.274	0.06	1.720	2.190
	LTE Band 66	20M	QPSK	50	0	Front	0mm	Ant 1	DSI 6	Simultaneous	132322	1745	20.51	21.50	1.256	-0.19	1.540	1.934
	LTE Band 66	20M	QPSK	50	0	Back	0mm	Ant 1	DSI 6	Simultaneous	132322	1745	20.51	21.50	1.256	0.14	0.991	1.245
	LTE Band 66	20M	QPSK	50	0	Top Side	0mm	Ant 1	DSI 6	Simultaneous	132322	1745	20.51	21.50	1.256	-0.02	1.930	2.424

	LTE Band 66	20M	QPSK	50	0	Top Side	0mm	Ant 1	DSI 6	Simultaneous	132072	1720	20.28	21.50	1.324	-0.05	2.080	2.755
	LTE Band 66	20M	QPSK	50	0	Top Side	0mm	Ant 1	DSI 6	Simultaneous	132572	1770	20.50	21.50	1.259	0.16	1.750	2.203
	LTE Band 66	20M	QPSK	100	0	Top Side	0mm	Ant 1	DSI 6	Simultaneous	132322	1745	20.42	21.50	1.282	0.08	2.070	2.654
	LTE Band 2	20M	QPSK	1	0	Front	0mm	Ant 0	DSI 6	Standalone	18700	1860	19.71	20.50	1.199	0.05	1.240	1.487
79	LTE Band 2	20M	QPSK	1	0	Back	0mm	Ant 0	DSI 6	Standalone	18700	1860	19.71	20.50	1.199	0.02	2.050	**2.459**
	LTE Band 2	20M	QPSK	1	0	Bottom Side	0mm	Ant 0	DSI 6	Standalone	18700	1860	19.71	20.50	1.199	0.04	2.040	2.447
	LTE Band 2	20M	QPSK	1	0	Back	0mm	Ant 0	DSI 6	Standalone	18900	1880	19.45	20.50	1.274	0.02	1.870	2.381
	LTE Band 2	20M	QPSK	1	0	Back	0mm	Ant 0	DSI 6	Standalone	19100	1900	19.49	20.50	1.262	-0.02	1.930	2.435
	LTE Band 2	20M	QPSK	1	0	Bottom Side	0mm	Ant 0	DSI 6	Standalone	18900	1880	19.45	20.50	1.274	0.01	1.890	2.407
	LTE Band 2	20M	QPSK	1	0	Bottom Side	0mm	Ant 0	DSI 6	Standalone	19100	1900	19.49	20.50	1.262	-0.03	1.840	2.322
	LTE Band 2	20M	QPSK	1	0	Front	7mm	Ant 0	DSI 4	Full	18700	1860	22.66	24.00	1.361	0.12	0.784	1.067
	LTE Band 2	20M	QPSK	1	0	Back	13mm	Ant 0	DSI 4	Full	18700	1860	22.66	24.00	1.361	0.08	0.542	0.738
	LTE Band 2	20M	QPSK	1	0	Bottom Side	12mm	Ant 0	DSI 4	Full	18700	1860	22.66	24.00	1.361	0.05	0.989	1.346
	LTE Band 2	20M	QPSK	50	0	Front	0mm	Ant 0	DSI 6	Standalone	18700	1860	19.65	20.50	1.216	-0.06	1.320	1.605
	LTE Band 2	20M	QPSK	50	0	Back	0mm	Ant 0	DSI 6	Standalone	18700	1860	19.65	20.50	1.216	0.08	2.010	2.445
	LTE Band 2	20M	QPSK	50	0	Bottom Side	0mm	Ant 0	DSI 6	Standalone	18700	1860	19.65	20.50	1.216	-0.16	2.020	2.457
	LTE Band 2	20M	QPSK	50	0	Back	0mm	Ant 0	DSI 6	Standalone	18900	1880	19.59	20.50	1.233	-0.06	1.970	2.429
	LTE Band 2	20M	QPSK	50	0	Back	0mm	Ant 0	DSI 6	Standalone	19100	1900	19.57	20.50	1.239	0.05	1.890	2.341
	LTE Band 2	20M	QPSK	50	0	Bottom Side	0mm	Ant 0	DSI 6	Standalone	18900	1880	19.59	20.50	1.233	-0.19	1.980	2.442
	LTE Band 2	20M	QPSK	50	0	Bottom Side	0mm	Ant 0	DSI 6	Standalone	19100	1900	19.57	20.50	1.239	-0.06	1.930	2.391
	LTE Band 2	20M	QPSK	100	0	Back	0mm	Ant 0	DSI 6	Standalone	18700	1860	19.54	20.50	1.247	-0.08	1.840	2.295
	LTE Band 2	20M	QPSK	100	0	Bottom Side	0mm	Ant 0	DSI 6	Standalone	18700	1860	19.54	20.50	1.247	0.05	1.830	2.283
	LTE Band 7	20M	QPSK	1	99	Front	0mm	Ant 0	DSI 6	Full	21350	2560	23.34	24.00	1.164	0.08	1.190	1.385
80	LTE Band 7	20M	QPSK	1	99	Back	0mm	Ant 0	DSI 6	Full	21350	2560	23.34	24.00	1.164	-0.05	2.530	**2.945**
	LTE Band 7	20M	QPSK	1	0	Back	0mm	Ant 0	DSI 6	Full	21350(SCC) +21152(PCC)	2560 +2540.2	22.67	24.00	1.358	0.17	2.150	2.920
	LTE Band 7	20M	QPSK	1	99	Bottom Side	0mm	Ant 0	DSI 6	Full	21350	2560	23.34	24.00	1.164	0.07	2.350	2.736
	LTE Band 7	20M	QPSK	1	99	Back	0mm	Ant 0	DSI 6	Full	20850	2510	22.89	24.00	1.291	-0.09	2.160	2.789
	LTE Band 7	20M	QPSK	1	99	Back	0mm	Ant 0	DSI 6	Full	21100	2535	22.95	24.00	1.274	0.18	2.280	2.904
	LTE Band 7	20M	QPSK	1	99	Bottom Side	0mm	Ant 0	DSI 6	Full	20850	2510	22.89	24.00	1.291	0.06	2.120	2.737
	LTE Band 7	20M	QPSK	1	99	Bottom Side	0mm	Ant 0	DSI 6	Full	21100	2535	22.95	24.00	1.274	0.03	2.110	2.687
	LTE Band 7	20M	QPSK	50	50	Front	0mm	Ant 0	DSI 6	Full	21350	2560	22.07	23.00	1.239	0.13	1.140	1.412
	LTE Band 7	20M	QPSK	50	50	Back	0mm	Ant 0	DSI 6	Full	21350	2560	22.07	23.00	1.239	-0.13	2.240	2.775
	LTE Band 7	20M	QPSK	50	50	Bottom Side	0mm	Ant 0	DSI 6	Full	21350	2560	22.07	23.00	1.239	0.12	2.260	2.800
	LTE Band 7	20M	QPSK	50	50	Back	0mm	Ant 0	DSI 6	Full	20850	2510	22.04	23.00	1.247	-0.06	2.230	2.782
	LTE Band 7	20M	QPSK	50	50	Back	0mm	Ant 0	DSI 6	Full	21100	2535	21.92	23.00	1.282	0.11	2.130	2.731
	LTE Band 7	20M	QPSK	50	50	Bottom Side	0mm	Ant 0	DSI 6	Full	20850	2510	22.04	23.00	1.247	-0.09	2.070	2.582
	LTE Band 7	20M	QPSK	50	50	Bottom Side	0mm	Ant 0	DSI 6	Full	21100	2535	21.92	23.00	1.282	0.09	2.020	2.590
	LTE Band 7	20M	QPSK	100	0	Back	0mm	Ant 0	DSI 6	Full	21350	2560	22.05	23.00	1.245	0.14	2.230	2.775
	LTE Band 7	20M	QPSK	100	0	Bottom Side	0mm	Ant 0	DSI 6	Full	21350	2560	22.05	23.00	1.245	-0.06	2.220	2.763
	LTE Band 7	20M	QPSK	1	99	Back	0mm	Ant 1	DSI 6	Full	20850	2510	20.42	22.00	1.439	-0.12	0.679	0.977
	LTE Band 7	20M	QPSK	1	99	Top Side	0mm	Ant 1	DSI 6	Full	20850	2510	20.42	22.00	1.439	-0.02	1.930	2.777
	LTE Band 7C	20M	QPSK	1	99	Top Side	0mm	Ant 1	DSI 6	Full	20850(SCC) +21048(PCC)	2510 +2529.8	20.17	22.00	1.524	0.17	1.780	2.713
	LTE Band 7	20M	QPSK	1	99	Top Side	0mm	Ant 1	DSI 6	Full	21100	2535	20.13	22.00	1.538	-0.02	1.770	2.723
	LTE Band 7	20M	QPSK	1	99	Top Side	0mm	Ant 1	DSI 6	Full	21350	2560	20.06	22.00	1.563	-0.08	1.710	2.673
	LTE Band 7	20M	QPSK	50	0	Back	0mm	Ant 1	DSI 6	Full	20850	2510	19.48	21.00	1.419	-0.12	0.658	0.934
	LTE Band 7	20M	QPSK	50	0	Top Side	0mm	Ant 1	DSI 6	Full	20850	2510	19.48	21.00	1.419	0.01	1.670	2.370
	LTE Band 7	20M	QPSK	50	0	Top Side	0mm	Ant 1	DSI 6	Full	21100	2535	19.33	21.00	1.469	-0.12	1.580	2.321
	LTE Band 7	20M	QPSK	50	0	Top Side	0mm	Ant 1	DSI 6	Full	21350	2560	19.17	21.00	1.524	-0.02	1.610	2.454
	LTE Band 7	20M	QPSK	100	0	Top Side	0mm	Ant 1	DSI 6	Full	20850	2510	19.47	21.00	1.422	-0.05	1.670	2.375

<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 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	LTE Band 41	20M	QPSK	1	99	Front	0mm	Ant 0	DSI 6	Full	40620	2593	22.98	24.00	1.265	62.9	1.006	0.18	0.534	0.679
	LTE Band 41	20M	QPSK	1	99	Back	0mm	Ant 0	DSI 6	Full	40620	2593	22.98	24.00	1.265	62.9	1.006	0.03	1.710	2.176
	LTE Band 41	20M	QPSK	1	99	Bottom Side	0mm	Ant 0	DSI 6	Full	40620	2593	22.98	24.00	1.265	62.9	1.006	0.08	1.350	1.718
	LTE Band 41	20M	QPSK	1	99	Back	0mm	Ant 0	DSI 6	Full	39750	2506	22.66	24.00	1.361	62.9	1.006	0.01	1.250	1.712
81	LTE Band 41	20M	QPSK	1	99	Back	0mm	Ant 0	DSI 6	Full	40185	2549.5	22.73	24.00	1.340	62.9	1.006	-0.18	1.670	**2.251**
	LTE Band 41C	20M	QPSK	1	0	Back	0mm	Ant 0	DSI 6	Full	40185(PCC) +39987(SCC)	2549.5 +2529.7	22.66	24.00	1.361	62.9	1.006	-0.03	1.580	2.164
	LTE Band 41	20M	QPSK	1	99	Back	0mm	Ant 0	DSI 6	Full	41055	2636.5	22.68	24.00	1.355	62.9	1.006	-0.06	1.150	1.568
	LTE Band 41	20M	QPSK	1	99	Back	0mm	Ant 0	DSI 6	Full	41490	2680	22.53	24.00	1.403	62.9	1.006	0.01	1.010	1.425
	LTE Band 41	20M	QPSK	50	50	Front	0mm	Ant 0	DSI 6	Full	40620	2593	21.99	23.00	1.262	62.9	1.006	0.02	0.536	0.680
	LTE Band 41	20M	QPSK	50	50	Back	0mm	Ant 0	DSI 6	Full	40620	2593	21.99	23.00	1.262	62.9	1.006	0.01	1.200	1.523
	LTE Band 41	20M	QPSK	50	50	Bottom Side	0mm	Ant 0	DSI 6	Full	40620	2593	21.99	23.00	1.262	62.9	1.006	0.06	1.460	1.853
	LTE Band 41	20M	QPSK	100	0	Back	0mm	Ant 0	DSI 6	Full	40620	2593	21.89	23.00	1.291	62.9	1.006	0.01	1.260	1.637
	LTE Band 42	20M	QPSK	1	99	Back	0mm	Ant 3	DSI 6	Standalone	42590	3500	19.98	21.50	1.419	62.9	1.006	-0.17	1.910	2.727
	LTE Band 42	20M	QPSK	1	99	Left Side	0mm	Ant 3	DSI 6	Standalone	42590	3500	19.98	21.50	1.419	62.9	1.006	0.13	1.340	1.913
82	LTE Band 42	20M	QPSK	1	99	Back	0mm	Ant 3	DSI 6	Standalone	42190	3460	19.91	21.50	1.442	62.9	1.006	-0.07	1.940	**2.814**
	LTE Band 42	20M	QPSK	1	99	Back	0mm	Ant 3	DSI 6	Standalone	42990	3540	19.89	21.50	1.449	62.9	1.006	-0.19	1.800	2.623
	LTE Band 42	20M	QPSK	1	99	Back	15mm	Ant 3	DSI 4	Full	42590	3500	22.10	24.00	1.549	62.9	1.006	0.08	0.176	0.274
	LTE Band 42	20M	QPSK	1	99	Left Side	6mm	Ant 3	DSI 4	Full	42190	3460	22.02	24.00	1.578	62.9	1.006	0.14	0.850	1.349
	LTE Band 42	20M	QPSK	50	50	Back	0mm	Ant 3	DSI 6	Standalone	42590	3500	19.85	21.50	1.462	62.9	1.006	0.13	1.910	2.810
	LTE Band 42	20M	QPSK	50	50	Left Side	0mm	Ant 3	DSI 6	Standalone	42590	3500	19.85	21.50	1.462	62.9	1.006	0.05	1.300	1.912
	LTE Band 42	20M	QPSK	50	50	Back	0mm	Ant 3	DSI 6	Standalone	42190	3460	19.75	21.50	1.496	62.9	1.006	-0.07	1.850	2.785
	LTE Band 42	20M	QPSK	50	50	Back	0mm	Ant 3	DSI 6	Standalone	42990	3540	19.72	21.50	1.507	62.9	1.006	-0.19	1.760	2.668
	LTE Band 42	20M	QPSK	100	0	Back	0mm	Ant 3	DSI 6	Standalone	42590	3500	19.81	21.50	1.476	62.9	1.006	0.11	1.836	2.726
	LTE Band 42	20M	QPSK	1	99	Back	0mm	Ant 3	DSI 6	Simultaneous	42590	3500	19.38	21.00	1.452	62.9	1.006	0.05	1.710	2.498
	LTE Band 42	20M	QPSK	1	99	Left Side	0mm	Ant 3	DSI 6	Simultaneous	42590	3500	19.38	21.00	1.452	62.9	1.006	-0.08	1.180	1.724
	LTE Band 42	20M	QPSK	1	99	Back	0mm	Ant 3	DSI 6	Simultaneous	42190	3460	19.22	21.00	1.507	62.9	1.006	-0.15	1.740	2.637
	LTE Band 42	20M	QPSK	1	99	Back	0mm	Ant 3	DSI 6	Simultaneous	42990	3540	19.19	21.00	1.517	62.9	1.006	-0.15	1.800	2.747
	LTE Band 42	20M	QPSK	50	50	Back	0mm	Ant 3	DSI 6	Simultaneous	42590	3500	19.36	21.00	1.459	62.9	1.006	0.09	1.760	2.583
	LTE Band 42	20M	QPSK	50	50	Left Side	0mm	Ant 3	DSI 6	Simultaneous	42590	3500	19.36	21.00	1.459	62.9	1.006	0.09	1.230	1.805
	LTE Band 42	20M	QPSK	50	50	Back	0mm	Ant 3	DSI 6	Simultaneous	42190	3460	19.35	21.00	1.462	62.9	1.006	0.05	1.780	2.618
	LTE Band 42	20M	QPSK	50	50	Back	0mm	Ant 3	DSI 6	Simultaneous	42990	3540	19.33	21.00	1.469	62.9	1.006	-0.15	1.820	2.689
	LTE Band 42	20M	QPSK	100	0	Back	0mm	Ant 3	DSI 6	Standalone	42590	3500	19.31	21.00	1.476	62.9	1.006	0.07	1.796	2.666

<5GNR 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 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	FR1 n66	40M	BPSK	1	1	Front	0mm	Ant 0	DSI 6	Standalone	349000	1745	21.70	22.50	1.202	-0.09	1.610	1.936
	FR1 n66	40M	BPSK	1	1	Back	0mm	Ant 0	DSI 6	Standalone	349000	1745	21.70	22.50	1.202	0.02	2.340	2.813
	FR1 n66	40M	BPSK	1	1	Bottom Side	0mm	Ant 0	DSI 6	Standalone	349000	1745	21.70	22.50	1.202	0.06	2.310	2.777
	FR1 n66	40M	BPSK	1	1	Back	0mm	Ant 0	DSI 6	Standalone	346000	1730	21.60	22.50	1.230	0.01	2.350	2.891
83	FR1 n66	40M	BPSK	1	1	Back	0mm	Ant 0	DSI 6	Standalone	352000	1760	21.53	22.50	1.250	-0.07	2.360	**2.951**
	FR1 n66	40M	BPSK	1	1	Bottom Side	0mm	Ant 0	DSI 6	Standalone	346000	1730	21.60	22.50	1.230	-0.12	2.290	2.817
	FR1 n66	40M	BPSK	1	1	Bottom Side	0mm	Ant 0	DSI 6	Standalone	352000	1760	21.53	22.50	1.250	-0.06	2.270	2.838
	FR1 n66	40M	BPSK	1	1	Front	7mm	Ant 0	DSI 4	Full	349000	1745	22.92	24.00	1.282	0.06	0.563	0.722
	FR1 n66	40M	BPSK	1	1	Back	13mm	Ant 0	DSI 4	Full	352000	1760	22.79	24.00	1.321	-0.06	0.394	0.521
	FR1 n66	40M	BPSK	1	1	Bottom Side	12mm	Ant 0	DSI 4	Full	352000	1760	22.79	24.00	1.321	0.06	0.547	0.723
	FR1 n66	40M	BPSK	108	54	Front	0mm	Ant 0	DSI 6	Standalone	349000	1745	21.18	22.00	1.208	0.02	1.420	1.715
	FR1 n66	40M	BPSK	108	54	Back	0mm	Ant 0	DSI 6	Standalone	349000	1745	21.18	22.00	1.208	0.09	2.180	2.633
	FR1 n66	40M	BPSK	108	54	Bottom Side	0mm	Ant 0	DSI 6	Standalone	349000	1745	21.18	22.00	1.208	0.11	2.140	2.585
	FR1 n66	40M	BPSK	108	54	Back	0mm	Ant 0	DSI 6	Standalone	346000	1730	21.10	22.00	1.230	0.04	2.370	2.916
	FR1 n66	40M	BPSK	108	54	Back	0mm	Ant 0	DSI 6	Standalone	352000	1760	21.06	22.00	1.242	0.05	2.290	2.843

	FR1 n66	40M	BPSK	108	54	Bottom Side	0mm	Ant 0	DSI 6	Standalone	346000	1730	21.10	22.00	1.230	0.11	2.310	2.842
	FR1 n66	40M	BPSK	108	54	Bottom Side	0mm	Ant 0	DSI 6	Standalone	352000	1760	21.06	22.00	1.242	0.08	2.080	2.583
	FR1 n66	40M	BPSK	216	0	Back	0mm	Ant 0	DSI 6	Standalone	349000	1745	21.16	22.00	1.213	-0.11	2.210	2.682
	FR1 n66	40M	BPSK	216	0	Bottom Side	0mm	Ant 0	DSI 6	Standalone	349000	1745	21.16	22.00	1.213	0.09	2.150	2.609
	FR1 n66	40M	BPSK	1	1	Front	0mm	Ant 1	DSI 6	Standalone	349000	1745	20.90	22.00	1.288	0.05	1.950	2.512
	FR1 n66	40M	BPSK	1	1	Back	0mm	Ant 1	DSI 6	Standalone	349000	1745	20.90	22.00	1.288	0.05	1.290	1.662
	FR1 n66	40M	BPSK	1	1	Top Side	0mm	Ant 1	DSI 6	Standalone	349000	1745	20.90	22.00	1.288	0.07	2.220	2.860
	FR1 n66	40M	BPSK	1	1	Front	0mm	Ant 1	DSI 6	Standalone	346000	1730	20.84	22.00	1.306	0.06	2.150	2.808
	FR1 n66	40M	BPSK	1	1	Front	0mm	Ant 1	DSI 6	Standalone	352000	1760	20.81	22.00	1.315	-0.04	1.850	2.433
	FR1 n66	40M	BPSK	1	1	Top Side	0mm	Ant 1	DSI 6	Standalone	346000	1730	20.84	22.00	1.306	-0.04	2.250	2.939
	FR1 n66	40M	BPSK	1	1	Top Side	0mm	Ant 1	DSI 6	Standalone	352000	1760	20.81	22.00	1.315	0.14	2.210	2.907
	FR1 n66	40M	BPSK	1	1	Front	8mm	Ant 1	DSI 4	Full	346000	1730	22.81	24.00	1.315	0.04	0.070	0.092
	FR1 n66	40M	BPSK	1	1	Back	12mm	Ant 1	DSI 4	Full	349000	1745	22.88	24.00	1.294	0.06	0.063	0.082
	FR1 n66	40M	BPSK	1	1	Top Side	10mm	Ant 1	DSI 4	Full	346000	1730	22.81	24.00	1.315	0.13	0.096	0.126
	FR1 n66	40M	BPSK	108	54	Front	0mm	Ant 1	DSI 6	Standalone	349000	1745	20.48	21.50	1.265	0.16	1.580	1.998
	FR1 n66	40M	BPSK	108	54	Back	0mm	Ant 1	DSI 6	Standalone	349000	1745	20.48	21.50	1.265	0.05	1.040	1.315
	FR1 n66	40M	BPSK	108	54	Top Side	0mm	Ant 1	DSI 6	Standalone	349000	1745	20.48	21.50	1.265	-0.08	2.160	2.732
	FR1 n66	40M	BPSK	108	54	Top Side	0mm	Ant 1	DSI 6	Standalone	346000	1730	20.42	21.50	1.282	0.07	2.055	2.635
	FR1 n66	40M	BPSK	108	54	Top Side	0mm	Ant 1	DSI 6	Standalone	352000	1760	20.41	21.50	1.285	0.08	2.170	2.789
	FR1 n66	40M	BPSK	216	0	Front	0mm	Ant 1	DSI 6	Standalone	349000	1745	20.40	21.50	1.288	0.03	1.510	1.945
	FR1 n66	40M	BPSK	216	0	Back	0mm	Ant 1	DSI 6	Standalone	349000	1745	20.40	21.50	1.288	0.11	1.020	1.314
	FR1 n66	40M	BPSK	216	0	Top Side	0mm	Ant 1	DSI 6	Standalone	349000	1745	20.40	21.50	1.288	0.08	2.180	2.808
	FR1 n66	40M	BPSK	1	1	Front	0mm	Ant 1	DSI 6	Simultaneous	349000	1745	20.61	21.50	1.227	0.13	1.670	2.050
	FR1 n66	40M	BPSK	1	1	Back	0mm	Ant 1	DSI 6	Simultaneous	349000	1745	20.61	21.50	1.227	0.14	1.050	1.289
	FR1 n66	40M	BPSK	1	1	Top Side	0mm	Ant 1	DSI 6	Simultaneous	349000	1745	20.61	21.50	1.227	0.02	2.110	2.590
	FR1 n66	40M	BPSK	1	1	Front	0mm	Ant 1	DSI 6	Simultaneous	346000	1730	20.56	21.50	1.242	0.08	1.790	2.223
	FR1 n66	40M	BPSK	1	1	Front	0mm	Ant 1	DSI 6	Simultaneous	352000	1760	20.54	21.50	1.247	-0.13	1.580	1.971
	FR1 n66	40M	BPSK	1	1	Top Side	0mm	Ant 1	DSI 6	Simultaneous	346000	1730	20.56	21.50	1.242	-0.18	2.050	2.545
	FR1 n66	40M	BPSK	1	1	Top Side	0mm	Ant 1	DSI 6	Simultaneous	352000	1760	20.54	21.50	1.247	0.15	2.100	2.620
	FR1 n66	40M	BPSK	108	54	Front	0mm	Ant 1	DSI 6	Simultaneous	349000	1745	20.13	21.00	1.222	0.06	1.410	1.723
	FR1 n66	40M	BPSK	108	54	Back	0mm	Ant 1	DSI 6	Simultaneous	349000	1745	20.13	21.00	1.222	0.08	0.929	1.135
	FR1 n66	40M	BPSK	108	54	Top Side	0mm	Ant 1	DSI 6	Simultaneous	349000	1745	20.13	21.00	1.222	0.03	1.910	2.334
	FR1 n66	40M	BPSK	108	54	Top Side	0mm	Ant 1	DSI 6	Simultaneous	346000	1730	19.94	21.00	1.276	0.05	1.980	2.527
	FR1 n66	40M	BPSK	108	54	Top Side	0mm	Ant 1	DSI 6	Simultaneous	352000	1760	20.10	21.00	1.230	-0.13	1.960	2.411
	FR1 n66	40M	BPSK	216	0	Front	0mm	Ant 1	DSI 6	Simultaneous	349000	1745	20.12	21.00	1.225	0.08	1.440	1.763
	FR1 n66	40M	BPSK	216	0	Back	0mm	Ant 1	DSI 6	Simultaneous	349000	1745	20.12	21.00	1.225	0.17	0.975	1.194
	FR1 n66	40M	BPSK	216	0	Top Side	0mm	Ant 1	DSI 6	Simultaneous	349000	1745	20.12	21.00	1.225	0.05	2.030	2.486
	FR1 n7	40M	BPSK	1	108	Back	0mm	Ant 0	DSI 6	Standalone	504000	2520	21.57	22.50	1.239	-0.08	2.310	2.862
	FR1 n7	40M	BPSK	1	108	Bottom Side	0mm	Ant 0	DSI 6	Standalone	504000	2520	21.57	22.50	1.239	-0.09	1.510	1.871
	FR1 n7	40M	BPSK	1	108	Back	0mm	Ant 0	DSI 6	Standalone	507000	2535	21.52	22.50	1.253	0.04	2.180	2.732
	FR1 n7	40M	BPSK	1	108	Back	0mm	Ant 0	DSI 6	Standalone	510000	2550	21.46	22.50	1.271	-0.03	1.670	2.122
	FR1 n7	40M	BPSK	1	108	Front	7mm	Ant 0	DSI 4	Full	504000	2520	23.29	24.00	1.178	0.02	0.423	0.498
	FR1 n7	40M	BPSK	1	108	Back	13mm	Ant 0	DSI 4	Full	504000	2520	23.29	24.00	1.178	0.03	0.351	0.413
	FR1 n7	40M	BPSK	1	108	Bottom Side	12mm	Ant 0	DSI 4	Full	504000	2520	23.29	24.00	1.178	0.18	0.531	0.625
84	FR1 n7	40M	BPSK	108	54	Back	0mm	Ant 0	DSI 6	Standalone	504000	2520	21.54	22.50	1.247	-0.06	2.350	**2.931**
	FR1 n7	40M	BPSK	108	54	Bottom Side	0mm	Ant 0	DSI 6	Standalone	504000	2520	21.54	22.50	1.247	-0.01	1.490	1.859
	FR1 n7	40M	BPSK	108	54	Back	0mm	Ant 0	DSI 6	Standalone	507000	2535	21.48	22.50	1.265	-0.05	2.210	2.795
	FR1 n7	40M	BPSK	108	54	Back	0mm	Ant 0	DSI 6	Standalone	510000	2550	21.44	22.50	1.276	0.03	1.670	2.132
	FR1 n7	40M	BPSK	108	54	Front	7mm	Ant 0	DSI 4	Full	504000	2520	23.27	24.00	1.183	0.02	0.398	0.471
	FR1 n7	40M	BPSK	108	54	Back	13mm	Ant 0	DSI 4	Full	504000	2520	23.27	24.00	1.183	0.03	0.342	0.405
	FR1 n7	40M	BPSK	108	54	Bottom Side	12mm	Ant 0	DSI 4	Full	504000	2520	23.27	24.00	1.183	0.18	0.518	0.613
	FR1 n7	40M	BPSK	216	0	Back	0mm	Ant 0	DSI 6	Standalone	504000	2520	21.52	22.50	1.253	0.16	2.170	2.719
	FR1 n41-PC3	100M	BPSK	1	1	Front	0mm	Ant 0	DSI 6	Standalone	509202	2546.01	21.57	22.50	1.239	0.01	1.260	1.561
85	FR1 n41-PC3	100M	BPSK	1	1	Back	0mm	Ant 0	DSI 6	Standalone	509202	2546.01	21.57	22.50	1.239	-0.07	2.290	**2.837**
	FR1 n41-PC3	100M	BPSK	1	1	Bottom Side	0mm	Ant 0	DSI 6	Standalone	509202	2546.01	21.57	22.50	1.239	-0.17	2.010	2.490
	FR1 n41-PC3	100M	BPSK	1	1	Back	0mm	Ant 0	DSI 6	Standalone	518598	2592.99	21.52	22.50	1.253	-0.01	1.940	2.431

	FR1 n41-PC3	100M	BPSK	1	1	Back	0mm	Ant 0	DSI 6	Standalone	528000	2640	21.38	22.50	1.294	0.02	2.010	2.601
	FR1 n41-PC3	100M	BPSK	1	1	Bottom Side	0mm	Ant 0	DSI 6	Standalone	518598	2592.99	21.52	22.50	1.253	0.01	2.070	2.594
	FR1 n41-PC3	100M	BPSK	1	1	Bottom Side	0mm	Ant 0	DSI 6	Standalone	528000	2640	21.38	22.50	1.294	0.07	1.970	2.550
	FR1 n41-PC2	100M	BPSK	1	137	Front	7mm	Ant 0	DSI 4	Full	509202	2546.01	25.56	27.00	1.393	-0.17	0.782	1.089
	FR1 n41-PC2	100M	BPSK	1	137	Back	13mm	Ant 0	DSI 4	Full	509202	2546.01	25.56	27.00	1.393	0.15	0.623	0.868
	FR1 n41-PC2	100M	BPSK	1	137	Bottom Side	12mm	Ant 0	DSI 4	Full	518598	2592.99	25.40	27.00	1.445	0.12	1.150	1.662
	FR1 n41-PC3	100M	BPSK	135	69	Front	0mm	Ant 0	DSI 6	Standalone	509202	2546.01	21.52	22.50	1.253	-0.18	1.300	1.629
	FR1 n41-PC3	100M	BPSK	135	69	Back	0mm	Ant 0	DSI 6	Standalone	509202	2546.01	21.52	22.50	1.253	-0.12	2.180	2.732
	FR1 n41-PC3	100M	BPSK	135	69	Bottom Side	0mm	Ant 0	DSI 6	Standalone	509202	2546.01	21.52	22.50	1.253	0.03	2.130	2.669
	FR1 n41-PC3	100M	BPSK	135	69	Back	0mm	Ant 0	DSI 6	Standalone	518598	2592.99	21.41	22.50	1.285	0.05	1.950	2.506
	FR1 n41-PC3	100M	BPSK	135	69	Back	0mm	Ant 0	DSI 6	Standalone	528000	2640	21.40	22.50	1.288	0.09	2.030	2.615
	FR1 n41-PC3	100M	BPSK	135	69	Bottom Side	0mm	Ant 0	DSI 6	Standalone	518598	2592.99	21.41	22.50	1.285	-0.08	2.010	2.583
	FR1 n41-PC3	100M	BPSK	135	69	Bottom Side	0mm	Ant 0	DSI 6	Standalone	528000	2640	21.40	22.50	1.288	-0.08	2.040	2.628
	FR1 n41-PC3	100M	BPSK	270	0	Back	0mm	Ant 0	DSI 6	Standalone	509202	2546.01	21.39	22.50	1.291	-0.11	2.030	2.621
	FR1 n41-PC3	100M	BPSK	270	0	Bottom Side	0mm	Ant 0	DSI 6	Standalone	509202	2546.01	21.39	22.50	1.291	-0.13	2.010	2.595
	FR1 n41-PC2	100M	BPSK	1	1	Front	0mm	Ant 0	DSI 6	Standalone	509202	2546.01	21.57	22.50	1.239	0.01	1.260	1.561
	FR1 n41-PC2	100M	BPSK	1	1	Back	0mm	Ant 0	DSI 6	Standalone	509202	2546.01	21.57	22.50	1.239	-0.07	2.290	2.837
	FR1 n41-PC2	100M	BPSK	1	1	Bottom Side	0mm	Ant 0	DSI 6	Standalone	509202	2546.01	21.57	22.50	1.239	-0.17	2.010	2.490
	FR1 n41-PC2	100M	BPSK	1	1	Back	0mm	Ant 0	DSI 6	Standalone	518598	2592.99	21.52	22.50	1.253	-0.01	1.940	2.431
	FR1 n41-PC2	100M	BPSK	1	1	Back	0mm	Ant 0	DSI 6	Standalone	528000	2640	21.38	22.50	1.294	0.02	2.010	2.601
	FR1 n41-PC2	100M	BPSK	1	1	Bottom Side	0mm	Ant 0	DSI 6	Standalone	518598	2592.99	21.52	22.50	1.253	0.01	2.070	2.594
	FR1 n41-PC2	100M	BPSK	1	1	Bottom Side	0mm	Ant 0	DSI 6	Standalone	528000	2640	21.38	22.50	1.294	0.07	1.970	2.550
	FR1 n41-PC2	100M	BPSK	1	137	Front	7mm	Ant 0	DSI 4	Full	509202	2546.01	25.56	27.00	1.393	-0.17	0.782	1.089
	FR1 n41-PC2	100M	BPSK	1	137	Back	13mm	Ant 0	DSI 4	Full	509202	2546.01	25.56	27.00	1.393	0.15	0.623	0.868
	FR1 n41-PC2	100M	BPSK	1	137	Bottom Side	12mm	Ant 0	DSI 4	Full	518598	2592.99	25.40	27.00	1.445	0.12	1.150	1.662
	FR1 n41-PC2	100M	BPSK	135	69	Front	0mm	Ant 0	DSI 6	Standalone	509202	2546.01	21.52	22.50	1.253	-0.18	1.300	1.629
	FR1 n41-PC2	100M	BPSK	135	69	Back	0mm	Ant 0	DSI 6	Standalone	509202	2546.01	21.52	22.50	1.253	-0.12	2.180	2.732
	FR1 n41-PC2	100M	BPSK	135	69	Bottom Side	0mm	Ant 0	DSI 6	Standalone	509202	2546.01	21.52	22.50	1.253	0.03	2.130	2.669
	FR1 n41-PC2	100M	BPSK	135	69	Back	0mm	Ant 0	DSI 6	Standalone	518598	2592.99	21.41	22.50	1.285	0.05	1.950	2.506
	FR1 n41-PC2	100M	BPSK	135	69	Back	0mm	Ant 0	DSI 6	Standalone	528000	2640	21.40	22.50	1.288	0.09	2.030	2.615
	FR1 n41-PC2	100M	BPSK	135	69	Bottom Side	0mm	Ant 0	DSI 6	Standalone	518598	2592.99	21.41	22.50	1.285	-0.08	2.010	2.583
	FR1 n41-PC2	100M	BPSK	135	69	Bottom Side	0mm	Ant 0	DSI 6	Standalone	528000	2640	21.40	22.50	1.288	-0.08	2.040	2.628
	FR1 n41-PC2	100M	BPSK	270	0	Back	0mm	Ant 0	DSI 6	Standalone	509202	2546.01	21.39	22.50	1.291	-0.11	2.030	2.621
	FR1 n41-PC2	100M	BPSK	270	0	Bottom Side	0mm	Ant 0	DSI 6	Standalone	509202	2546.01	21.39	22.50	1.291	-0.13	2.010	2.595
	FR1 n78-PC3	100M	BPSK	1	137	Front	0mm	Ant 3	DSI 4	Full	633334	3500.01	23.39	24.00	1.151	0.04	1.400	1.611
	FR1 n78-PC3	100M	BPSK	1	137	Back	0mm	Ant 3	DSI 6	Standalone	633334	3500.01	18.08	19.00	1.236	-0.12	2.250	2.781
	FR1 n78-PC3	100M	BPSK	1	137	Left Side	0mm	Ant 3	DSI 6	Standalone	633334	3500.01	18.08	19.00	1.236	0.05	1.580	1.953
	FR1 n78-PC3	100M	BPSK	1	137	Top Side	0mm	Ant 3	DSI 4	Full	633334	3500.01	23.39	24.00	1.151	0.06	1.270	1.462
	FR1 n78-PC3	100M	BPSK	135	69	Front	0mm	Ant 3	DSI 4	Full	633334	3500.01	23.26	24.00	1.186	0.05	1.370	1.625
86	FR1 n78-PC3	100M	BPSK	135	69	Back	0mm	Ant 3	DSI 6	Standalone	633334	3500.01	18.04	19.00	1.247	0.08	2.280	**2.844**
	FR1 n78-PC3	100M	BPSK	135	69	Left Side	0mm	Ant 3	DSI 6	Standalone	633334	3500.01	18.04	19.00	1.247	-0.08	1.600	1.996
	FR1 n78-PC3	100M	BPSK	135	69	Top Side	0mm	Ant 3	DSI 4	Full	633334	3500.01	23.26	24.00	1.186	0.04	1.280	1.518
	FR1 n78-PC2	100M	BPSK	135	69	Back	15mm	Ant 3	DSI 4	Full	633334	3500.01	26.02	27.00	1.253	0.02	0.211	0.264
	FR1 n78-PC2	100M	BPSK	135	69	Left Side	6mm	Ant 3	DSI 4	Full	633334	3500.01	26.02	27.00	1.253	0.1	0.829	1.039
	FR1 n78-PC3	100M	BPSK	270	0	Back	0mm	Ant 3	DSI 6	Standalone	633334	3500.01	18.00	19.00	1.259	0.03	2.210	2.782
	FR1 n78-PC3	100M	BPSK	1	137	Front	0mm	Ant 3	DSI 4	Full	633334	3500.01	23.39	24.00	1.151	0.1	1.400	1.611
	FR1 n78-PC3	100M	BPSK	1	137	Back	0mm	Ant 3	DSI 6	Simultaneous	633334	3500.01	17.60	18.50	1.230	0.17	2.070	2.547
	FR1 n78-PC3	100M	BPSK	1	137	Left Side	0mm	Ant 3	DSI 6	Simultaneous	633334	3500.01	17.60	18.50	1.230	-0.01	1.290	1.587
	FR1 n78-PC3	100M	BPSK	1	137	Top Side	0mm	Ant 3	DSI 4	Full	633334	3500.01	23.39	24.00	1.151	0.06	1.270	1.462
	FR1 n78-PC3	100M	BPSK	135	69	Front	0mm	Ant 3	DSI 4	Full	633334	3500.01	23.26	24.00	1.186	-0.07	1.370	1.625
	FR1 n78-PC3	100M	BPSK	135	69	Back	0mm	Ant 3	DSI 6	Simultaneous	633334	3500.01	17.56	18.50	1.242	0.04	2.130	2.645
	FR1 n78-PC3	100M	BPSK	135	69	Left Side	0mm	Ant 3	DSI 6	Simultaneous	633334	3500.01	17.56	18.50	1.242	0.01	1.380	1.713
	FR1 n78-PC3	100M	BPSK	135	69	Top Side	0mm	Ant 3	DSI 4	Full	633334	3500.01	23.26	24.00	1.186	0.04	1.280	1.518
	FR1 n78-PC3	100M	BPSK	270	0	Back	0mm	Ant 3	DSI 6	Simultaneous	633334	3500.01	17.52	18.50	1.253	-0.14	2.040	2.556
	FR1 n78-PC2	100M	BPSK	1	137	Front	0mm	Ant 3	DSI 4	Full	633334	3500.01	26.21	27.00	1.199	0.04	1.400	1.679
	FR1 n78-PC2	100M	BPSK	1	137	Back	0mm	Ant 3	DSI 6	Standalone	633334	3500.01	18.08	19.00	1.236	-0.12	2.250	2.781