FCC SAR Test Report

APPLICANT	:	Motorola Mobility LLC
EQUIPMENT	:	Mobile Cellular Phone
BRAND NAME	:	Motorola
MODEL NAME	:	XT2171-1
FCC ID	:	IHDT56ZX3
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 given in 47 CFR Part 2.1093 and FCC KDB and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (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

ACCREDITED Cert #5145.01

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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA180409	Rev. 01	Initial issue of report.	Oct. 09, 2021

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Motorola Mobility LLC, Mobile Cellular Phone, XT2171-1, a**re 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	0.46	1.31	1.31	1.59
		GSM1900	0.18	1.33	1.33	
	WCDMA	Band V	0.41	1.39	1.39	
		Band IV	0.23	1.42	1.42	
		Band II	0.24	1.41	1.39	
	LTE	Band 12/Band 17	0.32	0.96	0.96	
		Band 13	0.26	1.14	1.14	
		Band 26/Band 5	0.41	1.32	1.32	
		Band 66/Band 4	0.30	1.28	1.23	
		Band 2	0.23	1.36	1.36	
		Band 7	0.73	**1.43**	**1.43**	
		Band 38	0.40	1.37	1.37	
		Band 42	1.06	1.11	1.11	
	5G NR	n5	0.23	0.58	0.58	
		n66	0.20	0.68	0.59	
		n7	0.78	0.66	0.55	
		n78	0.78	0.60	0.75	
DTS	WLAN	2.4GHz WLAN	1.07	0.36	1.13	1.57
NII		5GHz WLAN	**1.12**	0.39	1.19	1.59
DSS	Bluetooth	2.4GHz Bluetooth	0.19	0.15	0.15	1.59

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	1.68	3.95
		GSM1900	3.05	
	WCDMA	Band V	1.93	
		Band IV	**3.52**	
		Band II	3.28	
	LTE	Band 26/Band 5	2.10	
		Band 66/Band 4	3.38	
		Band 2	3.14	
		Band 7	3.35	
		Band 38	3.13	
		Band 42	2.24	
	5G NR	n5	1.53	
		n66	1.54	
		n7	1.58	
		n78	1.58	
DTS	WLAN	2.4GHz WLAN	1.98	3.92
NII		5GHz WLAN	1.67	3.95
Date of Testing:			2021/8/31~ 2021/9/28	

Remark: This device supports LTE B4 / B5 / B17 and B66 / B26 / B12. Since the supported frequency span for LTE B4 / B5 / B17 falls completely within the supports frequency span for LTE B66 / B26 / B12, 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 / B26 / B12.

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.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	SAR05-SZ	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
- 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	XT2171-1
FCC ID	IHDT56ZX3
IMEI Code	SIM1: 351368590018855 SIM2: 351368590018863
Wireless Technology and Frequency Range	GSM850: 824 MHz ~ 849 MHz GSM1900: 1850 MHz ~ 1910 MHz WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 66: 1710 MHz ~ 1780 MHz LTE Band 42: 3450 MHz ~ 3550 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n7 : 2500 MHz ~ 2570 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 Bluetooth: 2402 MHz ~ 2480 MHz NFC : 13.56 MHz
Mode	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+ (16QAM uplink) LTE: QPSK, 16QAM, 64QAM, 256QAM 5G NR : CP-OFDM / DFT-s-OFDM, PI/2 BPSK,QPSK, 16QAM, 64QAM, 256QAM WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE NFC:ASK
HW Version	DVT2
SW Version	RRYA31.Q3-23
GSM / (E)GPRS Transfer mode	Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network.
EUT Stage	Identical Prototype
Remark: 1. This device supports VoIP in GPRS, EGPRS, WCDMA and LTE (e.g. for 3rd-party VoIP), LTE supports VoLTE operation. 2. This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications. 3. This device 2.4GHz WLAN/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).

4. This device does not support DTM operation and supports GRPS/EGRPS mode up to multi-slot class 12.
5. The device implements Proximity sensors/receiver detect mechanism/hotspot trigger reduced power for the power management for SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity) and the 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 Some WWAN bands, sensor on reduced power level higher than hotspot reduced power level, so front/back sensor on SAR can represent hotspot conservatively.
7. For WLAN when transmit simultaneous with WWAN, power reduction will be activated to head, body-worn, extremity.
8. There are two different types of EUT. They are single SIM card mobile and dual SIM card mobile. The others are the same including circuit design, PCB board, structure and all components. It is special to declare. 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.
9. There are four headsets, only supplier different, so only chose one headset to perform SAR testing.
10. 5GNR n78 supports HPUE, HPUE power and SAR testing performed separately.
11. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
12. For 5GNR, the simultaneous transmission analysis is used standalone SAR at total power level to show compliance.
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. 5G NR NSA EN-DC mode, standalone SAR performed for 5GNR band with the maximum power, EN-DC SAR summed 5GNR standalone SAR and LTE standalone SAR , the result of EN-DC SAR is more conservatively.
16. This device supports 5GNR FR1 bands as following table and only NSA mode.

<5G NR>

Mode	Band	Duplex	SCS(KHz)	Bandwidths(BW)
NSA	n5	FDD	15	5, 10, 15, 20
	n7	FDD	15	5, 10, 15, 20
	n66	FDD	15	5, 10, 15, 20
	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>IHDT56ZX3</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 13: 777 MHz ~ 787 MHz
LTE Band 17: 704 MHz ~ 716 MHz
LTE Band 26: 814 MHz ~ 849 MHz
LTE Band 38: 2570 MHz ~ 2620 MHz
LTE Band 66: 1710 MHz ~ 1780 MHz
LTE Band 42: 3450 MHz ~ 3550 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 13: 5MHz, 10MHz
LTE Band 17: 5MHz, 10MHz
LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz
LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 66:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 42: 5MHz, 10MHz, 15MHz, 20MHz</td></tr>
<tr><td>uplink modulations used</td><td>QPSK / 16QAM / 64QAM / 256QAM</td></tr>
<tr><td>LTE Voice / Data requirements</td><td>Voice and Data</td></tr>
<tr><td>LTE Release Version</td><td>R12, Cat18</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 13.</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 13.</td></tr>
<tr><td>LTE Carrier Aggregation Additional Information</td><td>1. This device supports LTE Carrier Aggregation (CA) in the uplink for 7C/5A_7A with two component carriers in the uplink. SAR Measurements and conducted powers were evaluated per FCC Guidance.
2. This device supports maximum of 3 carriers in the downlink and 2 carriers in the uplink. Additional following LTE Release features are not supported: Relay, HetNet, Enhanced MIMO, eICI, WiFi Offloading, MDH, eMBMA, Cross-Carrier Scheduling, Enhanced SC-FDMA.</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 13				
	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)
L	23205	779.5	23230	782
M	23230	782		
H	23255	784.5		

LTE Band 17				
	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq. (MHz)
L	23755	706.5	23780	709
M	23790	710	23790	710
H	23825	713.5	23800	711

LTE Band 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 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

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

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 n66 : 1710 MHz – 1780 MHz 5G NR n78: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3800 MHz
Channel Bandwidth	5G NR n5: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n7: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n66: 5MHz, 10MHz, 15MHz, 20MHz 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 B2/5/66
LTE Anchor Bands for n66	LTE B7
LTE Anchor Bands for n78	LTE B2/4/5/7/38/66

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	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	500500	2502.5	501000	2505	501500	2507.5	502000	2510
M	507000	2535	507000	2535	507000	2535	507000	2535
H	513500	2567.5	513000	2565	512500	2562.5	512000	2560

NR Band 66

	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	342500	1712.5	343000	1715	343500	1717.5	344000	1720
M	349000	1745	349000	1745	349000	1745	349000	1745
H	355500	1777.5	355000	1775	354500	1772.5	354000	1770

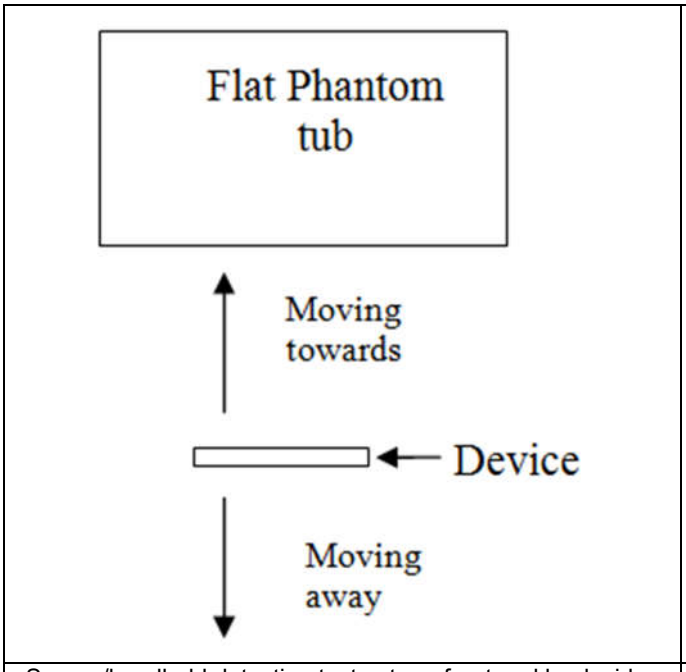
NR Band 78

	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	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98
H	636000	3540	635666	3534.99	635332	3529.98	635000	3525	634666	3519.99	634332	3514.98	634000	3510	633666	3504.99		

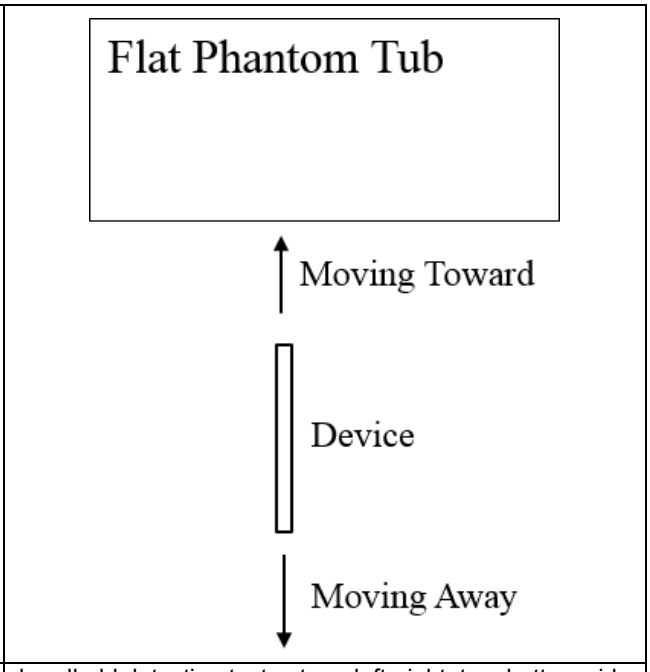
5. Proximity Sensor Triggering Test

5.1 Proximity sensor triggering distances(Per KDB616217§6.2)

1. Proximity sensor triggering distance testing was performed according to the procedures outlined in KDB 616217 D04 section 6.2, and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed and the tissue-equivalent medium for highest frequency (5850MHz) and lowest (835MHz) 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. The output power will reduce to body worn power level when top and bottom sensor pad be detected.
3. 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.
4. 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/left/right/bottom/top sides of the device. When front/back/left/right/bottom/top sides of handheld condition is detected reduced power will be active.
5. 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/handheld detection test set-up, front and back sides



handheld detection test set-up, left, right, top, bottom side

<P-Sensor>

Proximity Sensor Triggering Distance (mm)				
Position	Front		Back	
	Moving towards	Moving away	Moving towards	Moving away
Minimum	17	21	23	29

<Handheld for ANT0>

Proximity Sensor Triggering Distance (mm)								
Position	Front		Back		Right Side		Bottom Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	9	12	13	19	2	5	12	15

<Handheld for ANT1>

Proximity Sensor Triggering Distance (mm)								
Position	Front		Back		Left Side		Bottom Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	7	12	15	20	13	19	8	13

<Handheld for ANT4>

Proximity Sensor Triggering Distance (mm)								
Position	Front		Back		Left Side		Top Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	7	10	14	17	7	18	12	16

<Handheld for ANT5>

Proximity Sensor Triggering Distance (mm)						
Position	Front		Back		Top Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	4	10	11	16	9	16

<Handheld for ANT6>

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	4	9	11	16	5	8	10	14

6. RF Exposure Limits

6.1 Uncontrolled Environment

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

6.2 Controlled Environment

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

Limits for Occupational/Controlled Exposure (W/kg)

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

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

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

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

7. Specific Absorption Rate (SAR)

7.1 Introduction

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

7.2 SAR Definition

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

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

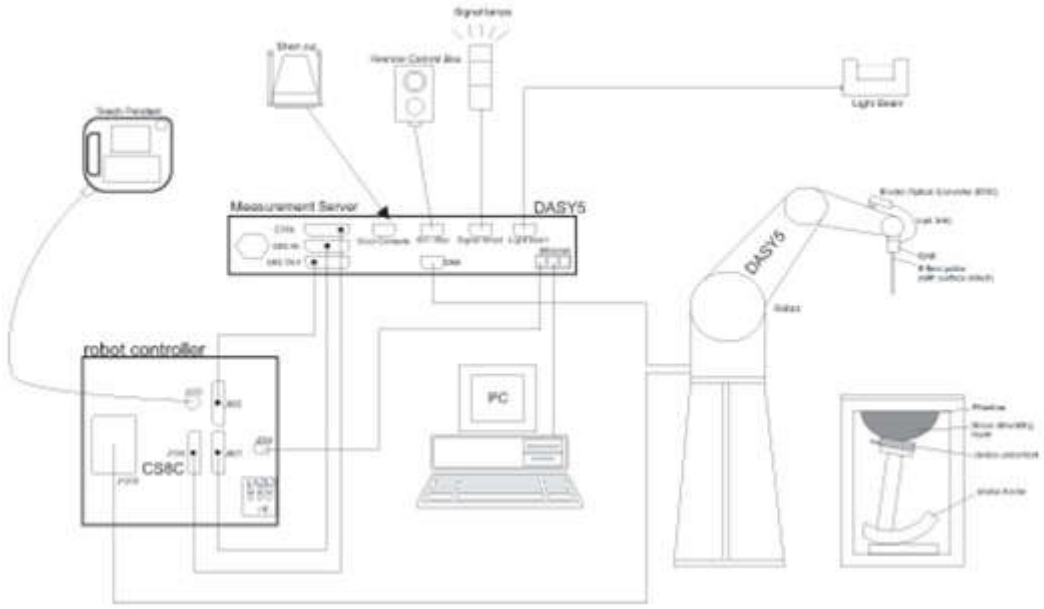
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

8. System Description and Setup

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



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

8.1 E-Field Probe

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

<EX3DV4 Probe>

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

8.2 Data Acquisition Electronics (DAE)

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

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

Photo of DAE

8.3 Phantom

<SAM Twin Phantom>

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

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

<ELI Phantom>

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

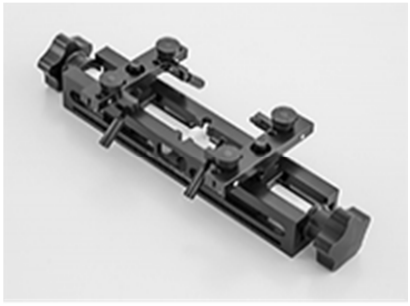
The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

8.4 Device Holder

<Mounting Device for Hand-Held Transmitter>

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

Mounting Device for Hand-Held Transmitters



Mounting Device Adaptor for Wide-Phones

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

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

Mounting Device for Laptops

9. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

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

<SAR measurement>

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

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

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

9.1 Spatial Peak SAR Evaluation

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

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

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

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

9.2 Power Reference Measurement

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

9.3 Area Scan

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

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

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

9.4 Zoom Scan

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

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

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

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

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

9.5 Volume Scan Procedures

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

9.6 Power Drift Monitoring

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

10. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1099	Dec. 06, 2018	Nov. 24, 2021
SPEAG	835MHz System Validation Kit	D835V2	4d162	Dec. 05, 2018	Nov. 24, 2021
SPEAG	1750MHz System Validation Kit	D1750V2	1090	Mar. 27, 2019	Mar. 25, 2022
SPEAG	1900MHz System Validation Kit	D1900V2	5d182	Dec. 07, 2018	Nov. 24, 2021
SPEAG	2450MHz System Validation Kit	D2450V2	924	Sep. 02, 2020	Sep. 01, 2023
SPEAG	2600MHz System Validation Kit	D2600V2	1070	Dec. 07, 2018	Nov. 24, 2021
SPEAG	3500MHz System Validation Kit	D3500V2	1076	Apr. 29, 2019	Apr. 14, 2022
SPEAG	5000MHz System Validation Kit	D5GHzV2	1113	Sep. 24, 2019	Sep. 22, 2022
SPEAG	5000MHz System Validation Kit	D5GHzV2	1145	Nov. 09, 2020	Nov. 08, 2021
SPEAG	Data Acquisition Electronics	DAE4	1664	Mar. 01, 2021	Feb. 28, 2022
SPEAG	Dosimetric E-Field Probe	EX3DV4	7576	Apr. 26, 2021	Apr. 25, 2022
SPEAG	SAM Twin Phantom	QD 000 P41 AA	2035	NCR	NCR
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
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. 14, 2021	Jul. 13, 2022
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 Sensor	MA2411B	1207253	Dec. 25, 2020	Dec. 24, 2021
Anritsu	Power Meter	ML2495A	1218010	Dec. 25, 2020	Dec. 24, 2021
R&S	Power Sensor	NRP50S	101254	Apr. 09, 2021	Apr. 08, 2022
R&S	Power Sensor	NRP8S	109228	Apr. 09, 2021	Apr. 08, 2022
R&S	CBT BLUETOOTH TESTER	CBT	100963	Dec. 25, 2020	Dec. 24, 2021
R&S	Spectrum Analyzer	FSP7	100818	Jul. 14, 2021	Jul. 13, 2022
TES	Hygrometer	1310	200505600	Jul. 17, 2021	Jul. 16, 2022
Anymetre	Thermo-Hygrometer	JR593	2020062101	Jul. 17, 2021	Jul. 16, 2022
SPEAG	Device Holder	N/A	N/A	N/A	N/A
AR	Amplifier	5S1G4	0333096	Note 1	
mini-circuits	Amplifier	ZVE-3W-83+	599201528	Note 1	
ARRA	Power Divider	A3200-2	N/A	Note 1	
ET Industries	Dual Directional Coupler	C-058-10	N/A	Note 1	
Weinschel	Attenuator 1	3M-10	N/A	Note 1	
Weinschel	Attenuator 2	3M-20	N/A	Note 1	

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.

11. System Verification

11.1 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.

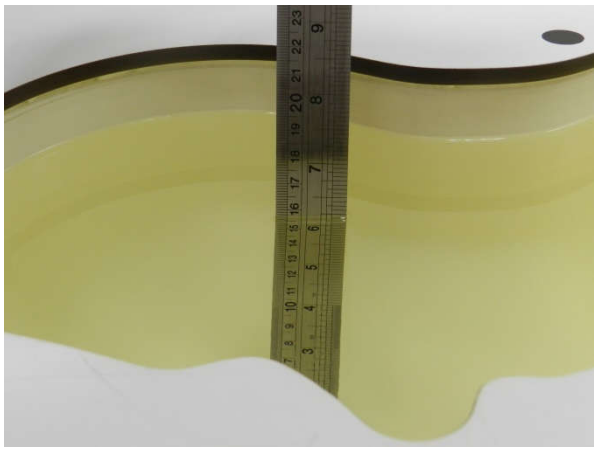


Fig 11.1 Photo of Liquid Height for Head SAR

Fig 11.2 Photo of Liquid Height for Body SAR

11.2 Tissue Verification

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

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (εr)
For Head								
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.40	40.0
2450	55.0	0	0	0	0	45.0	1.80	39.2
2600	54.8	0	0	0.1	0	45.1	1.96	39.0

Simulating Liquid for 5GHz, Manufactured by SPEAG

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

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Tissue Type	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
750	Head	22.3	0.886	41.534	0.89	41.90	-0.45	-0.87	±5	2021/8/31
835	Head	22.5	0.927	42.674	0.90	41.50	3.00	2.83	±5	2021/9/1
835	Head	22.7	0.897	41.605	0.90	41.50	-0.33	0.25	±5	2021/9/10
1750	Head	22.7	1.402	41.374	1.37	40.10	2.34	3.18	±5	2021/9/3
1750	Head	22.2	1.380	40.206	1.37	40.10	0.73	0.26	±5	2021/9/12
1750	Head	22.6	1.382	39.895	1.37	40.10	0.88	-0.51	±5	2021/9/28
1900	Head	22.6	1.461	39.099	1.40	40.00	4.36	-2.25	±5	2021/9/2
1900	Head	22.8	1.451	39.162	1.40	40.00	3.64	-2.10	±5	2021/9/15
2450	Head	22.5	1.857	37.670	1.80	39.20	3.17	-3.90	±5	2021/9/4
2450	Head	22.6	1.825	39.664	1.80	39.20	1.39	1.18	±5	2021/9/16
2600	Head	22.5	2.048	37.284	1.96	39.00	4.49	-4.40	±5	2021/9/5
2600	Head	22.4	2.056	37.589	1.96	39.00	4.90	-3.62	±5	2021/9/13
3500	Head	22.6	2.813	39.758	2.91	37.90	-3.33	4.90	±5	2021/9/5
3500	Head	22.7	3.035	36.600	2.91	37.90	4.30	-3.43	±5	2021/9/19
5250	Head	22.3	4.725	36.522	4.71	35.95	0.32	1.59	±5	2021/9/6
5250	Head	22.4	4.597	36.241	4.71	35.95	-2.40	0.81	±5	2021/9/22
5600	Head	22.7	5.155	35.916	5.07	35.50	1.68	1.17	±5	2021/9/6
5600	Head	22.8	5.188	36.135	5.07	35.50	2.33	1.79	±5	2021/9/24
5750	Head	22.7	5.332	35.643	5.22	35.35	2.15	0.83	±5	2021/9/6
5750	Head	22.6	5.363	35.849	5.22	35.35	2.74	1.41	±5	2021/9/26

11.3 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 (%)
2021/8/31	750	Head	250	1099	7576	1664	2.23	8.52	8.92	4.69
2021/9/1	835	Head	250	4d162	7576	1664	2.35	9.61	9.4	-2.19
2021/9/10	835	Head	250	4d162	7576	1664	2.58	9.61	10.32	7.39
2021/9/3	1750	Head	250	1090	7576	1664	8.92	36.40	35.68	-1.98
2021/9/12	1750	Head	250	1090	7576	1664	9.50	36.40	38	4.40
2021/9/28	1750	Head	250	1090	7576	1664	9.89	36.40	39.56	8.68
2021/9/2	1900	Head	250	5d182	7576	1664	9.93	39.60	39.72	0.30
2021/9/15	1900	Head	250	5d182	7576	1664	10.50	39.60	42	6.06
2021/9/4	2450	Head	250	924	7576	1664	12.50	51.40	50	-2.72
2021/9/16	2450	Head	250	924	7576	1664	12.70	51.40	50.8	-1.17
2021/9/5	2600	Head	250	1070	7576	1664	15.00	58.10	60	3.27
2021/9/13	2600	Head	250	1070	7576	1664	15.30	58.10	61.2	5.34
2021/9/5	3500	Head	100	1076	7576	1664	6.33	67.90	63.3	-6.77
2021/9/19	3500	Head	100	1076	7576	1664	6.61	67.90	66.1	-2.65
2021/9/6	5250	Head	100	1113	7576	1664	7.78	80.50	77.8	-3.35
2021/9/22	5250	Head	100	1145	7576	1664	8.04	77.50	80.4	3.74
2021/9/6	5600	Head	100	1113	7576	1664	7.98	83.40	79.8	-4.32
2021/9/24	5600	Head	100	1145	7576	1664	8.03	80.30	80.3	0.00
2021/9/6	5750	Head	100	1113	7576	1664	7.34	80.00	73.4	-8.25
2021/9/26	5750	Head	100	1145	7576	1664	7.38	77.50	73.8	-4.77

<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 (%)
2021/8/31	750	Head	250	1099	7576	1664	1.37	5.64	5.48	-2.84
2021/9/1	835	Head	250	4d162	7576	1664	1.55	6.35	6.2	-2.36
2021/9/10	835	Head	250	4d162	7576	1664	1.67	6.35	6.68	5.20
2021/9/3	1750	Head	250	1090	7576	1664	4.81	19.20	19.24	0.21
2021/9/12	1750	Head	250	1090	7576	1664	4.87	19.20	19.48	1.46
2021/9/28	1750	Head	250	1090	7576	1664	5.11	19.20	20.44	6.46
2021/9/2	1900	Head	250	5d182	7576	1664	5.14	20.70	20.56	-0.68
2021/9/15	1900	Head	250	5d182	7576	1664	5.29	20.70	21.16	2.22
2021/9/4	2450	Head	250	924	7576	1664	5.83	24.00	23.32	-2.83
2021/9/16	2450	Head	250	924	7576	1664	5.99	24.00	23.96	-0.17
2021/9/5	2600	Head	250	1070	7576	1664	6.59	26.10	26.36	1.00
2021/9/13	2600	Head	250	1070	7576	1664	7.09	26.10	28.36	8.66
2021/9/5	3500	Head	100	1076	7576	1664	2.44	25.30	24.4	-3.56
2021/9/19	3500	Head	100	1076	7576	1664	2.42	25.30	24.2	-4.35
2021/9/6	5250	Head	100	1113	7576	1664	2.33	23.10	23.3	0.87
2021/9/22	5250	Head	100	1145	7576	1664	2.39	22.10	23.9	8.14
2021/9/6	5600	Head	100	1113	7576	1664	2.19	23.80	21.9	-7.98
2021/9/24	5600	Head	100	1145	7576	1664	2.20	22.90	22	-3.93
2021/9/6	5750	Head	100	1113	7576	1664	2.23	22.80	22.3	-2.19
2021/9/26	5750	Head	100	1145	7576	1664	2.34	22.10	23.4	5.88

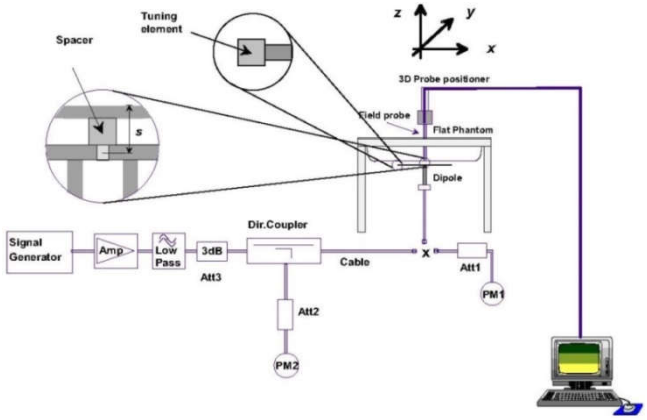


Fig 11.3.1 System Performance Check Setup

Fig 11.3.2 Setup Photo

12. RF Exposure Positions

12.1 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 15mm 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.

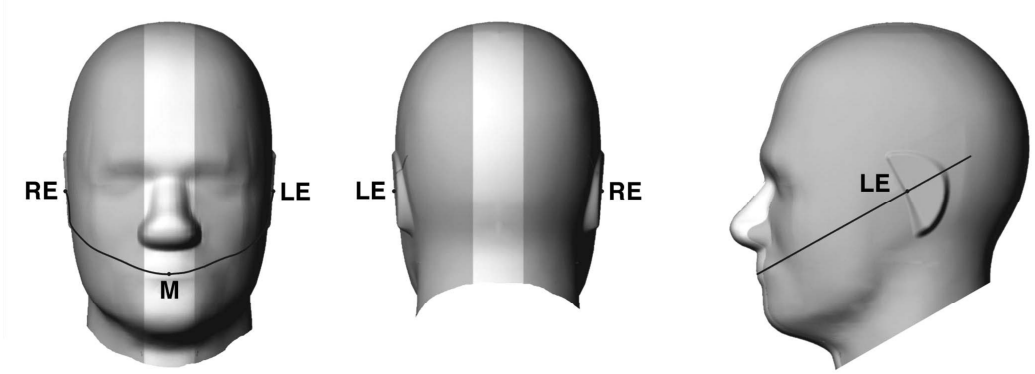


Fig 12.1.1 Front, back, and side views of SAM twin phantom

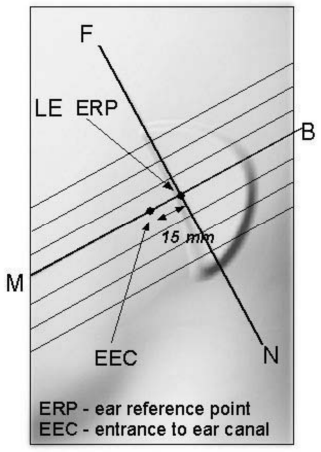


Fig 12.1.2 Close-up side view of phantom showing the ear region.

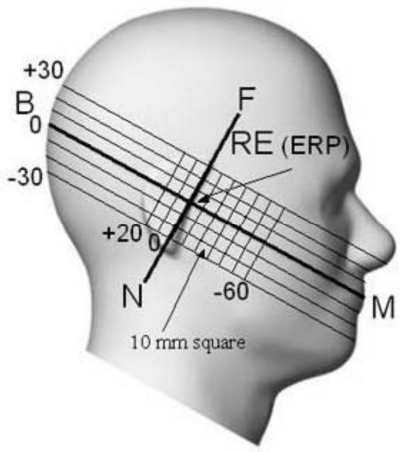


Fig 12.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

12.2 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.

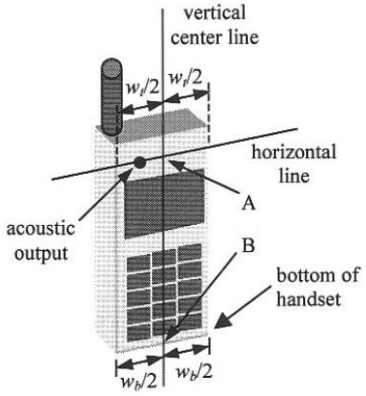


Fig 12.2.1 Handset vertical and horizontal reference lines—"fixed case

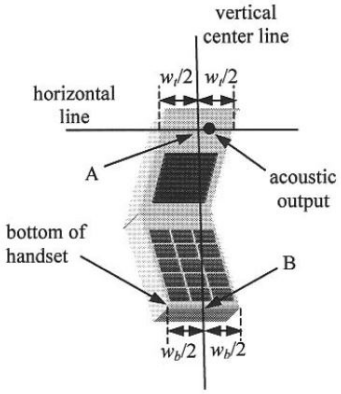


Fig 12.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

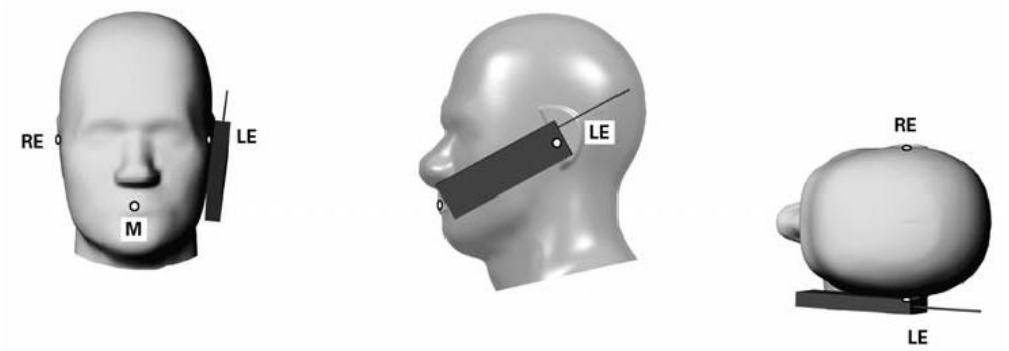


Fig 12.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

12.3 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

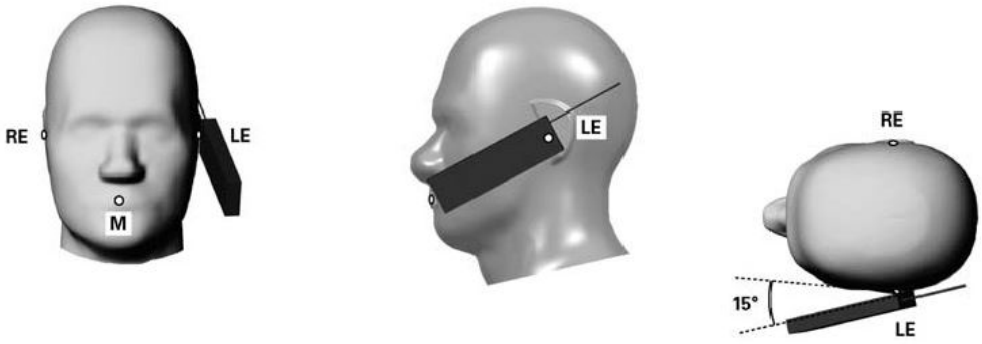


Fig 12.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

12.4 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.

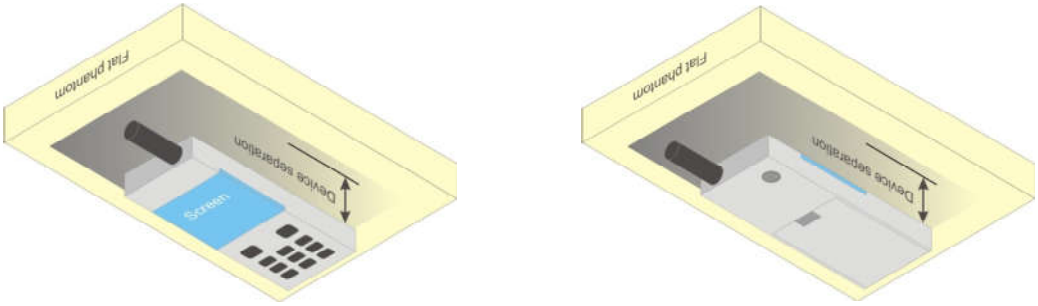


Fig 12.4 Body Worn Position

12.5 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 ≤ 25mm 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 5mm 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.

12.6 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.

13. 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 2Tx slots for GSM850/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	Proces ses	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK
Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table. Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.		

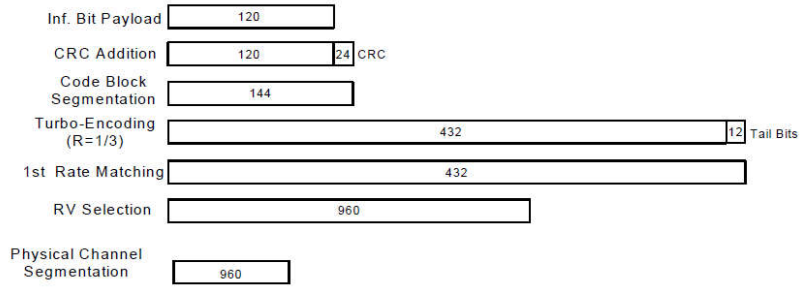


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

Setup Configuration

HSPA+ 3GPP release 7 (uplink category 7) 16QAM, 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 = 5.2E:HSPA+:UL with 16QAM
   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, C11.1.4, quoted from the TS 34.121-1 s5.2E
   iii. Set Channel Parms
   iv. Set Cell Power = -86 dBm
   v. Set Channel Type = HSPA
   vi. Set UE Target Power =21 dBm
   vii. Power Ctrl Mode= All Up Bits
   viii. Set Manual Uplink DPCH Bc/Bd = Manual
   ix. Set Manual Uplink DPCH Bc and Bd=15,15(for 34.121-1 v8.10.0 table C11.1.4 sub-test 1)
   x. Set HSPA Conn DL Channel Levels
   xi. Set HS-SCCH Configs
   xii. Set RB Test Mode Setup
   xiii. Set Common HSUPA Parameters
   xiv. Set Serving Grant
   xv. Confirm that E-TFCI is equal to the target E-TFCI of 105 for sub-test 1, and other subtest's E-TFCI
d. The transmitted maximum output power was recorded.

Table C.11.1.4: β values for transmitter characteristics tests with HS-DPCCH and E-DCH with 16QAM

Sub-test	β_c (Note3)	β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (2xSF2) (Note 4)	β_{ed} (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	$\beta_{ed}1$: 30/15 $\beta_{ed}2$: 30/15	$\beta_{ed}3$: 24/15 $\beta_{ed}4$: 24/15	3.5	2.5	14	105	105

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with $\beta_{hs} = 30/15 * \beta_c$.
Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).
Note 3: DPDCH is not configured, therefore the β_c is set to 1 and β_d = 0 by default.
Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value.
Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signaled to use the extrapolation algorithm.

Setup Configuration

<WCDMA Conducted Power>

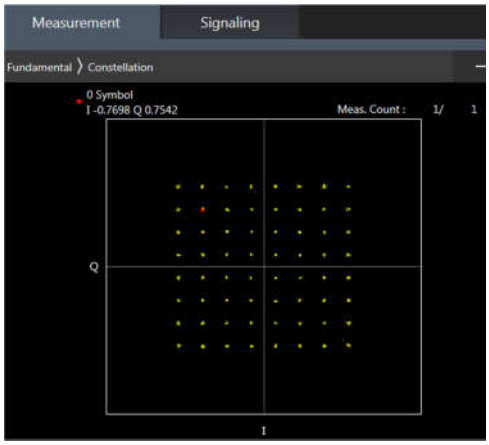
General Note:

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

<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/256QAM 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/256QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B4 / B5 / B12 / B17 / B26 / B38 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
9. LTE B4 / B5 / B17 SAR test was covered by B66 / B26 / B12; 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.

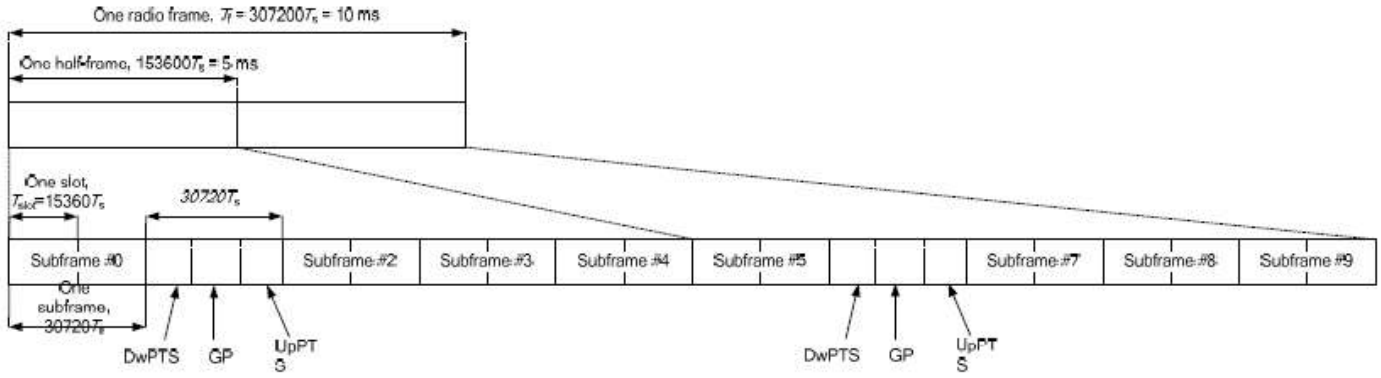


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

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 SAR measurement the duty cycle 1:1.59 (62.9 %) was used perform testing.

vi. 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) * (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			
Number	Combination	4X4 MIMO	Covered by Measurement Superset	Number	Combination	4X4 MIMO	Covered by Measurement Superset
1	CA_2C			1	CA_2A-4A-5A		
2	CA_2A-4A		3CC-2	2	CA_2A-4A-7A		
3	CA_2A-5A		3CC-3	3	CA_2A-5A-7A		
4	CA_2A-7A	7A	3CC-3	4	CA_2A-5A-66A		
5	CA_2A-66A		3CC-4	5	CA_2A-7C		
6	CA_4A-4A	4A-4A		6	CA_2A-7A-7A		
7	CA_4A-5A	4A	3CC-1	7	CA_4A-7C	4A	
8	CA_4A-7A	4A,7A	3CC-7	8	CA_5A-7C		
9	CA_4A-12A			9	CA_5A-7A-66A		
10	CA_4A-17A			10	CA_5A-66A-66A		
11	CA_5A-7A	7A	3CC-3	11	CA_7C-66A,		
12	CA_5A-66A		3CC-10	12	CA_7A-66A-66A		
13	CA_7B	7B		13	CA_42D,		
14	CA_7C	7C	3CC-5				
15	CA_7A-7A	7A-7A	3CC-6				
16	CA_7A-26A						
17	CA_7A-42A	7A,42A					
18	CA_7A-66A		3CC-12				
19	CA_12A-66A						
20	CA_38C						
21	CA_42C	42C					
22	CA_66B,						
23	CA_66C						
24	CA_66A-66A		3CC-10				

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 three 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.

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

LTE 4x4 MIMO (Downlink)

This device supports downlink 4x4 MIMO operations for LTE Bands 4/7/42 only. Uplink transmission is limited to a single output stream. Power measurements were performed with downlink 4x4 MIMO active for the configuration with highest measured maximum conducted power with 4x4 downlink MIMO inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band.

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

4X4 MIMO	Band
	LTE Band4/7/42

LTE Carrier Aggregation Conducted Power (Uplink)

1. This device supports uplink carrier aggregation for LTE CA_7C, and CA_5A-7A 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>

Note: LTE band 7 for ANT 4 is limited to uplink CA_5A-7A. When uplink CA_5A-7A is not active, LTE band 7 will not transmit standalone.

5G NR Output Power (Unit: dBm)

General Note:

1. 5G NR n5 / n7 / n66 / n78 is NSA mode.
2. 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-s PI/2 BPSK and the reported SAR for the DFT-s 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 16QAM/64QAM/256QAM and smaller bandwidth output power will spot check largest channel bandwidth worst RB configuration to ensure the 16QAM/64QAM/256QAM and smaller bandwidth output power will not ½ dB higher than the same configuration in the largest supported bandwidth.
   c. SAR testing start with the largest channel bandwidth and measure SAR for 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
3. 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.
4. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
5. 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.
6. 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.
7. 5G NR NSA EN-DC mode, standalone SAR performed for 5GNR band with the maximum power, EN-DC SAR summed 5GNR standalone SAR and LTE standalone SAR , the result of EN-DC SAR is more conservatively.

<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		

EN-DC	4G UL	5G-NR UL
DC_7A_n5A	Ant 4	Ant 0
DC_2A_n7A	Ant 0	Ant 4
DC_5A_n7A	Ant 0	Ant 4
DC_66A_n7A	Ant 0	Ant 4
DC_7A_n66A	Ant 4	Ant 0
DC_2A_n78A	Ant 0	Ant 5
DC_4A_n78A	Ant 0	Ant 5
DC_5A_n78A	Ant 0	Ant 5
DC_7A_n78A	Ant 1	Ant 5
DC_38A_n78A	Ant 1	Ant 5
DC_66A_n78A	Ant 0	Ant 5

Note: For EN-DC combination, LTE band 7 for ANT 4 is limited to EN-DC active and they will act as anchor mode. When EN-DC is not active, LTE band 7 will not transmit.

ENDC List (3*CA)
DC_7C_n5A
DC_7C_n78A
DC_66A-66A_n7A
DC_66A-66A_n78A

<WLAN Conducted Power>

General Note:

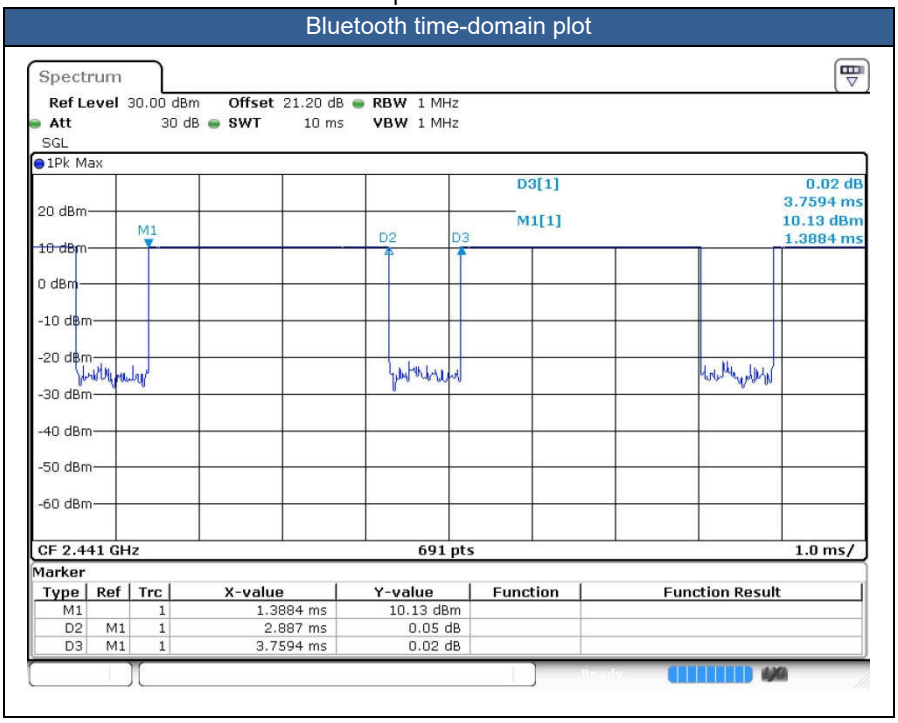
1. Per KDB 248227 D01v02r02, SAR test reduction is determined according to 802.11 transmission mode configurations and certain exposure conditions with multiple test positions. In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements.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

<2.4GHz Bluetooth>

General Note:

1. For 2.4GHz Bluetooth SAR testing was selected 1Mbps, due to its highest average power.
2. The Bluetooth duty cycle is 76.79 % as following figure, according to 2016 Oct. TCB workshop for Bluetooth SAR scaling need further consideration and the theoretical duty cycle is 100%, therefore the actual duty cycle will be scaled up to the theoretical value of Bluetooth reported SAR calculation

Bluetooth time-domain plot



14. Antenna Location

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

15. SAR Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For SAR testing of 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. Pre KDB648474 D04v01r03, when the reported SAR for a 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 headset attached to the handset. When headset SAR is less than or equal than without headset SAR, no need to verify the remaining channels for headset SAR.
5. The device implements Proximity sensors/receiver detect mechanism/hotspot trigger reduced power for the power management for SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity) and the 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 Some WWAN bands, sensor on reduced power level higher than hotspot reduced power level, so front/back sensor on SAR can represent hotspot conservatively.
7. For WLAN when transmit simultaneous with WWAN, power reduction will be activated to head, body-worn, extremity.
8. There are two different types of EUT. They are single SIM card mobile and dual SIM card mobile. The others are the same including circuit design, PCB board, structure and all components. It is special to declare. 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.
9. There are four headsets, only supplier different, so only chose one headset to perform SAR testing.
10. LTE band 7 for ANT 4 is limited to uplink CA_5A-7A and EN-DC active. When uplink CA_5A-7A and EN-DC is not active, LTE band 7 will not transmit standalone.
11. 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 (for handheld on state, the maximum full power means reduced 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 V/II/IV, LTE Band 2/4/5/7/26/38/42/66, 5GNR n5/n7/n66/n78 and WLAN 2.4GHz /WLAN 5.2/5.8GHz therefore product specific 10g SAR is necessary.
    b. WLAN 5.3/5.5GHz 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.
12. The following table“n/a”means the measured SAR is too small to find the 1g cube SAR.
13. For LTE B5 Ant0, when at EN-DC combination and UL Inter-Band CA, the power is same, so LTE B5 Ant0 EN-DC SAR can represent LTE B5 Ant 0 UL Inter-Band CA SAR. Choose LTE B5 Ant0 EN-DC SAR result to do simultaneous transmission summation for LTE Inter Band UL CA of CA_5A-7A.

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 2Tx slots for GSM850/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 / HSPA+ 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 / HSPA+ to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+, and according to the following RF output power, the output power results of the secondary modes (HSDPA / HSUPA / DC-HSDPA / HSPA+) are less than ¼ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+.

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/256QAM 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/256QAM SAR testing is not required.
5. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B4 / B5 / B12 / B17 / B26 / B38 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
7. LTE B4 / B5 / B17 SAR test was covered by LTE B66 / B26 / B12; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
   c. the maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion
   d. 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 Note:

2. 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.
3. 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.
4. 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.
5. 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.
6. During SAR testing the WLAN transmission was verified using a spectrum analyzer.

15.1 Head SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	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)
01	GSM850_Ant0	GPRS 2 Tx slots	Right Cheek	0mm	Full	189	836.4	30.15	31.00	1.216	0.05	0.374	**0.455**
	GSM850_Ant0	GPRS 2 Tx slots	Right Tilted	0mm	Full	189	836.4	30.15	31.00	1.216	-0.11	0.162	0.197
	GSM850_Ant0	GPRS 2 Tx slots	Left Cheek	0mm	Full	189	836.4	30.15	31.00	1.216	0.01	0.266	0.324
	GSM850_Ant0	GPRS 2 Tx slots	Left Tilted	0mm	Full	189	836.4	30.15	31.00	1.216	0.14	0.143	0.174
02	GSM1900_Ant0	GPRS 2 Tx slots	Right Cheek	0mm	Full	512	1850.2	27.19	28.00	1.205	0.06	0.149	**0.180**
	GSM1900_Ant0	GPRS 2 Tx slots	Right Tilted	0mm	Full	512	1850.2	27.19	28.00	1.205	0.08	0.100	0.120
	GSM1900_Ant0	GPRS 2 Tx slots	Left Cheek	0mm	Full	512	1850.2	27.19	28.00	1.205	-0.15	0.110	0.133
	GSM1900_Ant0	GPRS 2 Tx slots	Left Tilted	0mm	Full	512	1850.2	27.19	28.00	1.205	0.05	0.131	0.158

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	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)
03	WCDMA V_Ant0	RMC 12.2Kbps	Right Cheek	0mm	Full	4182	836.4	22.85	24.00	1.303	0.06	0.312	**0.407**
	WCDMA V_Ant0	RMC 12.2Kbps	Right Tilted	0mm	Full	4182	836.4	22.85	24.00	1.303	-0.12	0.156	0.203
	WCDMA V_Ant0	RMC 12.2Kbps	Left Cheek	0mm	Full	4182	836.4	22.85	24.00	1.303	0.14	0.267	0.348
	WCDMA V_Ant0	RMC 12.2Kbps	Left Tilted	0mm	Full	4182	836.4	22.85	24.00	1.303	0.1	0.142	0.185
04	WCDMA IV_Ant0	RMC 12.2Kbps	Right Cheek	0mm	Full	1312	1712.4	22.74	24.00	1.337	-0.19	0.170	**0.227**
	WCDMA IV_Ant0	RMC 12.2Kbps	Right Tilted	0mm	Full	1312	1712.4	22.74	24.00	1.337	-0.18	0.072	0.097
	WCDMA IV_Ant0	RMC 12.2Kbps	Left Cheek	0mm	Full	1312	1712.4	22.74	24.00	1.337	0.12	0.105	0.140
	WCDMA IV_Ant0	RMC 12.2Kbps	Left Tilted	0mm	Full	1312	1712.4	22.74	24.00	1.337	0.05	0.082	0.110
05	WCDMA II_Ant0	RMC 12.2Kbps	Right Cheek	0mm	Full	9262	1852.4	22.65	24.00	1.365	0.16	0.177	**0.242**
	WCDMA II_Ant0	RMC 12.2Kbps	Right Tilted	0mm	Full	9262	1852.4	22.65	24.00	1.365	-0.09	0.143	0.195
	WCDMA II_Ant0	RMC 12.2Kbps	Left Cheek	0mm	Full	9262	1852.4	22.65	24.00	1.365	0.06	0.136	0.186
	WCDMA II_Ant0	RMC 12.2Kbps	Left Tilted	0mm	Full	9262	1852.4	22.65	24.00	1.365	0.1	0.174	0.237

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	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 12_Ant0	10M	QPSK	1	0	Right Cheek	0mm	Full	23095	707.5	22.50	24.00	1.413	0.07	0.223	**0.315**
	LTE Band 12_Ant0	10M	QPSK	1	0	Right Tilted	0mm	Full	23095	707.5	22.50	24.00	1.413	-0.07	0.099	0.140
	LTE Band 12_Ant0	10M	QPSK	1	0	Left Cheek	0mm	Full	23095	707.5	22.50	24.00	1.413	0.03	0.158	0.223
	LTE Band 12_Ant0	10M	QPSK	1	0	Left Tilted	0mm	Full	23095	707.5	22.50	24.00	1.413	0.09	0.076	0.107
	LTE Band 12_Ant0	10M	QPSK	25	0	Right Cheek	0mm	Full	23095	707.5	21.49	23.00	1.416	-0.14	0.130	0.184
	LTE Band 12_Ant0	10M	QPSK	25	0	Right Tilted	0mm	Full	23095	707.5	21.49	23.00	1.416	0.05	0.056	0.080
	LTE Band 12_Ant0	10M	QPSK	25	0	Left Cheek	0mm	Full	23095	707.5	21.49	23.00	1.416	0.12	0.090	0.127
	LTE Band 12_Ant0	10M	QPSK	25	0	Left Tilted	0mm	Full	23095	707.5	21.49	23.00	1.416	0.08	0.043	0.061
07	LTE Band 13_Ant0	10M	QPSK	1	0	Right Cheek	0mm	Full	23230	782	22.66	24.00	1.361	-0.11	0.191	**0.260**
	LTE Band 13_Ant0	10M	QPSK	1	0	Right Tilted	0mm	Full	23230	782	22.66	24.00	1.361	0.17	0.116	0.158
	LTE Band 13_Ant0	10M	QPSK	1	0	Left Cheek	0mm	Full	23230	782	22.66	24.00	1.361	0.02	0.162	0.221
	LTE Band 13_Ant0	10M	QPSK	1	0	Left Tilted	0mm	Full	23230	782	22.66	24.00	1.361	0.07	0.081	0.110
	LTE Band 13_Ant0	10M	QPSK	25	0	Right Cheek	0mm	Full	23230	782	21.61	23.00	1.377	0.06	0.136	0.187
	LTE Band 13_Ant0	10M	QPSK	25	0	Right Tilted	0mm	Full	23230	782	21.61	23.00	1.377	0.04	0.075	0.103
	LTE Band 13_Ant0	10M	QPSK	25	0	Left Cheek	0mm	Full	23230	782	21.61	23.00	1.377	0.08	0.090	0.124
	LTE Band 13_Ant0	10M	QPSK	25	0	Left Tilted	0mm	Full	23230	782	21.61	23.00	1.377	0.12	0.046	0.064
	LTE Band 26_Ant0	15M	QPSK	1	0	Right Cheek	0mm	Full	26865	831.5	22.80	24.00	1.318	0.13	0.300	0.395
	LTE Band 26_Ant0	15M	QPSK	1	0	Right Tilted	0mm	Full	26865	831.5	22.80	24.00	1.318	0.05	0.151	0.199
	LTE Band 26_Ant0	15M	QPSK	1	0	Left Cheek	0mm	Full	26865	831.5	22.80	24.00	1.318	0.06	0.228	0.301
	LTE Band 26_Ant0	15M	QPSK	1	0	Left Tilted	0mm	Full	26865	831.5	22.80	24.00	1.318	0.07	0.119	0.157

	LTE Band 26_Ant0	15M	QPSK	36	0	Right Cheek	0mm	Full	26865	831.5	21.72	23.00	1.343	0.04	0.180	0.242
	LTE Band 26_Ant0	15M	QPSK	36	0	Right Tilted	0mm	Full	26865	831.5	21.72	23.00	1.343	-0.02	0.088	0.118
	LTE Band 26_Ant0	15M	QPSK	36	0	Left Cheek	0mm	Full	26865	831.5	21.72	23.00	1.343	0.1	0.132	0.177
	LTE Band 26_Ant0	15M	QPSK	36	0	Left Tilted	0mm	Full	26865	831.5	21.72	23.00	1.343	0.14	0.069	0.093
08	LTE Band 5_Ant0 (ENDC)	10M	QPSK	1	0	Right Cheek	0mm	Full	20525	836.5	22.71	24.00	1.346	0.03	0.302	**0.406**
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	1	0	Right Tilted	0mm	Full	20525	836.5	22.71	24.00	1.346	0.01	0.157	0.211
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	1	0	Left Cheek	0mm	Full	20525	836.5	22.71	24.00	1.346	0.05	0.226	0.304
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	1	0	Left Tilted	0mm	Full	20525	836.5	22.71	24.00	1.346	0.09	0.123	0.166
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	25	0	Right Cheek	0mm	Full	20525	836.5	21.65	23.00	1.365	-0.03	0.188	0.257
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	25	0	Right Tilted	0mm	Full	20525	836.5	21.65	23.00	1.365	0.01	0.103	0.141
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	25	0	Left Cheek	0mm	Full	20525	836.5	21.65	23.00	1.365	0.05	0.144	0.196
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	25	0	Left Tilted	0mm	Full	20525	836.5	21.65	23.00	1.365	0.08	0.092	0.126
09	LTE Band 66_Ant0	20M	QPSK	1	0	Right Cheek	0mm	Full	132322	1745	22.73	24.00	1.340	0.08	0.224	**0.300**
	LTE Band 66_Ant0	20M	QPSK	1	0	Right Tilted	0mm	Full	132322	1745	22.73	24.00	1.340	-0.11	0.107	0.143
	LTE Band 66_Ant0	20M	QPSK	1	0	Left Cheek	0mm	Full	132322	1745	22.73	24.00	1.340	0.07	0.120	0.161
	LTE Band 66_Ant0	20M	QPSK	1	0	Left Tilted	0mm	Full	132322	1745	22.73	24.00	1.340	0.16	0.138	0.185
	LTE Band 66_Ant0	20M	QPSK	50	0	Right Cheek	0mm	Full	132322	1745	21.65	23.00	1.365	0.04	0.140	0.191
	LTE Band 66_Ant0	20M	QPSK	50	0	Right Tilted	0mm	Full	132322	1745	21.65	23.00	1.365	0.14	0.073	0.099
	LTE Band 66_Ant0	20M	QPSK	50	0	Left Cheek	0mm	Full	132322	1745	21.65	23.00	1.365	0.02	0.082	0.111
	LTE Band 66_Ant0	20M	QPSK	50	0	Left Tilted	0mm	Full	132322	1745	21.65	23.00	1.365	0.09	0.097	0.133
10	LTE Band 2_Ant0	20M	QPSK	1	0	Right Cheek	0mm	Full	18900	1880	22.70	24.00	1.349	0.07	0.168	**0.227**
	LTE Band 2_Ant0	20M	QPSK	1	0	Right Tilted	0mm	Full	18900	1880	22.70	24.00	1.349	-0.01	0.100	0.135
	LTE Band 2_Ant0	20M	QPSK	1	0	Left Cheek	0mm	Full	18900	1880	22.70	24.00	1.349	0.03	0.127	0.171
	LTE Band 2_Ant0	20M	QPSK	1	0	Left Tilted	0mm	Full	18900	1880	22.70	24.00	1.349	0.1	0.146	0.197
	LTE Band 2_Ant0	20M	QPSK	50	0	Right Cheek	0mm	Full	18900	1880	21.54	23.00	1.400	-0.05	0.098	0.136
	LTE Band 2_Ant0	20M	QPSK	50	0	Right Tilted	0mm	Full	18900	1880	21.54	23.00	1.400	0.19	0.060	0.083
	LTE Band 2_Ant0	20M	QPSK	50	0	Left Cheek	0mm	Full	18900	1880	21.54	23.00	1.400	0.11	0.086	0.121
	LTE Band 2_Ant0	20M	QPSK	50	0	Left Tilted	0mm	Full	18900	1880	21.54	23.00	1.400	0.13	0.084	0.117
	LTE Band 7_Ant1	20M	QPSK	1	0	Right Cheek	0mm	Full	21100	2535	22.90	24.00	1.288	-0.03	0.452	0.582
	LTE Band 7_Ant1	20M	QPSK	1	0	Right Tilted	0mm	Full	21100	2535	22.90	24.00	1.288	0.06	0.362	0.466
11	LTE Band 7_Ant1	20M	QPSK	1	0	Left Cheek	0mm	Full	21100	2535	22.90	24.00	1.288	0.09	0.570	**0.734**
	LTE Band 7C_Ant1	20M	QPSK	1	0	Left Cheek	0mm	Full	PCC(21100) SCC(20902)	PCC(2535) SCC(2515.2)	22.94	24.00	1.276	0.07	0.567	0.724
	LTE Band 7_Ant1	20M	QPSK	1	0	Left Tilted	0mm	Full	21100	2535	22.90	24.00	1.288	-0.14	0.209	0.269
	LTE Band 7_Ant1	20M	QPSK	50	0	Right Cheek	0mm	Full	21100	2535	21.80	23.00	1.318	-0.06	0.340	0.448
	LTE Band 7_Ant1	20M	QPSK	50	0	Right Tilted	0mm	Full	21100	2535	21.80	23.00	1.318	0.11	0.274	0.361
	LTE Band 7_Ant1	20M	QPSK	50	0	Left Cheek	0mm	Full	21100	2535	21.80	23.00	1.318	0.02	0.435	0.573
	LTE Band 7_Ant1	20M	QPSK	50	0	Left Tilted	0mm	Full	21100	2535	21.80	23.00	1.318	0.11	0.158	0.208
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	1	0	Right Cheek	0mm	Reduced	21100	2535	19.34	20.50	1.306	0.06	0.162	0.212
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	1	0	Right Tilted	0mm	Reduced	21100	2535	19.34	20.50	1.306	0.01	0.155	0.202
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	1	0	Left Cheek	0mm	Reduced	21100	2535	19.34	20.50	1.306	-0.05	0.253	0.330
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	1	0	Left Tilted	0mm	Reduced	21100	2535	19.34	20.50	1.306	0.03	0.081	0.106
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	50	0	Right Cheek	0mm	Reduced	21100	2535	19.27	20.50	1.327	-0.07	0.171	0.227
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	50	0	Right Tilted	0mm	Reduced	21100	2535	19.27	20.50	1.327	0.08	0.163	0.216
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	50	0	Left Cheek	0mm	Reduced	21100	2535	19.27	20.50	1.327	0.01	0.260	0.345
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	50	0	Left Tilted	0mm	Reduced	21100	2535	19.27	20.50	1.327	0.09	0.088	0.117
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	1	0	Right Cheek	0mm	Reduced	21350	2560	13.62	15.00	1.374	0.11	0.352	0.484
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	1	0	Right Tilted	0mm	Reduced	21350	2560	13.62	15.00	1.374	0.08	0.482	0.662
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	1	0	Left Cheek	0mm	Reduced	21350	2560	13.62	15.00	1.374	0.06	0.156	0.214
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	1	0	Left Tilted	0mm	Reduced	21350	2560	13.62	15.00	1.374	0.07	0.216	0.297
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	50	0	Right Cheek	0mm	Reduced	21350	2560	13.53	15.00	1.403	0.03	0.360	0.505
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	50	0	Right Tilted	0mm	Reduced	21350	2560	13.53	15.00	1.403	0.08	0.500	0.701
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	50	0	Left Cheek	0mm	Reduced	21350	2560	13.53	15.00	1.403	0.01	0.168	0.236
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	50	0	Left Tilted	0mm	Reduced	21350	2560	13.53	15.00	1.403	-0.05	0.224	0.314

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 38_Ant1	20M	QPSK	1	0	Right Cheek	0mm	Full	38000	2595	23.06	24.00	1.242	62.9	1.006	-0.01	0.223	0.279
	LTE Band 38_Ant1	20M	QPSK	1	0	Right Tilted	0mm	Full	38000	2595	23.06	24.00	1.242	62.9	1.006	0.05	0.206	0.257
12	LTE Band 38_Ant1	20M	QPSK	1	0	Left Cheek	0mm	Full	38000	2595	23.06	24.00	1.242	62.9	1.006	0.04	0.316	**0.395**
	LTE Band 38_Ant1	20M	QPSK	1	0	Left Tilted	0mm	Full	38000	2595	23.06	24.00	1.242	62.9	1.006	0.03	0.119	0.149
	LTE Band 38_Ant1	20M	QPSK	50	0	Right Cheek	0mm	Full	38000	2595	22.05	23.00	1.245	62.9	1.006	-0.06	0.146	0.183
	LTE Band 38_Ant1	20M	QPSK	50	0	Right Tilted	0mm	Full	38000	2595	22.05	23.00	1.245	62.9	1.006	0.08	0.130	0.163
	LTE Band 38_Ant1	20M	QPSK	50	0	Left Cheek	0mm	Full	38000	2595	22.05	23.00	1.245	62.9	1.006	0.09	0.210	0.263
	LTE Band 38_Ant1	20M	QPSK	50	0	Left Tilted	0mm	Full	38000	2595	22.05	23.00	1.245	62.9	1.006	0.06	0.077	0.096
	LTE Band 42_Ant5	20M	QPSK	1	0	Right Cheek	0mm	Reduced	42590	3500	18.75	20.00	1.334	62.9	1.006	0.19	0.312	0.419
	LTE Band 42_Ant5	20M	QPSK	1	0	Right Tilted	0mm	Reduced	42590	3500	18.75	20.00	1.334	62.9	1.006	0.1	0.330	0.443
	LTE Band 42_Ant5	20M	QPSK	1	0	Left Cheek	0mm	Reduced	42590	3500	18.75	20.00	1.334	62.9	1.006	0.1	0.602	0.808
	LTE Band 42_Ant5	20M	QPSK	1	0	Left Tilted	0mm	Reduced	42590	3500	18.75	20.00	1.334	62.9	1.006	-0.03	0.551	0.739
	LTE Band 42_Ant5	20M	QPSK	1	0	Left Cheek	0mm	Reduced	42190	3460	18.64	20.00	1.368	62.9	1.006	0.09	0.705	0.970
	LTE Band 42_Ant5	20M	QPSK	1	0	Left Cheek	0mm	Reduced	42990	3540	18.68	20.00	1.355	62.9	1.006	-0.03	0.560	0.763
	LTE Band 42_Ant5	20M	QPSK	50	0	Right Cheek	0mm	Reduced	42590	3500	18.69	20.00	1.352	62.9	1.006	0.11	0.328	0.446
	LTE Band 42_Ant5	20M	QPSK	50	0	Right Tilted	0mm	Reduced	42590	3500	18.69	20.00	1.352	62.9	1.006	-0.04	0.342	0.465
	LTE Band 42_Ant5	20M	QPSK	50	0	Left Cheek	0mm	Reduced	42590	3500	18.69	20.00	1.352	62.9	1.006	0.06	0.702	0.955
	LTE Band 42_Ant5	20M	QPSK	50	0	Left Tilted	0mm	Reduced	42590	3500	18.69	20.00	1.352	62.9	1.006	0.01	0.597	0.812
13	LTE Band 42_Ant5	20M	QPSK	50	0	Left Cheek	0mm	Reduced	42190	3460	18.52	20.00	1.406	62.9	1.006	0.12	0.751	**1.062**
	LTE Band 42_Ant5	20M	QPSK	50	0	Left Cheek	0mm	Reduced	42990	3540	18.61	20.00	1.377	62.9	1.006	0.15	0.697	0.966
	LTE Band 42_Ant5	20M	QPSK	50	0	Left Tilted	0mm	Reduced	42190	3460	18.52	20.00	1.406	62.9	1.006	0.08	0.623	0.881
	LTE Band 42_Ant5	20M	QPSK	50	0	Left Tilted	0mm	Reduced	42990	3540	18.61	20.00	1.377	62.9	1.006	-0.17	0.568	0.787
	LTE Band 42_Ant5	20M	QPSK	100	0	Left Cheek	0mm	Reduced	42590	3500	18.62	20.00	1.374	62.9	1.006	0.11	0.682	0.943
	LTE Band 42_Ant5	20M	QPSK	100	0	Left Tilted	0mm	Reduced	42590	3500	18.62	20.00	1.374	62.9	1.006	-0.06	0.581	0.803

<5GNR SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	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)
14	N5_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Right Cheek	0mm	Full	167300	836.5	23.28	24.00	1.180	-0.05	0.197	**0.233**
	N5_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Right Tilted	0mm	Full	167300	836.5	23.28	24.00	1.180	0.03	0.107	0.126
	N5_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Left Cheek	0mm	Full	167300	836.5	23.28	24.00	1.180	0.07	0.195	0.230
	N5_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Left Tilted	0mm	Full	167300	836.5	23.28	24.00	1.180	0.12	0.108	0.127
	N5_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Right Cheek	0mm	Full	167300	836.5	23.01	24.00	1.256	0.03	0.183	0.230
	N5_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Right Tilted	0mm	Full	167300	836.5	23.01	24.00	1.256	0.05	0.103	0.129
	N5_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Left Cheek	0mm	Full	167300	836.5	23.01	24.00	1.256	0.02	0.181	0.227
	N5_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Left Tilted	0mm	Full	167300	836.5	23.01	24.00	1.256	0.04	0.099	0.124
15	N66_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Right Cheek	0mm	Full	344000	1720	23.08	24.00	1.236	0.07	0.159	**0.197**
	N66_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Right Tilted	0mm	Full	344000	1720	23.08	24.00	1.236	0.06	0.077	0.095
	N66_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Left Cheek	0mm	Full	344000	1720	23.08	24.00	1.236	-0.11	0.086	0.106
	N66_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Left Tilted	0mm	Full	344000	1720	23.08	24.00	1.236	0.03	0.095	0.117
	N66_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Right Cheek	0mm	Full	344000	1720	22.94	24.00	1.276	0.04	0.119	0.152
	N66_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Right Tilted	0mm	Full	344000	1720	22.94	24.00	1.276	-0.05	0.066	0.085
	N66_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Left Cheek	0mm	Full	344000	1720	22.94	24.00	1.276	0.05	0.075	0.096
	N66_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Left Tilted	0mm	Full	344000	1720	22.94	24.00	1.276	0.12	0.082	0.104
	N7_Ant 4	20M	BPSK	1	1	DFT_SCS 15KHz	Right Cheek	0mm	Reduced	512000	2560	14.11	15.00	1.227	0.05	0.472	0.579
	N7_Ant 4	20M	BPSK	1	1	DFT_SCS 15KHz	Right Tilted	0mm	Reduced	512000	2560	14.11	15.00	1.227	-0.07	0.588	0.722
	N7_Ant 4	20M	BPSK	1	1	DFT_SCS 15KHz	Left Cheek	0mm	Reduced	512000	2560	14.11	15.00	1.227	0.18	0.169	0.207
	N7_Ant 4	20M	BPSK	1	1	DFT_SCS 15KHz	Left Tilted	0mm	Reduced	512000	2560	14.11	15.00	1.227	0.03	0.268	0.329
	N7_Ant 4	20M	BPSK	50	28	DFT_SCS 15KHz	Right Cheek	0mm	Reduced	512000	2560	14.09	15.00	1.233	0.09	0.493	0.608
16	N7_Ant 4	20M	BPSK	50	28	DFT_SCS 15KHz	Right Tilted	0mm	Reduced	512000	2560	14.09	15.00	1.233	0.04	0.629	**0.776**
	N7_Ant 4	20M	BPSK	50	28	DFT_SCS 15KHz	Left Cheek	0mm	Reduced	512000	2560	14.09	15.00	1.233	0.06	0.173	0.213
	N7_Ant 4	20M	BPSK	50	28	DFT_SCS 15KHz	Left Tilted	0mm	Reduced	512000	2560	14.09	15.00	1.233	-0.06	0.275	0.339
	N78_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Right Cheek	0mm	Reduced	633332	3499.98	14.37	15.50	1.297	0.03	0.216	0.280
	N78_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Right Tilted	0mm	Reduced	633332	3499.98	14.37	15.50	1.297	0.05	0.243	0.315
	N78_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Left Cheek	0mm	Reduced	633332	3499.98	14.37	15.50	1.297	0.01	0.442	0.573
	N78_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Left Tilted	0mm	Reduced	633332	3499.98	14.37	15.50	1.297	0.04	0.443	0.575
	N78_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Right Cheek	0mm	Reduced	633332	3499.98	14.35	15.50	1.303	0.06	0.257	0.335
	N78_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Right Tilted	0mm	Reduced	633332	3499.98	14.35	15.50	1.303	0.09	0.287	0.374
	N78_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Left Cheek	0mm	Reduced	633332	3499.98	14.35	15.50	1.303	0.02	0.599	0.781
	N78_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Left Tilted	0mm	Reduced	633332	3499.98	14.35	15.50	1.303	0.03	0.601	0.783
	N78(HPUE)_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Right Cheek	0mm	Reduced	633332	3499.98	14.37	15.50	1.297	0.03	0.216	0.280
	N78(HPUE)_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Right Tilted	0mm	Reduced	633332	3499.98	14.37	15.50	1.297	0.05	0.243	0.315
	N78(HPUE)_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Left Cheek	0mm	Reduced	633332	3499.98	14.37	15.50	1.297	0.01	0.442	0.573
	N78(HPUE)_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Left Tilted	0mm	Reduced	633332	3499.98	14.37	15.50	1.297	0.04	0.443	0.575
	N78(HPUE)_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Right Cheek	0mm	Reduced	633332	3499.98	14.35	15.50	1.303	0.06	0.257	0.335
	N78(HPUE)_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Right Tilted	0mm	Reduced	633332	3499.98	14.35	15.50	1.303	0.09	0.287	0.374
	N78(HPUE)_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Left Cheek	0mm	Reduced	633332	3499.98	14.35	15.50	1.303	0.02	0.599	0.781
17	N78(HPUE)_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Left Tilted	0mm	Reduced	633332	3499.98	14.35	15.50	1.303	0.03	0.601	**0.783**

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	Bluetooth	DH5 1Mbps	Right Cheek	0mm	Ant 6	Full	39	2441	10.80	12.50	1.479	76.79	1.302	-0.19	0.039	0.075
	Bluetooth	DH5 1Mbps	Right Tilted	0mm	Ant 6	Full	39	2441	10.80	12.50	1.479	76.79	1.302	0.03	0.035	0.067
18	Bluetooth	DH5 1Mbps	Left Cheek	0mm	Ant 6	Full	39	2441	10.80	12.50	1.479	76.79	1.302	0.01	0.097	**0.187**
	Bluetooth	DH5 1Mbps	Left Tilted	0mm	Ant 6	Full	39	2441	10.80	12.50	1.479	76.79	1.302	0.18	0.090	0.174

<WLAN2.4G SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 6	Standalone	6	2437	15.00	16.50	1.413	99.01	1.010	-0.02	0.224	0.320
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 6	Standalone	6	2437	15.00	16.50	1.413	99.01	1.010	0.04	0.215	0.307
19	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 6	Standalone	6	2437	15.00	16.50	1.413	99.01	1.010	0.16	0.750	**1.070**
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 6	Standalone	6	2437	15.00	16.50	1.413	99.01	1.010	-0.11	0.618	0.882
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 6	Standalone	1	2412	14.90	16.50	1.445	99.01	1.010	0.03	0.711	1.038
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 6	Standalone	1	2412	14.90	16.50	1.445	99.01	1.010	0.18	0.558	0.815
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 6	Simultaneous	6	2437	10.50	12.00	1.413	99.01	1.010	-0.1	0.067	0.096
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 6	Simultaneous	6	2437	10.50	12.00	1.413	99.01	1.010	0.19	0.064	0.091
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 6	Simultaneous	6	2437	10.50	12.00	1.413	99.01	1.010	-0.11	0.276	0.394
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 6	Simultaneous	6	2437	10.50	12.00	1.413	99.01	1.010	0.06	0.203	0.290

<WLAN5G SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna Vendor / Tuner	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	802.11a 6Mbps	Right Cheek	0mm	Ant 6	Full	52	5260	17.13	19.00	1.538	97.97	1.021	-0.15	0.360	0.565
	WLAN5.3GHz	802.11a 6Mbps	Right Tilted	0mm	Ant 6	Full	52	5260	17.13	19.00	1.538	97.97	1.021	0.09	0.457	0.718
	WLAN5.3GHz	802.11a 6Mbps	Left Cheek	0mm	Ant 6	Full	52	5260	17.13	19.00	1.538	97.97	1.021	0.06	0.607	0.953
	WLAN5.3GHz	802.11a 6Mbps	Left Tilted	0mm	Ant 6	Full	52	5260	17.13	19.00	1.538	97.97	1.021	0.16	0.680	1.068
	WLAN5.3GHz	802.11a 6Mbps	Left Cheek	0mm	Ant 6	Full	64	5320	16.90	18.50	1.446	97.97	1.021	0.08	0.653	0.964
20	WLAN5.3GHz	802.11a 6Mbps	Left Tilted	0mm	Ant 6	Full	64	5320	16.90	18.50	1.446	97.97	1.021	-0.19	0.758	**1.119**
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6	Simultaneous	58	5290	12.86	14.50	1.459	95.78	1.044	0.09	0.273	0.416
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 6	Simultaneous	58	5290	12.86	14.50	1.459	95.78	1.044	-0.12	0.299	0.455
	WLAN5.5GHz	802.11a 6Mbps	Right Cheek	0mm	Ant 6	Full	140	5700	17.44	19.00	1.432	97.97	1.021	-0.07	0.164	0.240
	WLAN5.5GHz	802.11a 6Mbps	Right Tilted	0mm	Ant 6	Full	140	5700	17.44	19.00	1.432	97.97	1.021	-0.08	0.170	0.249
21	WLAN5.5GHz	802.11a 6Mbps	Left Cheek	0mm	Ant 6	Full	140	5700	17.44	19.00	1.432	97.97	1.021	-0.01	0.494	**0.722**
	WLAN5.5GHz	802.11a 6Mbps	Left Tilted	0mm	Ant 6	Full	140	5700	17.44	19.00	1.432	97.97	1.021	-0.07	0.464	0.679
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6	Simultaneous	106	5530	11.49	13.00	1.416	95.78	1.044	0.15	0.248	0.367
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 6	Simultaneous	106	5530	11.49	13.00	1.416	95.78	1.044	0.09	0.235	0.347
	WLAN5.8GHz	802.11a 6Mbps	Right Cheek	0mm	Ant 6	Full	149	5745	17.34	19.00	1.466	97.97	1.021	-0.19	0.105	0.157
	WLAN5.8GHz	802.11a 6Mbps	Right Tilted	0mm	Ant 6	Full	149	5745	17.34	19.00	1.466	97.97	1.021	-0.16	0.115	0.172
22	WLAN5.8GHz	802.11a 6Mbps	Left Cheek	0mm	Ant 6	Full	149	5745	17.34	19.00	1.466	97.97	1.021	-0.08	0.461	**0.690**
	WLAN5.8GHz	802.11a 6Mbps	Left Tilted	0mm	Ant 6	Full	149	5745	17.34	19.00	1.466	97.97	1.021	-0.03	0.394	0.590
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6	Simultaneous	155	5775	14.35	16.00	1.462	95.78	1.044	0.15	0.216	0.330
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 6	Simultaneous	155	5775	14.35	16.00	1.462	95.78	1.044	0.02	0.170	0.260

15.2 Hotspot SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	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_Ant0	GPRS 2 Tx slots	Front	5mm	Reduced	189	836.4	28.72	29.50	1.197	0.08	0.551	0.659
	GSM850_Ant0	GPRS 2 Tx slots	Back	5mm	Reduced	189	836.4	28.72	29.50	1.197	-0.08	1.080	1.292
	GSM850_Ant0	GPRS 2 Tx slots	Left Side	5mm	Reduced	189	836.4	28.72	29.50	1.197	-0.14	0.206	0.247
	GSM850_Ant0	GPRS 2 Tx slots	Right Side	5mm	Reduced	189	836.4	28.72	29.50	1.197	0.09	0.295	0.353
	GSM850_Ant0	GPRS 2 Tx slots	Bottom Side	5mm	Reduced	189	836.4	28.72	29.50	1.197	-0.07	0.577	0.691
	GSM850_Ant0	GPRS 2 Tx slots	Back	5mm	Reduced	128	824.2	28.21	29.50	1.346	0.05	0.896	1.206
23	GSM850_Ant0	GPRS 2 Tx slots	Back	5mm	Reduced	251	848.8	28.43	29.50	1.279	0.12	1.020	**1.305**
	GSM1900_Ant0	GPRS 2 Tx slots	Front	5mm	Reduced	512	1850.2	22.81	24.00	1.315	0.13	0.585	0.769
24	GSM1900_Ant0	GPRS 2 Tx slots	Back	5mm	Reduced	512	1850.2	22.81	24.00	1.315	-0.14	1.010	**1.328**
	GSM1900_Ant0	GPRS 2 Tx slots	Left Side	5mm	Reduced	512	1850.2	21.92	23.00	1.282	0.01	0.125	0.160
	GSM1900_Ant0	GPRS 2 Tx slots	Right Side	5mm	Reduced	512	1850.2	21.92	23.00	1.282	0.1	0.057	0.073
	GSM1900_Ant0	GPRS 2 Tx slots	Bottom Side	5mm	Reduced	512	1850.2	21.92	23.00	1.282	-0.01	1.020	1.308
	GSM1900_Ant0	GPRS 2 Tx slots	Bottom Side	5mm	Reduced	661	1880	21.79	23.00	1.321	0.02	0.973	1.286
	GSM1900_Ant0	GPRS 2 Tx slots	Bottom Side	5mm	Reduced	810	1909.8	21.86	23.00	1.300	0.13	0.769	1.000
	GSM1900_Ant0	GPRS 2 Tx slots	Back	5mm	Reduced	661	1880	22.71	24.00	1.346	0.04	0.936	1.260
	GSM1900_Ant0	GPRS 2 Tx slots	Back	5mm	Reduced	810	1909.8	22.77	24.00	1.327	0.09	0.746	0.990

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	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_Ant0	RMC 12.2Kbps	Front	5mm	Reduced	4182	836.4	21.41	22.50	1.285	-0.1	0.506	0.650
	WCDMA V_Ant0	RMC 12.2Kbps	Back	5mm	Reduced	4182	836.4	21.41	22.50	1.285	-0.05	0.964	1.239
	WCDMA V_Ant0	RMC 12.2Kbps	Left Side	5mm	Reduced	4182	836.4	21.41	22.50	1.285	0.08	0.189	0.243
	WCDMA V_Ant0	RMC 12.2Kbps	Right Side	5mm	Reduced	4182	836.4	21.41	22.50	1.285	-0.07	0.324	0.416
	WCDMA V_Ant0	RMC 12.2Kbps	Bottom Side	5mm	Reduced	4182	836.4	21.41	22.50	1.285	-0.02	0.503	0.646
	WCDMA V_Ant0	RMC 12.2Kbps	Back	5mm	Reduced	4132	826.4	21.39	22.50	1.291	0.15	0.875	1.130
25	WCDMA V_Ant0	RMC 12.2Kbps	Back	5mm	Reduced	4233	846.6	21.36	22.50	1.300	0.08	1.070	**1.391**
	WCDMA IV_Ant0	RMC 12.2Kbps	Front	5mm	Reduced	1312	1712.4	14.65	16.00	1.365	0.01	0.334	0.456
	WCDMA IV_Ant0	RMC 12.2Kbps	Back	5mm	Reduced	1312	1712.4	14.65	16.00	1.365	-0.13	0.874	1.193
	WCDMA IV_Ant0	RMC 12.2Kbps	Left Side	5mm	Reduced	1312	1712.4	14.55	15.50	1.245	0.07	0.020	0.025
	WCDMA IV_Ant0	RMC 12.2Kbps	Right Side	5mm	Reduced	1312	1712.4	14.55	15.50	1.245	0.16	0.079	0.098
	WCDMA IV_Ant0	RMC 12.2Kbps	Bottom Side	5mm	Reduced	1312	1712.4	14.55	15.50	1.245	0.07	0.882	1.098
	WCDMA IV_Ant0	RMC 12.2Kbps	Bottom Side	5mm	Reduced	1413	1732.6	14.46	15.50	1.271	0.17	0.868	1.103
	WCDMA IV_Ant0	RMC 12.2Kbps	Bottom Side	5mm	Reduced	1513	1752.6	14.13	15.50	1.371	0.18	0.906	1.242
	WCDMA IV_Ant0	RMC 12.2Kbps	Back	5mm	Reduced	1413	1732.6	14.58	16.00	1.387	-0.01	0.866	1.201
26	WCDMA IV_Ant0	RMC 12.2Kbps	Back	5mm	Reduced	1513	1752.6	14.21	16.00	1.510	0.1	0.943	**1.424**
	WCDMA II_Ant0	RMC 12.2Kbps	Front	5mm	Reduced	9262	1852.4	17.31	18.50	1.315	-0.09	0.538	0.708
	WCDMA II_Ant0	RMC 12.2Kbps	Back	5mm	Reduced	9262	1852.4	17.31	18.50	1.315	0.06	1.060	1.394
	WCDMA II_Ant0	RMC 12.2Kbps	Left Side	5mm	Reduced	9262	1852.4	16.33	17.50	1.309	0.19	0.087	0.114
	WCDMA II_Ant0	RMC 12.2Kbps	Right Side	5mm	Reduced	9262	1852.4	16.33	17.50	1.309	0.06	0.056	0.073
27	WCDMA II_Ant0	RMC 12.2Kbps	Bottom Side	5mm	Reduced	9262	1852.4	16.33	17.50	1.309	0.08	1.080	**1.414**
	WCDMA II_Ant0	RMC 12.2Kbps	Bottom Side	5mm	Reduced	9400	1880	16.28	17.50	1.324	0.05	0.979	1.297
	WCDMA II_Ant0	RMC 12.2Kbps	Bottom Side	5mm	Reduced	9538	1907.6	16.26	17.50	1.330	0.11	1.010	1.344
	WCDMA II_Ant0	RMC 12.2Kbps	Back	5mm	Reduced	9400	1880	17.29	18.50	1.321	0.07	0.987	1.304
	WCDMA II_Ant0	RMC 12.2Kbps	Back	5mm	Reduced	9538	1907.6	17.24	18.50	1.337	-0.03	0.976	1.305

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 12_Ant0	10M	QPSK	1	0	Front	5mm	Full	23095	707.5	22.50	24.00	1.413	-0.17	0.315	0.445
28	LTE Band 12_Ant0	10M	QPSK	1	0	Back	5mm	Full	23095	707.5	22.50	24.00	1.413	0.18	0.677	**0.956**
	LTE Band 12_Ant0	10M	QPSK	1	0	Left Side	5mm	Full	23095	707.5	22.50	24.00	1.413	-0.09	0.273	0.386
	LTE Band 12_Ant0	10M	QPSK	1	0	Right Side	5mm	Full	23095	707.5	22.50	24.00	1.413	0.15	0.269	0.380
	LTE Band 12_Ant0	10M	QPSK	1	0	Bottom Side	5mm	Full	23095	707.5	22.50	24.00	1.413	0.11	0.249	0.352
	LTE Band 12_Ant0	10M	QPSK	25	0	Front	5mm	Full	23095	707.5	21.49	23.00	1.416	-0.19	0.184	0.261
	LTE Band 12_Ant0	10M	QPSK	25	0	Back	5mm	Full	23095	707.5	21.49	23.00	1.416	0.05	0.428	0.606
	LTE Band 12_Ant0	10M	QPSK	25	0	Left Side	5mm	Full	23095	707.5	21.49	23.00	1.416	0.06	0.156	0.221
	LTE Band 12_Ant0	10M	QPSK	25	0	Right Side	5mm	Full	23095	707.5	21.49	23.00	1.416	-0.19	0.223	0.316
	LTE Band 12_Ant0	10M	QPSK	25	0	Bottom Side	5mm	Full	23095	707.5	21.49	23.00	1.416	-0.04	0.153	0.217
	LTE Band 12_Ant0	10M	QPSK	50	0	Back	5mm	Full	23095	707.5	21.51	23.00	1.409	-0.18	0.431	0.607
	LTE Band 13_Ant0	10M	QPSK	1	0	Front	5mm	Full	23230	782	22.66	24.00	1.361	-0.02	0.331	0.451
29	LTE Band 13_Ant0	10M	QPSK	1	0	Back	5mm	Full	23230	782	22.66	24.00	1.361	0.15	0.840	**1.144**
	LTE Band 13_Ant0	10M	QPSK	1	0	Left Side	5mm	Full	23230	782	22.66	24.00	1.361	0.19	0.173	0.236
	LTE Band 13_Ant0	10M	QPSK	1	0	Right Side	5mm	Full	23230	782	22.66	24.00	1.361	0.04	0.345	0.470
	LTE Band 13_Ant0	10M	QPSK	1	0	Bottom Side	5mm	Full	23230	782	22.66	24.00	1.361	0.04	0.492	0.670
	LTE Band 13_Ant0	10M	QPSK	25	0	Front	5mm	Full	23230	782	21.61	23.00	1.377	0.1	0.187	0.258
	LTE Band 13_Ant0	10M	QPSK	25	0	Back	5mm	Full	23230	782	21.61	23.00	1.377	-0.16	0.470	0.647
	LTE Band 13_Ant0	10M	QPSK	25	0	Left Side	5mm	Full	23230	782	21.61	23.00	1.377	-0.18	0.097	0.134
	LTE Band 13_Ant0	10M	QPSK	25	0	Right Side	5mm	Full	23230	782	21.61	23.00	1.377	-0.11	0.192	0.264
	LTE Band 13_Ant0	10M	QPSK	25	0	Bottom Side	5mm	Full	23230	782	21.61	23.00	1.377	0.03	0.308	0.424
	LTE Band 13_Ant0	10M	QPSK	50	0	Back	5mm	Full	23230	782	21.52	23.00	1.406	-0.1	0.468	0.658
	LTE Band 26_Ant0	15M	QPSK	1	0	Front	5mm	Reduced	26865	831.5	21.35	22.50	1.303	-0.18	0.462	0.602
	LTE Band 26_Ant0	15M	QPSK	1	0	Back	5mm	Reduced	26865	831.5	21.35	22.50	1.303	-0.07	0.883	1.151
	LTE Band 26_Ant0	15M	QPSK	1	0	Left Side	5mm	Reduced	26865	831.5	21.35	22.50	1.303	0.19	0.198	0.258
	LTE Band 26_Ant0	15M	QPSK	1	0	Right Side	5mm	Reduced	26865	831.5	21.35	22.50	1.303	-0.13	0.352	0.459
	LTE Band 26_Ant0	15M	QPSK	1	0	Bottom Side	5mm	Reduced	26865	831.5	21.35	22.50	1.303	-0.18	0.455	0.593
	LTE Band 26_Ant0	15M	QPSK	1	0	Back	5mm	Reduced	26765	821.5	21.24	22.50	1.337	0.02	0.857	1.145
30	LTE Band 26_Ant0	15M	QPSK	1	0	Back	5mm	Reduced	26965	841.5	21.22	22.50	1.343	-0.13	0.984	**1.321**
	LTE Band 26_Ant0	15M	QPSK	36	0	Front	5mm	Reduced	26865	831.5	21.34	22.50	1.306	0.04	0.353	0.461
	LTE Band 26_Ant0	15M	QPSK	36	0	Back	5mm	Reduced	26865	831.5	21.34	22.50	1.306	0.08	0.729	0.952
	LTE Band 26_Ant0	15M	QPSK	36	0	Left Side	5mm	Reduced	26865	831.5	21.34	22.50	1.306	0.08	0.148	0.193
	LTE Band 26_Ant0	15M	QPSK	36	0	Right Side	5mm	Reduced	26865	831.5	21.34	22.50	1.306	0.02	0.274	0.358
	LTE Band 26_Ant0	15M	QPSK	36	0	Bottom Side	5mm	Reduced	26865	831.5	21.34	22.50	1.306	0.11	0.372	0.486
	LTE Band 26_Ant0	15M	QPSK	36	0	Back	5mm	Reduced	26765	821.5	21.24	22.50	1.337	0.02	0.666	0.890
	LTE Band 26_Ant0	15M	QPSK	36	0	Back	5mm	Reduced	26965	841.5	21.21	22.50	1.346	0.09	0.774	1.042
	LTE Band 26_Ant0	15M	QPSK	75	0	Back	5mm	Reduced	26865	831.5	21.28	22.50	1.324	0.17	0.754	0.999
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	1	0	Front	5mm	Reduced	20525	836.5	17.26	18.50	1.330	0.09	0.190	0.253
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	1	0	Back	5mm	Reduced	20525	836.5	17.26	18.50	1.330	0.04	0.382	0.508
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	1	0	Left Side	5mm	Reduced	20525	836.5	17.26	18.50	1.330	-0.11	0.071	0.094
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	1	0	Right Side	5mm	Reduced	20525	836.5	17.26	18.50	1.330	0.06	0.132	0.176
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	1	0	Bottom Side	5mm	Reduced	20525	836.5	17.26	18.50	1.330	0.02	0.197	0.262
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	25	0	Front	5mm	Reduced	20525	836.5	17.21	18.50	1.346	0.01	0.191	0.257
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	25	0	Back	5mm	Reduced	20525	836.5	17.21	18.50	1.346	0.08	0.391	0.526
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	25	0	Left Side	5mm	Reduced	20525	836.5	17.21	18.50	1.346	-0.06	0.081	0.109
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	25	0	Right Side	5mm	Reduced	20525	836.5	17.21	18.50	1.346	0.08	0.134	0.180
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	25	0	Bottom Side	5mm	Reduced	20525	836.5	17.21	18.50	1.346	0.01	0.211	0.284
	LTE Band 66_Ant0	20M	QPSK	1	0	Front	5mm	Reduced	132322	1745	15.27	16.50	1.327	0.01	0.415	0.551
	LTE Band 66_Ant0	20M	QPSK	1	0	Back	5mm	Reduced	132322	1745	15.27	16.50	1.327	0.11	0.878	1.165
	LTE Band 66_Ant0	20M	QPSK	1	0	Left Side	5mm	Reduced	132322	1745	14.77	16.00	1.327	0.01	0.045	0.060
	LTE Band 66_Ant0	20M	QPSK	1	0	Right Side	5mm	Reduced	132322	1745	14.77	16.00	1.327	0.11	0.066	0.088
	LTE Band 66_Ant0	20M	QPSK	1	0	Bottom Side	5mm	Reduced	132322	1745	14.77	16.00	1.327	-0.14	0.889	1.180
	LTE Band 66_Ant0	20M	QPSK	1	0	Bottom Side	5mm	Reduced	132072	1720	14.68	16.00	1.355	-0.09	0.915	1.240
	LTE Band 66_Ant0	20M	QPSK	1	0	Bottom Side	5mm	Reduced	132572	1770	14.71	16.00	1.346	0.01	0.863	1.161
	LTE Band 66_Ant0	20M	QPSK	1	0	Back	5mm	Reduced	132072	1720	15.21	16.50	1.346	0.05	0.901	1.213

	LTE Band 66_Ant0	20M	QPSK	1	0	Back	5mm	Reduced	132572	1770	15.24	16.50	1.337	0.08	0.800	1.069
	LTE Band 66_Ant0	20M	QPSK	50	0	Front	5mm	Reduced	132322	1745	15.25	16.50	1.334	-0.15	0.423	0.564
	LTE Band 66_Ant0	20M	QPSK	50	0	Back	5mm	Reduced	132322	1745	15.25	16.50	1.334	-0.15	0.888	1.184
	LTE Band 66_Ant0	20M	QPSK	50	0	Left Side	5mm	Reduced	132322	1745	14.70	16.00	1.349	-0.14	0.046	0.062
	LTE Band 66_Ant0	20M	QPSK	50	0	Right Side	5mm	Reduced	132322	1745	14.70	16.00	1.349	0.19	0.067	0.090
	LTE Band 66_Ant0	20M	QPSK	50	0	Bottom Side	5mm	Reduced	132322	1745	14.70	16.00	1.349	0.16	0.912	1.230
31	LTE Band 66_Ant0	20M	QPSK	50	0	Bottom Side	5mm	Reduced	132072	1720	14.58	16.00	1.387	0.16	0.922	**1.279**
	LTE Band 66_Ant0	20M	QPSK	50	0	Bottom Side	5mm	Reduced	132572	1770	14.65	16.00	1.365	0.04	0.871	1.189
	LTE Band 66_Ant0	20M	QPSK	50	0	Back	5mm	Reduced	132072	1720	15.13	16.50	1.371	0.09	0.900	1.234
	LTE Band 66_Ant0	20M	QPSK	50	0	Back	5mm	Reduced	132572	1770	15.22	16.50	1.343	0.02	0.823	1.105
	LTE Band 66_Ant0	20M	QPSK	100	0	Back	5mm	Reduced	132322	1745	15.24	16.50	1.337	0.1	0.877	1.172
	LTE Band 66_Ant0	20M	QPSK	100	0	Bottom Side	5mm	Reduced	132322	1745	14.69	16.00	1.352	0.12	0.823	1.113
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	1	0	Front	5mm	Reduced	132322	1745	11.81	13.00	1.315	0.11	0.186	0.245
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	1	0	Back	5mm	Reduced	132322	1745	11.81	13.00	1.315	0.15	0.397	0.522
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	1	0	Left Side	5mm	Reduced	132322	1745	11.81	13.00	1.315	-	n/a	n/a
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	1	0	Right Side	5mm	Reduced	132322	1745	11.81	13.00	1.315	-0.07	0.038	0.050
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	1	0	Bottom Side	5mm	Reduced	132322	1745	11.81	13.00	1.315	-0.16	0.480	0.631
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	50	0	Front	5mm	Reduced	132322	1745	11.76	13.00	1.330	-0.11	0.185	0.246
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	50	0	Back	5mm	Reduced	132322	1745	11.76	13.00	1.330	0.15	0.396	0.527
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	50	0	Left Side	5mm	Reduced	132322	1745	11.76	13.00	1.330	-	n/a	n/a
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	50	0	Right Side	5mm	Reduced	132322	1745	11.76	13.00	1.330	-0.05	0.040	0.053
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	50	0	Bottom Side	5mm	Reduced	132322	1745	11.76	13.00	1.330	0.07	0.485	0.645
	LTE Band 2_Ant0	20M	QPSK	1	0	Front	5mm	Reduced	18900	1880	17.73	19.00	1.340	0.04	0.489	0.655
	LTE Band 2_Ant0	20M	QPSK	1	0	Back	5mm	Reduced	18900	1880	17.73	19.00	1.340	0.16	0.919	1.231
	LTE Band 2_Ant0	20M	QPSK	1	0	Left Side	5mm	Reduced	18900	1880	16.76	18.00	1.330	-0.1	0.103	0.137
	LTE Band 2_Ant0	20M	QPSK	1	0	Right Side	5mm	Reduced	18900	1880	16.76	18.00	1.330	0.07	0.053	0.071
	LTE Band 2_Ant0	20M	QPSK	1	0	Bottom Side	5mm	Reduced	18900	1880	16.76	18.00	1.330	-0.02	0.914	1.216
	LTE Band 2_Ant0	20M	QPSK	1	0	Bottom Side	5mm	Reduced	18700	1860	16.73	18.00	1.340	-0.08	0.942	1.262
	LTE Band 2_Ant0	20M	QPSK	1	0	Bottom Side	5mm	Reduced	19100	1900	16.71	18.00	1.346	-0.12	0.857	1.153
	LTE Band 2_Ant0	20M	QPSK	1	0	Back	5mm	Reduced	18700	1860	17.65	19.00	1.365	-0.05	0.965	1.317
	LTE Band 2_Ant0	20M	QPSK	1	0	Back	5mm	Reduced	19100	1900	17.60	19.00	1.380	-0.07	0.868	1.198
	LTE Band 2_Ant0	20M	QPSK	50	0	Front	5mm	Reduced	18900	1880	17.70	19.00	1.349	0.08	0.499	0.673
	LTE Band 2_Ant0	20M	QPSK	50	0	Back	5mm	Reduced	18900	1880	17.70	19.00	1.349	-0.15	0.931	1.256
	LTE Band 2_Ant0	20M	QPSK	50	0	Left Side	5mm	Reduced	18900	1880	16.74	18.00	1.337	-0.07	0.112	0.150
	LTE Band 2_Ant0	20M	QPSK	50	0	Right Side	5mm	Reduced	18900	1880	16.74	18.00	1.337	0.15	0.056	0.075
	LTE Band 2_Ant0	20M	QPSK	50	0	Bottom Side	5mm	Reduced	18900	1880	16.74	18.00	1.337	-0.16	0.921	1.231
	LTE Band 2_Ant0	20M	QPSK	50	0	Bottom Side	5mm	Reduced	18700	1860	16.68	18.00	1.355	0.06	0.962	1.304
	LTE Band 2_Ant0	20M	QPSK	50	0	Bottom Side	5mm	Reduced	19100	1900	16.61	18.00	1.377	0.06	0.863	1.189
32	LTE Band 2_Ant0	20M	QPSK	50	0	Back	5mm	Reduced	18700	1860	17.68	19.00	1.355	0.03	1.000	**1.355**
	LTE Band 2_Ant0	20M	QPSK	50	0	Back	5mm	Reduced	19100	1900	17.59	19.00	1.384	-0.07	0.874	1.209
	LTE Band 2_Ant0	20M	QPSK	100	0	Back	5mm	Reduced	18900	1880	17.68	19.00	1.355	-0.08	0.919	1.245
	LTE Band 2_Ant0	20M	QPSK	100	0	Bottom Side	5mm	Reduced	18900	1880	16.71	18.00	1.346	0.15	0.912	1.227
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	1	0	Front	5mm	Reduced	18900	1880	13.71	15.00	1.346	-0.07	0.190	0.256
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	1	0	Back	5mm	Reduced	18900	1880	13.71	15.00	1.346	-0.15	0.386	0.520
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	1	0	Left Side	5mm	Reduced	18900	1880	13.71	15.00	1.346	0.09	0.042	0.057
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	1	0	Right Side	5mm	Reduced	18900	1880	13.71	15.00	1.346	-	n/a	n/a
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	1	0	Bottom Side	5mm	Reduced	18900	1880	13.71	15.00	1.346	0.16	0.479	0.645
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	50	0	Front	5mm	Reduced	18900	1880	13.64	15.00	1.368	-0.04	0.195	0.267
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	50	0	Back	5mm	Reduced	18900	1880	13.64	15.00	1.368	0.03	0.387	0.529
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	50	0	Left Side	5mm	Reduced	18900	1880	13.64	15.00	1.368	-0.12	0.042	0.057
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	50	0	Right Side	5mm	Reduced	18900	1880	13.64	15.00	1.368	-	n/a	n/a
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	50	0	Bottom Side	5mm	Reduced	18900	1880	13.64	15.00	1.368	0.02	0.483	0.661
	LTE Band 7_Ant1	20M	QPSK	1	0	Front	5mm	Reduced	21100	2535	17.35	18.50	1.303	-0.05	0.692	0.902
	LTE Band 7_Ant1	20M	QPSK	1	0	Back	5mm	Reduced	21100	2535	17.35	18.50	1.303	-0.05	0.963	1.255
	LTE Band 7_Ant1	20M	QPSK	1	0	Left Side	5mm	Reduced	21100	2535	17.35	18.50	1.303	-0.12	0.616	0.803
	LTE Band 7_Ant1	20M	QPSK	1	0	Right Side	5mm	Reduced	21100	2535	17.35	18.50	1.303	0.09	0.116	0.151
	LTE Band 7_Ant1	20M	QPSK	1	0	Left Side	5mm	Reduced	20850	2510	17.28	18.50	1.324	0.15	0.551	0.730
	LTE Band 7_Ant1	20M	QPSK	1	0	Left Side	5mm	Reduced	21350	2560	17.32	18.50	1.312	0.16	0.600	0.787
	LTE Band 7_Ant1	20M	QPSK	1	0	Bottom Side	5mm	Reduced	21100	2535	17.35	18.50	1.303	0.01	0.660	0.860

	LTE Band 7_Ant1	20M	QPSK	1	0	Bottom Side	5mm	Reduced	20850	2510	17.28	18.50	1.324	0.01	0.608	0.805
	LTE Band 7_Ant1	20M	QPSK	1	0	Bottom Side	5mm	Reduced	21350	2560	17.32	18.50	1.312	-0.04	0.605	0.794
	LTE Band 7_Ant1	20M	QPSK	1	0	Front	5mm	Reduced	20850	2510	17.28	18.50	1.324	-0.07	0.630	0.834
	LTE Band 7_Ant1	20M	QPSK	1	0	Front	5mm	Reduced	21350	2560	17.32	18.50	1.312	-0.04	0.680	0.892
	LTE Band 7_Ant1	20M	QPSK	1	0	Back	5mm	Reduced	20850	2510	17.28	18.50	1.324	0.04	0.861	1.140
	LTE Band 7_Ant1	20M	QPSK	1	0	Back	5mm	Reduced	21350	2560	17.32	18.50	1.312	0.1	0.935	1.227
	LTE Band 7_Ant1	20M	QPSK	50	0	Front	5mm	Reduced	21100	2535	17.31	18.50	1.315	0.1	0.727	0.956
33	LTE Band 7_Ant1	20M	QPSK	50	0	Back	5mm	Reduced	21100	2535	17.31	18.50	1.315	-0.01	1.090	**1.434**
	LTE Band 7C_Ant1	20M	QPSK	50	0	Back	5mm	Reduced	PCC(21100)+ SCC(20902)	PCC(2535)+ SCC(2515.2)	17.55	18.50	1.245	0.08	1.010	1.257
	LTE Band 7C_Ant1	20M	QPSK	50	0	Back	5mm	Reduced	PCC(20850)+ SCC(21048)	PCC(2510)+ SCC(2529.8)	17.42	18.50	1.282	0.07	0.963	1.235
	LTE Band 7C_Ant1	20M	QPSK	50	0	Back	5mm	Reduced	PCC(21350)+ SCC(21152)	PCC(2560)+ SCC(2540.2)	17.47	18.50	1.268	0.12	1.040	1.318
	LTE Band 7_Ant1	20M	QPSK	50	0	Left Side	5mm	Reduced	21100	2535	17.31	18.50	1.315	0.04	0.627	0.825
	LTE Band 7_Ant1	20M	QPSK	50	0	Right Side	5mm	Reduced	21100	2535	17.31	18.50	1.315	-0.1	0.119	0.157
	LTE Band 7_Ant1	20M	QPSK	50	0	Left Side	5mm	Reduced	20850	2510	17.21	18.50	1.346	-0.09	0.578	0.778
	LTE Band 7_Ant1	20M	QPSK	50	0	Left Side	5mm	Reduced	21350	2560	17.25	18.50	1.334	-0.07	0.628	0.837
	LTE Band 7_Ant1	20M	QPSK	50	0	Bottom Side	5mm	Reduced	21100	2535	17.31	18.50	1.315	0.06	0.693	0.911
	LTE Band 7_Ant1	20M	QPSK	50	0	Bottom Side	5mm	Reduced	20850	2510	17.21	18.50	1.346	-0.05	0.633	0.852
	LTE Band 7_Ant1	20M	QPSK	50	0	Bottom Side	5mm	Reduced	21350	2560	17.25	18.50	1.334	-0.07	0.723	0.964
	LTE Band 7_Ant1	20M	QPSK	50	0	Front	5mm	Reduced	20850	2510	17.21	18.50	1.346	0.02	0.654	0.880
	LTE Band 7_Ant1	20M	QPSK	50	0	Front	5mm	Reduced	21350	2560	17.25	18.50	1.334	-0.01	0.710	0.947
	LTE Band 7_Ant1	20M	QPSK	50	0	Back	5mm	Reduced	20850	2510	17.21	18.50	1.346	0.02	0.963	1.296
	LTE Band 7_Ant1	20M	QPSK	50	0	Back	5mm	Reduced	21350	2560	17.25	18.50	1.334	-0.13	1.060	1.414
	LTE Band 7_Ant1	20M	QPSK	100	0	Front	5mm	Reduced	21100	2535	17.24	18.50	1.337	0.02	0.718	0.960
	LTE Band 7_Ant1	20M	QPSK	100	0	Back	5mm	Reduced	21100	2535	17.24	18.50	1.337	0.01	0.947	1.266
	LTE Band 7_Ant1	20M	QPSK	100	0	Left Side	5mm	Reduced	21100	2535	17.24	18.50	1.337	-0.12	0.617	0.825
	LTE Band 7_Ant1	20M	QPSK	100	0	Bottom Side	5mm	Reduced	21100	2535	17.24	18.50	1.337	-0.09	0.678	0.906
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	1	0	Front	5mm	Reduced	21100	2535	13.33	14.50	1.309	-0.15	0.281	0.368
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	1	0	Back	5mm	Reduced	21100	2535	13.33	14.50	1.309	0.14	0.405	0.530
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	1	0	Left Side	5mm	Reduced	21100	2535	13.33	14.50	1.309	0.16	0.261	0.342
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	1	0	Right Side	5mm	Reduced	21100	2535	13.33	14.50	1.309	0.07	0.046	0.060
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	1	0	Bottom Side	5mm	Reduced	21100	2535	13.33	14.50	1.309	-0.03	0.284	0.372
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	50	0	Front	5mm	Reduced	21100	2535	13.27	14.50	1.327	0.13	0.296	0.393
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	50	0	Back	5mm	Reduced	21100	2535	13.27	14.50	1.327	-0.12	0.427	0.567
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	50	0	Left Side	5mm	Reduced	21100	2535	13.27	14.50	1.327	-0.03	0.268	0.356
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	50	0	Right Side	5mm	Reduced	21100	2535	13.27	14.50	1.327	0.05	0.060	0.080
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	50	0	Bottom Side	5mm	Reduced	21100	2535	13.27	14.50	1.327	-0.15	0.299	0.397
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	1	0	Front	5mm	Reduced	21350	2560	11.26	12.50	1.330	0.05	0.125	0.166
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	1	0	Back	5mm	Reduced	21350	2560	11.26	12.50	1.330	0.12	0.364	0.484
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	1	0	Left Side	5mm	Reduced	21350	2560	11.26	12.50	1.330	0.05	0.093	0.124
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	1	0	Right Side	5mm	Reduced	21350	2560	11.26	12.50	1.330	-	n/a	n/a
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	1	0	Top Side	5mm	Reduced	21350	2560	11.26	12.50	1.330	0.04	0.500	0.665
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	50	0	Front	5mm	Reduced	21350	2560	11.22	12.50	1.343	0.11	0.130	0.175
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	50	0	Back	5mm	Reduced	21350	2560	11.22	12.50	1.343	-0.09	0.374	0.502
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	50	0	Left Side	5mm	Reduced	21350	2560	11.22	12.50	1.343	0.16	0.092	0.124
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	50	0	Right Side	5mm	Reduced	21350	2560	11.22	12.50	1.343	-	n/a	n/a
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	50	0	Top Side	5mm	Reduced	21350	2560	11.22	12.50	1.343	0.03	0.507	0.681

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 38_Ant1	20M	QPSK	1	0	Front	5mm	Reduced	38000	2595	20.18	21.00	1.208	62.9	1.006	-0.02	0.667	0.810
	LTE Band 38_Ant1	20M	QPSK	1	0	Back	5mm	Reduced	38000	2595	20.18	21.00	1.208	62.9	1.006	0.1	0.926	1.125
	LTE Band 38_Ant1	20M	QPSK	1	0	Left Side	5mm	Reduced	38000	2595	20.18	21.00	1.208	62.9	1.006	0.09	0.515	0.626
	LTE Band 38_Ant1	20M	QPSK	1	0	Right Side	5mm	Reduced	38000	2595	20.18	21.00	1.208	62.9	1.006	-0.16	0.131	0.159
	LTE Band 38_Ant1	20M	QPSK	1	0	Bottom Side	5mm	Reduced	38000	2595	20.18	21.00	1.208	62.9	1.006	-0.08	0.658	0.800
	LTE Band 38_Ant1	20M	QPSK	1	0	Bottom Side	5mm	Reduced	37850	2580	20.07	21.00	1.239	62.9	1.006	0.1	0.621	0.774
	LTE Band 38_Ant1	20M	QPSK	1	0	Bottom Side	5mm	Reduced	38150	2610	20.01	21.00	1.256	62.9	1.006	-0.01	0.591	0.747
	LTE Band 38_Ant1	20M	QPSK	1	0	Front	5mm	Reduced	37850	2580	20.07	21.00	1.239	62.9	1.006	0.06	0.652	0.813
	LTE Band 38_Ant1	20M	QPSK	1	0	Front	5mm	Reduced	38150	2610	20.01	21.00	1.256	62.9	1.006	-0.06	0.659	0.833
	LTE Band 38_Ant1	20M	QPSK	1	0	Back	5mm	Reduced	37850	2580	20.07	21.00	1.239	62.9	1.006	-0.03	0.931	1.160
	LTE Band 38_Ant1	20M	QPSK	1	0	Back	5mm	Reduced	38150	2610	20.01	21.00	1.256	62.9	1.006	0.01	1.020	1.289
	LTE Band 38_Ant1	20M	QPSK	50	0	Front	5mm	Reduced	38000	2595	20.16	21.00	1.213	62.9	1.006	0.07	0.664	0.811
	LTE Band 38_Ant1	20M	QPSK	50	0	Back	5mm	Reduced	38000	2595	20.16	21.00	1.213	62.9	1.006	-0.07	0.937	1.144
	LTE Band 38_Ant1	20M	QPSK	50	0	Left Side	5mm	Reduced	38000	2595	20.16	21.00	1.213	62.9	1.006	-0.07	0.514	0.627
	LTE Band 38_Ant1	20M	QPSK	50	0	Right Side	5mm	Reduced	38000	2595	20.16	21.00	1.213	62.9	1.006	0.04	0.133	0.162
	LTE Band 38_Ant1	20M	QPSK	50	0	Bottom Side	5mm	Reduced	38000	2595	20.16	21.00	1.213	62.9	1.006	0.1	0.667	0.814
	LTE Band 38_Ant1	20M	QPSK	50	0	Bottom Side	5mm	Reduced	37850	2580	20.04	21.00	1.247	62.9	1.006	0.14	0.643	0.807
	LTE Band 38_Ant1	20M	QPSK	50	0	Bottom Side	5mm	Reduced	38150	2610	20.01	21.00	1.256	62.9	1.006	0.05	0.606	0.766
	LTE Band 38_Ant1	20M	QPSK	50	0	Front	5mm	Reduced	37850	2580	20.04	21.00	1.247	62.9	1.006	-0.16	0.663	0.832
	LTE Band 38_Ant1	20M	QPSK	50	0	Front	5mm	Reduced	38150	2610	20.01	21.00	1.256	62.9	1.006	-0.14	0.669	0.845
	LTE Band 38_Ant1	20M	QPSK	50	0	Back	5mm	Reduced	37850	2580	20.04	21.00	1.247	62.9	1.006	0.12	0.962	1.207
34	LTE Band 38_Ant1	20M	QPSK	50	0	Back	5mm	Reduced	38150	2610	20.01	21.00	1.256	62.9	1.006	-0.15	1.080	**1.365**
	LTE Band 38_Ant1	20M	QPSK	100	0	Front	5mm	Reduced	38000	2595	20.08	21.00	1.236	62.9	1.006	-0.13	0.643	0.799
	LTE Band 38_Ant1	20M	QPSK	100	0	Back	5mm	Reduced	38000	2595	20.08	21.00	1.236	62.9	1.006	0.08	0.897	1.115
	LTE Band 38_Ant1	20M	QPSK	100	0	Bottom Side	5mm	Reduced	38000	2595	20.08	21.00	1.236	62.9	1.006	0.12	0.603	0.750
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	1	0	Front	5mm	Reduced	38000	2595	17.13	18.00	1.222	62.9	1.006	-0.14	0.335	0.412
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	1	0	Back	5mm	Reduced	38000	2595	17.13	18.00	1.222	62.9	1.006	0.11	0.449	0.552
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	1	0	Left Side	5mm	Reduced	38000	2595	17.13	18.00	1.222	62.9	1.006	0.08	0.289	0.355
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	1	0	Right Side	5mm	Reduced	38000	2595	17.13	18.00	1.222	62.9	1.006	-0.09	0.055	0.068
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	1	0	Bottom Side	5mm	Reduced	38000	2595	17.13	18.00	1.222	62.9	1.006	-0.02	0.313	0.385
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	50	0	Front	5mm	Reduced	38000	2595	17.10	18.00	1.230	62.9	1.006	0.16	0.337	0.417
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	50	0	Back	5mm	Reduced	38000	2595	17.10	18.00	1.230	62.9	1.006	-0.03	0.470	0.582
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	50	0	Left Side	5mm	Reduced	38000	2595	17.10	18.00	1.230	62.9	1.006	-0.11	0.295	0.365
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	50	0	Right Side	5mm	Reduced	38000	2595	17.10	18.00	1.230	62.9	1.006	-0.13	0.059	0.073
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	50	0	Bottom Side	5mm	Reduced	38000	2595	17.10	18.00	1.230	62.9	1.006	0.05	0.316	0.391
	LTE Band 42_Ant5	20M	QPSK	1	0	Front	5mm	Reduced	42590	3500	19.78	21.00	1.324	62.9	1.006	0.16	0.389	0.518
	LTE Band 42_Ant5	20M	QPSK	1	0	Back	5mm	Reduced	42590	3500	19.78	21.00	1.324	62.9	1.006	0.14	0.681	0.907
	LTE Band 42_Ant5	20M	QPSK	1	0	Right Side	5mm	Reduced	42590	3500	19.78	21.00	1.324	62.9	1.006	-0.13	0.238	0.317
	LTE Band 42_Ant5	20M	QPSK	1	0	Top Side	5mm	Reduced	42590	3500	19.78	21.00	1.324	62.9	1.006	-0.01	0.422	0.562
	LTE Band 42_Ant5	20M	QPSK	1	0	Back	5mm	Reduced	42190	3460	19.57	21.00	1.390	62.9	1.006	0.1	0.729	1.019
	LTE Band 42_Ant5	20M	QPSK	1	0	Back	5mm	Reduced	42990	3540	19.76	21.00	1.330	62.9	1.006	0.09	0.689	0.922
	LTE Band 42_Ant5	20M	QPSK	50	0	Front	5mm	Reduced	42590	3500	19.76	21.00	1.330	62.9	1.006	-0.07	0.412	0.551
	LTE Band 42_Ant5	20M	QPSK	50	0	Back	5mm	Reduced	42590	3500	19.76	21.00	1.330	62.9	1.006	0.1	0.693	0.928
	LTE Band 42_Ant5	20M	QPSK	50	0	Right Side	5mm	Reduced	42590	3500	19.76	21.00	1.330	62.9	1.006	0.14	0.245	0.328
	LTE Band 42_Ant5	20M	QPSK	50	0	Top Side	5mm	Reduced	42590	3500	19.76	21.00	1.330	62.9	1.006	0.12	0.436	0.584
35	LTE Band 42_Ant5	20M	QPSK	50	0	Back	5mm	Reduced	42190	3460	19.45	21.00	1.429	62.9	1.006	0.15	0.774	**1.113**
	LTE Band 42_Ant5	20M	QPSK	50	0	Back	5mm	Reduced	42990	3540	19.59	21.00	1.384	62.9	1.006	0.07	0.721	1.004
	LTE Band 42_Ant5	20M	QPSK	100	0	Back	5mm	Reduced	42590	3500	19.63	21.00	1.371	62.9	1.006	0.1	0.705	0.972

<5GNR SAR

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	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)
	N5_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Front	5mm	Reduced	167300	836.5	20.23	21.00	1.194	0.1	0.218	0.260
	N5_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Back	5mm	Reduced	167300	836.5	20.23	21.00	1.194	-0.08	0.484	0.578
	N5_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Left Side	5mm	Reduced	167300	836.5	20.23	21.00	1.194	0.02	0.097	0.116
	N5_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Right Side	5mm	Reduced	167300	836.5	20.23	21.00	1.194	0.1	0.163	0.195
	N5_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Bottom Side	5mm	Reduced	167300	836.5	20.23	21.00	1.194	0.15	0.186	0.222
	N5_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Front	5mm	Reduced	167300	836.5	20.19	21.00	1.205	0.11	0.229	0.276
36	N5_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Back	5mm	Reduced	167300	836.5	20.19	21.00	1.205	0.05	0.484	**0.583**
	N5_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Left Side	5mm	Reduced	167300	836.5	20.19	21.00	1.205	-0.12	0.102	0.123
	N5_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Right Side	5mm	Reduced	167300	836.5	20.19	21.00	1.205	0.05	0.171	0.206
	N5_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Bottom Side	5mm	Reduced	167300	836.5	20.19	21.00	1.205	-0.07	0.229	0.276
	N66_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Front	5mm	Reduced	344000	1720	13.08	14.00	1.236	0.06	0.228	0.282
	N66_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Back	5mm	Reduced	344000	1720	13.08	14.00	1.236	-0.03	0.476	0.588
	N66_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Left Side	5mm	Reduced	344000	1720	13.08	14.00	1.236	-	n/a	n/a
	N66_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Right Side	5mm	Reduced	344000	1720	13.08	14.00	1.236	-	n/a	n/a
	N66_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Bottom Side	5mm	Reduced	344000	1720	13.08	14.00	1.236	-0.13	0.514	0.635
	N66_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Front	5mm	Reduced	344000	1720	13.05	14.00	1.245	-0.13	0.225	0.280
	N66_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Back	5mm	Reduced	344000	1720	13.05	14.00	1.245	-0.12	0.476	0.592
	N66_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Left Side	5mm	Reduced	344000	1720	13.05	14.00	1.245	-	n/a	n/a
	N66_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Right Side	5mm	Reduced	344000	1720	13.05	14.00	1.245	-	n/a	n/a
37	N66_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Bottom Side	5mm	Reduced	344000	1720	13.05	14.00	1.245	-0.14	0.545	**0.678**
	N7_Ant 4	20M	BPSK	1	1	DFT_SCS 15KHz	Front	5mm	Reduced	512000	2560	11.61	12.50	1.227	0.11	0.188	0.231
	N7_Ant 4	20M	BPSK	1	1	DFT_SCS 15KHz	Back	5mm	Reduced	512000	2560	11.61	12.50	1.227	-0.04	0.444	0.545
	N7_Ant 4	20M	BPSK	1	1	DFT_SCS 15KHz	Left Side	5mm	Reduced	512000	2560	11.61	12.50	1.227	-0.13	0.120	0.147
	N7_Ant 4	20M	BPSK	1	1	DFT_SCS 15KHz	Right Side	5mm	Reduced	512000	2560	11.61	12.50	1.227	-	n/a	n/a
	N7_Ant 4	20M	BPSK	1	1	DFT_SCS 15KHz	Top Side	5mm	Reduced	512000	2560	11.61	12.50	1.227	-0.12	0.525	0.644
	N7_Ant 4	20M	BPSK	50	28	DFT_SCS 15KHz	Front	5mm	Reduced	512000	2560	11.56	12.50	1.242	-0.05	0.182	0.226
	N7_Ant 4	20M	BPSK	50	28	DFT_SCS 15KHz	Back	5mm	Reduced	512000	2560	11.56	12.50	1.242	0.06	0.434	0.539
	N7_Ant 4	20M	BPSK	50	28	DFT_SCS 15KHz	Left Side	5mm	Reduced	512000	2560	11.56	12.50	1.242	0.02	0.123	0.153
	N7_Ant 4	20M	BPSK	50	28	DFT_SCS 15KHz	Right Side	5mm	Reduced	512000	2560	11.56	12.50	1.242	-	n/a	n/a
38	N7_Ant 4	20M	BPSK	50	28	DFT_SCS 15KHz	Top Side	5mm	Reduced	512000	2560	11.56	12.50	1.242	0.09	0.533	**0.662**
	N78_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Front	5mm	Reduced	633332	3499.98	13.61	14.50	1.227	0.03	0.136	0.167
	N78_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Back	5mm	Reduced	633332	3499.98	13.61	14.50	1.227	0.09	0.294	0.361
	N78_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Left Side	5mm	Reduced	633332	3499.98	13.61	14.50	1.227	-	n/a	n/a
	N78_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Right Side	5mm	Reduced	633332	3499.98	13.61	14.50	1.227	0.01	0.081	0.099
	N78_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Top Side	5mm	Reduced	633332	3499.98	13.61	14.50	1.227	0.15	0.226	0.277
	N78_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Front	5mm	Reduced	633332	3499.98	13.59	14.50	1.233	0.12	0.201	0.248
	N78_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Back	5mm	Reduced	633332	3499.98	13.59	14.50	1.233	-0.04	0.483	0.596
	N78_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Left Side	5mm	Reduced	633332	3499.98	13.59	14.50	1.233	-	n/a	n/a
	N78_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Right Side	5mm	Reduced	633332	3499.98	13.59	14.50	1.233	-0.09	0.101	0.125
	N78_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Top Side	5mm	Reduced	633332	3499.98	13.59	14.50	1.233	-0.09	0.378	0.466
	N78(HPUE)_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Front	5mm	Reduced	633332	3499.98	13.61	14.50	1.227	0.03	0.136	0.167
	N78(HPUE)_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Back	5mm	Reduced	633332	3499.98	13.61	14.50	1.227	0.09	0.294	0.361
	N78(HPUE)_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Left Side	5mm	Reduced	633332	3499.98	13.61	14.50	1.227	-	n/a	n/a
	N78(HPUE)_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Right Side	5mm	Reduced	633332	3499.98	13.61	14.50	1.227	0.01	0.081	0.099
	N78(HPUE)_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Top Side	5mm	Reduced	633332	3499.98	13.61	14.50	1.227	0.15	0.226	0.277
	N78(HPUE)_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Front	5mm	Reduced	633332	3499.98	13.59	14.50	1.233	0.12	0.201	0.248
39	N78(HPUE)_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Back	5mm	Reduced	633332	3499.98	13.59	14.50	1.233	-0.04	0.483	**0.596**
	N78(HPUE)_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Left Side	5mm	Reduced	633332	3499.98	13.59	14.50	1.233	-	n/a	n/a
	N78(HPUE)_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Right Side	5mm	Reduced	633332	3499.98	13.59	14.50	1.233	-0.09	0.101	0.125
	N78(HPUE)_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Top Side	5mm	Reduced	633332	3499.98	13.59	14.50	1.233	-0.09	0.378	0.466

<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 6	Full	39	2441	10.80	12.50	1.479	76.79	1.302	0.14	0.064	0.124
40	Bluetooth	DH5 1Mbps	Back	5mm	Ant 6	Full	39	2441	10.80	12.50	1.479	76.79	1.302	-0.11	0.080	**0.153**
	Bluetooth	DH5 1Mbps	Right Side	5mm	Ant 6	Full	39	2441	10.80	12.50	1.479	76.79	1.302	0.09	0.035	0.067
	Bluetooth	DH5 1Mbps	Top Side	5mm	Ant 6	Full	39	2441	10.80	12.50	1.479	76.79	1.302	-0.02	0.046	0.088

<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 6	Reduced	6	2437	11.40	13.00	1.445	99.01	1.010	0.08	0.121	0.177
41	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 6	Reduced	6	2437	11.40	13.00	1.445	99.01	1.010	-0.03	0.249	**0.364**
	WLAN2.4GHz	802.11b 1Mbps	Right Side	5mm	Ant 6	Reduced	6	2437	11.40	13.00	1.445	99.01	1.010	0.07	0.129	0.188
	WLAN2.4GHz	802.11b 1Mbps	Top Side	5mm	Ant 6	Reduced	6	2437	11.40	13.00	1.445	99.01	1.010	0.15	0.096	0.140

<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)
	WLAN5.2GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 6	Reduced	42	5210	10.22	11.50	1.343	95.78	1.044	0.04	0.050	0.070
42	WLAN5.2 GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 6	Reduced	42	5210	10.22	11.50	1.343	95.78	1.044	-0.09	0.248	**0.348**
	WLAN5.2GHz	802.11ac-VHT80 MCS0	Right Side	5mm	Ant 6	Reduced	42	5210	10.22	11.50	1.343	95.78	1.044	-0.08	0.049	0.068
	WLAN5.2 GHz	802.11ac-VHT80 MCS0	Top Side	5mm	Ant 6	Reduced	42	5210	10.22	11.50	1.343	95.78	1.044	0.13	0.170	0.238
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 6	Reduced	155	5775	8.41	10.00	1.442	95.78	1.044	0.08	0.028	0.042
43	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 6	Reduced	155	5775	8.41	10.00	1.442	95.78	1.044	-0.16	0.261	**0.393**
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Side	5mm	Ant 6	Reduced	155	5775	8.41	10.00	1.442	95.78	1.044	-0.06	0.081	0.122
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Top Side	5mm	Ant 6	Reduced	155	5775	8.41	10.00	1.442	95.78	1.044	-0.19	0.145	0.218

15.3 Body Worn Accessory SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Headset	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_Ant0	GPRS 2 Tx slots	Front	5mm	-	Reduced	189	836.4	28.72	29.50	1.197	0.08	0.551	0.659
	GSM850_Ant0	GPRS 2 Tx slots	Back	5mm	-	Reduced	189	836.4	28.72	29.50	1.197	-0.08	1.080	1.292
	GSM850_Ant0	GPRS 2 Tx slots	Back	5mm	-	Reduced	128	824.2	28.21	29.50	1.346	0.05	0.896	1.206
44	GSM850_Ant0	GPRS 2 Tx slots	Back	5mm	-	Reduced	251	848.8	28.43	29.50	1.279	0.12	1.020	**1.305**
	GSM850_Ant0	GPRS 2 Tx slots	Back	5mm	Headset	Reduced	251	848.8	28.43	29.50	1.279	0.02	0.955	1.222
	GSM850_Ant0	GPRS 2 Tx slots	Front	16mm	-	Full	189	836.4	30.15	31.00	1.216	0.07	0.207	0.252
	GSM850_Ant0	GPRS 2 Tx slots	Back	22mm	-	Full	251	848.8	29.90	31.00	1.288	-0.16	0.172	0.222
	GSM1900_Ant0	GPRS 2 Tx slots	Front	5mm	-	Reduced	512	1850.2	22.81	24.00	1.315	0.13	0.585	0.769
45	GSM1900_Ant0	GPRS 2 Tx slots	Back	5mm	-	Reduced	512	1850.2	22.81	24.00	1.315	-0.14	1.010	**1.328**
	GSM1900_Ant0	GPRS 2 Tx slots	Back	5mm	-	Reduced	661	1880	22.71	24.00	1.346	0.04	0.936	1.260
	GSM1900_Ant0	GPRS 2 Tx slots	Back	5mm	-	Reduced	810	1909.8	22.77	24.00	1.327	0.09	0.746	0.990
	GSM1900_Ant0	GPRS 2 Tx slots	Back	5mm	Headset	Reduced	512	1850.2	22.81	24.00	1.315	-0.12	0.822	1.081
	GSM1900_Ant0	GPRS 2 Tx slots	Front	16mm	-	Full	512	1850.2	27.19	28.00	1.205	0.06	0.297	0.358
	GSM1900_Ant0	GPRS 2 Tx slots	Back	22mm	-	Full	512	1850.2	27.19	28.00	1.205	0.04	0.225	0.271

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Headset	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_Ant0	RMC 12.2Kbps	Front	5mm	-	Reduced	4182	836.4	21.41	22.50	1.285	-0.1	0.506	0.650
	WCDMA V_Ant0	RMC 12.2Kbps	Back	5mm	-	Reduced	4182	836.4	21.41	22.50	1.285	-0.05	0.964	1.239
	WCDMA V_Ant0	RMC 12.2Kbps	Back	5mm	-	Reduced	4132	826.4	21.39	22.50	1.291	0.15	0.875	1.130
46	WCDMA V_Ant0	RMC 12.2Kbps	Back	5mm	-	Reduced	4233	846.6	21.36	22.50	1.300	0.08	1.070	**1.391**
	WCDMA V_Ant0	RMC 12.2Kbps	Back	5mm	Headset	Reduced	4233	846.6	21.36	22.50	1.300	0.02	1.050	1.365
	WCDMA V_Ant0	RMC 12.2Kbps	Front	16mm	-	Full	4182	836.4	22.85	24.00	1.303	0.04	0.211	0.275
	WCDMA V_Ant0	RMC 12.2Kbps	Back	22mm	-	Full	4233	846.6	22.77	24.00	1.327	0.09	0.167	0.222
	WCDMA IV_Ant0	RMC 12.2Kbps	Front	5mm	-	Reduced	1312	1712.4	14.65	16.00	1.365	0.01	0.334	0.456
	WCDMA IV_Ant0	RMC 12.2Kbps	Back	5mm	-	Reduced	1312	1712.4	14.65	16.00	1.365	-0.13	0.874	1.193
	WCDMA IV_Ant0	RMC 12.2Kbps	Back	5mm	-	Reduced	1413	1732.6	14.58	16.00	1.387	-0.01	0.866	1.201
47	WCDMA IV_Ant0	RMC 12.2Kbps	Back	5mm	-	Reduced	1513	1752.6	14.21	16.00	1.510	0.1	0.943	**1.424**
	WCDMA IV_Ant0	RMC 12.2Kbps	Back	5mm	Headset	Reduced	1513	1752.6	14.21	16.00	1.510	0.16	0.719	1.086
	WCDMA IV_Ant0	RMC 12.2Kbps	Front	16mm	-	Full	1312	1712.4	22.74	24.00	1.337	-0.17	0.480	0.642
	WCDMA IV_Ant0	RMC 12.2Kbps	Back	22mm	-	Full	1513	1752.6	22.35	24.00	1.462	0.11	0.489	0.715
	WCDMA II_Ant0	RMC 12.2Kbps	Front	5mm	-	Reduced	9262	1852.4	17.31	18.50	1.315	-0.09	0.538	0.708
48	WCDMA II_Ant0	RMC 12.2Kbps	Back	5mm	-	Reduced	9262	1852.4	17.31	18.50	1.315	0.06	1.060	**1.394**
	WCDMA II_Ant0	RMC 12.2Kbps	Back	5mm	-	Reduced	9400	1880	17.29	18.50	1.321	0.07	0.987	1.304
	WCDMA II_Ant0	RMC 12.2Kbps	Back	5mm	-	Reduced	9538	1907.6	17.24	18.50	1.337	-0.03	0.976	1.305
	WCDMA II_Ant0	RMC 12.2Kbps	Back	5mm	Headset	Reduced	9262	1852.4	17.31	18.50	1.315	0.01	1.050	1.381
	WCDMA II_Ant0	RMC 12.2Kbps	Front	16mm	-	Full	9262	1852.4	22.65	24.00	1.365	-0.12	0.393	0.536
	WCDMA II_Ant0	RMC 12.2Kbps	Back	22mm	-	Full	9262	1852.4	22.65	24.00	1.365	-0.1	0.294	0.401

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Headset	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 12_Ant0	10M	QPSK	1	0	Front	5mm	-	Full	23095	707.5	22.50	24.00	1.413	-0.17	0.315	0.445
49	LTE Band 12_Ant0	10M	QPSK	1	0	Back	5mm	-	Full	23095	707.5	22.50	24.00	1.413	0.18	0.677	**0.956**
	LTE Band 12_Ant0	10M	QPSK	25	0	Front	5mm	-	Full	23095	707.5	21.49	23.00	1.416	-0.19	0.184	0.261
	LTE Band 12_Ant0	10M	QPSK	25	0	Back	5mm	-	Full	23095	707.5	21.49	23.00	1.416	0.05	0.428	0.606
	LTE Band 12_Ant0	10M	QPSK	50	0	Back	5mm		Full	23095	707.5	21.51	23.00	1.409	-0.18	0.431	0.607
	LTE Band 13_Ant0	10M	QPSK	1	0	Front	5mm	-	Full	23230	782	22.66	24.00	1.361	-0.02	0.331	0.451
50	LTE Band 13_Ant0	10M	QPSK	1	0	Back	5mm	-	Full	23230	782	22.66	24.00	1.361	0.15	0.840	**1.144**
	LTE Band 13_Ant0	10M	QPSK	25	0	Front	5mm	-	Full	23230	782	21.61	23.00	1.377	0.1	0.187	0.258
	LTE Band 13_Ant0	10M	QPSK	25	0	Back	5mm	-	Full	23230	782	21.61	23.00	1.377	-0.16	0.470	0.647
	LTE Band 13_Ant0	10M	QPSK	50	0	Back	5mm	-	Full	23230	782	21.52	23.00	1.406	-0.1	0.468	0.658
	LTE Band 26_Ant0	15M	QPSK	1	0	Front	5mm	-	Reduced	26865	831.5	21.35	22.50	1.303	-0.18	0.462	0.602
	LTE Band 26_Ant0	15M	QPSK	1	0	Back	5mm	-	Reduced	26865	831.5	21.35	22.50	1.303	-0.07	0.883	1.151
	LTE Band 26_Ant0	15M	QPSK	1	0	Back	5mm	-	Reduced	26765	821.5	21.24	22.50	1.337	0.02	0.857	1.145
51	LTE Band 26_Ant0	15M	QPSK	1	0	Back	5mm	-	Reduced	26965	841.5	21.22	22.50	1.343	-0.13	0.984	**1.321**
	LTE Band 26_Ant0	15M	QPSK	1	0	Back	5mm	Headset	Reduced	26965	841.5	21.22	22.50	1.343	-0.05	0.979	1.315
	LTE Band 26_Ant0	15M	QPSK	1	0	Front	16mm	-	Full	26865	831.5	22.80	24.00	1.318	-0.11	0.216	0.285
	LTE Band 26_Ant0	15M	QPSK	1	0	Back	22mm	-	Full	26965	841.5	22.70	24.00	1.349	0.11	0.181	0.244
	LTE Band 26_Ant0	15M	QPSK	36	0	Front	5mm	-	Reduced	26865	831.5	21.34	22.50	1.306	0.04	0.353	0.461
	LTE Band 26_Ant0	15M	QPSK	36	0	Back	5mm	-	Reduced	26865	831.5	21.34	22.50	1.306	0.08	0.729	0.952
	LTE Band 26_Ant0	15M	QPSK	36	0	Back	5mm	-	Reduced	26765	821.5	21.24	22.50	1.337	0.02	0.666	0.890
	LTE Band 26_Ant0	15M	QPSK	36	0	Back	5mm	-	Reduced	26965	841.5	21.21	22.50	1.346	0.09	0.774	1.042
	LTE Band 26_Ant0	15M	QPSK	75	0	Back	5mm	-	Reduced	26865	831.5	21.28	22.50	1.324	0.17	0.754	0.999
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	1	0	Front	5mm	-	Reduced	20525	836.5	17.26	18.50	1.330	0.09	0.190	0.253
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	1	0	Back	5mm	-	Reduced	20525	836.5	17.26	18.50	1.330	0.04	0.382	0.508
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	1	0	Front	16mm	-	Full	20525	836.5	22.71	24.00	1.346	0.01	0.208	0.280
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	1	0	Back	22mm	-	Full	20525	836.5	22.71	24.00	1.346	0.02	0.168	0.226
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	25	0	Front	5mm	-	Reduced	20525	836.5	17.21	18.50	1.346	0.01	0.191	0.257
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	25	0	Back	5mm	-	Reduced	20525	836.5	17.21	18.50	1.346	0.08	0.391	0.526
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	25	0	Front	16mm	-	Full	20525	836.5	21.65	23.00	1.365	0.09	0.133	0.181
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	25	0	Back	22mm	-	Full	20525	836.5	21.65	23.00	1.365	0.08	0.105	0.143
	LTE Band 66_Ant0	20M	QPSK	1	0	Front	5mm	-	Reduced	132322	1745	15.27	16.50	1.327	0.01	0.415	0.551
	LTE Band 66_Ant0	20M	QPSK	1	0	Back	5mm	-	Reduced	132322	1745	15.27	16.50	1.327	0.11	0.878	1.165
	LTE Band 66_Ant0	20M	QPSK	1	0	Back	5mm	-	Reduced	132072	1720	15.21	16.50	1.346	0.05	0.901	1.213
	LTE Band 66_Ant0	20M	QPSK	1	0	Back	5mm	-	Reduced	132572	1770	15.24	16.50	1.337	0.08	0.800	1.069
	LTE Band 66_Ant0	20M	QPSK	1	0	Back	5mm	Headset	Reduced	132072	1720	15.21	16.50	1.346	0.04	0.750	1.009
	LTE Band 66_Ant0	20M	QPSK	1	0	Front	16mm	-	Full	132322	1745	22.73	24.00	1.340	0.06	0.473	0.634
	LTE Band 66_Ant0	20M	QPSK	1	0	Back	22mm	-	Full	132072	1720	22.60	24.00	1.380	-0.13	0.477	0.658
	LTE Band 66_Ant0	20M	QPSK	50	0	Front	5mm	-	Reduced	132322	1745	15.25	16.50	1.334	-0.15	0.423	0.564
	LTE Band 66_Ant0	20M	QPSK	50	0	Back	5mm	-	Reduced	132322	1745	15.25	16.50	1.334	-0.15	0.888	1.184
52	LTE Band 66_Ant0	20M	QPSK	50	0	Back	5mm	-	Reduced	132072	1720	15.13	16.50	1.371	0.09	0.900	**1.234**
	LTE Band 66_Ant0	20M	QPSK	50	0	Back	5mm	-	Reduced	132572	1770	15.22	16.50	1.343	0.02	0.823	1.105
	LTE Band 66_Ant0	20M	QPSK	50	0	Back	5mm	Headset	Reduced	132072	1720	15.13	16.50	1.371	0.12	0.741	1.016
	LTE Band 66_Ant0	20M	QPSK	50	0	Front	16mm	-	Full	132322	1745	21.65	23.00	1.365	-0.14	0.304	0.415
	LTE Band 66_Ant0	20M	QPSK	50	0	Back	22mm	-	Full	132072	1720	21.42	23.00	1.439	0.15	0.307	0.442
	LTE Band 66_Ant0	20M	QPSK	100	0	Back	5mm	-	Reduced	132322	1745	15.24	16.50	1.337	0.1	0.877	1.172
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	1	0	Front	5mm	-	Reduced	132322	1745	11.81	13.00	1.315	0.11	0.186	0.245
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	1	0	Back	5mm	-	Reduced	132322	1745	11.81	13.00	1.315	0.15	0.397	0.522
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	1	0	Front	16mm	-	Full	132322	1745	22.73	24.00	1.340	-0.03	0.480	0.643
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	1	0	Back	22mm	-	Full	132322	1745	22.73	24.00	1.340	-0.04	0.402	0.539
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	50	0	Front	5mm	-	Reduced	132322	1745	11.76	13.00	1.330	-0.11	0.185	0.246
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	50	0	Back	5mm	-	Reduced	132322	1745	11.76	13.00	1.330	0.15	0.396	0.527
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	50	0	Front	16mm	-	Full	132322	1745	21.65	23.00	1.365	-0.11	0.310	0.423

	LTE Band 66_Ant0 (ENDC)	20M	QPSK	50	0	Back	22mm	-	Full	132322	1745	21.65	23.00	1.365	0.05	0.174	0.237
	LTE Band 2_Ant0	20M	QPSK	1	0	Front	5mm	-	Reduced	18900	1880	17.73	19.00	1.340	0.04	0.489	0.655
	LTE Band 2_Ant0	20M	QPSK	1	0	Back	5mm	-	Reduced	18900	1880	17.73	19.00	1.340	0.16	0.919	1.231
	LTE Band 2_Ant0	20M	QPSK	1	0	Back	5mm	-	Reduced	18700	1860	17.65	19.00	1.365	-0.05	0.965	1.317
	LTE Band 2_Ant0	20M	QPSK	1	0	Back	5mm	-	Reduced	19100	1900	17.60	19.00	1.380	-0.07	0.868	1.198
	LTE Band 2_Ant0	20M	QPSK	1	0	Back	5mm	Headset	Reduced	18700	1860	17.65	19.00	1.365	0.16	0.942	1.285
	LTE Band 2_Ant0	20M	QPSK	1	0	Front	16mm	-	Full	18900	1880	22.70	24.00	1.349	0.12	0.346	0.467
	LTE Band 2_Ant0	20M	QPSK	1	0	Back	22mm	-	Full	18700	1860	22.69	24.00	1.352	-0.16	0.253	0.342
	LTE Band 2_Ant0	20M	QPSK	50	0	Front	5mm	-	Reduced	18900	1880	17.70	19.00	1.349	0.08	0.499	0.673
	LTE Band 2_Ant0	20M	QPSK	50	0	Back	5mm	-	Reduced	18900	1880	17.70	19.00	1.349	-0.15	0.931	1.256
53	LTE Band 2_Ant0	20M	QPSK	50	0	Back	5mm	-	Reduced	18700	1860	17.68	19.00	1.355	0.03	1.000	**1.355**
	LTE Band 2_Ant0	20M	QPSK	50	0	Back	5mm	-	Reduced	19100	1900	17.59	19.00	1.384	-0.07	0.874	1.209
	LTE Band 2_Ant0	20M	QPSK	50	0	Back	5mm	Headset	Reduced	18700	1860	17.68	19.00	1.355	-0.11	0.953	1.291
	LTE Band 2_Ant0	20M	QPSK	50	0	Front	16mm	-	Full	18900	1880	21.54	23.00	1.400	0.07	0.196	0.274
	LTE Band 2_Ant0	20M	QPSK	50	0	Back	22mm	-	Full	18700	1860	21.52	23.00	1.406	0.1	0.144	0.202
	LTE Band 2_Ant0	20M	QPSK	100	0	Back	5mm	-	Reduced	18900	1880	17.68	19.00	1.355	-0.08	0.919	1.245
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	1	0	Front	5mm	-	Reduced	18900	1880	13.71	15.00	1.346	-0.07	0.190	0.256
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	1	0	Back	5mm	-	Reduced	18900	1880	13.71	15.00	1.346	-0.15	0.386	0.520
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	1	0	Front	16mm	-	Full	18900	1880	22.70	24.00	1.349	0.08	0.364	0.491
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	1	0	Back	22mm	-	Full	18900	1880	22.70	24.00	1.349	-0.13	0.245	0.330
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	50	0	Front	5mm	-	Reduced	18900	1880	13.64	15.00	1.368	-0.04	0.195	0.267
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	50	0	Back	5mm	-	Reduced	18900	1880	13.64	15.00	1.368	0.03	0.387	0.529
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	50	0	Front	16mm	-	Full	18900	1880	21.54	23.00	1.400	0.08	0.208	0.291
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	50	0	Back	22mm	-	Full	18900	1880	21.54	23.00	1.400	-0.06	0.140	0.196
	LTE Band 7_Ant1	20M	QPSK	1	0	Front	5mm	-	Reduced	21100	2535	17.35	18.50	1.303	-0.05	0.692	0.902
	LTE Band 7_Ant1	20M	QPSK	1	0	Back	5mm	-	Reduced	21100	2535	17.35	18.50	1.303	-0.05	0.963	1.255
	LTE Band 7_Ant1	20M	QPSK	1	0	Front	5mm	-	Reduced	20850	2510	17.28	18.50	1.324	-0.07	0.630	0.834
	LTE Band 7_Ant1	20M	QPSK	1	0	Front	5mm	-	Reduced	21350	2560	17.32	18.50	1.312	-0.04	0.680	0.892
	LTE Band 7_Ant1	20M	QPSK	1	0	Back	5mm	-	Reduced	20850	2510	17.28	18.50	1.324	0.04	0.861	1.140
	LTE Band 7_Ant1	20M	QPSK	1	0	Back	5mm	-	Reduced	21350	2560	17.32	18.50	1.312	0.1	0.935	1.227
	LTE Band 7_Ant1	20M	QPSK	1	0	Back	5mm	Headset	Reduced	21100	2535	17.35	18.50	1.303	-0.1	0.954	1.243
	LTE Band 7_Ant1	20M	QPSK	1	0	Front	16mm	-	Full	21100	2535	22.90	24.00	1.288	0.15	0.514	0.662
	LTE Band 7_Ant1	20M	QPSK	1	0	Back	22mm	-	Full	21100	2535	22.90	24.00	1.288	-0.1	0.299	0.385
	LTE Band 7_Ant1	20M	QPSK	50	0	Front	5mm	-	Reduced	21100	2535	17.31	18.50	1.315	0.1	0.727	0.956
54	LTE Band 7_Ant1	20M	QPSK	50	0	Back	5mm	-	Reduced	21100	2535	17.31	18.50	1.315	-0.01	1.090	**1.434**
	LTE Band 7C_Ant1	20M	QPSK	50	0	Back	5mm	-	Reduced	PCC(21100)+ SCC(20902)	PCC(2535)+ SCC(2515.2)	17.55	18.50	1.245	0.08	1.010	1.257
	LTE Band 7C_Ant1	20M	QPSK	50	0	Back	5mm	-	Reduced	PCC(20850)+ SCC(21048)	PCC(2510)+ SCC(2529.8)	17.42	18.50	1.282	0.07	0.963	1.235
	LTE Band 7C_Ant1	20M	QPSK	50	0	Back	5mm	-	Reduced	PCC(21350)+ SCC(21152)	PCC(2560)+ SCC(2540.2)	17.47	18.50	1.268	0.12	1.040	1.318
	LTE Band 7_Ant1	20M	QPSK	50	0	Front	5mm	-	Reduced	20850	2510	17.21	18.50	1.346	0.02	0.654	0.880
	LTE Band 7_Ant1	20M	QPSK	50	0	Front	5mm	-	Reduced	21350	2560	17.25	18.50	1.334	-0.01	0.710	0.947
	LTE Band 7_Ant1	20M	QPSK	50	0	Back	5mm	-	Reduced	20850	2510	17.21	18.50	1.346	0.02	0.963	1.296
	LTE Band 7_Ant1	20M	QPSK	50	0	Back	5mm	-	Reduced	21350	2560	17.25	18.50	1.334	-0.13	1.060	1.414
	LTE Band 7_Ant1	20M	QPSK	50	0	Back	5mm	Headset	Reduced	21100	2535	17.31	18.50	1.315	-0.08	0.985	1.295
	LTE Band 7_Ant1	20M	QPSK	50	0	Front	16mm	-	Full	21100	2535	21.80	23.00	1.318	-0.13	0.388	0.511
	LTE Band 7_Ant1	20M	QPSK	50	0	Back	22mm	-	Full	21100	2535	21.80	23.00	1.318	0.09	0.211	0.278
	LTE Band 7_Ant1	20M	QPSK	100	0	Front	5mm	-	Reduced	21100	2535	17.24	18.50	1.337	0.02	0.718	0.960
	LTE Band 7_Ant1	20M	QPSK	100	0	Back	5mm	-	Reduced	21100	2535	17.24	18.50	1.337	0.01	0.947	1.266
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	1	0	Front	5mm	-	Reduced	21100	2535	13.33	14.50	1.309	-0.15	0.281	0.368
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	1	0	Back	5mm	-	Reduced	21100	2535	13.33	14.50	1.309	0.14	0.405	0.530
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	1	0	Front	16mm	-	Full	21100	2535	22.90	24.00	1.288	-0.06	0.514	0.662
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	1	0	Back	22mm	-	Full	21100	2535	22.90	24.00	1.288	0.07	0.292	0.376
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	50	0	Front	5mm	-	Reduced	21100	2535	13.27	14.50	1.327	0.13	0.296	0.393
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	50	0	Back	5mm	-	Reduced	21100	2535	13.27	14.50	1.327	-0.12	0.427	0.567
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	50	0	Front	16mm	-	Full	21100	2535	21.80	23.00	1.318	-0.12	0.388	0.511
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	50	0	Back	22mm	-	Full	21100	2535	21.80	23.00	1.318	-0.13	0.212	0.279

	LTE Band 7_Ant4 (ENDC)	20M	QPSK	1	0	Front	5mm	-	Reduced	21350	2560	11.26	12.50	1.330	0.05	0.125	0.166
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	1	0	Back	5mm	-	Reduced	21350	2560	11.26	12.50	1.330	0.12	0.364	0.484
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	1	0	Front	16mm	-	Full	21350	2560	22.86	24.00	1.300	0.08	0.324	0.421
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	1	0	Back	22mm	-	Full	21350	2560	22.86	24.00	1.300	0.07	0.345	0.449
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	50	0	Front	5mm	-	Reduced	21350	2560	11.22	12.50	1.343	0.11	0.132	0.177
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	50	0	Back	5mm	-	Reduced	21350	2560	11.22	12.50	1.343	-0.09	0.374	0.502
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	50	0	Front	16mm	-	Full	21350	2560	21.46	23.00	1.426	-0.15	0.254	0.362
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	50	0	Back	22mm	-	Full	21350	2560	21.46	23.00	1.426	0.16	0.276	0.393

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	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)
	LTE Band 38_Ant1	20M	QPSK	1	0	Front	5mm	-	Reduced	38000	2595	20.18	21.00	1.208	62.9	1.006	-0.02	0.667	0.810
	LTE Band 38_Ant1	20M	QPSK	1	0	Back	5mm	-	Reduced	38000	2595	20.18	21.00	1.208	62.9	1.006	0.1	0.926	1.125
	LTE Band 38_Ant1	20M	QPSK	1	0	Front	5mm	-	Reduced	37850	2580	20.07	21.00	1.239	62.9	1.006	0.06	0.652	0.813
	LTE Band 38_Ant1	20M	QPSK	1	0	Front	5mm	-	Reduced	38150	2610	20.01	21.00	1.256	62.9	1.006	-0.06	0.659	0.833
	LTE Band 38_Ant1	20M	QPSK	1	0	Back	5mm	-	Reduced	37850	2580	20.07	21.00	1.239	62.9	1.006	-0.03	0.931	1.160
	LTE Band 38_Ant1	20M	QPSK	1	0	Back	5mm	-	Reduced	38150	2610	20.01	21.00	1.256	62.9	1.006	0.01	1.020	1.289
	LTE Band 38_Ant1	20M	QPSK	1	0	Back	5mm	Headset	Reduced	38150	2610	20.01	21.00	1.256	62.9	1.006	-0.09	0.817	1.032
	LTE Band 38_Ant1	20M	QPSK	1	0	Front	16mm	-	Full	38150	2610	23.01	24.00	1.256	62.9	1.006	0.06	0.293	0.370
	LTE Band 38_Ant1	20M	QPSK	1	0	Back	22mm	-	Full	38150	2610	23.01	24.00	1.256	62.9	1.006	-0.06	0.165	0.208
	LTE Band 38_Ant1	20M	QPSK	50	0	Front	5mm	-	Reduced	38000	2595	20.16	21.00	1.213	62.9	1.006	0.07	0.664	0.811
	LTE Band 38_Ant1	20M	QPSK	50	0	Back	5mm	-	Reduced	38000	2595	20.16	21.00	1.213	62.9	1.006	-0.07	0.937	1.144
	LTE Band 38_Ant1	20M	QPSK	50	0	Front	5mm	-	Reduced	37850	2580	20.04	21.00	1.247	62.9	1.006	-0.16	0.663	0.832
	LTE Band 38_Ant1	20M	QPSK	50	0	Front	5mm	-	Reduced	38150	2610	20.01	21.00	1.256	62.9	1.006	-0.14	0.669	0.845
	LTE Band 38_Ant1	20M	QPSK	50	0	Back	5mm	-	Reduced	37850	2580	20.04	21.00	1.247	62.9	1.006	0.12	0.962	1.207
55	LTE Band 38_Ant1	20M	QPSK	50	0	Back	5mm	-	Reduced	38150	2610	20.01	21.00	1.256	62.9	1.006	-0.15	1.080	**1.365**
	LTE Band 38_Ant1	20M	QPSK	50	0	Back	5mm	Headset	Reduced	38150	2610	20.01	21.00	1.256	62.9	1.006	-0.12	0.823	1.040
	LTE Band 38_Ant1	20M	QPSK	50	0	Front	16mm	-	Full	38150	2610	21.93	23.00	1.279	62.9	1.006	0.02	0.186	0.239
	LTE Band 38_Ant1	20M	QPSK	50	0	Back	22mm	-	Full	38150	2610	21.93	23.00	1.279	62.9	1.006	0.15	0.108	0.139
	LTE Band 38_Ant1	20M	QPSK	100	0	Front	5mm	-	Reduced	38000	2595	20.08	21.00	1.236	62.9	1.006	-0.13	0.643	0.799
	LTE Band 38_Ant1	20M	QPSK	100	0	Back	5mm	-	Reduced	38000	2595	20.08	21.00	1.236	62.9	1.006	0.08	0.897	1.115
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	1	0	Front	5mm	-	Reduced	38000	2595	17.13	18.00	1.222	62.9	1.006	-0.14	0.335	0.412
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	1	0	Back	5mm	-	Reduced	38000	2595	17.13	18.00	1.222	62.9	1.006	0.11	0.449	0.552
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	1	0	Front	16mm	-	Full	38000	2595	23.06	24.00	1.242	62.9	1.006	-0.09	0.295	0.368
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	1	0	Back	22mm	-	Full	38000	2595	23.06	24.00	1.242	62.9	1.006	0.09	0.168	0.210
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	50	0	Front	5mm	-	Reduced	38000	2595	17.10	18.00	1.230	62.9	1.006	0.16	0.337	0.417
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	50	0	Back	5mm	-	Reduced	38000	2595	17.10	18.00	1.230	62.9	1.006	-0.03	0.470	0.582
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	50	0	Front	16mm	-	Full	38000	2595	22.05	23.00	1.245	62.9	1.006	0.11	0.183	0.229
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	50	0	Back	22mm	-	Full	38000	2595	22.05	23.00	1.245	62.9	1.006	0.12	0.108	0.135
	LTE Band 42_Ant5	20M	QPSK	1	0	Front	5mm	-	Reduced	42590	3500	19.78	21.00	1.324	62.9	1.006	0.16	0.389	0.518
	LTE Band 42_Ant5	20M	QPSK	1	0	Back	5mm	-	Reduced	42590	3500	19.78	21.00	1.324	62.9	1.006	0.14	0.681	0.907
	LTE Band 42_Ant5	20M	QPSK	1	0	Back	5mm	-	Reduced	42190	3460	19.57	21.00	1.390	62.9	1.006	0.1	0.729	1.019
	LTE Band 42_Ant5	20M	QPSK	1	0	Back	5mm	-	Reduced	42990	3540	19.76	21.00	1.330	62.9	1.006	0.09	0.689	0.922
	LTE Band 42_Ant5	20M	QPSK	1	0	Front	16mm	-	Full	42590	3500	22.76	24.00	1.330	62.9	1.006	0.15	0.119	0.159
	LTE Band 42_Ant5	20M	QPSK	1	0	Back	22mm	-	Full	42190	3460	22.60	24.00	1.380	62.9	1.006	0.02	0.100	0.139
	LTE Band 42_Ant5	20M	QPSK	50	0	Front	5mm	-	Reduced	42590	3500	19.76	21.00	1.330	62.9	1.006	-0.07	0.412	0.551
	LTE Band 42_Ant5	20M	QPSK	50	0	Back	5mm	-	Reduced	42590	3500	19.76	21.00	1.330	62.9	1.006	0.1	0.693	0.928
56	LTE Band 42_Ant5	20M	QPSK	50	0	Back	5mm	-	Reduced	42190	3460	19.45	21.00	1.429	62.9	1.006	0.15	0.774	**1.113**
	LTE Band 42_Ant5	20M	QPSK	50	0	Back	5mm	-	Reduced	42990	3540	19.59	21.00	1.384	62.9	1.006	0.07	0.721	1.004
	LTE Band 42_Ant5	20M	QPSK	50	0	Back	16mm	-	Full	42590	3500	21.71	23.00	1.346	62.9	1.006	-0.04	0.082	0.111
	LTE Band 42_Ant5	20M	QPSK	50	0	Back	22mm	-	Full	42190	3460	21.67	23.00	1.358	62.9	1.006	-0.07	0.064	0.087
	LTE Band 42_Ant5	20M	QPSK	100	0	Back	5mm	-	Reduced	42590	3500	19.63	21.00	1.371	62.9	1.006	0.1	0.705	0.972

<5GNR SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Headset	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)
	N5_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Front	5mm	-	Reduced	167300	836.5	20.23	21.00	1.194	0.1	0.218	0.260
	N5_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Back	5mm	-	Reduced	167300	836.5	20.23	21.00	1.194	-0.08	0.484	0.578
	N5_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Front	16mm	-	Full	167300	836.5	23.28	24.00	1.180	0.02	0.154	0.182
	N5_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Back	22mm	-	Full	167300	836.5	23.28	24.00	1.180	-0.04	0.135	0.159
	N5_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Front	5mm	-	Reduced	167300	836.5	20.19	21.00	1.205	0.11	0.229	0.276
57	N5_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Back	5mm	-	Reduced	167300	836.5	20.19	21.00	1.205	0.05	0.484	**0.583**
	N5_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Front	16mm	-	Full	167300	836.5	23.01	24.00	1.256	0.1	0.153	0.192
	N5_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Back	22mm	-	Full	167300	836.5	23.01	24.00	1.256	-0.08	0.130	0.163
	N66_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Front	5mm	-	Reduced	344000	1720	13.08	14.00	1.236	0.06	0.228	0.282
	N66_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Back	5mm	-	Reduced	344000	1720	13.08	14.00	1.236	-0.03	0.476	0.588
	N66_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Front	16mm	-	Full	344000	1720	23.08	24.00	1.236	-0.02	0.448	0.554
	N66_Ant 0	20M	BPSK	1	1	DFT_SCS 15KHz	Back	22mm	-	Full	344000	1720	23.08	24.00	1.236	0.13	0.475	0.587
	N66_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Front	5mm	-	Reduced	344000	1720	13.05	14.00	1.245	-0.13	0.225	0.280
58	N66_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Back	5mm	-	Reduced	344000	1720	13.05	14.00	1.245	-0.12	0.476	**0.592**
	N66_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Front	16mm	-	Full	344000	1720	22.94	24.00	1.276	0.11	0.461	0.588
	N66_Ant 0	20M	BPSK	50	28	DFT_SCS 15KHz	Back	22mm	-	Full	344000	1720	22.94	24.00	1.276	-0.14	0.392	0.500
	N7_Ant 4	20M	BPSK	1	1	DFT_SCS 15KHz	Front	5mm	-	Reduced	512000	2560	11.61	12.50	1.227	0.11	0.188	0.231
59	N7_Ant 4	20M	BPSK	1	1	DFT_SCS 15KHz	Back	5mm	-	Reduced	512000	2560	11.61	12.50	1.227	-0.04	0.444	**0.545**
	N7_Ant 4	20M	BPSK	1	1	DFT_SCS 15KHz	Front	16mm	-	Full	512000	2560	23.10	24.00	1.230	0.02	0.387	0.476
	N7_Ant 4	20M	BPSK	1	1	DFT_SCS 15KHz	Back	22mm	-	Full	512000	2560	23.10	24.00	1.230	-0.09	0.437	0.538
	N7_Ant 4	20M	BPSK	50	28	DFT_SCS 15KHz	Front	5mm	-	Reduced	512000	2560	11.56	12.50	1.242	-0.05	0.182	0.226
	N7_Ant 4	20M	BPSK	50	28	DFT_SCS 15KHz	Back	5mm	-	Reduced	512000	2560	11.56	12.50	1.242	0.06	0.434	0.539
	N7_Ant 4	20M	BPSK	50	28	DFT_SCS 15KHz	Front	16mm	-	Full	512000	2560	23.09	24.00	1.233	-0.16	0.374	0.461
	N7_Ant 4	20M	BPSK	50	28	DFT_SCS 15KHz	Back	22mm	-	Full	512000	2560	23.09	24.00	1.233	0.16	0.426	0.525
	N78_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Front	5mm	-	Reduced	633332	3499.98	13.61	14.50	1.227	0.03	0.146	0.179
	N78_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Back	5mm	-	Reduced	633332	3499.98	13.61	14.50	1.227	0.09	0.294	0.361
	N78_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Front	16mm	-	Full	633332	3499.98	22.95	24.00	1.274	-0.15	0.175	0.223
	N78_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Back	22mm	-	Full	633332	3499.98	22.95	24.00	1.274	-0.11	0.241	0.307
	N78_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Front	5mm	-	Reduced	633332	3499.98	13.59	14.50	1.233	0.12	0.201	0.248
	N78_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Back	5mm	-	Reduced	633332	3499.98	13.59	14.50	1.233	-0.04	0.483	0.596
	N78_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Front	16mm	-	Full	633332	3499.98	22.85	24.00	1.303	-0.15	0.289	0.377
	N78_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Back	22mm	-	Full	633332	3499.98	22.85	24.00	1.303	-0.13	0.356	0.464
	N78(HPUE)_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Front	5mm	-	Reduced	633332	3499.98	13.61	14.50	1.227	0.03	0.146	0.179
	N78(HPUE)_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Back	5mm	-	Reduced	633332	3499.98	13.61	14.50	1.227	0.09	0.294	0.361
	N78(HPUE)_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Front	16mm	-	Full	633332	3499.98	24.94	26.00	1.276	-0.14	0.303	0.387
	N78(HPUE)_Ant 5	100M	BPSK	1	1	DFT-SCS_30KHz	Back	22mm	-	Full	633332	3499.98	24.94	26.00	1.276	-0.06	0.392	0.500
	N78(HPUE)_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Front	5mm	-	Reduced	633332	3499.98	13.59	14.50	1.233	0.12	0.201	0.248
	N78(HPUE)_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Back	5mm	-	Reduced	633332	3499.98	13.59	14.50	1.233	-0.04	0.483	0.596
	N78(HPUE)_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Front	16mm	-	Full	633332	3499.98	24.86	26.00	1.300	0.08	0.395	0.514
60	N78(HPUE)_Ant 5	100M	BPSK	135	69	DFT-SCS_30KHz	Back	22mm	-	Full	633332	3499.98	24.86	26.00	1.300	0.04	0.579	**0.753**

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Headset	Antenna Vendor / Tuner	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 6	Full	39	2441	10.80	12.50	1.479	76.79	1.302	0.14	0.064	0.124
61	Bluetooth	DH5 1Mbps	Back	5mm	-	Ant 6	Full	39	2441	10.80	12.50	1.479	76.79	1.302	-0.11	0.080	**0.153**

<WLAN2.4G SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Headset	Antenna Vendor / Tuner	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 6	Standalone	6	2437	16.50	18.00	1.413	99.01	1.010	-0.15	0.404	0.576
62	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	-	Ant 6	Standalone	6	2437	16.50	18.00	1.413	99.01	1.010	0.14	0.793	**1.131**
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	-	Ant 6	Standalone	1	2412	16.40	18.00	1.445	99.01	1.010	-0.13	0.678	0.990
	WLAN2.4GHz	802.11b 1Mbps	Front	5mm	-	Ant 6	Simultaneous	6	2437	11.40	13.00	1.445	99.01	1.010	0.08	0.121	0.177
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	-	Ant 6	Simultaneous	6	2437	11.40	13.00	1.445	99.01	1.010	-0.03	0.249	0.364
	WLAN2.4GHz	802.11b 1Mbps	Front	16mm	-	Ant 6	Full	6	2437	19.00	20.50	1.413	99.01	1.010	0.06	0.149	0.213
	WLAN2.4GHz	802.11b 1Mbps	Back	22mm	-	Ant 6	Full	6	2437	19.00	20.50	1.413	99.01	1.010	-0.07	0.095	0.136
	WLAN2.4GHz	802.11b 1Mbps	Front	16mm	-	Ant 6	Simultaneous	6	2437	14.50	16.00	1.413	99.01	1.010	0.07	0.064	0.091
	WLAN2.4GHz	802.11b 1Mbps	Back	22mm	-	Ant 6	Simultaneous	6	2437	14.50	16.00	1.413	99.01	1.010	0.04	0.042	0.060

<WLAN5G SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Headset	Antenna Vendor / Tuner	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 6	Standalone	58	5290	13.67	15.50	1.524	95.78	1.044	0.09	0.123	0.196
63	WLAN5.3GHz	802.11ac-VHT80 MCS0	Back	5mm	-	Ant 6	Standalone	58	5290	13.67	15.50	1.524	95.78	1.044	0.03	0.746	**1.187**
	WLAN5.2GHz	802.11ac-VHT80 MCS0	Front	5mm	-	Ant 6	Simultaneous	42	5210	10.22	11.50	1.343	95.78	1.044	0.04	0.050	0.070
	WLAN5.2GHz	802.11ac-VHT80 MCS0	Back	5mm	-	Ant 6	Simultaneous	42	5210	10.22	11.50	1.343	95.78	1.044	-0.09	0.248	0.348
	WLAN5.3GHz	802.11a 6Mbps	Front	16mm	-	Ant 6	Full	52	5260	17.13	19.00	1.538	97.97	1.021	0.06	0.072	0.113
	WLAN5.3GHz	802.11a 6Mbps	Back	22mm	-	Ant 6	Full	52	5260	17.13	19.00	1.538	97.97	1.021	0.01	0.263	0.413
	WLAN5.2GHz	802.11n-HT40 MCS0	Front	16mm	-	Ant 6	Simultaneous	38	5190	15.98	17.50	1.419	96.4	1.037	0.09	0.035	0.051
	WLAN5.2GHz	802.11n-HT40 MCS0	Back	22mm	-	Ant 6	Simultaneous	38	5190	15.98	17.50	1.419	96.4	1.037	0.08	0.191	0.281
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Front	5mm	-	Ant 6	Standalone	106	5530	11.89	13.50	1.449	95.78	1.044	0.1	0.173	0.262
64	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	5mm	-	Ant 6	Standalone	106	5530	11.89	13.50	1.449	95.78	1.044	-0.02	0.788	**1.192**
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Front	5mm	-	Ant 6	Simultaneous	106	5530	6.22	8.00	1.507	95.78	1.044	0.012	0.055	0.087
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	5mm	-	Ant 6	Simultaneous	106	5530	6.22	8.00	1.507	95.78	1.044	0.05	0.258	0.406
	WLAN5.5GHz	802.11a 6Mbps	Front	16mm	-	Ant 6	Full	140	5700	17.44	19.00	1.432	97.97	1.021	-0.08	0.076	0.111
	WLAN5.5GHz	802.11a 6Mbps	Back	22mm	-	Ant 6	Full	140	5700	17.44	19.00	1.432	97.97	1.021	0.06	0.272	0.398
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Front	16mm	-	Ant 6	Simultaneous	106	5530	10.57	12.00	1.390	95.78	1.044	0.06	0.027	0.039
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	22mm	-	Ant 6	Simultaneous	106	5530	10.57	12.00	1.390	95.78	1.044	0.01	0.142	0.206
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	5mm	-	Ant 6	Standalone	155	5775	14.35	16.00	1.462	95.78	1.044	0.03	0.143	0.218
65	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	5mm	-	Ant 6	Standalone	155	5775	14.35	16.00	1.462	95.78	1.044	0.01	0.767	**1.171**
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	5mm	-	Ant 6	Simultaneous	155	5775	8.41	10.00	1.442	95.78	1.044	0.08	0.028	0.042
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	5mm	-	Ant 6	Simultaneous	155	5775	8.41	10.00	1.442	95.78	1.044	-0.16	0.261	0.393
	WLAN5.8GHz	802.11a 6Mbps	Front	16mm	-	Ant 6	Full	149	5745	17.34	19.00	1.466	97.97	1.021	0.04	0.031	0.046
	WLAN5.8GHz	802.11a 6Mbps	Back	22mm	-	Ant 6	Full	149	5745	17.34	19.00	1.466	97.97	1.021	-0.11	0.222	0.332
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	16mm	-	Ant 6	Simultaneous	155	5775	14.35	16.00	1.462	95.78	1.044	0.09	0.013	0.020
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	22mm	-	Ant 6	Simultaneous	155	5775	14.35	16.00	1.462	95.78	1.044	0.05	0.093	0.142

15.4 Product Specific 10g SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	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)
66	GSM850_Ant0	GPRS 2 Tx slots	Back	0mm	Full	189	836.4	30.15	31.00	1.216	0.09	1.380	**1.678**
	GSM1900_Ant0	GPRS 2 Tx slots	Front	0mm	Full	512	1850.2	27.19	28.00	1.205	0.01	1.750	2.109
	GSM1900_Ant0	GPRS 2 Tx slots	Front	0mm	Full	661	1880	26.97	28.00	1.268	0.1	1.300	1.648
	GSM1900_Ant0	GPRS 2 Tx slots	Front	0mm	Full	810	1909.8	27.13	28.00	1.222	-0.06	1.150	1.405
67	GSM1900_Ant0	GPRS 2 Tx slots	Back	0mm	Full	512	1850.2	27.19	28.00	1.205	-0.12	2.530	**3.049**
	GSM1900_Ant0	GPRS 2 Tx slots	Back	0mm	Full	661	1880	26.97	28.00	1.268	0.07	2.000	2.535
	GSM1900_Ant0	GPRS 2 Tx slots	Back	0mm	Full	810	1909.8	27.13	28.00	1.222	-0.12	1.990	2.431
	GSM1900_Ant0	GPRS 2 Tx slots	Bottom Side	0mm	Full	512	1850.2	27.19	28.00	1.205	0.16	2.220	2.675
	GSM1900_Ant0	GPRS 2 Tx slots	Bottom Side	0mm	Full	661	1880	26.97	28.00	1.268	-0.18	2.030	2.573
	GSM1900_Ant0	GPRS 2 Tx slots	Bottom Side	0mm	Full	810	1909.8	27.13	28.00	1.222	0.06	1.930	2.358

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	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)
68	WCDMA V_Ant0	RMC 12.2Kbps	Back	0mm	Full	4182	836.4	22.85	24.00	1.303	-0.14	1.480	**1.929**
	WCDMA IV_Ant0	RMC 12.2Kbps	Front	0mm	Reduced	1312	1712.4	19.55	21.00	1.396	0.07	1.100	1.536
	WCDMA IV_Ant0	RMC 12.2Kbps	Back	0mm	Reduced	1312	1712.4	19.55	21.00	1.396	-0.07	2.500	3.491
	WCDMA IV_Ant0	RMC 12.2Kbps	Back	0mm	Reduced	1413	1732.6	19.47	21.00	1.422	0.08	2.440	3.470
69	WCDMA IV_Ant0	RMC 12.2Kbps	Back	0mm	Reduced	1513	1752.6	19.24	21.00	1.500	0.01	2.350	**3.524**
	WCDMA IV_Ant0	RMC 12.2Kbps	Bottom Side	0mm	Reduced	1312	1712.4	19.55	21.00	1.396	0.11	2.260	3.156
	WCDMA IV_Ant0	RMC 12.2Kbps	Bottom Side	0mm	Reduced	1413	1732.6	19.47	21.00	1.422	0.08	2.310	3.286
	WCDMA IV_Ant0	RMC 12.2Kbps	Bottom Side	0mm	Reduced	1513	1752.6	19.24	21.00	1.500	0.06	2.340	3.509
	WCDMA IV_Ant0	RMC 12.2Kbps	Front	8mm	Full	1312	1712.4	22.74	24.00	1.337	0.07	0.754	1.008
	WCDMA IV_Ant0	RMC 12.2Kbps	Back	12mm	Full	1513	1752.6	22.35	24.00	1.462	0.06	0.856	1.252
	WCDMA IV_Ant0	RMC 12.2Kbps	Bottom Side	11mm	Full	1513	1752.6	22.35	24.00	1.462	0.08	1.420	2.076
	WCDMA II_Ant0	RMC 12.2Kbps	Front	0mm	Reduced	9262	1852.4	20.11	21.50	1.377	0.09	1.520	2.093
	WCDMA II_Ant0	RMC 12.2Kbps	Front	0mm	Reduced	9400	1880	20.07	21.50	1.390	-0.03	1.370	1.904
	WCDMA II_Ant0	RMC 12.2Kbps	Front	0mm	Reduced	9538	1907.6	20.05	21.50	1.396	-0.03	1.360	1.899
	WCDMA II_Ant0	RMC 12.2Kbps	Back	0mm	Reduced	9262	1852.4	20.11	21.50	1.377	0.13	2.160	2.975
	WCDMA II_Ant0	RMC 12.2Kbps	Back	0mm	Reduced	9400	1880	20.07	21.50	1.390	-0.14	2.200	3.058
70	WCDMA II_Ant0	RMC 12.2Kbps	Back	0mm	Reduced	9538	1907.6	20.05	21.50	1.396	0.11	2.350	**3.281**
	WCDMA II_Ant0	RMC 12.2Kbps	Bottom Side	0mm	Reduced	9262	1852.4	20.11	21.50	1.377	-0.07	2.320	3.195
	WCDMA II_Ant0	RMC 12.2Kbps	Bottom Side	0mm	Reduced	9400	1880	20.07	21.50	1.390	0.04	2.240	3.113
	WCDMA II_Ant0	RMC 12.2Kbps	Bottom Side	0mm	Reduced	9538	1907.6	20.05	21.50	1.396	-0.09	2.160	3.016
	WCDMA II_Ant0	RMC 12.2Kbps	Front	8mm	Full	9262	1852.4	22.65	24.00	1.365	-0.08	0.643	0.877
	WCDMA II_Ant0	RMC 12.2Kbps	Back	12mm	Full	9538	1907.6	22.60	24.00	1.380	0.09	0.540	0.745
	WCDMA II_Ant0	RMC 12.2Kbps	Bottom Side	11mm	Full	9262	1852.4	22.65	24.00	1.365	-0.11	0.974	1.329

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	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)
71	LTE Band 26_Ant0	15M	QPSK	1	0	Back	0mm	Full	26865	831.5	22.80	24.00	1.318	0.16	1.590	**2.096**
	LTE Band 26_Ant0	15M	QPSK	1	0	Back	0mm	Full	26765	821.5	22.75	24.00	1.334	0.03	1.470	1.960
	LTE Band 26_Ant0	15M	QPSK	1	0	Back	0mm	Full	26965	841.5	22.70	24.00	1.349	-0.13	1.440	1.943
	LTE Band 26_Ant0	15M	QPSK	36	0	Back	0mm	Full	26865	831.5	21.72	23.00	1.343	0.1	1.100	1.477
	LTE Band 26_Ant0	15M	QPSK	75	0	Back	0mm	Full	26865	831.5	21.68	23.00	1.355	0.17	1.130	1.531
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	1	0	Back	0mm	Reduced	20525	836.5	20.69	22.00	1.352	0.05	1.180	1.595
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	1	0	Back	12mm	Full	20525	836.5	22.71	24.00	1.346	0.03	0.176	0.237
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	25	0	Back	0mm	Reduced	20525	836.5	20.60	22.00	1.380	0.08	1.050	1.449
	LTE Band 5_Ant0 (ENDC)	10M	QPSK	25	0	Back	12mm	Full	20525	836.5	21.65	23.00	1.365	-0.09	0.117	0.160
	LTE Band 66_Ant0	20M	QPSK	1	0	Front	0mm	Reduced	132322	1745	19.77	21.00	1.327	0.02	1.450	1.925
	LTE Band 66_Ant0	20M	QPSK	1	0	Back	0mm	Reduced	132322	1745	19.77	21.00	1.327	0.01	1.990	2.642
	LTE Band 66_Ant0	20M	QPSK	1	0	Back	0mm	Reduced	132072	1720	19.62	21.00	1.374	-0.15	2.080	2.858
	LTE Band 66_Ant0	20M	QPSK	1	0	Back	0mm	Reduced	132572	1770	19.69	21.00	1.352	-0.08	1.920	2.596
	LTE Band 66_Ant0	20M	QPSK	1	0	Bottom Side	0mm	Reduced	132322	1745	19.77	21.00	1.327	0.16	2.100	2.788
	LTE Band 66_Ant0	20M	QPSK	1	0	Bottom Side	0mm	Reduced	132072	1720	19.62	21.00	1.374	0.09	2.330	3.202
	LTE Band 66_Ant0	20M	QPSK	1	0	Bottom Side	0mm	Reduced	132572	1770	19.69	21.00	1.352	0.06	2.060	2.785
	LTE Band 66_Ant0	20M	QPSK	1	0	Front	8mm	Full	132322	1745	22.73	24.00	1.340	0.07	0.975	1.306
	LTE Band 66_Ant0	20M	QPSK	1	0	Back	12mm	Full	132072	1720	22.60	24.00	1.380	-0.05	0.897	1.238
	LTE Band 66_Ant0	20M	QPSK	1	0	Bottom Side	11mm	Full	132072	1720	22.60	24.00	1.380	-0.11	1.300	1.794
	LTE Band 66_Ant0	20M	QPSK	50	0	Front	0mm	Reduced	132322	1745	19.64	21.00	1.368	0.05	1.490	2.038
	LTE Band 66_Ant0	20M	QPSK	50	0	Front	0mm	Reduced	132072	1720	19.59	21.00	1.384	-0.02	1.510	2.089
	LTE Band 66_Ant0	20M	QPSK	50	0	Front	0mm	Reduced	132572	1770	19.60	21.00	1.380	-0.16	1.350	1.864
	LTE Band 66_Ant0	20M	QPSK	50	0	Back	0mm	Reduced	132322	1745	19.64	21.00	1.368	0.03	2.110	2.886
	LTE Band 66_Ant0	20M	QPSK	50	0	Back	0mm	Reduced	132072	1720	19.59	21.00	1.384	-0.02	2.250	3.113
	LTE Band 66_Ant0	20M	QPSK	50	0	Back	0mm	Reduced	132572	1770	19.60	21.00	1.380	-0.15	1.960	2.706
	LTE Band 66_Ant0	20M	QPSK	50	0	Bottom Side	0mm	Reduced	132322	1745	19.64	21.00	1.368	-0.11	2.180	2.982
72	LTE Band 66_Ant0	20M	QPSK	50	0	Bottom Side	0mm	Reduced	132072	1720	19.59	21.00	1.384	-0.04	2.440	**3.376**
	LTE Band 66_Ant0	20M	QPSK	50	0	Bottom Side	0mm	Reduced	132572	1770	19.60	21.00	1.380	0.01	2.120	2.926
	LTE Band 66_Ant0	20M	QPSK	50	0	Front	8mm	Full	132072	1720	21.42	23.00	1.439	-0.01	0.636	0.915
	LTE Band 66_Ant0	20M	QPSK	50	0	Back	12mm	Full	132072	1720	21.42	23.00	1.439	-0.14	0.568	0.817
	LTE Band 66_Ant0	20M	QPSK	50	0	Bottom Side	11mm	Full	132072	1720	21.42	23.00	1.439	0.04	0.824	1.186
	LTE Band 66_Ant0	20M	QPSK	100	0	Front	0mm	Reduced	132322	1745	19.66	21.00	1.361	0.13	1.400	1.906
	LTE Band 66_Ant0	20M	QPSK	100	0	Back	0mm	Reduced	132322	1745	19.66	21.00	1.361	0.05	1.940	2.641
	LTE Band 66_Ant0	20M	QPSK	100	0	Bottom Side	0mm	Reduced	132322	1745	19.66	21.00	1.361	0.12	2.150	2.927
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	1	0	Front	0mm	Reduced	132322	1745	16.78	18.00	1.324	-0.14	0.703	0.931
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	1	0	Back	0mm	Reduced	132322	1745	16.78	18.00	1.324	0.11	1.070	1.417
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	1	0	Bottom Side	0mm	Reduced	132322	1745	16.78	18.00	1.324	-0.14	1.070	1.417
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	1	0	Front	8mm	Full	132322	1745	22.73	24.00	1.340	0.03	0.690	0.924
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	1	0	Back	12mm	Full	132322	1745	22.73	24.00	1.340	-0.07	0.812	1.088
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	1	0	Bottom Side	11mm	Full	132322	1745	22.73	24.00	1.340	-0.15	1.530	2.050
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	50	0	Front	0mm	Reduced	132322	1745	16.76	18.00	1.330	0.09	0.715	0.951
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	50	0	Back	0mm	Reduced	132322	1745	16.76	18.00	1.330	-0.16	1.090	1.450
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	50	0	Bottom Side	0mm	Reduced	132322	1745	16.76	18.00	1.330	0.01	1.090	1.450
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	50	0	Front	8mm	Full	132322	1745	21.65	23.00	1.365	-0.13	0.455	0.621
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	50	0	Back	12mm	Full	132322	1745	21.65	23.00	1.365	0.1	0.516	0.704
	LTE Band 66_Ant0 (ENDC)	20M	QPSK	50	0	Bottom Side	11mm	Full	132322	1745	21.65	23.00	1.365	-0.07	0.940	1.283
	LTE Band 2_Ant0	20M	QPSK	1	0	Front	0mm	Reduced	18900	1880	20.60	22.00	1.380	-0.13	1.320	1.822
	LTE Band 2_Ant0	20M	QPSK	1	0	Back	0mm	Reduced	18900	1880	20.60	22.00	1.380	-0.1	2.080	2.871
	LTE Band 2_Ant0	20M	QPSK	1	0	Back	0mm	Reduced	18700	1860	20.56	22.00	1.393	0.07	2.120	2.953
	LTE Band 2_Ant0	20M	QPSK	1	0	Back	0mm	Reduced	19100	1900	20.53	22.00	1.403	-0.02	1.980	2.778
	LTE Band 2_Ant0	20M	QPSK	1	0	Bottom Side	0mm	Reduced	18900	1880	20.60	22.00	1.380	-0.12	2.130	2.940
73	LTE Band 2_Ant0	20M	QPSK	1	0	Bottom Side	0mm	Reduced	18700	1860	20.56	22.00	1.393	0.08	2.250	**3.135**

	LTE Band 2_Ant0	20M	QPSK	1	0	Bottom Side	0mm	Reduced	19100	1900	20.53	22.00	1.403	-0.07	2.030	2.848
	LTE Band 2_Ant0	20M	QPSK	1	0	Front	8mm	Full	18900	1880	22.70	24.00	1.349	0.07	0.704	0.950
	LTE Band 2_Ant0	20M	QPSK	1	0	Back	12mm	Full	18700	1860	22.69	24.00	1.352	0.16	0.490	0.663
	LTE Band 2_Ant0	20M	QPSK	1	0	Bottom Side	11mm	Full	18700	1860	22.69	24.00	1.352	0.04	0.854	1.155
	LTE Band 2_Ant0	20M	QPSK	50	0	Front	0mm	Reduced	18900	1880	20.56	22.00	1.393	-0.13	1.200	1.672
	LTE Band 2_Ant0	20M	QPSK	50	0	Back	0mm	Reduced	18900	1880	20.56	22.00	1.393	0.11	1.930	2.689
	LTE Band 2_Ant0	20M	QPSK	50	0	Back	0mm	Reduced	18700	1860	20.47	22.00	1.422	0.11	1.930	2.745
	LTE Band 2_Ant0	20M	QPSK	50	0	Back	0mm	Reduced	19100	1900	20.44	22.00	1.432	0.07	1.960	2.807
	LTE Band 2_Ant0	20M	QPSK	50	0	Bottom Side	0mm	Reduced	18900	1880	20.56	22.00	1.393	0.02	1.980	2.758
	LTE Band 2_Ant0	20M	QPSK	50	0	Bottom Side	0mm	Reduced	18700	1860	20.47	22.00	1.422	-0.11	2.100	2.987
	LTE Band 2_Ant0	20M	QPSK	50	0	Bottom Side	0mm	Reduced	19100	1900	20.44	22.00	1.432	0.01	1.870	2.678
	LTE Band 2_Ant0	20M	QPSK	100	0	Front	0mm	Reduced	18900	1880	20.54	22.00	1.400	0.1	1.180	1.652
	LTE Band 2_Ant0	20M	QPSK	100	0	Back	0mm	Reduced	18900	1880	20.54	22.00	1.400	0.07	2.000	2.799
	LTE Band 2_Ant0	20M	QPSK	100	0	Bottom Side	0mm	Reduced	18900	1880	20.54	22.00	1.400	-0.14	1.970	2.757
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	1	0	Front	0mm	Reduced	18900	1880	17.76	19.00	1.330	0.12	0.636	0.846
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	1	0	Back	0mm	Reduced	18900	1880	17.76	19.00	1.330	0.02	1.050	1.397
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	1	0	Bottom Side	0mm	Reduced	18900	1880	17.76	19.00	1.330	0.15	1.150	1.530
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	1	0	Front	8mm	Full	18900	1880	22.70	24.00	1.349	-0.08	0.527	0.711
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	1	0	Back	12mm	Full	18900	1880	22.70	24.00	1.349	-0.12	0.456	0.615
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	1	0	Bottom Side	11mm	Full	18900	1880	22.70	24.00	1.349	0.12	0.746	1.006
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	50	0	Front	0mm	Reduced	18900	1880	17.74	19.00	1.337	0.15	0.669	0.894
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	50	0	Back	0mm	Reduced	18900	1880	17.74	19.00	1.337	0.06	1.090	1.457
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	50	0	Bottom Side	0mm	Reduced	18900	1880	17.74	19.00	1.337	-0.05	1.180	1.577
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	50	0	Front	8mm	Full	18900	1880	21.54	23.00	1.400	-0.04	0.300	0.420
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	50	0	Back	12mm	Full	18900	1880	21.54	23.00	1.400	-0.06	0.254	0.355
	LTE Band 2_Ant0 (ENDC)	20M	QPSK	50	0	Bottom Side	11mm	Full	18900	1880	21.54	23.00	1.400	0.07	0.419	0.586
	LTE Band 7_Ant1	20M	QPSK	1	0	Front	0mm	Reduced	21100	2535	19.69	21.00	1.352	-0.13	1.570	2.123
	LTE Band 7_Ant1	20M	QPSK	1	0	Front	0mm	Reduced	20850	2510	19.53	21.00	1.403	0.16	1.540	2.160
	LTE Band 7_Ant1	20M	QPSK	1	0	Front	0mm	Reduced	21350	2560	19.66	21.00	1.361	-0.02	1.550	2.110
	LTE Band 7_Ant1	20M	QPSK	1	0	Back	0mm	Reduced	21100	2535	19.69	21.00	1.352	-0.13	1.930	2.610
	LTE Band 7_Ant1	20M	QPSK	1	0	Back	0mm	Reduced	20850	2510	19.53	21.00	1.403	-0.09	2.090	2.932
	LTE Band 7_Ant1	20M	QPSK	1	0	Back	0mm	Reduced	21350	2560	19.66	21.00	1.361	0.1	1.960	2.668
	LTE Band 7_Ant1	20M	QPSK	1	0	Left Side	0mm	Reduced	21100	2535	19.69	21.00	1.352	0.09	1.570	2.123
	LTE Band 7_Ant1	20M	QPSK	1	0	Left Side	0mm	Reduced	20850	2510	19.53	21.00	1.403	0.05	1.560	2.188
	LTE Band 7_Ant1	20M	QPSK	1	0	Left Side	0mm	Reduced	21350	2560	19.66	21.00	1.361	-0.06	1.580	2.151
	LTE Band 7_Ant1	20M	QPSK	1	0	Bottom Side	0mm	Reduced	21100	2535	19.69	21.00	1.352	0.12	1.470	1.988
	LTE Band 7_Ant1	20M	QPSK	1	0	Front	6mm	Full	20850	2510	22.45	24.00	1.429	-0.13	0.923	1.319
	LTE Band 7_Ant1	20M	QPSK	1	0	Back	14mm	Full	20850	2510	22.45	24.00	1.429	-0.16	0.390	0.557
	LTE Band 7_Ant1	20M	QPSK	1	0	Left Side	12mm	Full	20850	2510	22.45	24.00	1.429	-0.1	0.337	0.482
	LTE Band 7_Ant1	20M	QPSK	1	0	Bottom Side	7mm	Full	21100	2535	22.90	24.00	1.288	0.16	0.815	1.050
	LTE Band 7_Ant1	20M	QPSK	50	0	Front	0mm	Reduced	21100	2535	19.63	21.00	1.371	-0.13	1.650	2.262
	LTE Band 7_Ant1	20M	QPSK	50	0	Front	0mm	Reduced	20850	2510	19.45	21.00	1.429	0.1	1.620	2.315
	LTE Band 7_Ant1	20M	QPSK	50	0	Front	0mm	Reduced	21350	2560	19.52	21.00	1.406	0.05	1.600	2.250
	LTE Band 7_Ant1	20M	QPSK	50	0	Back	0mm	Reduced	21100	2535	19.63	21.00	1.371	0.07	2.340	3.208
	LTE Band 7_Ant1	20M	QPSK	50	0	Back	0mm	Reduced	20850	2510	19.45	21.00	1.429	-0.08	2.320	3.315
	LTE Band 7C_Ant1	20M	QPSK	50	0	Back	0mm	Reduced	PCC(21100)+ SCC(20902)	PCC(2535)+ SCC(2515.2)	19.74	21.00	1.337	0.1	2.290	3.061
	LTE Band 7C_Ant1	20M	QPSK	50	0	Back	0mm	Reduced	PCC(20850)+ SCC(21048)	PCC(2510)+ SCC(2529.8)	19.66	21.00	1.361	-0.06	2.210	3.009
	LTE Band 7C_Ant1	20M	QPSK	50	0	Back	0mm	Reduced	PCC(21350)+ SCC(21152)	PCC(2560)+ SCC(2540.2)	19.63	21.00	1.371	-0.13	2.330	3.194
74	LTE Band 7_Ant1	20M	QPSK	50	0	Back	0mm	Reduced	21350	2560	19.52	21.00	1.406	-0.11	2.380	**3.346**
	LTE Band 7_Ant1	20M	QPSK	50	0	Left Side	0mm	Reduced	21100	2535	19.63	21.00	1.371	0.13	1.660	2.276
	LTE Band 7_Ant1	20M	QPSK	50	0	Left Side	0mm	Reduced	20850	2510	19.45	21.00	1.429	0.09	1.640	2.343
	LTE Band 7_Ant1	20M	QPSK	50	0	Left Side	0mm	Reduced	21350	2560	19.52	21.00	1.406	0.1	1.660	2.334
	LTE Band 7_Ant1	20M	QPSK	50	0	Bottom Side	0mm	Reduced	21100	2535	19.63	21.00	1.371	0.05	1.570	2.152
	LTE Band 7_Ant1	20M	QPSK	50	0	Bottom Side	0mm	Reduced	20850	2510	19.45	21.00	1.429	-0.04	1.460	2.086
	LTE Band 7_Ant1	20M	QPSK	50	0	Bottom Side	0mm	Reduced	21350	2560	19.52	21.00	1.406	0.03	1.570	2.207

	LTE Band 7_Ant1	20M	QPSK	50	0	Front	6mm	Full	20850	2510	21.45	23.00	1.429	0.07	0.696	0.995
	LTE Band 7_Ant1	20M	QPSK	50	0	Back	14mm	Full	21350	2560	21.77	23.00	1.327	0.04	0.287	0.381
	LTE Band 7_Ant1	20M	QPSK	50	0	Left Side	12mm	Full	20850	2510	21.45	23.00	1.429	-0.08	0.252	0.360
	LTE Band 7_Ant1	20M	QPSK	50	0	Bottom Side	7mm	Full	21350	2560	21.77	23.00	1.327	0.02	0.572	0.759
	LTE Band 7_Ant1	20M	QPSK	100	0	Front	0mm	Reduced	21100	2535	19.55	21.00	1.396	0.08	1.600	2.234
	LTE Band 7_Ant1	20M	QPSK	100	0	Back	0mm	Reduced	21100	2535	19.55	21.00	1.396	-0.01	2.030	2.835
	LTE Band 7_Ant1	20M	QPSK	100	0	Left Side	0mm	Reduced	21100	2535	19.55	21.00	1.396	-0.09	1.600	2.234
	LTE Band 7_Ant1	20M	QPSK	100	0	Bottom Side	0mm	Reduced	21100	2535	19.55	21.00	1.396	0.06	1.540	2.150
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	1	0	Front	0mm	Reduced	21100	2535	16.24	17.50	1.337	-0.15	0.786	1.051
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	1	0	Back	0mm	Reduced	21100	2535	16.24	17.50	1.337	-0.07	0.972	1.299
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	1	0	Left Side	0mm	Reduced	21100	2535	16.24	17.50	1.337	-0.14	0.753	1.006
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	1	0	Bottom Side	0mm	Reduced	21100	2535	16.24	17.50	1.337	-0.02	0.720	0.962
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	1	0	Front	6mm	Full	21100	2535	22.90	24.00	1.288	-0.05	1.200	1.546
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	1	0	Back	14mm	Full	21100	2535	22.90	24.00	1.288	0.12	0.393	0.506
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	1	0	Left Side	12mm	Full	21100	2535	22.90	24.00	1.288	-0.14	0.356	0.459
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	1	0	Bottom Side	7mm	Full	21100	2535	22.90	24.00	1.288	0.16	0.798	1.028
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	50	0	Front	0mm	Reduced	21100	2535	16.16	17.50	1.361	0.02	0.825	1.123
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	50	0	Back	0mm	Reduced	21100	2535	16.16	17.50	1.361	-0.03	1.020	1.389
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	50	0	Left Side	0mm	Reduced	21100	2535	16.16	17.50	1.361	-0.09	0.789	1.074
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	50	0	Bottom Side	0mm	Reduced	21100	2535	16.16	17.50	1.361	-0.07	0.757	1.031
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	50	0	Front	6mm	Full	21100	2535	21.80	23.00	1.318	0.1	0.900	1.186
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	50	0	Back	14mm	Full	21100	2535	21.80	23.00	1.318	-0.07	0.291	0.384
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	50	0	Left Side	12mm	Full	21100	2535	21.80	23.00	1.318	0.02	0.263	0.347
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	50	0	Bottom Side	7mm	Full	21100	2535	21.80	23.00	1.318	-0.14	0.594	0.783
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	1	0	Front	0mm	Reduced	21350	2560	16.84	18.00	1.306	0.13	0.477	0.623
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	1	0	Back	0mm	Reduced	21350	2560	16.84	18.00	1.306	0.02	1.080	1.411
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	1	0	Left Side	0mm	Reduced	21350	2560	16.84	18.00	1.306	-0.07	0.449	0.586
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	1	0	Top Side	0mm	Reduced	21350	2560	16.84	18.00	1.306	0.08	0.508	0.664
	LTE Band 7_Ant1 (ENDC)	20M	QPSK	1	0	Front	6mm	Full	21350	2560	22.86	24.00	1.300	0.14	0.699	0.909
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	1	0	Back	13mm	Full	21350	2560	22.86	24.00	1.300	0.12	0.595	0.774
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	1	0	Left Side	6mm	Full	21350	2560	22.86	24.00	1.300	0.05	0.577	0.750
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	1	0	Top Side	11mm	Full	21350	2560	22.86	24.00	1.300	-0.07	1.080	1.404
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	50	0	Front	0mm	Reduced	21350	2560	16.75	18.00	1.334	0.12	0.483	0.644
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	50	0	Back	0mm	Reduced	21350	2560	16.75	18.00	1.334	-0.03	1.070	1.427
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	50	0	Left Side	0mm	Reduced	21350	2560	16.75	18.00	1.334	-0.16	0.497	0.663
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	50	0	Top Side	0mm	Reduced	21350	2560	16.75	18.00	1.334	-0.12	0.559	0.745
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	50	0	Front	6mm	Full	21350	2560	21.46	23.00	1.426	0.07	0.514	0.733
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	50	0	Back	13mm	Full	21350	2560	21.46	23.00	1.426	0.16	0.384	0.547
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	50	0	Left Side	6mm	Full	21350	2560	21.46	23.00	1.426	0.09	0.464	0.661
	LTE Band 7_Ant4 (ENDC)	20M	QPSK	50	0	Top Side	11mm	Full	21350	2560	21.46	23.00	1.426	-0.11	0.716	1.021

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	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 38_Ant1	20M	QPSK	1	0	Front	0mm	Full	38000	2595	23.06	24.00	1.242	62.9	1.006	-0.16	1.880	2.348
	LTE Band 38_Ant1	20M	QPSK	1	0	Front	0mm	Full	37850	2580	23.00	24.00	1.259	62.9	1.006	-0.06	1.890	2.394
	LTE Band 38_Ant1	20M	QPSK	1	0	Front	0mm	Full	38150	2610	23.01	24.00	1.256	62.9	1.006	-0.1	1.890	2.388
	LTE Band 38_Ant1	20M	QPSK	1	0	Back	0mm	Full	38000	2595	23.06	24.00	1.242	62.9	1.006	-0.08	2.450	3.060
	LTE Band 38_Ant1	20M	QPSK	1	0	Back	0mm	Full	37850	2580	23.00	24.00	1.259	62.9	1.006	-0.12	2.400	3.040
75	LTE Band 38_Ant1	20M	QPSK	1	0	Back	0mm	Full	38150	2610	23.01	24.00	1.256	62.9	1.006	-0.09	2.480	**3.134**
	LTE Band 38_Ant1	20M	QPSK	1	0	Left Side	0mm	Full	38000	2595	23.06	24.00	1.242	62.9	1.006	0.01	1.730	2.161
	LTE Band 38_Ant1	20M	QPSK	1	0	Left Side	0mm	Full	37850	2580	23.00	24.00	1.259	62.9	1.006	-0.06	1.700	2.153
	LTE Band 38_Ant1	20M	QPSK	1	0	Left Side	0mm	Full	38150	2610	23.01	24.00	1.256	62.9	1.006	0.09	1.750	2.211
	LTE Band 38_Ant1	20M	QPSK	1	0	Bottom Side	0mm	Full	38000	2595	23.06	24.00	1.242	62.9	1.006	0.16	1.670	2.086
	LTE Band 38_Ant1	20M	QPSK	1	0	Bottom Side	0mm	Full	37850	2580	23.00	24.00	1.259	62.9	1.006	-0.02	1.620	2.052
	LTE Band 38_Ant1	20M	QPSK	1	0	Bottom Side	0mm	Full	38150	2610	23.01	24.00	1.256	62.9	1.006	-0.14	1.690	2.135
	LTE Band 38_Ant1	20M	QPSK	50	0	Front	0mm	Full	38000	2595	22.05	23.00	1.245	62.9	1.006	-0.15	1.040	1.302
	LTE Band 38_Ant1	20M	QPSK	50	0	Back	0mm	Full	38000	2595	22.05	23.00	1.245	62.9	1.006	0.02	1.450	1.815
	LTE Band 38_Ant1	20M	QPSK	50	0	Left Side	0mm	Full	38000	2595	22.05	23.00	1.245	62.9	1.006	-0.15	1.090	1.365
	LTE Band 38_Ant1	20M	QPSK	50	0	Bottom Side	0mm	Full	38000	2595	22.05	23.00	1.245	62.9	1.006	0.13	1.110	1.390
	LTE Band 38_Ant1	20M	QPSK	100	0	Front	0mm	Full	38000	2595	21.99	23.00	1.262	62.9	1.006	-0.15	1.040	1.320
	LTE Band 38_Ant1	20M	QPSK	100	0	Back	0mm	Full	38000	2595	21.99	23.00	1.262	62.9	1.006	0.13	1.480	1.879
	LTE Band 38_Ant1	20M	QPSK	100	0	Left Side	0mm	Full	38000	2595	21.99	23.00	1.262	62.9	1.006	0.15	1.090	1.384
	LTE Band 38_Ant1	20M	QPSK	100	0	Bottom Side	0mm	Full	38000	2595	21.99	23.00	1.262	62.9	1.006	0.15	1.080	1.371
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	1	0	Front	0mm	Reduced	38000	2595	20.18	21.00	1.208	62.9	1.006	-0.16	0.814	0.989
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	1	0	Back	0mm	Reduced	38000	2595	20.18	21.00	1.208	62.9	1.006	-0.02	1.250	1.519
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	1	0	Left Side	0mm	Reduced	38000	2595	20.18	21.00	1.208	62.9	1.006	-0.04	0.853	1.036
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	1	0	Bottom Side	0mm	Reduced	38000	2595	20.18	21.00	1.208	62.9	1.006	-0.16	0.831	1.010
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	1	0	Front	6mm	Full	38000	2595	23.06	24.00	1.242	62.9	1.006	0.16	0.575	0.718
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	1	0	Back	14mm	Full	38000	2595	23.06	24.00	1.242	62.9	1.006	-0.04	0.211	0.264
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	1	0	Left Side	12mm	Full	38000	2595	23.06	24.00	1.242	62.9	1.006	-0.03	0.185	0.231
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	1	0	Bottom Side	7mm	Full	38000	2595	23.06	24.00	1.242	62.9	1.006	0.11	0.451	0.563
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	50	0	Front	0mm	Reduced	38000	2595	20.16	21.00	1.213	62.9	1.006	-0.02	0.828	1.011
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	50	0	Back	0mm	Reduced	38000	2595	20.16	21.00	1.213	62.9	1.006	-0.09	1.290	1.575
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	50	0	Left Side	0mm	Reduced	38000	2595	20.16	21.00	1.213	62.9	1.006	-0.13	0.877	1.071
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	50	0	Bottom Side	0mm	Reduced	38000	2595	20.16	21.00	1.213	62.9	1.006	-0.05	0.841	1.027
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	50	0	Front	6mm	Full	38000	2595	22.05	23.00	1.245	62.9	1.006	-0.06	0.359	0.449
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	50	0	Back	14mm	Full	38000	2595	22.05	23.00	1.245	62.9	1.006	0.08	0.137	0.172
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	50	0	Left Side	12mm	Full	38000	2595	22.05	23.00	1.245	62.9	1.006	0.09	0.113	0.141
	LTE Band 38_Ant1 (ENDC)	20M	QPSK	50	0	Bottom Side	7mm	Full	38000	2595	22.05	23.00	1.245	62.9	1.006	0.11	0.285	0.357
	LTE Band 42_Ant5	20M	QPSK	1	0	Back	0mm	Full	42590	3500	22.76	24.00	1.330	62.9	1.006	-0.04	1.550	2.075
76	LTE Band 42_Ant5	20M	QPSK	1	0	Back	0mm	Full	42190	3460	22.60	24.00	1.380	62.9	1.006	0.15	1.610	**2.236**
	LTE Band 42_Ant5	20M	QPSK	1	0	Back	0mm	Full	42990	3540	22.68	24.00	1.355	62.9	1.006	-0.05	1.380	1.881
	LTE Band 42_Ant5	20M	QPSK	50	0	Back	0mm	Full	42590	3500	21.71	23.00	1.346	62.9	1.006	0.1	1.120	1.516
	LTE Band 42_Ant5	20M	QPSK	100	0	Back	0mm	Full	42590	3500	21.68	23.00	1.355	62.9	1.006	0.08	1.090	1.486