FCC SAR Test Report

APPLICANT	**:**	**Motorola Mobility LLC**
EQUIPMENT	**:**	**Mobile Cellular Phone**
BRAND NAME	**:**	**Motorola**
MODEL NAME	**:**	**XT2335-4, XT2335-5, XT2335-6**
FCC ID	**:**	**IHDT56AJ9**
STANDARD	**:**	**FCC 47 CFR Part 2 (2.1093)**

We, Sporton International Inc. (Shenzhen), 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 Inc. (Shenzhen), the test report shall not be reproduced except in full.

Si Zhang

Approved by: Si Zhang

ACCREDITED Cert #5145.01

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People's Republic of China

Table of Contents

Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA292106-02	Rev. 01	1. Initial issue of report.	Dec. 28, 2022

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Motorola Mobility LLC, Mobile Cellular Phone, XT2335-4, XT2335-5, XT2335-6,** are as follows.

Highest 1g SAR Summary						
Equipment Class	Frequency Band		Head (Separation 0mm)	Hotspot (Separation 5mm)	Body-worn (Separation 5mm)	Highest Simultaneous Transmission
			1g SAR (W/kg)			1g SAR (W/kg)
Licensed	GSM	GSM850	0.18	1.33	1.33	1.59
		GSM1900	0.20	1.35	1.35	
	WCDMA	Band II	0.29	1.40	1.40	
		Band IV	0.16	1.36	1.36	
		Band V	0.26	1.40	1.40	
	LTE	Band 2	0.27	**1.44**	**1.44**	
		Band 4	0.18	**1.44**	**1.44**	
		Band 12/ Band 17	0.19	0.94	0.94	
		Band 26	0.20	1.40	1.40	
		Band 41/ Band 38	1.18	1.20	1.20	
		Band 42	1.03	1.00	1.02	
	5G NR	n77/n78	0.83	1.19	1.19	
DTS	WLAN	2.4GHz WLAN	**1.43**	0.38	1.39	1.58
NII		5GHz WLAN	1.18	0.38	1.17	1.59
DSS	Bluetooth	2.4GHz Bluetooth	0.21	0.20	0.20	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	2.70	3.98
		GSM1900	3.31	
	WCDMA	Band II	**3.59**	
		Band IV	3.55	
		Band V	2.63	
	LTE	Band 2	3.58	
		Band 4	3.46	
		Band 26	2.44	
		Band 41/ Band 38	2.98	
		Band 42	2.83	
	5G NR	n77/n78	2.91	
DTS	WLAN	2.4GHz WLAN	2.26	3.89
NII		5GHz WLAN	2.72	3.98
Date of Testing:			2022/11/19~ 2022/12/15	

Remark:

1. This device supports LTE B17 / B38 and B12 / B41. Since the supported frequency span for LTE B17 / B38 falls completely within the supports frequency span for LTE B12 / B41, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE B12 / B41.
2. This device supports 5GNR n78 and n77. Since the supported frequency span for 5GNR n78 falls completely within the supports frequency span for n77, both 5GNR bands have the same target power, and both 5GNR bands share the same transmission path; therefore, SAR was only assessed for n77.

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 Inc. (Shenzhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Testing Laboratory			
Test Firm	Sporton International Inc. (Shenzhen)		
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.
	SAR01-SZ/ SAR03-SZ/ SAR04-SZ/ 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	XT2335-4, XT2335-5, XT2335-6
FCC ID	IHDT56AJ9
IMEI Code	Sample 1: IMEI 1: 352304690019112 IMEI 2: 352304690019120 Sample 2: IMEI 1: 352304690023296 IMEI 2: 352304690023304
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 12: 699 MHz ~ 716 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 42: 3450 MHz ~ 3550MHz 5G NR n77: 3700 MHz ~ 3980 MHz 5G NR n78: 3700 MHz ~ 3800 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5720 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC: 13.56 MHz
Mode	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+(16QAM uplink is supported) 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	TTP33.28
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 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 GPRS/EGPRS mode up to multi-slot class 12.
5. This device has NFC operations, the NFC antenna is integrated into the device for this model, therefore, all SAR test were performed with the device which already incorporates the NFC antenna. A diagram showing the location of the antenna can be found in the operational description. According to FCC KDB publication 447498 D01v06, transmitters are consider to be operating simultaneously when there is overlapping transmission, with the exception of transmission during network hand-offs with maximum hand-off duration less than 30 seconds.
6. For dual SIM card mobile has single SIM slots + eSIM (electronic SIM) and supports dual SIM dual standby. The WWAN radio transmission will be enabled by either one SIM at a time (single active).
7. 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). The device will invoke corresponding work scenarios power level, which 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.
8. For WLAN when transmit simultaneous with WWAN, power reduction will be activated to head. For WLAN when transmit simultaneous with WWAN and Proximity sensors trigger, power reduction will be activated to body-worn and Handheld.
9. For some WWAN bands, sensor on power level is higher than hotspot power level, so front/back sensor on SAR can represent hotspot conservatively.
10. This device supports HPUE for LTE Band 41 with class 2 level, HPUE power has been measured separately. For HPUE power is higher than power class 3 but with lower duty cycle, the maximum average power for class 2 and class 3 is almost the same, so we chose power class 3 full SAR testing and power class 2 verify the worst case of power class 3 SAR.
11. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
12. 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.
13. 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.
14. The device has two batteries. For battery 1/2 only suppliers are different, so we only choose battery 1 to perform full SAR testing.
15. There are two headsets, only supplier different, so we chose headset 1 to perform full SAR testing only.
16. There are three samples, sample 1 and sample 3 are 1st source, and sample 2 is 2nd source. The different between them refer to the XT2335-4, XT2335-5, XT2335-6_Operational Description of Product Equality Declaration which is exhibit separately. According to the differences, we choose sample 1 to perform full SAR testing and sample 2 to verify the worst case of sample 1. For sample 3, the differences do not affect the test, so sample 3 is not tested.
17. The three models XT2335-4, XT2335-5, XT2335-6 are only for market differentiation; all the others are the same.
18. This device supports 5GNR FR1 bands as following table, only including SA mode. SA mode performed SAR separately.

<5G NR>

Mode	Band	Duplex	SCS(KHz)	Bandwidths(BW)
SA	n77	TDD	30	20, 30, 40, 50, 60, 70, 80, 90, 100
	n78	TDD	30	20, 30, 40, 50, 60, 70, 80, 90, 100

4.2 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05	
FCC ID	IHDT56AJ9
Equipment Name	Mobile Cellular Phone
Operating Frequency Range of each LTE transmission band	LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 42: 3450 MHz ~ 3550MHz
Channel Bandwidth	LTE Band 2:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 4:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 12:1.4MHz, 3MHz, 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 41: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 42: 5MHz, 10MHz, 15MHz, 20MHz
uplink modulations used	QPSK / 16QAM / 64QAM / 256QAM
LTE Voice / Data requirements	Voice and Data
LTE Release Version	R15, Cat18
CA Support	Supported, Downlink
LTE MPR permanently built-in by design	Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3 Modulation | Channel bandwidth / Transmission bandwidth (N_{RB}) 1.4 MHz | 3.0 MHz | 5 MHz | 10 MHz | 15 MHz | 20 MHz | MPR (dB) QPSK | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 1 16 QAM | ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 1 16 QAM | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 2 64 QAM | ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 2 64 QAM | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 3 256 QAM | ≥ 1 | ≤ 5
LTE A-MPR	In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)
Spectrum plots for RB configuration	A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.
Power reduction applied to satisfy SAR compliance	Yes, when operating in Proximity sensors/receiver/hotspot detect mechanism; head/ body-worn/hotspot/extremity will trigger reduced power for some bands applied to satisfy SAR compliance, the detail please referred to section 13.
LTE Carrier Aggregation Combinations	Inter-Band and Intra-Band possible combinations and the detail power verification please referred to section 13.
LTE Carrier Aggregation Additional Information	(1) This device supports maximum of 4 carriers in the downlink.

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 12

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	23017	699.7	23025	700.5	23035	701.5	23060	704
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5
H	23173	715.3	23165	714.5	23155	713.5	23130	711

LTE Band 17

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

LTE Band 26

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26697	814.7	26705	815.5	26715	816.5	26740	819	26765	821.5
M	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5
H	27033	848.3	27025	847.5	27015	846.5	26990	844	26965	841.5

LTE Band 38

	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	37775	2572.5	37800	2575	37825	2577.5	37850	2580
M	38000	2595	38000	2595	38000	2595	38000	2595
H	38225	2617.5	38200	2615	38175	2612.5	38150	2610

LTE Band 41

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

LTE Band 42

	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	42115	3452.5	42140	3455	42165	3457.5	42190	3460
M	42590	3500	42590	3500	42590	3500	42590	3500
H	43065	3547.5	43040	3545	43015	3542.5	42990	3540

<For LTE Overlap Bands Description>

1) LTE Bands BW

Band	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
LTE Band 12	Yes	Yes	Yes	Yes		
LTE Band 17			Yes	Yes		
LTE Band 38			Yes	Yes	Yes	Yes
LTE Band 41			Yes	Yes	Yes	Yes

2) LTE Bands tune up:

Band	Antenna	Default Tune-up Limit	DSI 2 Tune-up Limit	DSI 3 Tune-up Limit	DSI 7 Tune-up Limit	DSI 6 Tune-up Limit	DSI4 Tune-up Limit
LTE Band 12	0	24	24	24	24	24	24
LTE Band 17	0	24	24	24	24	24	24
LTE Band 38	1	24	17.5	16.5	15	20	24
LTE Band 41	1	24	17.5	16.5	15	20	24

Note: This device supports LTE B17 / B38 and B12 / B41. Since the supported frequency span for LTE B17 / B38 falls completely within the supports frequency span for LTE B12 / B41, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE B12 / B41.

4.3 General 5G NR SAR Test and Reporting Considerations

5G NR Information	
Operating Frequency Range of each 5G NR transmission band	5G NR n77: 3700 MHz ~ 3980 MHz 5G NR n78: 3700 MHz ~ 3800 MHz
Channel Bandwidth	The detail please refers to section 4.1 5GNR FR1 bands table.
SCS	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

NR Band 77																		
	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	647334	3710.01	647668	3715.02	648000	3720	648334	3725.01	648668	3730.02	649000	3735	649334	3740.01	649668	3745.02	650000	3750
M	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840
H	664666	3970.02	664332	3965.01	664000	3960	663668	3955.02	663332	3950.01	663000	3945	662666	3940.02	662332	3935.01	662000	3930

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	647334	3710.01	647668	3715.02	648000	3720	648334	3725.01	648668	3730.02	649000	3735	649334	3740.01	649668	3745.02		
M	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750
H	652668	3790.02	647668	3715.02	648000	3720	648334	3725.01	648668	3730.02	649000	3735	649334	3740.01	649668	3745.02		

<For NR Overlap Bands Description>

1) NR Bands BW

Mode	Band	Duplex	SCS(KHz)	Bandwidths(BW)
NR	n77	TDD	30	20, 30, 40, 50, 60, 70, 80, 90, 100
	n78	TDD	30	20, 30, 40, 50, 60, 70, 80, 90, 100

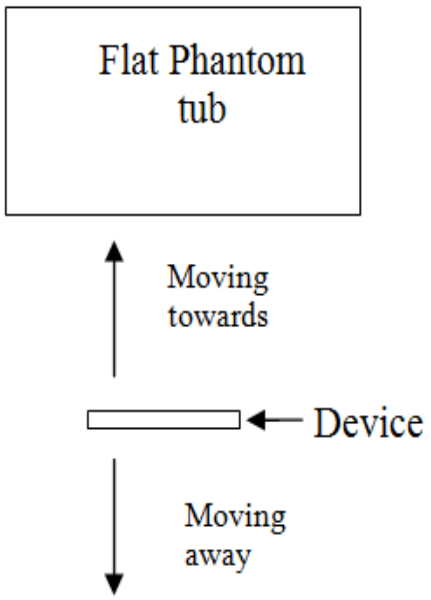
2) NR Bands Tune up:

Band	Antenna	Default Tune-up Limit	DSI 2 Tune-up Limit	DSI 3 Tune-up Limit	DSI 7 Tune-up Limit	DSI 6 Tune-up Limit	DSI4 Tune-up Limit
n77	2	24	28	17	17	20.5	23
n78	2	24	28	17	17	20.5	23
n77	3	21	21	12.5	12.5	17.5	17.5
n78	3	21	21	12.5	12.5	17.5	17.5
n77	5	21	21	21	21	21	21
n78	5	21	21	21	21	21	21
n77	7	21	21	17	17	21	21
n78	7	21	21	17	17	21	21

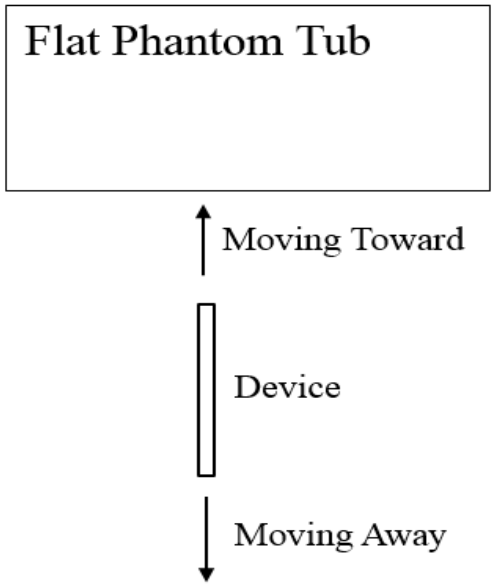
5. Proximity Sensor Triggering Test

<Proximity Sensor Triggering Distance>:

1. Proximity sensor triggering distance testing was performed according and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed and the tissue-equivalent medium for highest frequency (5850MHz) and lowest (850MHz) frequency was used for proximity sensor triggering testing.
2. Capacitive proximity sensors placed coincident with antenna elements at the top and bottom ends of the phone are utilized to determine when the device comes in proximity of the user's body at the front or back of the device.
3. The output power will reduce to body worn power level when top and bottom sensor pad be detected.
4. The sensors used to detect the proximity of the user's body at the front or back surface of the device use a detection threshold distance. The data shown in the sections below shows the distance(s). When front or back body worn condition is detected reduced power will be active.
5. The device employs proximity sensors also can detect the presence of the user's a finger or hand when handheld state at the front/back/top/bottom/left/right sides of the device. When front/back/top/bottom/left/right sides of handheld condition is detected reduced power will be active.
6. For verification of compliance of power reduction scheme, additional SAR testing with EUT transmitting at full RF power at a conservative trigger distance -1mm was performed:



Sensor detection test set-up, front and back sides



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

<P-Sensor>

Proximity Sensor Triggering Distance (mm)				
Position	Front		Back	
	Moving towards	Moving away	Moving towards	Moving away
Minimum	16	18	21	23

<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	21	26	28	33	14	18	25	26

<Handheld for ANT1>

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	14	16	18	21	8	10	20	20

<Handheld for ANT2>

Proximity Sensor Triggering Distance (mm)				
Position	Back		Top Side	
	Moving towards	Moving away	Moving towards	Moving away
Minimum	7	10	8	12

<Handheld for WWAN-Ant 8>

Proximity Sensor Triggering Distance (mm)								
Position	Front		Back		Right Side		Top Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	9	12	14	17	10	13	15	18

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:

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

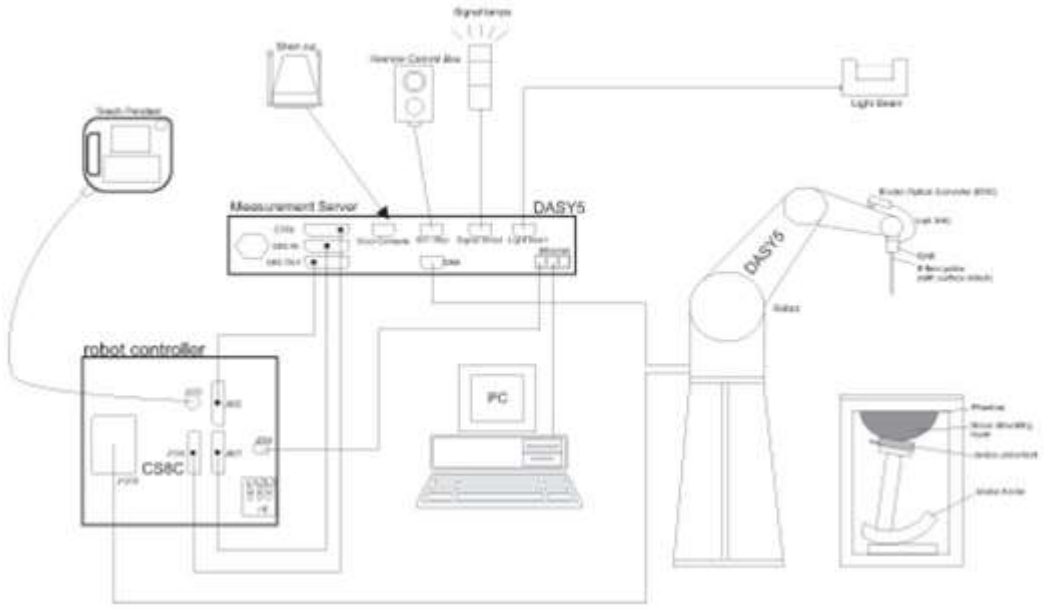
SAR is expressed in units of Watts per kilogram (W/kg)

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

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 DASY5 system used for performing compliance tests consists of the following items:



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP or Win10 and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

8.1 E-Field Probe

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

<EX3DV4 Probe>

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

<ES3DV3 Probe>

Construction	Symmetric design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Frequency	10 MHz – 4 GHz; Linearity: ±0.2 dB (30 MHz – 4 GHz)
Directivity	±0.2 dB in TSL (rotation around probe axis) ±0.3 dB in TSL (rotation normal to probe axis)
Dynamic Range	5 µW/g – >100 mW/g; Linearity: ±0.2 dB
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 3.9 mm (body: 12 mm) Distance from probe tip to dipole centers: 3.0 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 or for evaluating transmitters operating at low frequencies. ELI 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. 15, 2021	Dec. 14, 2022
SPEAG	835MHz System Validation Kit	D835V2	4d162	Dec. 17, 2021	Dec. 16, 2022
SPEAG	1750MHz System Validation Kit	D1750V2	1137	Oct. 19, 2021	Oct. 18, 2024
SPEAG	1900MHz System Validation Kit	D1900V2	5d182	Dec. 20, 2021	Dec. 19, 2022
SPEAG	2450MHz System Validation Kit	D2450V2	924	Sep. 02, 2020	Aug. 31, 2023
SPEAG	2600MHz System Validation Kit	D2600V2	1070	Dec. 20, 2021	Dec. 19, 2022
SPEAG	3500MHz System Validation Kit	D3500V2	1076	May 09, 2022	May 08, 2023
SPEAG	3700MHz System Validation Kit	D3700V2	1037	May. 09, 2022	May. 08, 2023
SPEAG	3900MHz System Validation Kit	D3900V2	1022	Aug. 18, 2022	Aug. 17, 2023
SPEAG	5000MHz System Validation Kit	D5GHzV2	1341	Dec. 13, 2021	Dec. 12, 2022
SPEAG	Data Acquisition Electronics	DAE4	1386	Jun. 30, 2022	Jun. 29, 2023
SPEAG	Data Acquisition Electronics	DAE4	679	Jun. 06, 2022	Jun. 05, 2023
SPEAG	Data Acquisition Electronics	DAE4	715	Dec. 29, 2021	Dec. 28, 2022
SPEAG	Dosimetric E-Field Probe	ES3DV3	3191	Mar. 03, 2022	Mar. 02, 2023
SPEAG	Dosimetric E-Field Probe	EX3DV4	7641	Apr. 11, 2022	Apr. 10, 2023
SPEAG	Dosimetric E-Field Probe	EX3DV4	3819	May 30, 2022	May 29, 2023
SPEAG	Dosimetric E-Field Probe	EX3DV4	7576	Jul. 28, 2022	Jul. 27, 2023
SPEAG	SAM Twin Phantom	QD 000 P40 CB	TP-1500	NCR	NCR
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	6201300653	Jul. 07, 2022	Jul. 06, 2023
Anritsu	Radio communication analyzer	MT8821C	6262314715	Jun. 27, 2022	Jun. 26, 2023
Anritsu	Radio communication analyzer	MT8821C	6272278319	Jun. 27, 2022	Jun. 26, 2023
Agilent	Wireless Communication Test Set	E5515C	MY50267224	Jul. 07, 2022	Jul. 06, 2023
Keysight	Network Analyzer	E5071C	MY46523671	Oct. 17, 2022	Oct. 16, 2023
Speag	Dielectric Assessment KIT	DAK-3.5	1071	Jan. 24, 2022	Jan. 23, 2023
Agilent	Signal Generator	N5181A	MY50145381	Dec. 28, 2021	Dec. 27, 2022
Anritsu	Power Senor	MA2411B	1306099	Oct. 17, 2022	Oct. 16, 2023
Anritsu	Power Meter	ML2495A	1349001	Oct. 17, 2022	Oct. 16, 2023
Anritsu	Power Sensor	MA2411B	1542004	Dec. 28, 2021	Dec. 27, 2022
Anritsu	Power Meter	ML2495A	1339473	Dec. 28, 2021	Dec. 27, 2022
R&S	CBT BLUETOOTH TESTER	CBT	100963	Dec. 28, 2021	Dec. 27, 2022
R&S	Spectrum Analyzer	FSP7	100818	Jul. 07, 2022	Jul. 06, 2023
TES	Hygrometer	1310	200505600	Jul. 12, 2022	Jul. 11, 2023
Anymetre	Thermo-Hygrometer	JR593	2015030904	Jul. 12, 2022	Jul. 11, 2023
Anymetre	Thermo-Hygrometer	JR593	2015030903	Dec. 30, 2021	Dec. 29, 2022
Anymetre	Thermo-Hygrometer	JR593	2015102801	Dec. 30, 2021	Dec. 29, 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	
Mini-Circuits	Amplifier	ZVA-183W-S+	726202215	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	0.889	40.877	0.89	41.90	-0.11	-2.44	±5	2022/11/19
750	Head	22.2	0.875	41.644	0.89	41.90	-1.69	-0.61	±5	2022/12/2
835	Head	22.6	0.904	40.381	0.90	41.50	0.44	-2.70	±5	2022/11/21
835	Head	22.3	0.934	40.112	0.90	41.50	3.78	-3.34	±5	2022/12/4
1750	Head	22.3	1.339	39.213	1.37	40.10	-2.26	-2.21	±5	2022/11/22
1750	Head	22.6	1.385	39.563	1.37	40.10	1.09	-1.34	±5	2022/12/5
1900	Head	22.5	1.398	38.705	1.40	40.00	-0.14	-3.24	±5	2022/11/24
1900	Head	22.3	1.412	38.427	1.40	40.00	0.86	-3.93	±5	2022/12/7
2450	Head	22.3	1.773	38.178	1.80	39.20	-1.50	-2.61	±5	2022/11/26
2450	Head	22.5	1.777	38.496	1.80	39.20	-1.28	-1.80	±5	2022/12/8
2600	Head	22.9	1.938	37.938	1.96	39.00	-1.12	-2.72	±5	2022/11/27
2600	Head	22.7	2.039	37.491	1.96	39.00	4.03	-3.87	±5	2022/12/9
3500	Head	22.6	2.866	37.003	2.91	37.90	-1.51	-2.37	±5	2022/11/28
3500	Head	22.7	2.935	39.300	2.91	37.90	0.86	3.69	±5	2022/12/14
3700	Head	22.8	3.007	38.198	3.12	37.70	-3.62	1.32	±5	2022/12/14
3900	Head	22.6	3.208	37.743	3.33	37.51	-3.66	0.62	±5	2022/11/30
3900	Head	22.4	3.289	38.586	3.33	37.51	-1.23	2.87	±5	2022/12/15
5250	Head	22.4	4.579	34.674	4.71	35.95	-2.78	-3.55	±5	2022/12/7
5250	Head	22.6	4.565	35.648	4.71	35.95	-3.08	-0.84	±5	2022/12/10
5600	Head	22.4	5.006	35.621	5.07	35.50	-1.26	0.34	±5	2022/12/8
5600	Head	22.5	4.947	35.037	5.07	35.50	-2.43	-1.30	±5	2022/12/11
5750	Head	22.6	5.206	35.543	5.22	35.35	-0.27	0.55	±5	2022/12/9
5750	Head	22.7	5.109	36.135	5.22	35.35	-2.13	2.22	±5	2022/12/12

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 (%)
2022/11/19	750	Head	250	1099	7576	679	2.140	8.540	8.56	0.23
2022/12/2	750	Head	250	1099	3191	679	2.110	8.540	8.44	-1.17
2022/11/21	835	Head	250	4d162	7576	679	2.420	9.640	9.68	0.41
2022/12/4	835	Head	250	4d162	3191	679	2.390	9.640	9.56	-0.83
2022/11/22	1750	Head	250	1137	7576	679	8.560	36.500	34.24	-6.19
2022/12/5	1750	Head	250	1137	3191	679	9.420	36.500	37.68	3.23
2022/11/24	1900	Head	250	5d182	7576	679	9.430	39.600	37.72	-4.75
2022/12/7	1900	Head	250	5d182	3191	679	10.200	39.600	40.8	3.03
2022/11/26	2450	Head	250	924	7576	679	12.200	51.400	48.8	-5.06
2022/12/8	2450	Head	250	924	3191	679	13.200	51.400	52.8	2.72
2022/11/27	2600	Head	250	1070	7576	679	13.100	56.200	52.4	-6.76
2022/12/9	2600	Head	250	1070	3191	679	14.900	56.200	59.6	6.05
2022/11/28	3500	Head	100	1076	7641	1386	6.950	66.200	69.5	4.98
2022/12/14	3500	Head	100	1076	7576	679	6.410	66.200	64.1	-3.17
2022/12/14	3700	Head	100	1037	7576	679	6.860	66.700	68.6	2.85
2022/11/30	3900	Head	100	1022	7576	679	6.860	66.400	68.6	3.31
2022/12/15	3900	Head	100	1022	3819	715	6.820	66.400	68.2	2.71
2022/12/7	5250	Head	100	1341	7641	1386	8.100	80.700	81	0.37
2022/12/10	5250	Head	100	1341	7576	679	8.520	80.700	85.2	5.58
2022/12/8	5600	Head	100	1341	7641	1386	8.230	84.500	82.3	-2.60
2022/12/11	5600	Head	100	1341	7576	679	9.180	84.500	91.8	8.64
2022/12/9	5750	Head	100	1341	7641	1386	7.880	80.600	78.8	-2.23
2022/12/12	5750	Head	100	1341	7576	679	8.460	80.600	84.6	4.96

<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 (%)
2022/11/19	750	Head	250	1099	7576	679	1.430	5.650	5.72	1.24
2022/12/2	750	Head	250	1099	3191	679	1.350	5.650	5.4	-4.42
2022/11/21	835	Head	250	4d162	7576	679	1.580	6.260	6.32	0.96
2022/12/4	835	Head	250	4d162	3191	679	1.570	6.260	6.28	0.32
2022/11/22	1750	Head	250	1137	7576	679	4.410	19.200	17.64	-8.12
2022/12/5	1750	Head	250	1137	3191	679	5.090	19.200	20.36	6.04
2022/11/24	1900	Head	250	5d182	7576	679	4.860	20.200	19.44	-3.76
2022/12/7	1900	Head	250	5d182	3191	679	5.360	20.200	21.44	6.14
2022/11/26	2450	Head	250	924	7576	679	5.470	24.000	21.88	-8.83
2022/12/8	2450	Head	250	924	3191	679	6.250	24.000	25	4.17
2022/11/27	2600	Head	250	1070	7576	679	5.840	24.600	23.36	-5.04
2022/12/9	2600	Head	250	1070	3191	679	6.680	24.600	26.72	8.62
2022/11/28	3500	Head	100	1076	7641	1386	2.610	25.500	26.1	2.35
2022/12/14	3500	Head	100	1076	7576	679	2.370	25.500	23.7	-7.06
2022/12/14	3700	Head	100	1037	7576	679	2.500	24.600	25	1.63
2022/11/30	3900	Head	100	1022	7576	679	2.460	23.700	24.6	3.80
2022/12/15	3900	Head	100	1022	3819	715	2.470	23.700	24.7	4.22
2022/12/7	5250	Head	100	1341	7641	1386	2.250	23.100	22.5	-2.60
2022/12/10	5250	Head	100	1341	7576	679	2.490	23.100	24.9	7.79
2022/12/8	5600	Head	100	1341	7641	1386	2.240	24.000	22.4	-6.67
2022/12/11	5600	Head	100	1341	7576	679	2.430	24.000	24.3	1.25
2022/12/9	5750	Head	100	1341	7641	1386	2.360	22.700	23.6	3.96
2022/12/12	5750	Head	100	1341	7576	679	2.190	22.700	21.9	-3.52

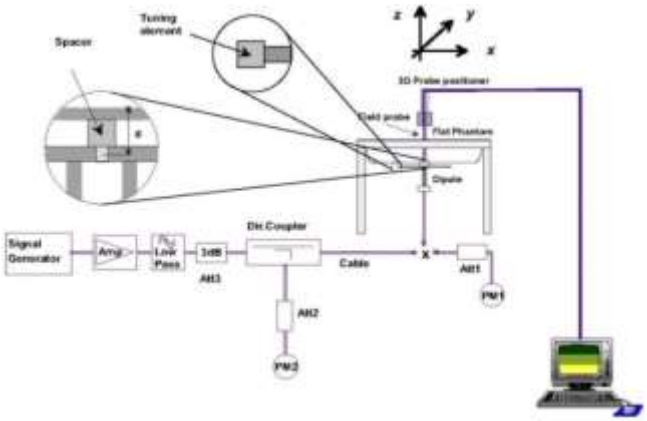


Fig 11.3.1 System Performance Check Setup

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 15 mm along the B-M (back-mouth) line behind the entrance-to-ear-canal (EEC) point, as shown in Figure 12.1.2 The Reference Plane is defined as passing through the two ear reference points and point M. The line N-F (neck-front), also called the reference pivoting line, is normal to the Reference Plane and perpendicular to both a line passing through RE and LE and the B-M line (see Figure 12.1.3). Both N-F and B-M lines should be marked on the exterior of the phantom shell to facilitate handset positioning. Posterior to the N-F line the ear shape is a flat surface with 6 mm thickness at each ERP, and forward of the N-F line the ear is truncated, as illustrated in Figure 12.1.2. The ear truncation is introduced to preclude the ear lobe from interfering with handset tilt, which could lead to unstable positioning at the cheek.

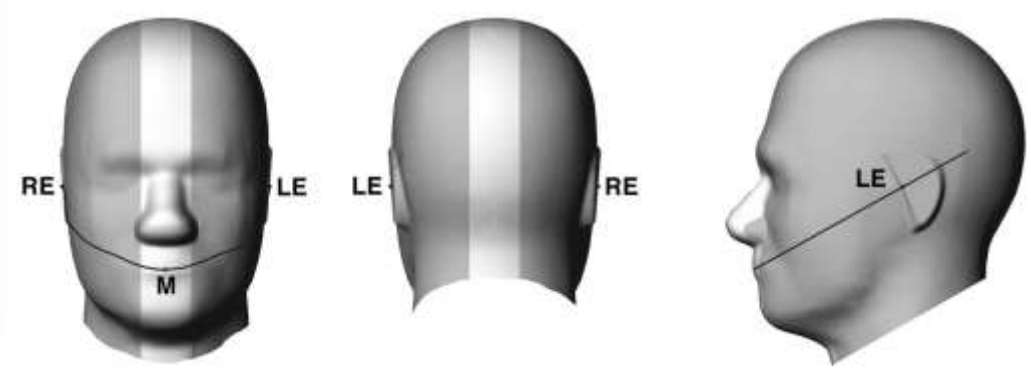


Fig 12.1.1 Front, back, and side views of SAM twin phantom

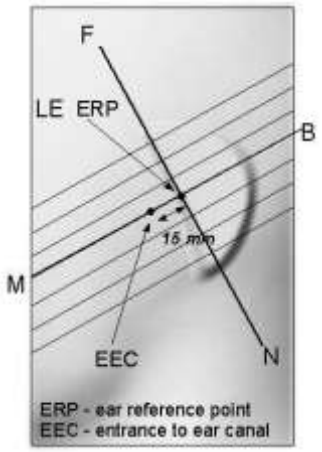


Fig 12.1.2 Close-up side view of phantom showing the ear region.

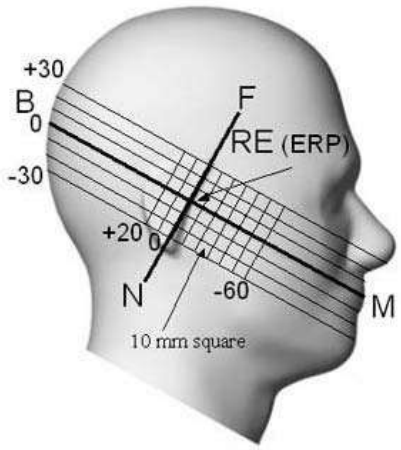


Fig 12.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

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.

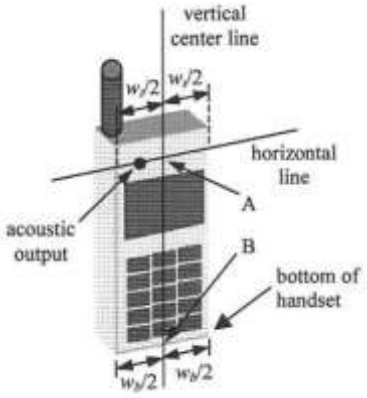


Fig 12.2.1 Handset vertical and horizontal reference lines—"fixed case

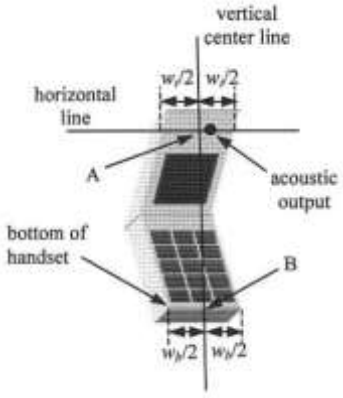


Fig 12.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

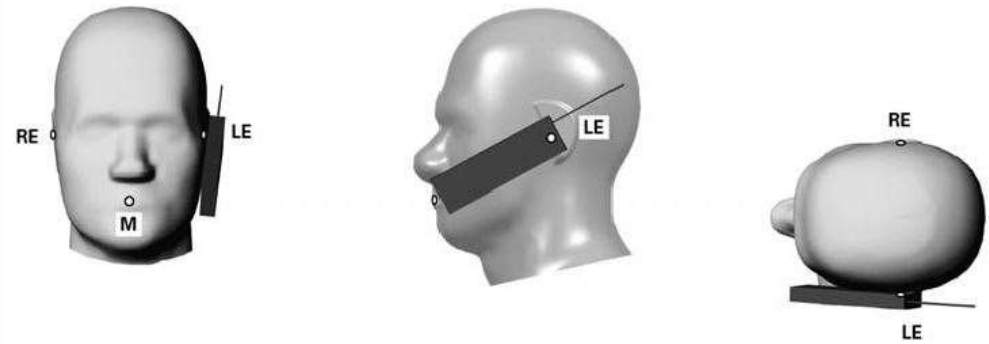


Fig 12.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

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

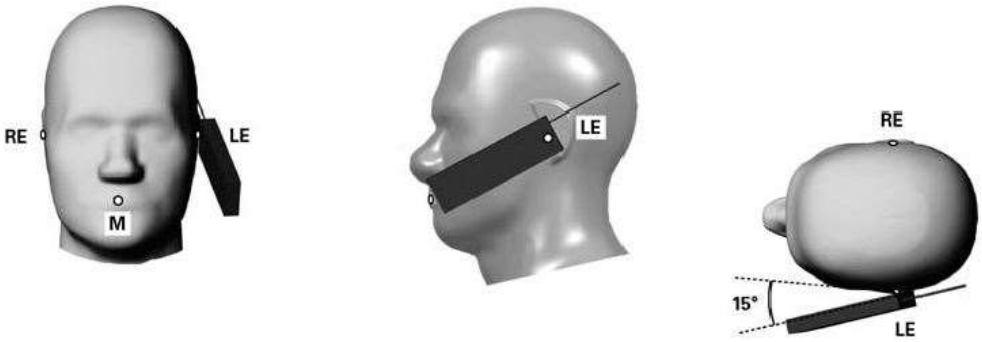


Fig 12.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

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. 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.

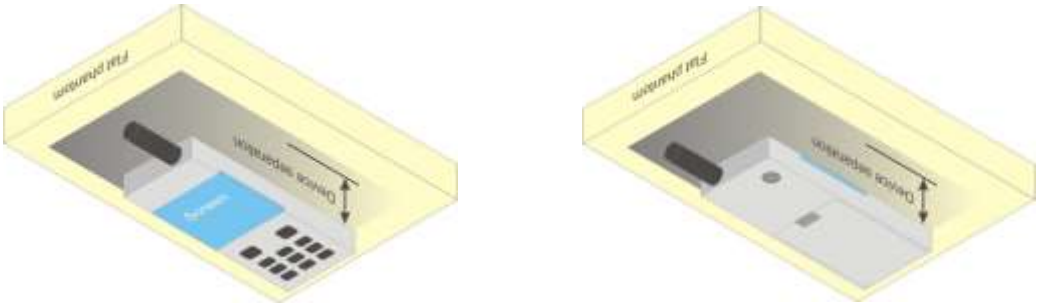


Fig 12.4 Body Worn Position

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 can provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets and support voice calls next to the ear, according to KDB648474 D04v01r03,, the following phablet procedures should be applied to evaluate SAR compliance for each applicable wireless modes and frequency band. Devices marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance

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

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

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.
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.		

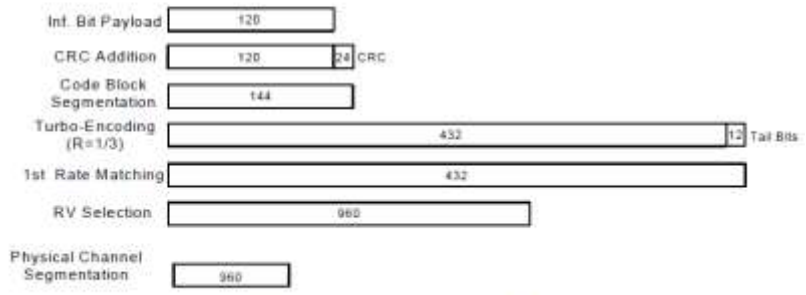


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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	β_{ed}1: 30/15 β_{ed}2: 30/15	β_{ed}3: 24/15 β_{ed}4: 24/15	3.5	2.5	14	105	105

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

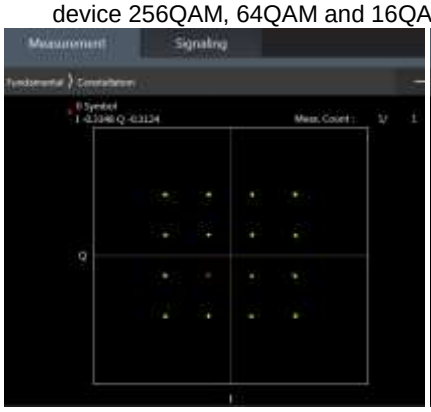
General Note:

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+.

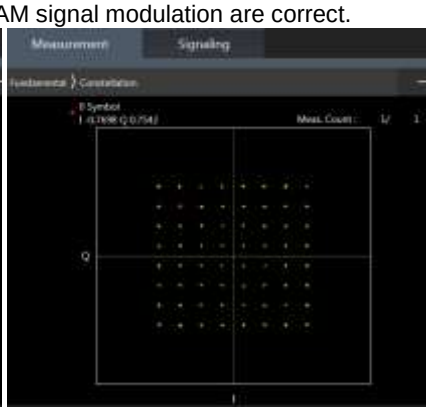
<LTE Conducted Power>

General Note:

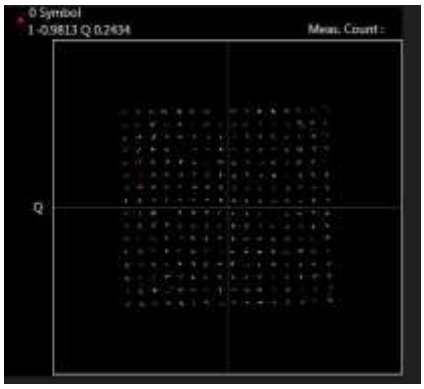
1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested 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 / 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 B17 / B38 SAR test was covered by B12 / B41; 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 May 2017 TCB workshop, for 16QAM and 64QAM, 256QAM 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 256QAM, 64QAM and 16QAM signal modulation are correct.



16QAM



64QAM



256QAM

<TDD LTE SAR Measurement>

TDD LTE configuration setup for SAR measurement

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

a. 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations
b. "special subframe S" contains both uplink and downlink transmissions, it has been taken into consideration to determine the transmission duty factor according to the worst case uplink and downlink cyclic prefix requirements for UpPTS
c. Establishing connections with base station simulators ensure a consistent means for testing SAR and recommended for evaluating SAR. The Anritsu MT8820C (firmware: #22.52#004) was used for LTE output power measurements and SAR testing.

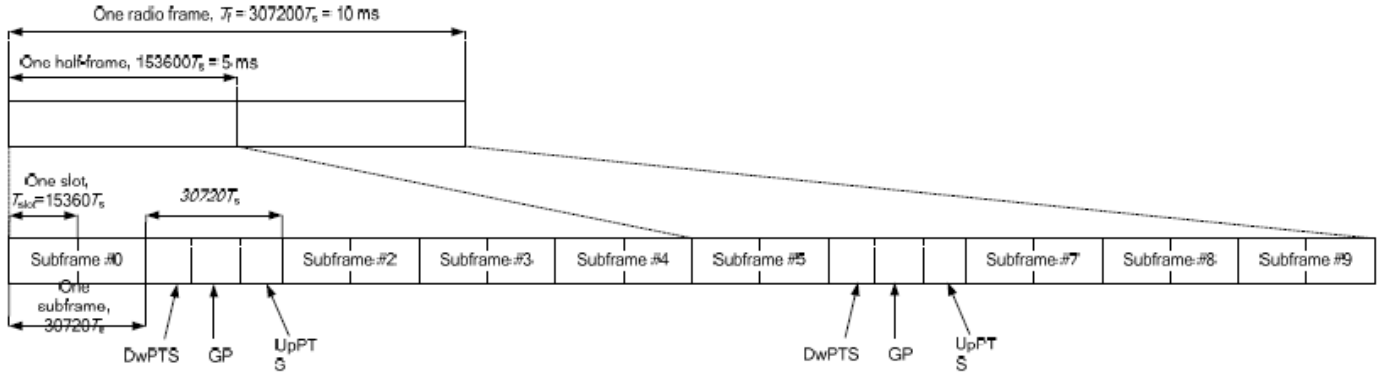


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

Table 4.2-2: Uplink-downlink configurations.

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

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

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

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

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

The highest duty factor is resulted from:

For LTE TDD Power class 2

i. Uplink-downlink configuration: 1. In a half-frame consisted of 5 subfames, uplink operation is in 2 uplink subframes and 1 special subframe.
ii. special subframe configuration: 5-9 for normal cyclic prefix in downlink, 4-7 for extended cyclic prefix in downlink
iii. for special subframe with extended cyclic prefix in uplink, the total uplink duty factor in one half-frame is: (2+0.167)/5 = 43.3%
iv. for special subframe with normal cyclic prefix in uplink, the total uplink duty factor in one half-frame is: (2+0.143)/5 = 42.9%
v. For TDD LTE SAR measurement, the duty cycle 1:2.33 (42.9 %) was used perform testing and considering the theoretical duty cycle of 43.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 42.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 43.3%/42.9% = 1.009 is applied to scale-up the measured SAR result. The scaled TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.

For LTE TDD Power class 3

i. Uplink-downlink configuration: 0. In a half-frame consisted of 5 subfames, uplink operation is in 3 uplink subframes and 1 special subframe.
ii. special subframe configuration: 5-9 for normal cyclic prefix in downlink, 4-7 for extended cyclic prefix in downlink
iii. for special subframe with extended cyclic prefix in uplink, the total uplink duty factor in one half-frame is: (3+0.167)/5 = 63.3%
iv. for special subframe with normal cyclic prefix in uplink, the total uplink duty factor in one half-frame is: (3+0.143)/5 = 62.9%
v. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The scaled TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.

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

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

<LTE Carrier Aggregation>

General Note:

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

2CC Downlink Carrier Aggregation			3CC Downlink Carrier Aggregation			4CC Downlink Carrier Aggregation		
Number	Combination	Covered by Measurement Superset	Number	Combination	Covered by Measurement Superset	Number	Combination	Covered by Measurement Superset
1	CA_41C	3CC-2	1	CA_41A-42C		1	CA_41C-42C	
2	CA_41A-42A		2	CA_41C-42A				
3	CA_42C	3CC-1						

LTE Carrier Aggregation Conducted Power (Downlink)

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

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

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

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

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

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

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

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

LTE 4x4 MIMO (Downlink)

This device supports downlink 4x4 MIMO operations for LTE Bands 41/42 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 Band B41/42

5G NR Output Power (Unit: dBm)

General Note:

1. 5G NR n77/n78 is SA 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-QPSK and the reported SAR for the DFT-QPSK configuration is ≤ 1.45 W/kg; CP-OFDM testing is not required.
   b. For DFT-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class2 and 3, for 16QAM/64QAM/256QAM and smaller bandwidth output power will spot check largest channel bandwidth worst RB configuration to ensure the 16QAM/64QAM/256QAM and smaller bandwidth output power will not ½ dB higher than the same configuration in the largest supported bandwidth.
   c. SAR testing start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel
   d. 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure
   e. QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested
   f. PI/2 BPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in QPSK, also reported SAR for the QPSK configuration is less than 1.45 W/kg, PI/2 BPSK /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. 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.
5. 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.

<WLAN Conducted Power>

General Note:

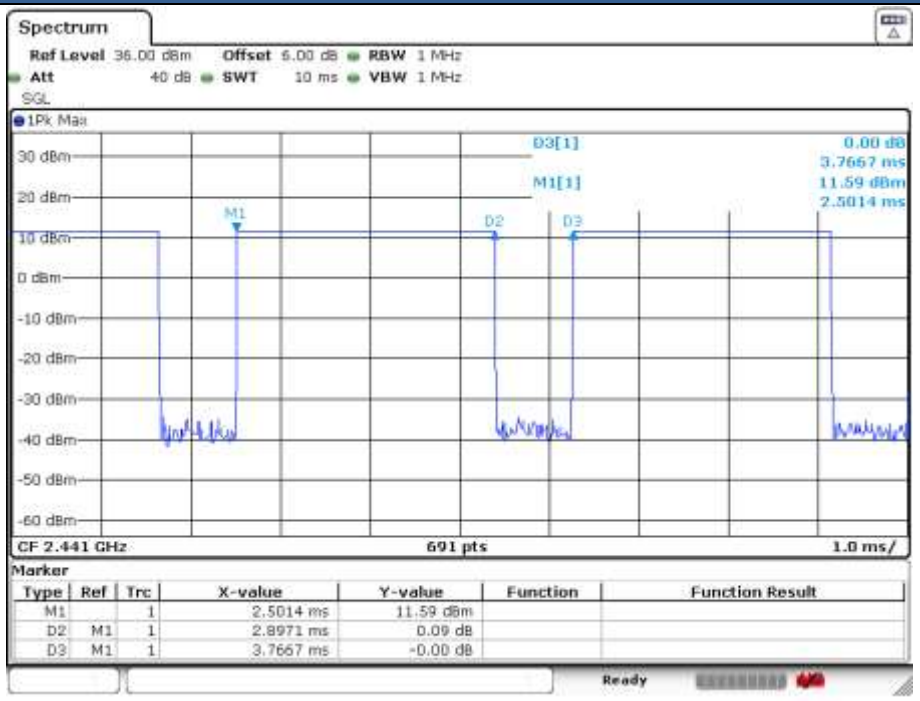
1. Per KDB 248227 D01v02r02, SAR test reduction is determined according to 802.11 transmission mode configurations and certain exposure conditions with multiple test positions. In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements. 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. The Bluetooth duty cycle is 76.91% as following figure, according to 2016 Oct. TCB workshop for Bluetooth SAR scaling need further consideration and the maximum duty cycle is 100%, therefore the actual duty cycle will be scaled up to100% for Bluetooth reported SAR calculation.

Bluetooth time-domain plot



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 of power class 3, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The reported TDD LTE SAR (W/kg) = Measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
   f. For TDD LTE SAR measurement of power class 2, the duty cycle 1:2.33 (42.9 %) was used perform testing and considering the theoretical duty cycle of 43.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 42.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 43.3%/42.9% = 1.009 is applied to scale-up the measured SAR result. The reported TDD LTE SAR (W/kg) = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
   - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
   - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
   - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required when the measured SAR is ≥ 0.8W/kg. Per KDB 865664 D01v01r04, if the extremity repeated SAR is necessary, the same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.
4. The device implements 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). The device will invoke corresponding work scenarios power level, which 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.
5. For WLAN when transmit simultaneous with WWAN, power reduction will be activated to head. For WLAN when transmit simultaneous with WWAN and Proximity sensors trigger, power reduction will be activated to body-worn and Handheld.
6. For some WWAN bands, sensor on power level is higher than hotspot power level, so front/back sensor on SAR can represent hotspot conservatively.
7. This device supports HPUE for LTE Band 41 with class 2 level, HPUE power has been measured separately. For HPUE power is higher than power class 3 but with lower duty cycle, the maximum average power for class 2 and class 3 is almost the same, so we chose power class 3 full SAR testing and power class 2 verify the worst case of power class 3 SAR.
8. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
9. 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.
10. 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.
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, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.

a. For this device SAR for WWAN/WLAN transmitter scaled to maximum output power mode for product specific 10g SAR is higher than 1.2W/kg of GSM850/1900, WCDMA Band II/IV/V, LTE Band 2/4/26/38/41/42, 5GNR n77/n78, WLAN2.4G&WLAN5.2/5.8GHz, 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. Although the headset SAR is greater than 0.8 W/kg, the headset SAR verified the worst of the non-headset SAR and less than non-headset SAR, so there is no need to be tested other channels.
13. For extremity exposure conditions, WLAN 2.4GHz SAR test at Back/Top side 0mm and WLAN 5GHz SAR test at Front/Back/Right side 0mm used full power SAR testing, so WLAN 2.4GHz/5GHz distance SAR test is not required.
14. The following table “n/a” in the result means the SAR cube is too small to be found.

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.
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 / 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 B17 / B38 SAR test was covered by LTE B12 / B41; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. the maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion
   b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band

5G NR Note:

1. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
   a. SAR testing start with the largest channel bandwidth and measure SAR for 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.
   b. 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure
   c. 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.
   d. PI/2 BPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in QPSK, also reported SAR for the QPSK configuration is less than 1.45 W/kg, PI/2 BPSK /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 n77/n78 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:

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

DSI status description：

Exposure conditions	DSI	Trigger conditions
Head SAR	DSI2	Earpiece On
Hotspot Mode	DSI7	Hotspot On
Body Worn	DSI3	Sensor On
Sensor Off	DSI4	Sensor Off
Extremity	DSI6	Sensor On

15.1 Head SAR

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Sample	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
750MHz																			
01	LTE Band 12	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	DSI 2	23095	707.5	1	23.07	24.00	1.239	0.16	0.151	**0.187**
	LTE Band 12	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	DSI 2	23095	707.5	1	23.07	24.00	1.239	0.03	0.097	0.120
	LTE Band 12	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	DSI 2	23095	707.5	1	23.07	24.00	1.239	0.07	0.148	0.183
	LTE Band 12	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	DSI 2	23095	707.5	1	23.07	24.00	1.239	-0.06	0.088	0.109
	LTE Band 12	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 0	DSI 2	23095	707.5	1	22.25	23.00	1.189	0.01	0.092	0.109
	LTE Band 12	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 0	DSI 2	23095	707.5	1	22.25	23.00	1.189	0.09	0.063	0.075
	LTE Band 12	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 0	DSI 2	23095	707.5	1	22.25	23.00	1.189	-0.07	0.089	0.106
	LTE Band 12	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 0	DSI 2	23095	707.5	1	22.25	23.00	1.189	-0.04	0.056	0.067
835MHz																			
02	GSM850	-	-	-	-	GPRS (2 Tx slots)	Right Cheek	0mm	Ant 0	DSI 2	128	824.2	1	30.04	31.00	1.247	0.17	0.143	**0.178**
	GSM850	-	-	-	-	GPRS (2 Tx slots)	Right Tilted	0mm	Ant 0	DSI 2	128	824.2	1	30.04	31.00	1.247	0.04	0.089	0.111
	GSM850	-	-	-	-	GPRS (2 Tx slots)	Left Cheek	0mm	Ant 0	DSI 2	128	824.2	1	30.04	31.00	1.247	-0.15	0.130	0.162
	GSM850	-	-	-	-	GPRS (2 Tx slots)	Left Tilted	0mm	Ant 0	DSI 2	128	824.2	1	30.04	31.00	1.247	0.17	0.074	0.092
03	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	DSI 2	4182	836.4	1	23.06	24.00	1.242	-0.04	0.205	**0.255**
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 0	DSI 2	4182	836.4	1	23.06	24.00	1.242	-0.12	0.135	0.168
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	DSI 2	4182	836.4	1	23.06	24.00	1.242	-0.09	0.190	0.236
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 0	DSI 2	4182	836.4	1	23.06	24.00	1.242	0.03	0.109	0.135
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	DSI 2	4182	836.4	2	23.06	24.00	1.242	0.05	0.174	0.216
04	LTE Band 26	15M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	DSI 2	26865	831.5	1	22.87	24.00	1.297	-0.02	0.151	**0.196**
	LTE Band 26	15M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	DSI 2	26865	831.5	1	22.87	24.00	1.297	-0.07	0.082	0.106
	LTE Band 26	15M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	DSI 2	26865	831.5	1	22.87	24.00	1.297	-0.15	0.139	0.180
	LTE Band 26	15M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	DSI 2	26865	831.5	1	22.87	24.00	1.297	-0.14	0.072	0.093
	LTE Band 26	15M	QPSK	36	0	-	Right Cheek	0mm	Ant 0	DSI 2	26865	831.5	1	21.91	23.00	1.285	-0.01	0.091	0.117
	LTE Band 26	15M	QPSK	36	0	-	Right Tilted	0mm	Ant 0	DSI 2	26865	831.5	1	21.91	23.00	1.285	0.12	0.050	0.064
	LTE Band 26	15M	QPSK	36	0	-	Left Cheek	0mm	Ant 0	DSI 2	26865	831.5	1	21.91	23.00	1.285	-0.16	0.084	0.108
	LTE Band 26	15M	QPSK	36	0	-	Left Tilted	0mm	Ant 0	DSI 2	26865	831.5	1	21.91	23.00	1.285	0.12	0.043	0.055
1750MHz																			
05	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	DSI 2	1413	1732.6	1	23.61	24.00	1.094	-0.15	0.148	**0.162**
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 0	DSI 2	1413	1732.6	1	23.61	24.00	1.094	-0.03	0.062	0.068
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	DSI 2	1413	1732.6	1	23.61	24.00	1.094	-0.12	0.097	0.106
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 0	DSI 2	1413	1732.6	1	23.61	24.00	1.094	0.17	0.072	0.079
06	LTE Band 4	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	DSI 2	20175	1732.5	1	22.98	24.00	1.265	-0.13	0.144	**0.182**
	LTE Band 4	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	DSI 2	20175	1732.5	1	22.98	24.00	1.265	0.01	0.070	0.089
	LTE Band 4	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	DSI 2	20175	1732.5	1	22.98	24.00	1.265	-0.11	0.112	0.142
	LTE Band 4	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	DSI 2	20175	1732.5	1	22.98	24.00	1.265	-0.05	0.087	0.110
	LTE Band 4	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 0	DSI 2	20175	1732.5	1	22.03	23.00	1.250	0.01	0.083	0.104
	LTE Band 4	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 0	DSI 2	20175	1732.5	1	22.03	23.00	1.250	-0.03	0.044	0.055
	LTE Band 4	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 0	DSI 2	20175	1732.5	1	22.03	23.00	1.250	-0.1	0.067	0.084
	LTE Band 4	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 0	DSI 2	20175	1732.5	1	22.03	23.00	1.250	0.15	0.050	0.063
1900MHz																			
07	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Right Cheek	0mm	Ant 0	DSI 2	512	1850.2	1	26.49	27.50	1.262	0.09	0.158	**0.199**
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Right Tilted	0mm	Ant 0	DSI 2	512	1850.2	1	26.49	27.50	1.262	-0.02	0.094	0.119
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Left Cheek	0mm	Ant 0	DSI 2	512	1850.2	1	26.49	27.50	1.262	-0.08	0.114	0.144
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Left Tilted	0mm	Ant 0	DSI 2	512	1850.2	1	26.49	27.50	1.262	0.13	0.102	0.129
08	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	DSI 2	9400	1880	1	23.59	24.00	1.099	0.05	0.266	**0.292**
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 0	DSI 2	9400	1880	1	23.59	24.00	1.099	0.15	0.164	0.180
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	DSI 2	9400	1880	1	23.59	24.00	1.099	0.01	0.189	0.208
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 0	DSI 2	9400	1880	1	23.59	24.00	1.099	0.1	0.175	0.192
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	DSI 2	9400	1880	2	23.59	24.00	1.099	0.09	0.241	0.265
09	LTE Band 2	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	DSI 2	19100	1900	1	22.95	24.00	1.274	0.13	0.215	**0.274**

	LTE Band 2	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	DSI 2	19100	1900	1	22.95	24.00	1.274	-0.08	0.144	0.183
	LTE Band 2	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	DSI 2	19100	1900	1	22.95	24.00	1.274	0.13	0.167	0.213
	LTE Band 2	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	DSI 2	19100	1900	1	22.95	24.00	1.274	0.09	0.160	0.204
	LTE Band 2	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 0	DSI 2	19100	1900	1	21.92	23.00	1.282	-0.06	0.130	0.167
	LTE Band 2	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 0	DSI 2	19100	1900	1	21.92	23.00	1.282	-0.04	0.086	0.110
	LTE Band 2	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 0	DSI 2	19100	1900	1	21.92	23.00	1.282	-0.14	0.096	0.123
	LTE Band 2	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 0	DSI 2	19100	1900	1	21.92	23.00	1.282	-0.09	0.094	0.121

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Sample	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)
2600MHz																					
	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	41490	2680	1	16.66	17.50	1.213	62.9	1.006	-0.13	0.749	0.914
	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	41490	2680	1	16.66	17.50	1.213	62.9	1.006	0.06	0.833	1.017
	LTE Band 41	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI 2	41490	2680	1	16.66	17.50	1.213	62.9	1.006	-0.12	0.286	0.349
	LTE Band 41	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	DSI 2	41490	2680	1	16.66	17.50	1.213	62.9	1.006	0.17	0.342	0.417
	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	39750	2506	1	16.54	17.50	1.247	62.9	1.006	0.13	0.692	0.868
	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	40185	2549.5	1	16.53	17.50	1.250	62.9	1.006	0.07	0.695	0.874
	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	40620	2593	1	16.53	17.50	1.250	62.9	1.006	0.18	0.696	0.875
	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	41055	2636.5	1	16.38	17.50	1.294	62.9	1.006	-0.05	0.736	0.958
	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	39750	2506	1	16.54	17.50	1.247	62.9	1.006	-0.07	0.828	1.039
	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	40185	2549.5	1	16.53	17.50	1.250	62.9	1.006	0.02	0.853	1.073
	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	40620	2593	1	16.53	17.50	1.250	62.9	1.006	0.06	0.869	1.093
	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	41055	2636.5	1	16.38	17.50	1.294	62.9	1.006	0.19	0.903	1.176
	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI 2	41490	2680	1	16.58	17.50	1.236	62.9	1.006	0.09	0.727	0.904
	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI 2	41490	2680	1	16.58	17.50	1.236	62.9	1.006	0.08	0.815	1.013
	LTE Band 41	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 1	DSI 2	41490	2680	1	16.58	17.50	1.236	62.9	1.006	-0.04	0.281	0.349
	LTE Band 41	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 1	DSI 2	41490	2680	1	16.58	17.50	1.236	62.9	1.006	0.03	0.334	0.415
	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI 2	39750	2506	1	16.57	17.50	1.239	62.9	1.006	0.13	0.673	0.839
	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI 2	40185	2549.5	1	16.44	17.50	1.276	62.9	1.006	0.07	0.672	0.863
	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI 2	40620	2593	1	16.54	17.50	1.247	62.9	1.006	0.18	0.677	0.850
	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI 2	41055	2636.5	1	16.54	17.50	1.247	62.9	1.006	-0.05	0.713	0.895
	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI 2	39750	2506	1	16.57	17.50	1.239	62.9	1.006	0.03	0.873	1.088
	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI 2	40185	2549.5	1	16.44	17.50	1.276	62.9	1.006	0.12	0.857	1.100
	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI 2	40620	2593	1	16.54	17.50	1.247	62.9	1.006	0.09	0.894	1.122
10	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI 2	41055	2636.5	1	16.54	17.50	1.247	62.9	1.006	0.09	0.933	**1.171**
	LTE Band 41-PC2	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI 2	41055	2636.5	1	17.95	19.00	1.274	42.9	1.009	0.05	0.851	1.094
	LTE Band 41	20M	QPSK	100	0	-	Right Cheek	0mm	Ant 1	DSI 2	41490	2680	1	16.47	17.50	1.268	62.9	1.006	-0.11	0.697	0.889
	LTE Band 41	20M	QPSK	100	0	-	Right Tilted	0mm	Ant 1	DSI 2	41490	2680	1	16.47	17.50	1.268	62.9	1.006	-0.05	0.782	0.997
3500MHz&3900MHz																					
	LTE Band 42	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 2	DSI 2	42590	3500	1	16.96	18.00	1.271	62.9	1.006	0.04	0.568	0.726
	LTE Band 42	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 2	DSI 2	42590	3500	1	16.96	18.00	1.271	62.9	1.006	0.15	0.549	0.702
	LTE Band 42	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 2	DSI 2	42590	3500	1	16.96	18.00	1.271	62.9	1.006	0.11	0.729	0.932
	LTE Band 42	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 2	DSI 2	42590	3500	1	16.96	18.00	1.271	62.9	1.006	-0.04	0.702	0.897
	LTE Band 42	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 2	DSI 2	42190	3460	1	16.89	18.00	1.291	62.9	1.006	0.06	0.662	0.860
11	LTE Band 42	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 2	DSI 2	42990	3540	1	16.70	18.00	1.349	62.9	1.006	0.02	0.760	**1.031**
	LTE Band 42	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 2	DSI 2	42190	3460	1	16.89	18.00	1.291	62.9	1.006	0.06	0.644	0.837
	LTE Band 42	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 2	DSI 2	42990	3540	1	16.70	18.00	1.349	62.9	1.006	0.02	0.735	0.997
	LTE Band 42	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 2	DSI 2	42590	3500	1	16.93	18.00	1.279	62.9	1.006	0.14	0.566	0.728
	LTE Band 42	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 2	DSI 2	42590	3500	1	16.93	18.00	1.279	62.9	1.006	0.17	0.544	0.700
	LTE Band 42	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 2	DSI 2	42590	3500	1	16.93	18.00	1.279	62.9	1.006	-0.04	0.713	0.918
	LTE Band 42	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 2	DSI 2	42590	3500	1	16.93	18.00	1.279	62.9	1.006	-0.15	0.695	0.895
	LTE Band 42	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 2	DSI 2	42190	3460	1	16.88	18.00	1.294	62.9	1.006	-0.13	0.651	0.848
	LTE Band 42	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 2	DSI 2	42990	3540	1	16.67	18.00	1.358	62.9	1.006	-0.02	0.749	1.023
	LTE Band 42	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 2	DSI 2	42190	3460	1	16.88	18.00	1.294	62.9	1.006	0.04	0.633	0.824
	LTE Band 42	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 2	DSI 2	42990	3540	1	16.67	18.00	1.358	62.9	1.006	0.11	0.720	0.984
	LTE Band 42	20M	QPSK	100	0	-	Left Cheek	0mm	Ant 2	DSI 2	42590	3500	1	16.90	18.00	1.288	62.9	1.006	0.06	0.706	0.915

	LTE Band 42	20M	QPSK	100	0	-	Left Tilted	0mm	Ant 2	DSI 2	42590	3500	1	16.90	18.00	1.288	62.9	1.006	0.17	0.686	0.889
	FR1 n77	100M	BPSK	1	1	DFT-30	Right Cheek	0mm	Ant 2	DSI 2	656000	3840	1	16.98	18.00	1.265	-	-	0.02	0.452	0.572
	FR1 n77	100M	BPSK	1	1	DFT-30	Right Tilted	0mm	Ant 2	DSI 2	656000	3840	1	16.98	18.00	1.265	-	-	0.1	0.493	0.624
	FR1 n77	100M	BPSK	1	1	DFT-30	Left Cheek	0mm	Ant 2	DSI 2	656000	3840	1	16.98	18.00	1.265	-	-	0.01	0.614	0.777
	FR1 n77	100M	BPSK	1	1	DFT-30	Left Tilted	0mm	Ant 2	DSI 2	656000	3840	1	16.98	18.00	1.265	-	-	0.1	0.638	0.807
	FR1 n77	100M	BPSK	135	69	DFT-30	Right Cheek	0mm	Ant 2	DSI 2	656000	3840	1	16.95	18.00	1.274	-	-	0.08	0.454	0.578
	FR1 n77	100M	BPSK	135	69	DFT-30	Right Tilted	0mm	Ant 2	DSI 2	656000	3840	1	16.95	18.00	1.274	-	-	-0.03	0.501	0.638
	FR1 n77	100M	BPSK	135	69	DFT-30	Left Cheek	0mm	Ant 2	DSI 2	656000	3840	1	16.95	18.00	1.274	-	-	-0.16	0.618	0.787
	FR1 n77	100M	BPSK	135	69	DFT-30	Left Tilted	0mm	Ant 2	DSI 2	656000	3840	1	16.95	18.00	1.274	-	-	-0.16	0.642	0.818
	FR1 n77	100M	BPSK	270	0	DFT-30	Right Cheek	0mm	Ant 2	DSI 2	656000	3840	1	16.77	18.00	1.327	-	-	0.09	0.451	0.599
	FR1 n77	100M	BPSK	270	0	DFT-30	Right Tilted	0mm	Ant 2	DSI 2	656000	3840	1	16.77	18.00	1.327	-	-	0.1	0.499	0.662
	FR1 n77	100M	BPSK	270	0	DFT-30	Left Cheek	0mm	Ant 2	DSI 2	656000	3840	1	16.77	18.00	1.327	-	-	0	0.613	0.814
12	FR1 n77	100M	BPSK	270	0	DFT-30	Left Tilted	0mm	Ant 2	DSI 2	656000	3840	1	16.77	18.00	1.327	-	-	-0.05	0.628	**0.834**
	FR1 n77	100M	BPSK	270	0	DFT-30	Left Tilted	0mm	Ant 2	DSI 2	656000	3840	2	16.77	18.00	1.327	-	-	0.04	0.519	0.689
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 3	DSI 2	656000	3840	1	19.83	21.00	1.309	-	-	-0.02	0.093	0.122
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 3	DSI 2	656000	3840	1	19.83	21.00	1.309	-	-	0.18	0.052	0.068
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 3	DSI 2	656000	3840	1	19.83	21.00	1.309	-	-	-0.12	0.082	0.107
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 3	DSI 2	656000	3840	1	19.83	21.00	1.309	-	-	0.05	0.068	0.089
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 3	DSI 2	656000	3840	1	19.80	21.00	1.318	-	-	-0.09	0.096	0.127
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 3	DSI 2	656000	3840	1	19.80	21.00	1.318	-	-	0.1	0.052	0.069
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 3	DSI 2	656000	3840	1	19.80	21.00	1.318	-	-	-0.01	0.084	0.111
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 3	DSI 2	656000	3840	1	19.80	21.00	1.318	-	-	-0.11	0.072	0.095
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 5	DSI 2	656000	3840	1	19.58	21.00	1.387	-	-	-0.06	0.102	0.141
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 5	DSI 2	656000	3840	1	19.58	21.00	1.387	-	-	0.04	0.124	0.172
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 5	DSI 2	656000	3840	1	19.58	21.00	1.387	-	-	0.16	0.190	0.263
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 5	DSI 2	656000	3840	1	19.58	21.00	1.387	-	-	0.17	0.083	0.115
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 5	DSI 2	656000	3840	1	19.53	21.00	1.403	-	-	0.09	0.099	0.139
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 5	DSI 2	656000	3840	1	19.53	21.00	1.403	-	-	0.13	0.121	0.170
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 5	DSI 2	656000	3840	1	19.53	21.00	1.403	-	-	0.17	0.194	0.272
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 5	DSI 2	656000	3840	1	19.53	21.00	1.403	-	-	-0.02	0.086	0.121
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 7	DSI 2	656000	3840	1	20.23	21.00	1.194	-	-	0.08	0.070	0.084
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 7	DSI 2	656000	3840	1	20.23	21.00	1.194	-	-	-0.14	0.062	0.074
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 7	DSI 2	656000	3840	1	20.23	21.00	1.194	-	-	-0.17	0.085	0.101
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 7	DSI 2	656000	3840	1	20.23	21.00	1.194	-	-	-0.1	0.060	0.072
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 7	DSI 2	656000	3840	1	20.16	21.00	1.213	-	-	-0.04	0.072	0.087
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 7	DSI 2	656000	3840	1	20.16	21.00	1.213	-	-	-0.05	0.066	0.080
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 7	DSI 2	656000	3840	1	20.16	21.00	1.213	-	-	0.17	0.083	0.101
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 7	DSI 2	656000	3840	1	20.16	21.00	1.213	-	-	0.01	0.063	0.076

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Sample	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)
2450MHz																	
	Bluetooth	DH5 1Mbps	Right Cheek	0mm	Ant 8	Full	0	2402	1	12.55	13.00	1.109	76.91	1.300	-0.16	0.061	0.088
	Bluetooth	DH5 1Mbps	Right Tilted	0mm	Ant 8	Full	0	2402	1	12.55	13.00	1.109	76.91	1.300	-0.17	0.057	0.082
13	Bluetooth	DH5 1Mbps	Left Cheek	0mm	Ant 8	Full	0	2402	1	12.55	13.00	1.109	76.91	1.300	0.1	0.146	**0.211**
	Bluetooth	DH5 1Mbps	Left Tilted	0mm	Ant 8	Full	0	2402	1	12.55	13.00	1.109	76.91	1.300	-0.13	0.085	0.123
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 8	Standalone	1	2412	1	18.66	20.00	1.361	100	1.000	0.11	0.478	0.651
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 8	Standalone	1	2412	1	18.66	20.00	1.361	100	1.000	0.01	0.427	0.581
14	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 8	Standalone	1	2412	1	18.66	20.00	1.361	100	1.000	0.1	1.050	**1.430**
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 8	Standalone	1	2412	1	18.66	20.00	1.361	100	1.000	-0.14	0.714	0.972
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 8	Standalone	11	2462	1	18.46	20.00	1.426	100	1.000	0.19	0.852	1.215
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 8	Standalone	6	2437	1	18.43	20.00	1.435	100	1.000	-0.04	0.660	0.947
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 8	Standalone	11	2462	1	18.46	20.00	1.426	100	1.000	0.01	0.630	0.898
	WLAN2.4GHz	802.11g 6Mbps	Left Cheek	0mm	Ant 8	Standalone	6	2437	1	18.34	20.00	1.466	98.25	1.018	-0.18	0.785	1.171
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 8	Simultaneous	1	2412	1	11.67	13.00	1.358	100	1.000	0.05	0.289	0.393
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 8	Standalone	1	2412	2	18.66	20.00	1.361	100	1.000	0.16	1.020	1.389
WIFI5G																	
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 8	Standalone	58	5290	1	15.05	16.50	1.396	92.17	1.085	0.11	0.348	0.527
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 8	Standalone	58	5290	1	15.05	16.50	1.396	92.17	1.085	-0.05	0.439	0.665
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 8	Standalone	58	5290	1	15.05	16.50	1.396	92.17	1.085	0.13	0.600	0.909
15	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 8	Standalone	58	5290	1	15.05	16.50	1.396	92.17	1.085	0.09	0.780	**1.182**
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 8	Simultaneous	58	5290	1	10.14	11.50	1.368	92.17	1.085	-0.05	0.106	0.157
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 8	Simultaneous	58	5290	1	10.14	11.50	1.368	92.17	1.085	-0.01	0.147	0.218
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 8	Simultaneous	58	5290	1	10.14	11.50	1.368	92.17	1.085	0.12	0.197	0.292
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 8	Simultaneous	58	5290	1	10.14	11.50	1.368	92.17	1.085	0.11	0.253	0.375
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 8	Standalone	58	5290	2	15.05	16.50	1.396	92.17	1.085	0.13	0.548	0.830
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 8	Standalone	122	5610	1	12.80	14.00	1.318	92.17	1.085	-0.18	0.493	0.705
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 8	Standalone	122	5610	1	12.80	14.00	1.318	92.17	1.085	-0.03	0.552	0.790
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 8	Standalone	122	5610	1	12.80	14.00	1.318	92.17	1.085	0.11	0.753	1.077
16	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 8	Standalone	122	5610	1	12.80	14.00	1.318	92.17	1.085	0.16	0.808	**1.156**
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 8	Standalone	138	5690	1	12.46	14.00	1.425	92.17	1.085	0.07	0.589	0.911
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 8	Standalone	138	5690	1	12.46	14.00	1.425	92.17	1.085	0.03	0.741	1.146
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 8	Simultaneous	122	5610	1	7.79	9.00	1.321	92.17	1.085	0.11	0.140	0.201
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 8	Simultaneous	122	5610	1	7.79	9.00	1.321	92.17	1.085	0.03	0.170	0.244
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 8	Simultaneous	122	5610	1	7.79	9.00	1.321	92.17	1.085	-0.16	0.209	0.300
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 8	Simultaneous	122	5610	1	7.79	9.00	1.321	92.17	1.085	0.04	0.242	0.347
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 8	Standalone	155	5775	1	12.05	13.50	1.396	92.17	1.085	0.19	0.489	0.741
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 8	Standalone	155	5775	1	12.05	13.50	1.396	92.17	1.085	0.18	0.603	0.914
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 8	Standalone	155	5775	1	12.05	13.50	1.396	92.17	1.085	-0.08	0.653	0.989
17	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 8	Standalone	155	5775	1	12.05	13.50	1.396	92.17	1.085	-0.1	0.731	**1.108**
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 8	Simultaneous	155	5775	1	7.01	8.50	1.409	92.17	1.085	-0.06	0.151	0.231
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 8	Simultaneous	155	5775	1	7.01	8.50	1.409	92.17	1.085	0.02	0.189	0.289
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 8	Simultaneous	155	5775	1	7.01	8.50	1.409	92.17	1.085	-0.13	0.206	0.315
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 8	Simultaneous	155	5775	1	7.01	8.50	1.409	92.17	1.085	-0.04	0.227	0.347

15.2 Hotspot SAR

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Sample	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
750MHz																			
	LTE Band 12	10M	QPSK	1	0	-	Front	5mm	Ant 0	DSI 3	23095	707.5	1	23.07	24.00	1.239	0.11	0.340	0.421
18	LTE Band 12	10M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3	23095	707.5	1	23.07	24.00	1.239	0	0.758	**0.939**
	LTE Band 12	10M	QPSK	1	0	-	Left Side	5mm	Ant 0	DSI 7	23095	707.5	1	23.07	24.00	1.239	-0.15	0.286	0.354
	LTE Band 12	10M	QPSK	1	0	-	Right Side	5mm	Ant 0	DSI 7	23095	707.5	1	23.07	24.00	1.239	0.03	0.565	0.700
	LTE Band 12	10M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 7	23095	707.5	1	23.07	24.00	1.239	0.17	0.396	0.491
	LTE Band 12	10M	QPSK	25	0	-	Front	5mm	Ant 0	DSI 3	23095	707.5	1	22.25	23.00	1.189	-0.09	0.212	0.252
	LTE Band 12	10M	QPSK	25	0	-	Back	5mm	Ant 0	DSI 3	23095	707.5	1	22.25	23.00	1.189	-0.06	0.488	0.580
	LTE Band 12	10M	QPSK	25	0	-	Left Side	5mm	Ant 0	DSI 7	23095	707.5	1	22.25	23.00	1.189	0.09	0.185	0.220
	LTE Band 12	10M	QPSK	25	0	-	Right Side	5mm	Ant 0	DSI 7	23095	707.5	1	22.25	23.00	1.189	0.06	0.365	0.434
	LTE Band 12	10M	QPSK	25	0	-	Bottom Side	5mm	Ant 0	DSI 7	23095	707.5	1	22.25	23.00	1.189	-0.03	0.247	0.294
	LTE Band 12	10M	QPSK	50	0	-	Back	5mm	Ant 0	DSI 3	23095	707.5	1	22.23	23.00	1.194	0.03	0.480	0.573
835MHz																			
	GSM850	-	-	-	-	GPRS (2 Tx slots)	Front	5mm	Ant 0	DSI 3	128	824.2	1	28.12	29.00	1.225	0.01	0.361	0.442
	GSM850	-	-	-	-	GPRS (2 Tx slots)	Back	5mm	Ant 0	DSI 3	128	824.2	1	28.12	29.00	1.225	-0.12	0.783	0.959
	GSM850	-	-	-	-	GPRS (2 Tx slots)	Back	5mm	Ant 0	DSI 3	189	836.4	1	27.69	29.00	1.352	-0.14	0.936	1.266
19	GSM850	-	-	-	-	GPRS (2 Tx slots)	Back	5mm	Ant 0	DSI 3	251	848.8	1	28.03	29.00	1.250	-0.1	1.060	**1.325**
	GSM850	-	-	-	-	GPRS (2 Tx slots)	Left Side	5mm	Ant 0	DSI 7	128	824.2	1	28.12	29.00	1.225	0.04	0.189	0.231
	GSM850	-	-	-	-	GPRS (2 Tx slots)	Right Side	5mm	Ant 0	DSI 7	128	824.2	1	28.12	29.00	1.225	-0.07	0.324	0.397
	GSM850	-	-	-	-	GPRS (2 Tx slots)	Bottom Side	5mm	Ant 0	DSI 7	128	824.2	1	28.12	29.00	1.225	-0.08	0.464	0.568
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	DSI 3	4182	836.4	1	22.15	23.00	1.216	0.12	0.611	0.743
20	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	4182	836.4	1	22.15	23.00	1.216	0.12	1.150	**1.399**
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	4132	826.4	1	22.08	23.00	1.236	0.05	1.055	1.304
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	4233	846.6	1	22.12	23.00	1.225	-0.12	0.969	1.187
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Side	5mm	Ant 0	DSI 7	4182	836.4	1	22.15	23.00	1.216	-0.06	0.193	0.235
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Side	5mm	Ant 0	DSI 7	4182	836.4	1	22.15	23.00	1.216	0.15	0.358	0.435
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI 7	4182	836.4	1	22.15	23.00	1.216	0.06	0.508	0.618
	LTE Band 26	15M	QPSK	1	0	-	Front	5mm	Ant 0	DSI 3	26865	831.5	1	21.29	22.50	1.321	0.12	0.590	0.780
21	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3	26865	831.5	1	21.29	22.50	1.321	-0.04	1.060	**1.401**
	LTE Band 26	15M	QPSK	1	0	-	Left Side	5mm	Ant 0	DSI 7	26865	831.5	1	21.29	22.50	1.321	-0.01	0.158	0.209
	LTE Band 26	15M	QPSK	1	0	-	Right Side	5mm	Ant 0	DSI 7	26865	831.5	1	21.29	22.50	1.321	-0.01	0.301	0.398
	LTE Band 26	15M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 7	26865	831.5	1	21.29	22.50	1.321	-0.01	0.488	0.645
	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3	26865	831.5	2	21.29	22.50	1.321	-0.08	0.833	1.101
	LTE Band 26	15M	QPSK	36	0	-	Front	5mm	Ant 0	DSI 3	26865	831.5	1	21.28	22.50	1.324	0.16	0.463	0.613
	LTE Band 26	15M	QPSK	36	0	-	Back	5mm	Ant 0	DSI 3	26865	831.5	1	21.28	22.50	1.324	-0.18	0.789	1.045
	LTE Band 26	15M	QPSK	36	0	-	Left Side	5mm	Ant 0	DSI 7	26865	831.5	1	21.28	22.50	1.324	0.1	0.125	0.166
	LTE Band 26	15M	QPSK	36	0	-	Right Side	5mm	Ant 0	DSI 7	26865	831.5	1	21.28	22.50	1.324	0.01	0.240	0.318
	LTE Band 26	15M	QPSK	36	0	-	Bottom Side	5mm	Ant 0	DSI 7	26865	831.5	1	21.28	22.50	1.324	0.04	0.383	0.507
	LTE Band 26	15M	QPSK	75	0	-	Back	5mm	Ant 0	DSI 3	26865	831.5	1	21.19	22.50	1.352	-0.07	0.768	1.038
1750MHz																			
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	DSI 3	1413	1732.6	1	18.84	19.50	1.164	-0.14	0.569	0.662
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	1413	1732.6	1	18.84	19.50	1.164	0.03	1.040	1.211
22	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	1312	1712.4	1	18.82	19.50	1.169	0.13	1.160	**1.357**
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	1513	1752.6	1	18.68	19.50	1.208	0.05	1.057	1.277
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Side	5mm	Ant 0	DSI 7	1413	1732.6	1	17.99	18.50	1.125	-0.13	0.043	0.048
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Side	5mm	Ant 0	DSI 7	1413	1732.6	1	17.99	18.50	1.125	-0.09	0.093	0.105
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI 7	1413	1732.6	1	17.99	18.50	1.125	-0.11	1.120	1.260
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI 7	1312	1712.4	1	17.97	18.50	1.130	0.14	1.200	1.356
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI 7	1513	1752.6	1	17.88	18.50	1.153	-0.13	1.098	1.266
	LTE Band 4	20M	QPSK	1	0	-	Front	5mm	Ant 0	DSI 3	20175	1732.5	1	19.50	20.50	1.259	-0.14	0.568	0.715
23	LTE Band 4	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3	20175	1732.5	1	19.50	20.50	1.259	-0.01	1.140	**1.435**
	LTE Band 4	20M	QPSK	1	0	-	Left Side	5mm	Ant 0	DSI 7	20175	1732.5	1	17.20	18.00	1.202	-	n/a	n/a

	LTE Band 4	20M	QPSK	1	0	-	Right Side	5mm	Ant 0	DSI 7	20175	1732.5	1	17.20	18.00	1.202	-0.06	0.107	0.129
	LTE Band 4	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 7	20175	1732.5	1	17.20	18.00	1.202	0.11	1.190	1.431
	LTE Band 4	20M	QPSK	50	0	-	Front	5mm	Ant 0	DSI 3	20175	1732.5	1	19.48	20.50	1.265	-0.15	0.574	0.726
	LTE Band 4	20M	QPSK	50	0	-	Back	5mm	Ant 0	DSI 3	20175	1732.5	1	19.48	20.50	1.265	0.14	1.100	1.391
	LTE Band 4	20M	QPSK	50	0	-	Left Side	5mm	Ant 0	DSI 7	20175	1732.5	1	17.19	18.00	1.205	-	n/a	n/a
	LTE Band 4	20M	QPSK	50	0	-	Right Side	5mm	Ant 0	DSI 7	20175	1732.5	1	17.19	18.00	1.205	0.04	0.104	0.125
	LTE Band 4	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	DSI 7	20175	1732.5	1	17.19	18.00	1.205	0.08	1.130	1.362
	LTE Band 4	20M	QPSK	100	0	-	Back	5mm	Ant 0	DSI 3	20175	1732.5	1	19.46	20.50	1.271	-0.07	1.070	1.360
	LTE Band 4	20M	QPSK	100	0	-	Bottom Side	5mm	Ant 0	DSI 7	20175	1732.5	1	17.17	18.00	1.211	-0.07	1.100	1.332
1900MHz																			
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Front	5mm	Ant 0	DSI 3	512	1850.2	1	21.92	22.50	1.143	-0.01	0.507	0.579
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Back	5mm	Ant 0	DSI 3	512	1850.2	1	21.92	22.50	1.143	0.14	1.050	1.200
24	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Back	5mm	Ant 0	DSI 3	661	1880	1	21.64	22.50	1.219	0.12	1.110	**1.353**
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Back	5mm	Ant 0	DSI 3	810	1909.8	1	21.77	22.50	1.183	-0.07	0.899	1.064
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Left Side	5mm	Ant 0	DSI 7	512	1850.2	1	19.67	20.50	1.211	-0.01	0.070	0.085
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Right Side	5mm	Ant 0	DSI 7	512	1850.2	1	19.67	20.50	1.211	0.13	0.082	0.099
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Bottom Side	5mm	Ant 0	DSI 7	512	1850.2	1	19.67	20.50	1.211	0.09	1.040	1.259
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Bottom Side	5mm	Ant 0	DSI 7	661	1880	1	19.42	20.50	1.282	0.16	1.030	1.321
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Bottom Side	5mm	Ant 0	DSI 7	810	1909.8	1	19.63	20.50	1.222	-0.07	0.902	1.102
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	DSI 3	9400	1880	1	17.55	18.00	1.109	-0.14	0.628	0.697
25	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	9400	1880	1	17.55	18.00	1.109	-0.1	1.260	**1.398**
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	9262	1852.4	1	17.52	18.00	1.117	0.1	1.219	1.361
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	9538	1907.6	1	17.46	18.00	1.132	-0.13	1.070	1.212
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Side	5mm	Ant 0	DSI 7	9400	1880	1	16.03	16.50	1.114	0.09	0.083	0.092
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Side	5mm	Ant 0	DSI 7	9400	1880	1	16.03	16.50	1.114	0.04	0.086	0.096
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI 7	9400	1880	1	16.03	16.50	1.114	0.11	1.150	1.281
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI 7	9262	1852.4	1	16.00	16.50	1.122	-0.08	1.220	1.369
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI 7	9538	1907.6	1	15.97	16.50	1.130	-0.13	1.010	1.141
	LTE Band 2	20M	QPSK	1	0	-	Front	5mm	Ant 0	DSI 3	19100	1900	1	17.02	18.00	1.253	0.12	0.527	0.660
	LTE Band 2	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3	19100	1900	1	17.02	18.00	1.253	-0.14	1.030	1.291
26	LTE Band 2	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3	18700	1860	1	16.98	18.00	1.265	-0.03	1.140	**1.442**
	LTE Band 2	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3	18900	1880	1	16.95	18.00	1.274	-0.15	1.110	1.414
	LTE Band 2	20M	QPSK	1	0	-	Left Side	5mm	Ant 0	DSI 7	19100	1900	1	16.04	17.00	1.247	0	0.074	0.092
	LTE Band 2	20M	QPSK	1	0	-	Right Side	5mm	Ant 0	DSI 7	19100	1900	1	16.04	17.00	1.247	0.04	0.078	0.097
	LTE Band 2	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 7	19100	1900	1	16.04	17.00	1.247	0.18	1.010	1.260
	LTE Band 2	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 7	18700	1860	1	16.02	17.00	1.253	0.17	1.150	1.441
	LTE Band 2	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 7	18900	1880	1	16.00	17.00	1.259	-0.09	1.090	1.372
	LTE Band 2	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3	18700	1860	2	16.98	18.00	1.265	-0.07	0.926	1.171
	LTE Band 2	20M	QPSK	50	0	-	Front	5mm	Ant 0	DSI 3	19100	1900	1	17.00	18.00	1.259	-0.08	0.522	0.657
	LTE Band 2	20M	QPSK	50	0	-	Back	5mm	Ant 0	DSI 3	19100	1900	1	17.00	18.00	1.259	-0.01	1.000	1.259
	LTE Band 2	20M	QPSK	50	0	-	Back	5mm	Ant 0	DSI 3	18700	1860	1	16.96	18.00	1.271	-0.02	1.090	1.385
	LTE Band 2	20M	QPSK	50	0	-	Back	5mm	Ant 0	DSI 3	18900	1880	1	16.93	18.00	1.279	-0.17	1.040	1.331
	LTE Band 2	20M	QPSK	50	0	-	Left Side	5mm	Ant 0	DSI 7	19100	1900	1	16.02	17.00	1.253	0.01	0.075	0.094
	LTE Band 2	20M	QPSK	50	0	-	Right Side	5mm	Ant 0	DSI 7	19100	1900	1	16.02	17.00	1.253	0.01	0.080	0.100
	LTE Band 2	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	DSI 7	19100	1900	1	16.02	17.00	1.253	-0.11	1.000	1.253
	LTE Band 2	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	DSI 7	18700	1860	1	16.00	17.00	1.259	-0.02	1.110	1.397
	LTE Band 2	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	DSI 7	18900	1880	1	15.98	17.00	1.265	-0.17	1.030	1.303
	LTE Band 2	20M	QPSK	100	0	-	Back	5mm	Ant 0	DSI 3	19100	1900	1	16.97	18.00	1.268	0.17	0.996	1.263
	LTE Band 2	20M	QPSK	100	0	-	Bottom Side	5mm	Ant 0	DSI 7	19100	1900	1	16.00	17.00	1.259	-0.09	0.994	1.251

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Sample	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)
2600MHz																					
	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 1	DSI 3	41490	2680	1	15.78	16.50	1.180	62.9	1.006	-0.11	0.337	0.400
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 3	41490	2680	1	15.78	16.50	1.180	62.9	1.006	-0.05	0.836	0.993
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 3	39750	2506	1	15.74	16.50	1.191	62.9	1.006	0.15	0.817	0.979
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 3	40185	2549.5	1	15.76	16.50	1.186	62.9	1.006	0.1	0.794	0.947
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 3	40620	2593	1	15.69	16.50	1.205	62.9	1.006	0.16	0.914	1.108
27	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 3	41055	2636.5	1	15.75	16.50	1.189	62.9	1.006	0.03	1.000	**1.196**
	LTE Band 41	20M	QPSK	1	0	-	Left Side	5mm	Ant 1	DSI 7	41490	2680	1	14.27	15.00	1.183	62.9	1.006	-0.06	0.225	0.268
	LTE Band 41	20M	QPSK	1	0	-	Top Side	5mm	Ant 1	DSI 7	41490	2680	1	14.27	15.00	1.183	62.9	1.006	-0.1	0.758	0.902
	LTE Band 41	20M	QPSK	1	0	-	Top Side	5mm	Ant 1	DSI 7	39750	2506	1	14.19	15.00	1.205	62.9	1.006	0.12	0.860	1.043
	LTE Band 41	20M	QPSK	1	0	-	Top Side	5mm	Ant 1	DSI 7	40185	2549.5	1	14.22	15.00	1.197	62.9	1.006	0.11	0.820	0.987
	LTE Band 41	20M	QPSK	1	0	-	Top Side	5mm	Ant 1	DSI 7	40620	2593	1	14.20	15.00	1.202	62.9	1.006	0.09	0.872	1.055
	LTE Band 41	20M	QPSK	1	0	-	Top Side	5mm	Ant 1	DSI 7	41055	2636.5	1	14.26	15.00	1.186	62.9	1.006	0.09	0.895	1.068
	LTE Band 41-PC2	20M	QPSK	1	0	-	Top Side	5mm	Ant 1	DSI 7	41055	2636.5	1	15.78	16.50	1.180	42.9	1.009	-0.14	0.793	0.944
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 3	41055	2636.5	2	15.75	16.50	1.189	62.9	1.006	0.09	0.887	1.061
	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 1	DSI 3	41490	2680	1	15.76	16.50	1.186	62.9	1.006	0.01	0.335	0.400
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	DSI 3	41490	2680	1	15.76	16.50	1.186	62.9	1.006	0.01	0.821	0.979
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	DSI 3	39750	2506	1	15.72	16.50	1.197	62.9	1.006	-0.16	0.824	0.992
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	DSI 3	40185	2549.5	1	15.73	16.50	1.194	62.9	1.006	-0.15	0.806	0.968
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	DSI 3	40620	2593	1	15.66	16.50	1.213	62.9	1.006	0.07	0.901	1.100
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	DSI 3	41055	2636.5	1	15.73	16.50	1.194	62.9	1.006	0.04	0.990	1.189
	LTE Band 41	20M	QPSK	50	0	-	Left Side	5mm	Ant 1	DSI 7	41490	2680	1	14.26	15.00	1.186	62.9	1.006	0.04	0.218	0.260
	LTE Band 41	20M	QPSK	50	0	-	Top Side	5mm	Ant 1	DSI 7	41490	2680	1	14.26	15.00	1.186	62.9	1.006	0.08	0.735	0.877
	LTE Band 41	20M	QPSK	50	0	-	Top Side	5mm	Ant 1	DSI 7	39750	2506	1	14.17	15.00	1.211	62.9	1.006	-0.07	0.840	1.023
	LTE Band 41	20M	QPSK	50	0	-	Top Side	5mm	Ant 1	DSI 7	40185	2549.5	1	14.20	15.00	1.202	62.9	1.006	-0.06	0.831	1.005
	LTE Band 41	20M	QPSK	50	0	-	Top Side	5mm	Ant 1	DSI 7	40620	2593	1	14.17	15.00	1.211	62.9	1.006	-0.04	0.864	1.052
	LTE Band 41	20M	QPSK	50	0	-	Top Side	5mm	Ant 1	DSI 7	41055	2636.5	1	14.24	15.00	1.191	62.9	1.006	-0.18	0.883	1.058
	LTE Band 41	20M	QPSK	100	0	-	Back	5mm	Ant 1	DSI 3	41490	2680	1	15.75	16.50	1.189	62.9	1.006	0.04	0.803	0.960
	LTE Band 41	20M	QPSK	100	0	-	Top Side	5mm	Ant 1	DSI 7	41490	2680	1	14.24	15.00	1.191	62.9	1.006	-0.1	0.764	0.916
3500MHz&3900MHz																					
	LTE Band 42	20M	QPSK	1	0	-	Front	5mm	Ant 2	DSI 3	42590	3500	1	17.49	18.00	1.125	62.9	1.006	-0.12	0.393	0.445
	LTE Band 42	20M	QPSK	1	0	-	Back	5mm	Ant 2	DSI 3	42590	3500	1	17.49	18.00	1.125	62.9	1.006	0.03	0.836	0.946
	LTE Band 42	20M	QPSK	1	0	-	Back	5mm	Ant 2	DSI 3	42190	3460	1	17.43	18.00	1.140	62.9	1.006	-0.18	0.752	0.863
28	LTE Band 42	20M	QPSK	1	0	-	Back	5mm	Ant 2	DSI 3	42990	3540	1	17.48	18.00	1.127	62.9	1.006	-0.16	0.883	**1.001**
	LTE Band 42	20M	QPSK	1	0	-	Left Side	5mm	Ant 2	DSI 7	42590	3500	1	17.49	18.00	1.125	62.9	1.006	0.18	0.078	0.088
	LTE Band 42	20M	QPSK	1	0	-	Right Side	5mm	Ant 2	DSI 7	42590	3500	1	17.49	18.00	1.125	62.9	1.006	-0.01	0.159	0.180
	LTE Band 42	20M	QPSK	1	0	-	Top Side	5mm	Ant 2	DSI 7	42590	3500	1	17.49	18.00	1.125	62.9	1.006	0.01	0.701	0.793
	LTE Band 42	20M	QPSK	1	0	-	Top Side	5mm	Ant 2	DSI 7	42190	3460	1	17.43	18.00	1.140	62.9	1.006	0.17	0.587	0.673
	LTE Band 42	20M	QPSK	1	0	-	Top Side	5mm	Ant 2	DSI 7	42990	3540	1	17.48	18.00	1.127	62.9	1.006	-0.14	0.787	0.892
	LTE Band 42	20M	QPSK	50	0	-	Front	5mm	Ant 2	DSI 3	42590	3500	1	17.48	18.00	1.127	62.9	1.006	0.01	0.404	0.458
	LTE Band 42	20M	QPSK	50	0	-	Back	5mm	Ant 2	DSI 3	42590	3500	1	17.48	18.00	1.127	62.9	1.006	0.13	0.833	0.945
	LTE Band 42	20M	QPSK	50	0	-	Back	5mm	Ant 2	DSI 3	42190	3460	1	17.41	18.00	1.146	62.9	1.006	0.14	0.756	0.871
	LTE Band 42	20M	QPSK	50	0	-	Back	5mm	Ant 2	DSI 3	42990	3540	1	17.46	18.00	1.132	62.9	1.006	-0.04	0.878	1.000
	LTE Band 42	20M	QPSK	50	0	-	Left Side	5mm	Ant 2	DSI 7	42590	3500	1	17.48	18.00	1.127	62.9	1.006	0.06	0.079	0.090
	LTE Band 42	20M	QPSK	50	0	-	Right Side	5mm	Ant 2	DSI 7	42590	3500	1	17.48	18.00	1.127	62.9	1.006	0.02	0.161	0.183
	LTE Band 42	20M	QPSK	50	0	-	Top Side	5mm	Ant 2	DSI 7	42590	3500	1	17.48	18.00	1.127	62.9	1.006	-0.1	0.699	0.793
	LTE Band 42	20M	QPSK	50	0	-	Top Side	5mm	Ant 2	DSI 7	42190	3460	1	17.41	18.00	1.146	62.9	1.006	0.01	0.575	0.663
	LTE Band 42	20M	QPSK	50	0	-	Top Side	5mm	Ant 2	DSI 7	42990	3540	1	17.46	18.00	1.132	62.9	1.006	-0.15	0.802	0.914
	LTE Band 42	20M	QPSK	100	0	-	Back	5mm	Ant 2	DSI 3	42590	3500	1	17.46	18.00	1.132	62.9	1.006	-0.04	0.837	0.954
	LTE Band 42	20M	QPSK	100	0	-	Top Side	5mm	Ant 2	DSI 7	42590	3500	1	17.46	18.00	1.132	62.9	1.006	0.04	0.681	0.776
	FR1 n77	100M	BPSK	1	1	DFT-30	Front	5mm	Ant 2	DSI 3	656000	3840	1	15.83	17.00	1.309	-	-	0.1	0.285	0.373
	FR1 n77	100M	BPSK	1	1	DFT-30	Back	5mm	Ant 2	DSI 3	656000	3840	1	15.83	17.00	1.309	-	-	0.09	0.716	0.937
	FR1 n77	100M	BPSK	1	1	DFT-30	Left Side	5mm	Ant 2	DSI 7	656000	3840	1	15.83	17.00	1.309	-	-	0.13	0.081	0.106
	FR1 n77	100M	BPSK	1	1	DFT-30	Right Side	5mm	Ant 2	DSI 7	656000	3840	1	15.83	17.00	1.309	-	-	0.09	0.213	0.279
	FR1 n77	100M	BPSK	1	1	DFT-30	Top Side	5mm	Ant 2	DSI 7	656000	3840	1	15.83	17.00	1.309	-	-	-0.04	0.514	0.673
	FR1 n77	100M	BPSK	135	69	DFT-30	Front	5mm	Ant 2	DSI 3	656000	3840	1	15.80	17.00	1.318	-	-	0.06	0.274	0.361
	FR1 n77	100M	BPSK	135	69	DFT-30	Back	5mm	Ant 2	DSI 3	656000	3840	1	15.80	17.00	1.318	-	-	0.16	0.703	0.927
	FR1 n77	100M	BPSK	135	69	DFT-30	Left Side	5mm	Ant 2	DSI 7	656000	3840	1	15.80	17.00	1.318	-	-	0.17	0.080	0.105

	FR1 n77	100M	BPSK	135	69	DFT-30	Right Side	5mm	Ant 2	DSI 7	656000	3840	1	15.80	17.00	1.318	-	-	0.09	0.203	0.268
	FR1 n77	100M	BPSK	135	69	DFT-30	Top Side	5mm	Ant 2	DSI 7	656000	3840	1	15.80	17.00	1.318	-	-	-0.01	0.515	0.679
	FR1 n77	100M	BPSK	270	0	DFT-30	Back	5mm	Ant 2	DSI 3	656000	3840	1	15.78	17.00	1.324	-	-	0.04	0.688	0.911
	FR1 n77	100M	BPSK	270	0	DFT-30	Top Side	5mm	Ant 2	DSI 7	656000	3840	1	15.78	17.00	1.324	-	-	-0.09	0.506	0.670
	FR1 n77	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 3	DSI 3	656000	3840	1	11.34	12.50	1.306	-	-	-	n/a	n/a
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	5mm	Ant 3	DSI 3	656000	3840	1	11.34	12.50	1.306	-	-	0.12	0.782	1.021
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Side	5mm	Ant 3	DSI 7	656000	3840	1	11.34	12.50	1.306	-	-	-0.15	0.141	0.184
	FR1 n77	100M	QPSK	1	1	DFT-30	Top Side	5mm	Ant 3	DSI 7	656000	3840	1	11.34	12.50	1.306	-	-	0.15	0.050	0.065
	FR1 n77	100M	QPSK	135	69	DFT-30	Front	5mm	Ant 3	DSI 3	656000	3840	1	11.32	12.50	1.312	-	-	-	n/a	n/a
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 3	DSI 3	656000	3840	1	11.32	12.50	1.312	-	-	-0.02	0.811	1.064
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Side	5mm	Ant 3	DSI 7	656000	3840	1	11.32	12.50	1.312	-	-	-0.15	0.157	0.206
	FR1 n77	100M	QPSK	135	69	DFT-30	Top Side	5mm	Ant 3	DSI 7	656000	3840	1	11.32	12.50	1.312	-	-	-0.07	0.048	0.063
	FR1 n77	100M	QPSK	270	0	DFT-30	Back	5mm	Ant 3	DSI 3	656000	3840	1	11.30	12.50	1.318	-	-	-0.05	0.857	1.130
	FR1 n77	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 5	DSI 3	656000	3840	1	19.58	21.00	1.387	-	-	-0.04	0.386	0.535
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	5mm	Ant 5	DSI 3	656000	3840	1	19.58	21.00	1.387	-	-	-0.19	0.665	0.922
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Side	5mm	Ant 5	DSI 7	656000	3840	1	19.58	21.00	1.387	-	-	-0.17	0.449	0.623
	FR1 n77	100M	QPSK	1	1	DFT-30	Bottom Side	5mm	Ant 5	DSI 7	656000	3840	1	19.58	21.00	1.387	-	-	0.02	0.135	0.187
	FR1 n77	100M	QPSK	135	69	DFT-30	Front	5mm	Ant 5	DSI 3	656000	3840	1	19.53	21.00	1.403	-	-	-0.02	0.371	0.520
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 5	DSI 3	656000	3840	1	19.53	21.00	1.403	-	-	-0.18	0.655	0.919
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Side	5mm	Ant 5	DSI 7	656000	3840	1	19.53	21.00	1.403	-	-	0.1	0.430	0.603
	FR1 n77	100M	QPSK	135	69	DFT-30	Bottom Side	5mm	Ant 5	DSI 7	656000	3840	1	19.53	21.00	1.403	-	-	-0.09	0.116	0.163
	FR1 n77	100M	QPSK	270	0	DFT-30	Front	5mm	Ant 5	DSI 3	656000	3840	1	18.46	20.00	1.426	-	-	0.06	0.298	0.425
	FR1 n77	100M	QPSK	270	0	DFT-30	Back	5mm	Ant 5	DSI 3	656000	3840	1	18.46	20.00	1.426	-	-	0.03	0.469	0.669
	FR1 n77	100M	QPSK	270	0	DFT-30	Left Side	5mm	Ant 5	DSI 7	656000	3840	1	18.46	20.00	1.426	-	-	0.05	0.311	0.443
	FR1 n77	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 7	DSI 3	656000	3840	1	16.21	17.00	1.199	-	-	0.02	0.020	0.024
29	FR1 n77	100M	QPSK	1	1	DFT-30	Back	5mm	Ant 7	DSI 3	656000	3840	1	16.21	17.00	1.199	-	-	-0.13	0.990	**1.188**
	FR1 n77	100M	QPSK	1	1	DFT-30	Right Side	5mm	Ant 7	DSI 7	656000	3840	1	16.21	17.00	1.199	-	-	-0.16	0.133	0.160
	FR1 n77	100M	QPSK	1	1	DFT-30	Top Side	5mm	Ant 7	DSI 7	656000	3840	1	16.21	17.00	1.199	-	-	-0.07	0.063	0.076
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	5mm	Ant 7	DSI 3	656000	3840	2	16.21	17.00	1.199	-	-	0.09	0.763	0.915
	FR1 n77	100M	QPSK	135	69	DFT-30	Front	5mm	Ant 7	DSI 3	656000	3840	1	16.18	17.00	1.208	-	-	-0.17	0.019	0.023
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 7	DSI 3	656000	3840	1	16.18	17.00	1.208	-	-	-0.1	0.982	1.186
	FR1 n77	100M	QPSK	135	69	DFT-30	Right Side	5mm	Ant 7	DSI 7	656000	3840	1	16.18	17.00	1.208	-	-	0.16	0.113	0.136
	FR1 n77	100M	QPSK	135	69	DFT-30	Top Side	5mm	Ant 7	DSI 7	656000	3840	1	16.18	17.00	1.208	-	-	-0.17	0.058	0.070
	FR1 n77	100M	QPSK	270	0	DFT-30	Back	5mm	Ant 7	DSI 3	656000	3840	1	16.15	17.00	1.216	-	-	-0.18	0.476	0.579

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Sample	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)
2450MHz																	
	Bluetooth	DH5 1Mbps	Front	5mm	Ant 8	Full	0	2402	1	12.55	13.00	1.109	76.91	1.300	0.08	0.070	0.101
30	Bluetooth	DH5 1Mbps	Back	5mm	Ant 8	Full	0	2402	1	12.55	13.00	1.109	76.91	1.300	0.13	0.138	**0.199**
	Bluetooth	DH5 1Mbps	Right Side	5mm	Ant 8	Full	0	2402	1	12.55	13.00	1.109	76.91	1.300	0.01	0.093	0.134
	Bluetooth	DH5 1Mbps	Top Side	5mm	Ant 8	Full	0	2402	1	12.55	13.00	1.109	76.91	1.300	-0.03	0.085	0.123
	WLAN2.4GHz	802.11b 1Mbps	Front	5mm	Ant 8	Reduced	6	2437	1	11.57	13.00	1.390	100	1.000	-0.14	0.111	0.154
31	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 8	Reduced	6	2437	1	11.57	13.00	1.390	100	1.000	0.05	0.275	**0.382**
	WLAN2.4GHz	802.11b 1Mbps	Right Side	5mm	Ant 8	Reduced	6	2437	1	11.57	13.00	1.390	100	1.000	-0.05	0.146	0.203
	WLAN2.4GHz	802.11b 1Mbps	Top Side	5mm	Ant 8	Reduced	6	2437	1	11.57	13.00	1.390	100	1.000	-0.17	0.118	0.164
WIFI5G																	
	WLAN5.2GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 8	Reduced	42	5210	1	9.67	10.50	1.211	92.17	1.085	0.05	0.099	0.130
	WLAN5.2GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 8	Reduced	42	5210	1	9.67	10.50	1.211	92.17	1.085	0.11	0.207	0.272
	WLAN5.2GHz	802.11ac-VHT80 MCS0	Right Side	5mm	Ant 8	Reduced	42	5210	1	9.67	10.50	1.211	92.17	1.085	-0.09	0.087	0.114
32	WLAN5.2GHz	802.11ac-VHT80 MCS0	Top Side	5mm	Ant 8	Reduced	42	5210	1	9.67	10.50	1.211	92.17	1.085	-0.05	0.290	**0.381**
	WLAN5.2GHz	802.11ac-VHT80 MCS0	Top Side	5mm	Ant 8	Reduced	42	5210	2	9.67	10.50	1.211	92.17	1.085	-0.01	0.162	0.213
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 8	Reduced	155	5775	1	6.67	8.00	1.358	92.17	1.085	0.03	0.081	0.119
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 8	Reduced	155	5775	1	6.67	8.00	1.358	92.17	1.085	-0.09	0.220	0.324
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Side	5mm	Ant 8	Reduced	155	5775	1	6.67	8.00	1.358	92.17	1.085	-0.1	0.104	0.153
33	WLAN5.8GHz	802.11ac-VHT80 MCS0	Top Side	5mm	Ant 8	Reduced	155	5775	1	6.67	8.00	1.358	92.17	1.085	0.15	0.254	**0.374**

15.3 Body Worn Accessory SAR

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Headset	Power State	Ch.	Freq. (MHz)	Sample	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
750MHz																				
	LTE Band 12	10M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3	23095	707.5	1	23.07	24.00	1.239	0.11	0.340	0.421
34	LTE Band 12	10M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	23095	707.5	1	23.07	24.00	1.239	0	0.758	**0.939**
	LTE Band 12	10M	QPSK	25	0	-	Front	5mm	Ant 0	-	DSI 3	23095	707.5	1	22.25	23.00	1.189	-0.09	0.212	0.252
	LTE Band 12	10M	QPSK	25	0	-	Back	5mm	Ant 0	-	DSI 3	23095	707.5	1	22.25	23.00	1.189	-0.06	0.488	0.580
	LTE Band 12	10M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3	23095	707.5	1	22.23	23.00	1.194	0.03	0.480	0.573
835MHz																				
	GSM850	-	-	-	-	GPRS (2 Tx slots)	Front	5mm	Ant 0	-	DSI 3	128	824.2	1	28.12	29.00	1.225	0.01	0.361	0.442
	GSM850	-	-	-	-	GPRS (2 Tx slots)	Back	5mm	Ant 0	-	DSI 3	128	824.2	1	28.12	29.00	1.225	-0.12	0.783	0.959
	GSM850	-	-	-	-	GPRS (2 Tx slots)	Back	5mm	Ant 0	-	DSI 3	189	836.4	1	27.69	29.00	1.352	-0.14	0.936	1.266
35	GSM850	-	-	-	-	GPRS (2 Tx slots)	Back	5mm	Ant 0	-	DSI 3	251	848.8	1	28.03	29.00	1.250	-0.1	1.060	**1.325**
	GSM850	-	-	-	-	GPRS (2 Tx slots)	Back	5mm	Ant 0	Headset	DSI 3	251	848.8	1	28.03	29.00	1.250	-0.15	0.920	1.150
	GSM850	-	-	-	-	GPRS (2 Tx slots)	Front	15mm	Ant 0	-	DSI 4	128	824.2	1	30.04	31.00	1.247	0.01	0.239	0.298
	GSM850	-	-	-	-	GPRS (2 Tx slots)	Back	20mm	Ant 0	-	DSI 4	251	848.8	1	30.00	31.00	1.259	-0.12	0.246	0.310
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	-	DSI 3	4182	836.4	1	22.15	23.00	1.216	0.12	0.611	0.743
36	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	4182	836.4	1	22.15	23.00	1.216	0.12	1.150	**1.399**
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	4132	826.4	1	22.08	23.00	1.236	0.05	1.055	1.304
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	4233	846.6	1	22.12	23.00	1.225	-0.12	0.969	1.187
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	Headset	DSI 3	4182	836.4	1	22.15	23.00	1.216	0.12	1.010	1.228
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 0	-	DSI 4	4182	836.4	1	23.06	24.00	1.242	0.12	0.223	0.277
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	20mm	Ant 0	-	DSI 4	4182	836.4	1	23.06	24.00	1.242	0.13	0.232	0.288
	LTE Band 26	15M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3	26865	831.5	1	21.29	22.50	1.321	0.12	0.590	0.780
37	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	26865	831.5	1	21.29	22.50	1.321	-0.04	1.060	**1.401**
	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 0	Headset	DSI 3	26865	831.5	1	21.29	22.50	1.321	-0.07	0.972	1.284
	LTE Band 26	15M	QPSK	1	0	-	Front	15mm	Ant 0	-	DSI 4	26865	831.5	1	22.87	24.00	1.297	0.12	0.222	0.288
	LTE Band 26	15M	QPSK	1	0	-	Back	20mm	Ant 0	-	DSI 4	26865	831.5	1	22.87	24.00	1.297	-0.15	0.236	0.306
	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	26865	831.5	2	21.29	22.50	1.321	-0.08	0.833	1.101
	LTE Band 26	15M	QPSK	36	0	-	Front	5mm	Ant 0	-	DSI 3	26865	831.5	1	21.28	22.50	1.324	0.16	0.463	0.613
	LTE Band 26	15M	QPSK	36	0	-	Back	5mm	Ant 0	-	DSI 3	26865	831.5	1	21.28	22.50	1.324	-0.18	0.789	1.045
	LTE Band 26	15M	QPSK	36	0	-	Front	15mm	Ant 0	-	DSI 4	26865	831.5	1	21.91	23.00	1.285	0.12	0.134	0.172
	LTE Band 26	15M	QPSK	36	0	-	Back	20mm	Ant 0	-	DSI 4	26865	831.5	1	21.91	23.00	1.285	-0.15	0.136	0.175
	LTE Band 26	15M	QPSK	75	0	-	Back	5mm	Ant 0	-	DSI 3	26865	831.5	1	21.19	22.50	1.352	-0.07	0.768	1.038
1750MHz																				
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	-	DSI 3	1413	1732.6	1	18.84	19.50	1.164	-0.14	0.569	0.662
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	1413	1732.6	1	18.84	19.50	1.164	0.03	1.040	1.211
38	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	1312	1712.4	1	18.82	19.50	1.169	0.13	1.160	**1.357**
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	1513	1752.6	1	18.68	19.50	1.208	0.05	1.057	1.277
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	Headset	DSI 3	1312	1712.4	1	18.82	19.50	1.169	-0.11	1.090	1.275
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 0	-	DSI 4	1413	1732.6	1	23.61	24.00	1.094	-0.14	0.312	0.341
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	20mm	Ant 0	-	DSI 4	1312	1712.4	1	23.41	24.00	1.146	0.03	0.305	0.349
	LTE Band 4	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3	20175	1732.5	1	19.50	20.50	1.259	-0.14	0.568	0.715
39	LTE Band 4	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	20175	1732.5	1	19.50	20.50	1.259	-0.01	1.140	**1.435**
	LTE Band 4	20M	QPSK	1	0	-	Back	5mm	Ant 0	Headset	DSI 3	20175	1732.5	1	19.50	20.50	1.259	-0.01	1.100	1.385
	LTE Band 4	20M	QPSK	1	0	-	Front	15mm	Ant 0	-	DSI 4	20175	1732.5	1	22.98	24.00	1.265	-0.14	0.244	0.309
	LTE Band 4	20M	QPSK	1	0	-	Back	20mm	Ant 0	-	DSI 4	20175	1732.5	1	22.98	24.00	1.265	-0.01	0.253	0.320
	LTE Band 4	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	DSI 3	20175	1732.5	1	19.48	20.50	1.265	-0.15	0.574	0.726
	LTE Band 4	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3	20175	1732.5	1	19.48	20.50	1.265	0.14	1.100	1.391
	LTE Band 4	20M	QPSK	50	0	-	Back	5mm	Ant 0	Headset	DSI 3	20175	1732.5	1	19.48	20.50	1.265	0.14	1.050	1.328
	LTE Band 4	20M	QPSK	50	0	-	Front	15mm	Ant 0	-	DSI 4	20175	1732.5	1	22.03	23.00	1.250	-0.14	0.122	0.153
	LTE Band 4	20M	QPSK	50	0	-	Back	20mm	Ant 0	-	DSI 4	20175	1732.5	1	22.03	23.00	1.250	-0.01	0.164	0.205

	LTE Band 4	20M	QPSK	100	0	-	Back	5mm	Ant 0	-	DSI 3	20175	1732.5	1	19.46	20.50	1.271	-0.07	1.070	1.360
1900MHz																				
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Front	5mm	Ant 0	-	DSI 3	512	1850.2	1	21.92	22.50	1.143	-0.01	0.507	0.579
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Back	5mm	Ant 0	-	DSI 3	512	1850.2	1	21.92	22.50	1.143	0.14	1.050	1.200
40	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Back	5mm	Ant 0	-	DSI 3	661	1880	1	21.64	22.50	1.219	0.12	1.110	**1.353**
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Back	5mm	Ant 0	-	DSI 3	810	1909.8	1	21.77	22.50	1.183	-0.07	0.899	1.064
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Back	5mm	Ant 0	Headset	DSI 3	661	1880	1	21.64	22.50	1.219	0.14	0.900	1.097
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Front	15mm	Ant 0	-	DSI 4	512	1850.2	1	26.49	27.50	1.262	-0.01	0.345	0.435
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Back	20mm	Ant 0	-	DSI 4	661	1880	1	26.41	27.50	1.285	0.14	0.347	0.446
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	-	DSI 3	9400	1880	1	17.55	18.00	1.109	-0.14	0.628	0.697
41	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	9400	1880	1	17.55	18.00	1.109	-0.1	1.260	**1.398**
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	9262	1852.4	1	17.52	18.00	1.117	0.1	1.219	1.361
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI 3	9538	1907.6	1	17.46	18.00	1.132	-0.13	1.070	1.212
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	Headset	DSI 3	9400	1880	1	17.55	18.00	1.109	-0.13	1.070	1.187
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 0	-	DSI 4	9400	1880	1	23.59	24.00	1.099	-0.14	0.461	0.507
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	20mm	Ant 0	-	DSI 4	9400	1880	1	23.59	24.00	1.099	-0.1	0.466	0.512
	LTE Band 2	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	DSI 3	19100	1900	1	17.02	18.00	1.253	0.12	0.527	0.660
	LTE Band 2	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	19100	1900	1	17.02	18.00	1.253	-0.14	1.030	1.291
42	LTE Band 2	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	18700	1860	1	16.98	18.00	1.265	-0.03	1.140	**1.442**
	LTE Band 2	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	18900	1880	1	16.95	18.00	1.274	-0.15	1.110	1.414
	LTE Band 2	20M	QPSK	1	0	-	Back	5mm	Ant 0	Headset	DSI 3	18700	1860	1	16.98	18.00	1.265	-0.15	0.937	1.185
	LTE Band 2	20M	QPSK	1	0	-	Front	15mm	Ant 0	-	DSI 4	19100	1900	1	22.95	24.00	1.274	0.12	0.366	0.466
	LTE Band 2	20M	QPSK	1	0	-	Back	20mm	Ant 0	-	DSI 4	18700	1860	1	22.91	24.00	1.285	-0.14	0.369	0.474
	LTE Band 2	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI 3	18700	1860	2	16.98	18.00	1.265	-0.07	0.926	1.171
	LTE Band 2	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	DSI 3	19100	1900	1	17.00	18.00	1.259	-0.08	0.522	0.657
	LTE Band 2	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3	19100	1900	1	17.00	18.00	1.259	-0.01	1.000	1.259
	LTE Band 2	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3	18700	1860	1	16.96	18.00	1.271	-0.02	1.090	1.385
	LTE Band 2	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	DSI 3	18900	1880	1	16.93	18.00	1.279	-0.17	1.040	1.331
	LTE Band 2	20M	QPSK	50	0	-	Back	5mm	Ant 0	Headset	DSI 3	18700	1860	1	16.96	18.00	1.271	-0.17	0.931	1.183
	LTE Band 2	20M	QPSK	50	0	-	Front	15mm	Ant 0	-	DSI 4	19100	1900	1	21.92	23.00	1.282	0.12	0.206	0.264
	LTE Band 2	20M	QPSK	50	0	-	Back	20mm	Ant 0	-	DSI 4	18700	1860	1	21.87	23.00	1.297	-0.14	0.208	0.270
	LTE Band 2	20M	QPSK	100	0	-	Back	5mm	Ant 0	-	DSI 3	19100	1900	1	16.97	18.00	1.268	0.17	0.996	1.263

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Headset	Power State	Ch.	Freq. (MHz)	Sample	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)
2600MHz																						
	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 1	-	DSI 3	41490	2680	1	15.78	16.50	1.180	62.9	1.006	-0.11	0.337	0.400
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI 3	41490	2680	1	15.78	16.50	1.180	62.9	1.006	-0.05	0.836	0.993
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI 3	39750	2506	1	15.74	16.50	1.191	62.9	1.006	0.15	0.817	0.979
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI 3	40185	2549.5	1	15.76	16.50	1.186	62.9	1.006	0.1	0.794	0.947
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI 3	40620	2593	1	15.69	16.50	1.205	62.9	1.006	0.16	0.914	1.108
43	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI 3	41055	2636.5	1	15.75	16.50	1.189	62.9	1.006	0.03	1.000	**1.196**
	LTE Band 41-PC2	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI 3	41055	2636.5	1	16.28	17.00	1.180	42.9	1.009	-0.09	0.840	1.000
	LTE Band 41	20M	QPSK	1	0	-	Front	15mm	Ant 1	-	DSI 4	41490	2680	1	23.36	24.00	1.159	62.9	1.006	-0.11	0.286	0.333
	LTE Band 41	20M	QPSK	1	0	-	Back	20mm	Ant 1	-	DSI 4	41055	2636.5	1	23.25	24.00	1.189	62.9	1.006	-0.05	0.333	0.398
	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 1	-	DSI 3	41490	2680	1	15.76	16.50	1.186	62.9	1.006	0.01	0.335	0.400
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	DSI 3	41490	2680	1	15.76	16.50	1.186	62.9	1.006	0.01	0.821	0.979
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	DSI 3	39750	2506	1	15.72	16.50	1.197	62.9	1.006	-0.16	0.824	0.992
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	DSI 3	40185	2549.5	1	15.73	16.50	1.194	62.9	1.006	-0.15	0.806	0.968
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	DSI 3	40620	2593	1	15.66	16.50	1.213	62.9	1.006	0.07	0.901	1.100
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	-	DSI 3	41055	2636.5	1	15.73	16.50	1.194	62.9	1.006	0.04	0.990	1.189
	LTE Band 41	20M	QPSK	50	0	-	Front	15mm	Ant 1	-	DSI 4	41490	2680	1	22.31	23.00	1.172	62.9	1.006	-0.11	0.163	0.192
	LTE Band 41	20M	QPSK	50	0	-	Back	20mm	Ant 1	-	DSI 4	41490	2680	1	22.28	23.00	1.180	62.9	1.006	-0.05	0.182	0.216
	LTE Band 41	20M	QPSK	100	0	-	Back	5mm	Ant 1	-	DSI 3	41490	2680	1	15.75	16.50	1.189	62.9	1.006	0.04	0.573	0.685
3500MHz&3900MHz																						
	LTE Band 42	20M	QPSK	1	0	-	Front	5mm	Ant 2	-	DSI 3	42590	3500	1	17.49	18.00	1.125	62.9	1.006	-0.12	0.393	0.445
	LTE Band 42	20M	QPSK	1	0	-	Back	5mm	Ant 2	-	DSI 3	42590	3500	1	17.49	18.00	1.125	62.9	1.006	0.03	0.836	0.946

	LTE Band 42	20M	QPSK	1	0	-	Back	5mm	Ant 2	-	DSI 3	42190	3460	1	17.43	18.00	1.140	62.9	1.006	-0.18	0.752	0.863
44	LTE Band 42	20M	QPSK	1	0	-	Back	5mm	Ant 2	-	DSI 3	42990	3540	1	17.48	18.00	1.127	62.9	1.006	-0.16	0.883	**1.001**
	LTE Band 42	20M	QPSK	1	0	-	Front	15mm	Ant 2	-	DSI 4	42590	3500	1	23.26	24.00	1.186	62.9	1.006	-0.12	0.302	0.360
	LTE Band 42	20M	QPSK	1	0	-	Back	20mm	Ant 2	-	DSI 4	42990	3540	1	23.11	24.00	1.227	62.9	1.006	0.03	0.242	0.299
	LTE Band 42	20M	QPSK	50	0	-	Front	5mm	Ant 2	-	DSI 3	42590	3500	1	17.48	18.00	1.127	62.9	1.006	0.01	0.404	0.458
	LTE Band 42	20M	QPSK	50	0	-	Back	5mm	Ant 2	-	DSI 3	42590	3500	1	17.48	18.00	1.127	62.9	1.006	0.13	0.833	0.945
	LTE Band 42	20M	QPSK	50	0	-	Back	5mm	Ant 2	-	DSI 3	42190	3460	1	17.41	18.00	1.146	62.9	1.006	0.14	0.756	0.871
	LTE Band 42	20M	QPSK	50	0	-	Back	5mm	Ant 2	-	DSI 3	42990	3540	1	17.46	18.00	1.132	62.9	1.006	-0.04	0.878	1.000
	LTE Band 42	20M	QPSK	50	0	-	Front	15mm	Ant 2	-	DSI 4	42590	3500	1	22.24	23.00	1.191	62.9	1.006	-0.12	0.174	0.209
	LTE Band 42	20M	QPSK	50	0	-	Back	20mm	Ant 2	-	DSI 4	42990	3540	1	22.11	23.00	1.227	62.9	1.006	0.03	0.146	0.180
	LTE Band 42	20M	QPSK	100	0	-	Back	5mm	Ant 2	-	DSI 3	42590	3500	1	17.46	18.00	1.132	62.9	1.006	-0.04	0.837	0.954
	FR1 n77	100M	BPSK	1	1	DFT-30	Front	5mm	Ant 2	-	DSI 3	656000	3840	1	15.83	17.00	1.309	-	-	0.1	0.285	0.373
	FR1 n77	100M	BPSK	1	1	DFT-30	Back	5mm	Ant 2	-	DSI 3	656000	3840	1	15.83	17.00	1.309	-	-	0.09	0.716	0.937
	FR1 n77	100M	BPSK	1	1	DFT-30	Front	15mm	Ant 2	-	DSI 4	656000	3840	1	21.81	23.00	1.315	-	-	0.1	0.272	0.358
	FR1 n77	100M	BPSK	1	1	DFT-30	Back	20mm	Ant 2	-	DSI 4	656000	3840	1	21.81	23.00	1.315	-	-	0.09	0.253	0.333
	FR1 n77	100M	BPSK	135	69	DFT-30	Front	5mm	Ant 2	-	DSI 3	656000	3840	1	15.80	17.00	1.318	-	-	0.06	0.274	0.361
	FR1 n77	100M	BPSK	135	69	DFT-30	Back	5mm	Ant 2	-	DSI 3	656000	3840	1	15.80	17.00	1.318	-	-	0.16	0.703	0.927
	FR1 n77	100M	BPSK	135	69	DFT-30	Front	15mm	Ant 2	-	DSI 4	656000	3840	1	21.78	23.00	1.324	-	-	0.1	0.275	0.364
	FR1 n77	100M	BPSK	135	69	DFT-30	Back	20mm	Ant 2	-	DSI 4	656000	3840	1	21.78	23.00	1.324	-	-	0.09	0.246	0.326
	FR1 n77	100M	BPSK	270	0	DFT-30	Back	5mm	Ant 2	-	DSI 3	656000	3840	1	15.78	17.00	1.324	-	-	0.04	0.688	0.911
	FR1 n77	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 3	-	DSI 3	656000	3840	1	11.34	12.50	1.306	-	-	-	n/a	n/a
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	5mm	Ant 3	-	DSI 3	656000	3840	1	11.34	12.50	1.306	-	-	0.12	0.782	1.021
	FR1 n77	100M	QPSK	1	1	DFT-30	Front	15mm	Ant 3	-	DSI 4	656000	3840	1	16.27	17.50	1.327	-	-	-	n/a	n/a
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	20mm	Ant 3	-	DSI 4	656000	3840	1	16.27	17.50	1.327	-	-	0.12	0.263	0.349
	FR1 n77	100M	QPSK	135	69	DFT-30	Front	5mm	Ant 3	-	DSI 3	656000	3840	1	11.32	12.50	1.312	-	-	-	n/a	n/a
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 3	-	DSI 3	656000	3840	1	11.32	12.50	1.312	-	-	-0.02	0.811	1.064
	FR1 n77	100M	QPSK	135	69	DFT-30	Front	15mm	Ant 3	-	DSI 4	656000	3840	1	16.25	17.50	1.334	-	-	-	n/a	n/a
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	20mm	Ant 3	-	DSI 4	656000	3840	1	16.25	17.50	1.334	-	-	0.12	0.278	0.371
	FR1 n77	100M	QPSK	270	0	DFT-30	Back	5mm	Ant 3	-	DSI 3	656000	3840	1	11.30	12.50	1.318	-	-	-0.05	0.857	1.130
	FR1 n77	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 5	-	DSI 3	656000	3840	1	19.58	21.00	1.387	-	-	-0.04	0.386	0.535
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	5mm	Ant 5	-	DSI 3	656000	3840	1	19.58	21.00	1.387	-	-	-0.19	0.665	0.922
	FR1 n77	100M	QPSK	135	69	DFT-30	Front	5mm	Ant 5	-	DSI 3	656000	3840	1	19.53	21.00	1.403	-	-	-0.02	0.371	0.520
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 5	-	DSI 3	656000	3840	1	19.53	21.00	1.403	-	-	-0.18	0.655	0.919
	FR1 n77	100M	QPSK	270	0	DFT-30	Front	5mm	Ant 5	-	DSI 3	656000	3840	1	18.46	20.00	1.426	-	-	0.06	0.298	0.425
	FR1 n77	100M	QPSK	270	0	DFT-30	Back	5mm	Ant 5	-	DSI 3	656000	3840	1	18.46	20.00	1.426	-	-	0.03	0.469	0.669
	FR1 n77	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 7	-	DSI 3	656000	3840	1	16.21	17.00	1.199	-	-	0.02	0.020	0.024
45	FR1 n77	100M	QPSK	1	1	DFT-30	Back	5mm	Ant 7	-	DSI 3	656000	3840	1	16.21	17.00	1.199	-	-	-0.13	0.990	**1.188**
	FR1 n77	100M	QPSK	1	1	DFT-30	Front	15mm	Ant 7	-	DSI 4	656000	3840	1	20.23	21.00	1.194	-	-	-	n/a	n/a
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	20mm	Ant 7	-	DSI 4	656000	3840	1	20.23	21.00	1.194	-	-	-0.17	0.087	0.104
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	5mm	Ant 7	-	DSI 3	656000	3840	2	16.21	17.00	1.199	-	-	0.09	0.763	0.915
	FR1 n77	100M	QPSK	135	69	DFT-30	Front	5mm	Ant 7	-	DSI 3	656000	3840	1	16.18	17.00	1.208	-	-	-0.17	0.019	0.023
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 7	-	DSI 3	656000	3840	1	16.18	17.00	1.208	-	-	-0.1	0.982	1.186
	FR1 n77	100M	QPSK	135	69	DFT-30	Front	15mm	Ant 7	-	DSI 4	656000	3840	1	20.16	21.00	1.213	-	-	-	n/a	n/a
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	20mm	Ant 7	-	DSI 4	656000	3840	1	20.16	21.00	1.213	-	-	-0.05	0.077	0.093
	FR1 n77	100M	QPSK	270	0	DFT-30	Back	5mm	Ant 7	-	DSI 3	656000	3840	1	16.15	17.00	1.216	-	-	-0.18	0.476	0.579

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Headset	Power State	Ch.	Freq. (MHz)	Sample	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)
2450MHz																		
	Bluetooth	DH5 1Mbps	Front	5mm	Ant 8	-	Full	0	2402	1	12.55	13.00	1.109	76.91	1.300	0.08	0.070	0.101
46	Bluetooth	DH5 1Mbps	Back	5mm	Ant 8	-	Full	0	2402	1	12.55	13.00	1.109	76.91	1.300	0.13	0.138	**0.199**
	WLAN2.4GHz	802.11b 1Mbps	Front	5mm	Ant 8	-	Standalone	1	2412	1	17.44	19.00	1.432	100	1.000	-0.12	0.506	0.725
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 8	-	Standalone	1	2412	1	17.44	19.00	1.432	100	1.000	0.04	0.908	1.300
47	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 8	-	Standalone	6	2437	1	17.42	19.00	1.439	100	1.000	0.05	0.967	**1.391**
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 8	-	Standalone	11	2462	1	17.32	19.00	1.472	100	1.000	-0.08	0.943	1.388
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 8	Headset	Standalone	6	2437	1	17.42	19.00	1.439	100	1.000	0.08	0.955	1.374
	WLAN2.4GHz	802.11g 6Mbps	Back	5mm	Ant 8	-	Standalone	1	2412	1	17.51	19.00	1.409	98.28	1.018	0.08	0.826	1.185
	WLAN2.4GHz	802.11b 1Mbps	Front	5mm	Ant 8	-	Simultaneous	6	2437	1	11.57	13.00	1.390	100	1.000	-0.14	0.111	0.154
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 8	-	Simultaneous	6	2437	1	11.57	13.00	1.390	100	1.000	0.05	0.275	0.382
	WLAN2.4GHz	802.11b 1Mbps	Front	15mm	Ant 8	-	Full	1	2412	1	19.23	20.50	1.340	100	1.000	0.03	0.105	0.141
	WLAN2.4GHz	802.11b 1Mbps	Back	20mm	Ant 8	-	Full	6	2437	1	18.92	20.50	1.439	100	1.000	-0.14	0.146	0.210
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 8	-	Standalone	6	2437	2	17.42	19.00	1.439	100	1.000	0.09	0.602	0.866
WIFI5G																		
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 8	-	Standalone	58	5290	1	13.28	15.00	1.486	92.17	1.085	-0.03	0.302	0.487
48	WLAN5.3GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 8	-	Standalone	58	5290	1	13.28	15.00	1.486	92.17	1.085	-0.19	0.727	**1.172**
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 8	-	Simultaneous	58	5290	1	8.94	10.50	1.432	92.17	1.085	-0.15	0.232	0.361
	WLAN5.3GHz	802.11n-HT40 MCS0	Front	15mm	Ant 8	-	Full	54	5270	1	17.89	19.50	1.449	96.30	1.038	-0.05	0.147	0.221
	WLAN5.3GHz	802.11n-HT40 MCS0	Back	20mm	Ant 8	-	Full	54	5270	1	17.89	19.50	1.449	96.30	1.038	0.09	0.190	0.286
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 8	-	Standalone	58	5290	2	13.28	15.00	1.486	92.17	1.085	-0.16	0.716	1.154
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 8	-	Standalone	122	5610	1	11.12	12.50	1.374	92.17	1.085	0.01	0.322	0.480
49	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 8	-	Standalone	122	5610	1	11.12	12.50	1.374	92.17	1.085	-0.12	0.723	**1.078**
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 8	-	Standalone	138	5690	1	11.00	12.50	1.412	92.17	1.085	-0.1	0.642	0.984
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 8	-	Simultaneous	122	5610	1	6.61	8.00	1.377	92.17	1.085	-0.19	0.260	0.389
	WLAN5.5GHz	802.11n-HT40 MCS0	Front	15mm	Ant 8	-	Full	142	5710	1	18.28	19.50	1.323	96.30	1.038	-0.08	0.260	0.357
	WLAN5.5GHz	802.11n-HT40 MCS0	Back	20mm	Ant 8	-	Full	142	5710	1	18.28	19.50	1.323	96.30	1.038	-0.012	0.333	0.457
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 8	-	Standalone	155	5775	1	12.18	13.50	1.355	92.17	1.085	0.11	0.356	0.523
50	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 8	-	Standalone	155	5775	1	12.18	13.50	1.355	92.17	1.085	-0.07	0.775	**1.140**
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 8	-	Simultaneous	155	5775	1	6.67	8.00	1.358	92.17	1.085	-0.09	0.220	0.324
	WLAN5.8GHz	802.11n-HT40 MCS0	Front	15mm	Ant 8	-	Full	151	5755	1	18.35	20.00	1.461	96.30	1.038	0.02	0.271	0.411
	WLAN5.8GHz	802.11n-HT40 MCS0	Back	20mm	Ant 8	-	Full	151	5755	1	18.35	20.00	1.461	96.30	1.038	0.05	0.355	0.538

15.4 Product specific 10g SAR

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Sample	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
835MHz																			
	GSM850	-	-	-	-	GPRS (2 Tx slots)	Back	0mm	Ant 0	DSI 6	128	824.2	1	30.04	31.00	1.247	-0.04	1.240	1.547
51	GSM850	-	-	-	-	GPRS (2 Tx slots)	Back	0mm	Ant 0	DSI 6	189	836.4	1	29.55	31.00	1.396	0.12	1.930	**2.695**
	GSM850	-	-	-	-	GPRS (2 Tx slots)	Back	0mm	Ant 0	DSI 6	251	848.8	1	30.00	31.00	1.259	0.18	1.820	2.291
	GSM850	-	-	-	-	GPRS (2 Tx slots)	Back	0mm	Ant 0	DSI 6	189	836.4	2	29.55	31.00	1.396	0.16	1.490	2.081
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6	4182	836.4	1	23.06	24.00	1.242	0.17	1.980	2.458
52	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6	4132	826.4	1	23.05	24.00	1.245	0.01	2.110	**2.626**
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6	4233	846.6	1	23.04	24.00	1.247	-0.04	1.610	2.008
53	LTE Band 26	15M	QPSK	1	0		Back	0mm	Ant 0	DSI 6	26865	831.5	1	22.87	24.00	1.297	0.09	1.880	**2.439**
	LTE Band 26	15M	QPSK	36	0		Back	0mm	Ant 0	DSI 6	26865	831.5	1	21.91	23.00	1.285	-0.06	1.080	1.388
	LTE Band 26	15M	QPSK	75	0		Back	0mm	Ant 0	DSI 6	26865	831.5	1	21.87	23.00	1.297	0.18	1.060	1.375
1750MHz																			
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	0mm	Ant 0	DSI 6	1413	1732.6	1	19.99	20.50	1.125	0.01	0.980	1.102
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6	1413	1732.6	1	19.99	20.50	1.125	0.08	1.697	1.908
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSI 6	1413	1732.6	1	19.99	20.50	1.125	-0.18	3.097	3.483
54	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSI 6	1312	1712.4	1	19.95	20.50	1.135	0.1	3.130	**3.553**
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSI 6	1513	1752.6	1	19.90	20.50	1.148	-0.04	3.064	3.518
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	20mm	Ant 0	DSI 4	1413	1732.6	1	23.61	24.00	1.094	0.01	0.110	0.120
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	27mm	Ant 0	DSI 4	1413	1732.6	1	23.61	24.00	1.094	0.08	0.095	0.104
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	24mm	Ant 0	DSI 4	1312	1712.4	1	23.41	24.00	1.146	-0.18	0.179	0.205
	LTE Band 4	20M	QPSK	1	0	-	Front	0mm	Ant 0	DSI 6	20175	1732.5	1	20.03	21.00	1.250	0.01	0.886	1.108
	LTE Band 4	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6	20175	1732.5	1	20.03	21.00	1.250	-0.02	1.730	2.163
55	LTE Band 4	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DSI 6	20175	1732.5	1	20.03	21.00	1.250	0.09	2.770	**3.463**
	LTE Band 4	20M	QPSK	1	0	-	Front	20mm	Ant 0	DSI 4	20175	1732.5	1	22.98	24.00	1.265	0.01	0.087	0.110
	LTE Band 4	20M	QPSK	1	0	-	Back	27mm	Ant 0	DSI 4	20175	1732.5	1	22.98	24.00	1.265	-0.02	0.082	0.104
	LTE Band 4	20M	QPSK	1	0	-	Bottom Side	24mm	Ant 0	DSI 4	20175	1732.5	1	22.98	24.00	1.265	0.09	0.137	0.173
	LTE Band 4	20M	QPSK	50	0	-	Front	0mm	Ant 0	DSI 6	20175	1732.5	1	20.01	21.00	1.256	0.15	0.890	1.118
	LTE Band 4	20M	QPSK	50	0	-	Back	0mm	Ant 0	DSI 6	20175	1732.5	1	20.01	21.00	1.256	0.04	1.700	2.135
	LTE Band 4	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DSI 6	20175	1732.5	1	20.01	21.00	1.256	-0.17	2.740	3.442
	LTE Band 4	20M	QPSK	50	0	-	Front	20mm	Ant 0	DSI 4	20175	1732.5	1	22.03	23.00	1.250	0.01	0.054	0.068
	LTE Band 4	20M	QPSK	50	0	-	Back	27mm	Ant 0	DSI 4	20175	1732.5	1	22.03	23.00	1.250	-0.02	0.047	0.059
	LTE Band 4	20M	QPSK	50	0	-	Bottom Side	24mm	Ant 0	DSI 4	20175	1732.5	1	22.03	23.00	1.250	0.09	0.079	0.099
	LTE Band 4	20M	QPSK	100	0	-	Back	0mm	Ant 0	DSI 6	20175	1732.5	1	20.00	21.00	1.259	0.01	1.670	2.102
	LTE Band 4	20M	QPSK	100	0	-	Bottom Side	0mm	Ant 0	DSI 6	20175	1732.5	1	20.00	21.00	1.259	-0.13	2.700	3.399
1900MHz																			
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Front	0mm	Ant 0	DSI 6	512	1850.2	1	24.00	25.00	1.259	-0.1	1.330	1.674
56	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Back	0mm	Ant 0	DSI 6	512	1850.2	1	24.00	25.00	1.259	-0.04	2.630	**3.311**
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Back	0mm	Ant 0	DSI 6	661	1880	1	23.81	25.00	1.315	0.04	1.590	2.091
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Back	0mm	Ant 0	DSI 6	810	1909.8	1	23.95	25.00	1.274	0.12	2.050	2.611
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Bottom Side	0mm	Ant 0	DSI 6	512	1850.2	1	24.00	25.00	1.259	-0.18	2.310	2.908
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Bottom Side	0mm	Ant 0	DSI 6	661	1880	1	23.81	25.00	1.315	-0.09	1.330	1.749
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Bottom Side	0mm	Ant 0	DSI 6	810	1909.8	1	23.95	25.00	1.274	0	1.100	1.401
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Front	20mm	Ant 0	DSI 4	512	1850.2	1	26.49	27.50	1.262	-0.1	0.130	0.164
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Back	27mm	Ant 0	DSI 4	512	1850.2	1	26.49	27.50	1.262	-0.04	0.114	0.144
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Bottom Side	24mm	Ant 0	DSI 4	512	1850.2	1	26.49	27.50	1.262	-0.18	0.202	0.255
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	0mm	Ant 0	DSI 6	9400	1880	1	20.96	21.50	1.132	0	1.620	1.834
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6	9400	1880	1	20.96	21.50	1.132	-0.01	2.930	3.318
57	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6	9262	1852.4	1	20.92	21.50	1.143	0.14	3.140	**3.589**
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6	9538	1907.6	1	20.88	21.50	1.153	0.11	2.610	3.011
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSI 6	9400	1880	1	20.96	21.50	1.132	0.03	1.990	2.253
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSI 6	9262	1852.4	1	20.92	21.50	1.143	0	2.320	2.651

	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSI 6	9538	1907.6	1	20.88	21.50	1.153	0.18	1.790	2.065
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	20mm	Ant 0	DSI 4	9400	1880	1	23.59	24.00	1.099	0	0.178	0.196
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	27mm	Ant 0	DSI 4	9262	1852.4	1	23.53	24.00	1.114	-0.01	0.138	0.154
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	24mm	Ant 0	DSI 4	9262	1852.4	1	23.53	24.00	1.114	0.03	0.254	0.283
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6	9262	1852.4	2	20.92	21.50	1.143	0.1	2.680	3.063
	LTE Band 2	20M	QPSK	1	0	-	Front	0mm	Ant 0	DSI 6	19100	1900	1	20.51	21.50	1.256	-0.14	1.300	1.633
	LTE Band 2	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6	19100	1900	1	20.51	21.50	1.256	0.16	2.510	3.153
58	LTE Band 2	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6	18700	1860	1	20.47	21.50	1.268	0.03	2.820	**3.575**
	LTE Band 2	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6	18900	1880	1	20.41	21.50	1.285	0.14	2.720	3.496
	LTE Band 2	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DSI 6	19100	1900	1	20.51	21.50	1.256	-0.16	1.600	2.010
	LTE Band 2	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DSI 6	18700	1860	1	20.47	21.50	1.268	0.14	1.950	2.472
	LTE Band 2	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DSI 6	18900	1880	1	20.41	21.50	1.285	0.14	1.740	2.236
	LTE Band 2	20M	QPSK	1	0	-	Front	20mm	Ant 0	DSI 4	19100	1900	1	22.95	24.00	1.274	-0.14	0.125	0.159
	LTE Band 2	20M	QPSK	1	0	-	Back	27mm	Ant 0	DSI 4	18700	1860	1	22.91	24.00	1.285	0.16	0.113	0.145
	LTE Band 2	20M	QPSK	1	0	-	Bottom Side	24mm	Ant 0	DSI 4	18700	1860	1	22.91	24.00	1.285	-0.16	0.200	0.257
	LTE Band 2	20M	QPSK	50	0	-	Front	0mm	Ant 0	DSI 6	19100	1900	1	20.49	21.50	1.262	-0.07	1.300	1.640
	LTE Band 2	20M	QPSK	50	0	-	Back	0mm	Ant 0	DSI 6	19100	1900	1	20.49	21.50	1.262	0.17	2.500	3.155
	LTE Band 2	20M	QPSK	50	0	-	Back	0mm	Ant 0	DSI 6	18700	1860	1	20.45	21.50	1.274	0.11	2.700	3.438
	LTE Band 2	20M	QPSK	50	0	-	Back	0mm	Ant 0	DSI 6	18900	1880	1	20.39	21.50	1.291	0.08	2.610	3.370
	LTE Band 2	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DSI 6	19100	1900	1	20.49	21.50	1.262	0	1.610	2.032
	LTE Band 2	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DSI 6	18700	1860	1	20.45	21.50	1.274	0.13	1.960	2.496
	LTE Band 2	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DSI 6	18900	1880	1	20.39	21.50	1.291	0.15	1.750	2.260
	LTE Band 2	20M	QPSK	50	0	-	Front	20mm	Ant 0	DSI 4	19100	1900	1	21.92	23.00	1.282	-0.14	0.071	0.091
	LTE Band 2	20M	QPSK	50	0	-	Back	27mm	Ant 0	DSI 4	18700	1860	1	21.87	23.00	1.297	0.16	0.065	0.084
	LTE Band 2	20M	QPSK	50	0	-	Bottom Side	24mm	Ant 0	DSI 4	18700	1860	1	21.87	23.00	1.297	-0.16	0.111	0.144
	LTE Band 2	20M	QPSK	100	0	-	Back	0mm	Ant 0	DSI 6	19100	1900	1	20.47	21.50	1.268	-0.11	2.410	3.055
	LTE Band 2	20M	QPSK	100	0	-	Bottom Side	0mm	Ant 0	DSI 6	19100	1900	1	20.47	21.50	1.268	-0.07	1.590	2.016

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Sample	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)
2600MHz																					
	LTE Band 41	20M	QPSK	1	0	-	Front	0mm	Ant 1	DSI 6	41490	2680	1	19.26	20.00	1.186	62.9	1.006	0.05	0.939	1.120
	LTE Band 41	20M	QPSK	1	0	-	Back	0mm	Ant 1	DSI 6	41490	2680	1	19.26	20.00	1.186	62.9	1.006	-0.15	2.120	2.529
	LTE Band 41	20M	QPSK	1	0	-	Back	0mm	Ant 1	DSI 6	39750	2506	1	19.15	20.00	1.216	62.9	1.006	-0.14	2.280	2.790
	LTE Band 41	20M	QPSK	1	0	-	Back	0mm	Ant 1	DSI 6	40185	2549.5	1	19.17	20.00	1.211	62.9	1.006	-0.16	2.250	2.740
	LTE Band 41	20M	QPSK	1	0	-	Back	0mm	Ant 1	DSI 6	40620	2593	1	19.23	20.00	1.194	62.9	1.006	0.01	2.310	2.775
59	LTE Band 41	20M	QPSK	1	0	-	Back	0mm	Ant 1	DSI 6	41055	2636.5	1	19.23	20.00	1.194	62.9	1.006	0.12	2.480	**2.979**
	LTE Band 41	20M	QPSK	1	0	-	Left Side	0mm	Ant 1	DSI 6	41490	2680	1	19.26	20.00	1.186	62.9	1.006	-0.14	0.963	1.149
	LTE Band 41	20M	QPSK	1	0	-	Top Side	0mm	Ant 1	DSI 6	41490	2680	1	19.26	20.00	1.186	62.9	1.006	0.18	1.130	1.348
	LTE Band 41-PC2	20M	QPSK	1	0	-	Back	0mm	Ant 1	DSI 6	41055	2636.5	1	20.76	21.50	1.186	42.9	1.009	0.14	2.260	2.704
	LTE Band 41	20M	QPSK	1	0	-	Front	13mm	Ant 1	DSI 4	41490	2680	1	23.36	24.00	1.159	62.9	1.006	0.05	0.195	0.227
	LTE Band 41	20M	QPSK	1	0	-	Back	17mm	Ant 1	DSI 4	41055	2636.5	1	23.25	24.00	1.189	62.9	1.006	-0.15	0.126	0.151
	LTE Band 41	20M	QPSK	1	0	-	Left Side	7mm	Ant 1	DSI 4	41490	2680	1	23.36	24.00	1.159	62.9	1.006	-0.14	0.468	0.546
	LTE Band 41	20M	QPSK	1	0	-	Top Side	19mm	Ant 1	DSI 4	41490	2680	1	23.36	24.00	1.159	62.9	1.006	0.18	0.196	0.228
	LTE Band 41	20M	QPSK	1	0	-	Back	0mm	Ant 1	DSI 6	41055	2636.5	2	19.23	20.00	1.194	62.9	1.006	0.17	1.77	2.126
	LTE Band 41	20M	QPSK	50	0	-	Front	0mm	Ant 1	DSI 6	41490	2680	1	19.24	20.00	1.191	62.9	1.006	-0.13	0.950	1.138
	LTE Band 41	20M	QPSK	50	0	-	Back	0mm	Ant 1	DSI 6	41490	2680	1	19.24	20.00	1.191	62.9	1.006	-0.16	2.190	2.624
	LTE Band 41	20M	QPSK	50	0	-	Back	0mm	Ant 1	DSI 6	39750	2506	1	19.13	20.00	1.222	62.9	1.006	-0.09	2.270	2.790
	LTE Band 41	20M	QPSK	50	0	-	Back	0mm	Ant 1	DSI 6	40185	2549.5	1	19.15	20.00	1.216	62.9	1.006	0.12	2.290	2.802
	LTE Band 41	20M	QPSK	50	0	-	Back	0mm	Ant 1	DSI 6	40620	2593	1	19.21	20.00	1.199	62.9	1.006	0.18	2.300	2.775
	LTE Band 41	20M	QPSK	50	0	-	Back	0mm	Ant 1	DSI 6	41055	2636.5	1	19.20	20.00	1.202	62.9	1.006	0.02	2.440	2.951
	LTE Band 41	20M	QPSK	50	0	-	Left Side	0mm	Ant 1	DSI 6	41490	2680	1	19.24	20.00	1.191	62.9	1.006	0.13	0.968	1.160

	LTE Band 41	20M	QPSK	50	0	-	Top Side	0mm	Ant 1	DSI 6	41490	2680	1	19.24	20.00	1.191	62.9	1.006	0.1	1.170	1.402
	LTE Band 41	20M	QPSK	50	0	-	Front	13mm	Ant 1	DSI 4	41490	2680	1	22.31	23.00	1.172	62.9	1.006	0.05	0.110	0.130
	LTE Band 41	20M	QPSK	50	0	-	Back	17mm	Ant 1	DSI 4	41055	2636.5	1	22.28	23.00	1.180	62.9	1.006	-0.15	0.071	0.084
	LTE Band 41	20M	QPSK	50	0	-	Left Side	7mm	Ant 1	DSI 4	41490	2680	1	22.31	23.00	1.172	62.9	1.006	-0.14	0.264	0.311
	LTE Band 41	20M	QPSK	50	0	-	Top Side	19mm	Ant 1	DSI 4	41490	2680	1	22.31	23.00	1.172	62.9	1.006	0.18	0.110	0.130
	LTE Band 41	20M	QPSK	100	0	-	Back	0mm	Ant 1	DSI 6	41490	2680	1	19.21	20.00	1.199	62.9	1.006	-0.1	2.130	2.570
3500MHz&3900MHz																					
	LTE Band 42	20M	QPSK	1	0	-	Front	0mm	Ant 2	DSI 4	42590	3500	1	23.26	24.00	1.186	62.9	1.006	-0.12	2.020	2.410
	LTE Band 42	20M	QPSK	1	0	-	Front	0mm	Ant 2	DSI 4	42190	3460	1	23.18	24.00	1.208	62.9	1.006	-0.01	1.870	2.272
	LTE Band 42	20M	QPSK	1	0	-	Front	0mm	Ant 2	DSI 4	42990	3540	1	23.11	24.00	1.227	62.9	1.006	0.01	2.000	2.470
	LTE Band 42	20M	QPSK	1	0	-	Back	0mm	Ant 2	DSI 6	42590	3500	1	20.61	21.50	1.227	62.9	1.006	-0.13	2.140	2.642
	LTE Band 42	20M	QPSK	1	0	-	Back	0mm	Ant 2	DSI 6	42190	3460	1	20.44	21.50	1.276	62.9	1.006	0.09	1.970	2.530
60	LTE Band 42	20M	QPSK	1	0	-	Back	0mm	Ant 2	DSI 6	42990	3540	1	20.42	21.50	1.282	62.9	1.006	0.09	2.190	**2.825**
	LTE Band 42	20M	QPSK	1	0	-	Top Side	0mm	Ant 2	DSI 6	42590	3500	1	20.61	21.50	1.227	62.9	1.006	-0.1	1.340	1.655
	LTE Band 42	20M	QPSK	1	0	-	Back	6mm	Ant 2	DSI 4	42990	3540	1	23.11	24.00	1.227	62.9	1.006	-0.13	0.621	0.767
	LTE Band 42	20M	QPSK	1	0	-	Top Side	7mm	Ant 2	DSI 4	42590	3500	1	23.26	24.00	1.186	62.9	1.006	-0.1	0.337	0.402
	LTE Band 42	20M	QPSK	50	0	-	Front	0mm	Ant 2	DSI 4	42590	3500	1	22.24	23.00	1.191	62.9	1.006	0.16	1.220	1.462
	LTE Band 42	20M	QPSK	50	0	-	Front	0mm	Ant 2	DSI 4	42190	3460	1	22.17	23.00	1.211	62.9	1.006	0.09	1.100	1.340
	LTE Band 42	20M	QPSK	50	0	-	Front	0mm	Ant 2	DSI 4	42990	3540	1	22.11	23.00	1.227	62.9	1.006	0.13	1.170	1.445
	LTE Band 42	20M	QPSK	50	0	-	Back	0mm	Ant 2	DSI 6	42590	3500	1	20.59	21.50	1.233	62.9	1.006	0.03	2.110	2.617
	LTE Band 42	20M	QPSK	50	0	-	Back	0mm	Ant 2	DSI 6	42190	3460	1	20.42	21.50	1.282	62.9	1.006	-0.13	1.940	2.503
	LTE Band 42	20M	QPSK	50	0	-	Back	0mm	Ant 2	DSI 6	42990	3540	1	20.40	21.50	1.288	62.9	1.006	0.06	2.150	2.786
	LTE Band 42	20M	QPSK	50	0	-	Top Side	0mm	Ant 2	DSI 6	42590	3500	1	20.59	21.50	1.233	62.9	1.006	-0.11	1.270	1.575
	LTE Band 42	20M	QPSK	50	0	-	Back	6mm	Ant 2	DSI 4	42990	3540	1	22.11	23.00	1.227	62.9	1.006	-0.13	0.563	0.695
	LTE Band 42	20M	QPSK	50	0	-	Top Side	7mm	Ant 2	DSI 4	42590	3500	1	22.24	23.00	1.191	62.9	1.006	-0.1	0.354	0.424
	LTE Band 42	20M	QPSK	100	0	-	Front	0mm	Ant 2	DSI 4	42590	3500	1	22.18	23.00	1.208	62.9	1.006	0.05	1.180	1.434
	LTE Band 42	20M	QPSK	100	0	-	Back	0mm	Ant 2	DSI 6	42190	3460	1	20.56	21.50	1.242	62.9	1.006	0.13	2.070	2.586
	FR1 n77	100M	BPSK	1	1	DFT-30	Front	0mm	Ant 2	DSI 4	656000	3840	1	21.81	23.00	1.315	-	-	0.01	1.610	2.118
	FR1 n77	100M	BPSK	1	1	DFT-30	Back	0mm	Ant 2	DSI 6	656000	3840	1	19.36	20.50	1.300	-	-	-0.12	2.130	2.769
	FR1 n77	100M	BPSK	1	1	DFT-30	Top Side	0mm	Ant 2	DSI 6	656000	3840	1	19.36	20.50	1.300	-	-	-0.12	1.210	1.573
	FR1 n77	100M	BPSK	1	1	DFT-30	Back	6mm	Ant 2	DSI 4	656000	3840	1	21.81	23.00	1.315	-	-	0.16	0.991	1.303
	FR1 n77	100M	BPSK	1	1	DFT-30	Top Side	7mm	Ant 2	DSI 4	656000	3840	1	21.81	23.00	1.315	-	-	0.17	0.616	0.810
	FR1 n77	100M	BPSK	135	69	DFT-30	Front	0mm	Ant 2	DSI 4	656000	3840	1	21.78	23.00	1.324	-	-	0	1.620	2.145
61	FR1 n77	100M	BPSK	135	69	DFT-30	Back	0mm	Ant 2	DSI 6	656000	3840	1	19.34	20.50	1.306	-	-	-0.04	2.140	**2.795**
	FR1 n77	100M	BPSK	135	69	DFT-30	Top Side	0mm	Ant 2	DSI 6	656000	3840	1	19.34	20.50	1.306	-	-	0.13	1.200	1.567
	FR1 n77	100M	BPSK	135	69	DFT-30	Back	6mm	Ant 2	DSI 4	656000	3840	1	21.78	23.00	1.324	-	-	0.03	0.888	1.176
	FR1 n77	100M	BPSK	135	69	DFT-30	Top Side	7mm	Ant 2	DSI 4	656000	3840	1	21.78	23.00	1.324	-	-	-0.18	0.564	0.747
	FR1 n77	100M	BPSK	270	0	DFT-30	Front	0mm	Ant 2	DSI 4	656000	3840	1	21.75	23.00	1.334	-	-	0.05	1.580	2.107
	FR1 n77	100M	BPSK	270	0	DFT-30	Back	0mm	Ant 2	DSI 6	656000	3840	1	19.31	20.50	1.315	-	-	0.11	2.070	2.723
	FR1 n77	100M	BPSK	270	0	DFT-30	Top Side	0mm	Ant 2	DSI 6	656000	3840	1	19.31	20.50	1.315	-	-	0.04	1.160	1.526
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	0mm	Ant 3	DSI 4	656000	3840	1	16.27	17.50	1.327	-	-	-0.05	2.190	2.907
	FR1 n77	100M	QPSK	1	1	DFT-30	Left Side	0mm	Ant 3	DSI 4	656000	3840	1	16.27	17.50	1.327	-	-	-0.11	0.426	0.565
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	0mm	Ant 3	DSI 4	656000	3840	2	16.27	17.50	1.327	-	-	-0.07	1.920	2.549
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	0mm	Ant 3	DSI 4	656000	3840	1	16.25	17.50	1.334	-	-	-0.14	2.080	2.774
	FR1 n77	100M	QPSK	135	69	DFT-30	Left Side	0mm	Ant 3	DSI 4	656000	3840	1	16.25	17.50	1.334	-	-	0.04	0.425	0.567
	FR1 n77	100M	QPSK	270	0	DFT-30	Back	0mm	Ant 3	DSI 4	656000	3840	1	16.22	17.50	1.343	-	-	-0.07	1.950	2.618
	FR1 n77	100M	QPSK	1	1	DFT-30	Back	0mm	Ant 7	DSI 4	656000	3840	1	20.23	21.00	1.194	-	-	0.11	1.750	2.089
	FR1 n77	100M	QPSK	135	69	DFT-30	Back	0mm	Ant 7	DSI 4	656000	3840	1	20.16	21.00	1.213	-	-	0.06	1.700	2.063
	FR1 n77	100M	QPSK	270	0	DFT-30	Back	0mm	Ant 7	DSI 4	656000	3840	1	18.90	20.00	1.288	-	-	0.03	1.340	1.726

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Sample	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)
2450MHz																	
	WLAN2.4GHz	802.11b 1Mbps	Back	0mm	Ant 8	Full	1	2412	1	19.23	20.50	1.340	100	1.000	0.09	1.520	2.036
62	WLAN2.4GHz	802.11b 1Mbps	Back	0mm	Ant 8	Full	6	2437	1	18.92	20.50	1.439	100	1.000	0.11	1.570	**2.259**
	WLAN2.4GHz	802.11b 1Mbps	Back	0mm	Ant 8	Full	11	2462	1	19.21	20.50	1.346	100	1.000	0.05	1.360	1.830
	WLAN2.4GHz	802.11b 1Mbps	Back	0mm	Ant 8	Simultaneous	6	2437	1	14.95	16.50	1.429	100	1.000	0.02	0.638	0.912
WIFI5G																	
	WLAN5.2GHz	802.11n-HT40 MCS0	Back	0mm	Ant 8	Standalone	38	5190	1	18.24	19.50	1.337	96.30	1.038	0.17	1.320	1.831
63	WLAN5.2GHz	802.11n-HT40 MCS0	Top Side	0mm	Ant 8	Standalone	38	5190	1	18.24	19.50	1.337	96.30	1.038	0.03	1.460	**2.026**
	WLAN5.2GHz	802.11n-HT40 MCS0	Top Side	0mm	Ant 8	Standalone	46	5230	1	18.19	19.50	1.351	96.30	1.038	0.1	1.400	1.963
	WLAN5.2GHz	802.11ac-VHT80 MCS0	Top Side	0mm	Ant 8	Simultaneous	42	5210	1	14.95	16.00	1.274	92.17	1.085	0.15	0.609	0.841
	WLAN5.3GHz	802.11n-HT40 MCS0	Front	0mm	Ant 8	Standalone	54	5270	1	17.89	19.50	1.448	96.30	1.038	-0.19	0.585	0.879
64	WLAN5.3GHz	802.11n-HT40 MCS0	Back	0mm	Ant 8	Standalone	54	5270	1	17.89	19.50	1.448	96.30	1.038	-0.14	1.230	**1.848**
	WLAN5.3GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 8	Standalone	54	5270	1	17.89	19.50	1.448	96.30	1.038	-0.12	0.518	0.778
	WLAN5.3GHz	802.11n-HT40 MCS0	Top Side	0mm	Ant 8	Standalone	54	5270	1	17.89	19.50	1.448	96.30	1.038	0.03	1.190	1.788
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Back	0mm	Ant 8	Simultaneous	58	5290	1	14.49	16.00	1.416	92.17	1.085	0.04	0.650	0.998
	WLAN5.5GHz	802.11n-HT40 MCS0	Front	0mm	Ant 8	Standalone	142	5710	1	18.28	19.50	1.323	96.30	1.038	0.05	0.947	1.301
65	WLAN5.5GHz	802.11n-HT40 MCS0	Back	0mm	Ant 8	Standalone	142	5710	1	18.28	19.50	1.323	96.30	1.038	0.11	1.830	**2.513**
	WLAN5.5GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 8	Standalone	142	5710	1	18.28	19.50	1.323	96.30	1.038	-0.09	0.563	0.773
	WLAN5.5GHz	802.11n-HT40 MCS0	Top Side	0mm	Ant 8	Standalone	142	5710	1	18.28	19.50	1.323	96.30	1.038	-0.05	1.330	1.827
	WLAN5.5GHz	802.11n-HT40 MCS0	Back	0mm	Ant 8	Standalone	134	5670	1	17.81	19.50	1.474	96.30	1.038	-0.09	1.590	2.433
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	0mm	Ant 8	Simultaneous	122	5610	1	13.34	14.50	1.306	92.17	1.085	-0.05	0.658	0.933
	WLAN5.8GHz	802.11n-HT40 MCS0	Back	0mm	Ant 8	Standalone	151	5755	1	18.35	20.00	1.461	96.30	1.038	-0.05	1.320	2.002
	WLAN5.8GHz	802.11n-HT40 MCS0	Back	0mm	Ant 8	Standalone	159	5795	1	18.25	20.00	1.495	96.30	1.038	0.09	1.440	2.235
	WLAN5.8GHz	802.11n-HT40 MCS0	Top Side	0mm	Ant 8	Standalone	151	5755	1	18.35	20.00	1.461	96.30	1.038	-0.12	1.530	2.320
66	WLAN5.8GHz	802.11n-HT40 MCS0	Top Side	0mm	Ant 8	Standalone	159	5795	1	18.25	20.00	1.495	96.30	1.038	0.03	1.750	**2.716**
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Top Side	0mm	Ant 8	Simultaneous	155	5775	1	12.76	14.00	1.330	92.17	1.085	-0.07	0.678	0.979
	WLAN5.8GHz	802.11n-HT40 MCS0	Top Side	0mm	Ant 8	Standalone	159	5795	2	18.25	20.00	1.495	96.30	1.038	0.08	1.080	1.676

15.5 Repeated SAR Measurement

<1g>

No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Sample	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	WLAN2.4GHz	-	-	-	-	802.11b 1Mbps	Left Cheek	0mm	Ant 8	Standalone	1	2412	1	18.66	20.00	1.361	100	1.000	0.1	1.050	1.000	1.430
2st	WLAN2.4GHz	-	-	-	-	802.11b 1Mbps	Left Cheek	0mm	Ant 8	Standalone	1	2412	1	18.66	20.00	1.361	100	1.000	0.13	1.020	1.029	1.389
1st	WLAN5GHz	-	-	-	-	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 8	Standalone	122	5610	1	12.80	14.00	1.318	92.17	1.085	0.16	0.808	1.000	1.156
2st	WLAN5GHz	-	-	-	-	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 8	Standalone	122	5610	1	12.80	14.00	1.318	92.17	1.085	0.16	0.796	1.015	1.139
1st	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	4182	836.4	1	22.15	23.00	1.216	-	-	0.12	1.150	1.000	1.399
2st	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	4182	836.4	1	22.15	23.00	1.216	-	-	0.1	1.110	1.036	1.350
1st	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI 7	1312	1712.4	1	17.97	18.50	1.130	-	-	0.14	1.200	1.000	1.356
2st	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI 7	1312	1752.6	1	17.97	18.50	1.130	-	-	0.05	1.140	1.053	1.288
1st	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	9400	1880	1	17.55	18.00	1.109	-	-	-0.1	1.260	1.000	1.398
2st	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	9400	1880	1	17.55	18.00	1.109	-	-	-0.16	1.210	1.041	1.342
1st	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 3	41055	2636.5	1	15.75	16.50	1.189	62.9	1.006	0.03	1.000	1.000	1.196
2st	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 3	41055	2636.5	1	15.75	16.50	1.189	62.9	1.006	0.08	0.988	1.012	1.181
1st	FR1 n77	100M	QPSK	1	1	DFT-30	Back	5mm	Ant 7	DSI 3	656000	3840	1	16.21	17.00	1.199	-	-	-0.13	0.990	1.000	1.188
2st	FR1 n77	100M	QPSK	1	1	DFT-30	Back	5mm	Ant 7	DSI 3	656000	3840	1	16.21	17.00	1.199	-	-	-0.07	0.974	1.016	1.168
1st	LTE Band 42	20M	QPSK	1	0		Back	5mm	Ant 2	DSI 3	42990	3540	1	17.48	18.00	1.127	62.9	1.006	-0.16	0.883	1.000	1.001
2st	LTE Band 42	20M	QPSK	1	0		Back	5mm	Ant 2	DSI 3	42990	3540	1	17.48	18.00	1.127	62.9	1.006	-0.08	0.867	1.018	0.983

<10g>

No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Sample	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)	Ratio	Reported 10g SAR (W/kg)
1st	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6	4132	826.4	1	23.05	24.00	1.245	-	-	0.01	2.110	1.000	2.626
2st	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6	4132	826.4	1	23.05	24.00	1.245	-	-	0.07	2.060	1.024	2.564
1st	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSI 6	1312	1712.4	1	19.95	20.50	1.135	-	-	0.1	3.130	1.000	3.553
2st	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSI 6	1312	1712.4	1	19.95	20.50	1.135	-	-	0.15	3.080	1.016	3.496
1st	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6	9262	1852.4	1	20.92	21.50	1.143	-	-	0.14	3.140	1.000	3.589
2st	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6	9262	1852.4	1	20.92	21.50	1.143	-	-	0.11	3.060	1.026	3.497
1st	LTE Band 41	20M	QPSK	1	0	-	Back	0mm	Ant 1	DSI 6	41055	2636.5	1	19.23	20.00	1.194	62.9	1.006	0.12	2.480	1.000	2.979
2st	LTE Band 41	20M	QPSK	1	0	-	Back	0mm	Ant 1	DSI 6	41055	2636.5	1	19.23	20.00	1.194	62.9	1.006	0.07	2.420	1.025	2.907
1st	FR1 n77	100M	QPSK	1	1	DFT-30	Back	0mm	Ant 3	DSI 4	656000	3840	1	16.27	17.50	1.327	-	-	-0.05	2.190	1.000	2.907
2st	FR1 n77	100M	QPSK	1	1	DFT-30	Back	0mm	Ant 3	DSI 4	656000	3840	1	16.27	17.50	1.327	-	-	-0.07	2.100	1.043	2.788
1st	LTE Band 42	20M	QPSK	1	0		Back	5mm	Ant 2	DSI 6	42990	3540	1	20.42	21.50	1.282	62.9	1.006	0.09	2.190	1.000	2.825
2st	LTE Band 42	20M	QPSK	1	0		Back	5mm	Ant 2	DSI 6	42990	3540	1	20.42	21.50	1.282	62.9	1.006	0.12	2.120	1.033	2.735

General Note:

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
2. Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR <1.45W/kg, only one repeated measurement is required.
3. Per KDB 865664 D01v01r04, if the extremity repeated SAR is necessary, the same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.
4. The ratio is the difference in percentage between original and repeated measured SAR.
5. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

15.6 TDD B41 Linearity Data Analysis

General Note:
This device support Power Class 2 and Power Class 3 operations for LTE Band 41. The highest available duty cycle for Power Class 2 operation is 43.3% using UL-DL configuration 1. Per FCC Guidance based on the device behavior, all SAR tests were performed using Power Class 3. Power Class 2 is tested using the highest SAR test configuration in Power Class 3 for each LTE configuration and exposure condition combination, according to the highest time averaged power for all applicable uplink-downlink configurations in Power Class 2. When the reported SAR vs. output power is linearly scaled with < 10% discrepancy between power classes and all reported SAR are < 1.4 W/kg for 1g and < 3.5 W/kg for 10g, so separate SAR testing for Power Class 2 is not required.

Head		
LTE Band 41_Ant 1(HPUE)-Linearity Data for DSI 2		
	LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)
Maximum Tune up Power (dBm)	17.50	19.00
Reported 1g SAR (W/kg)	1.171	1.094
Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	35.60	34.39
Linearity SAR (W/kg)	1.131	
% deviation from expected linearity		-3.31%
Hotspot		
LTE Band 41_Ant 1(HPUE)-Linearity Data for DSI 7		
	LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)
Maximum Tune up Power (dBm)	15.00	16.50
Reported 1g SAR (W/kg)	1.068	0.944
Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	20.02	19.34
Linearity SAR (W/kg)	1.032	
% deviation from expected linearity		-8.52%
Extremity SAR		
LTE Band 41_Ant 1(HPUE)-Linearity Data for DSI 6		
	LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)
Maximum Tune up Power (dBm)	20.00	21.50
Reported 10g SAR (W/kg)	2.979	2.704
Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	63.30	61.16
Linearity SAR (W/kg)	2.878	
% deviation from expected linearity		-6.06%
Body worn		
LTE Band 41_Ant 1(HPUE)-Linearity Data for DSI 3		
	LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)
Maximum Tune up Power (dBm)	16.50	17.00
Reported 1g SAR (W/kg)	1.196	1.000
Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	28.28	21.70
Linearity SAR (W/kg)	0.918	
% deviation from expected linearity		8.94%

16. Simultaneous Transmission Analysis

No.	Simultaneous Transmission Configurations	Portable Handset			
		Head	Body-worn	Hotspot	Product specific 10g SAR
1.	WWAN + WLAN2.4GHz	Yes	Yes	Yes	Yes
2.	WWAN + WLAN5GHz	Yes	Yes	Yes	Yes
3.	WWAN + Bluetooth	Yes	Yes	Yes	Yes
4.	Bluetooth + WLAN5GHz	Yes	Yes	Yes	Yes
5.	WWAN + Bluetooth + WLAN5GHz	Yes	Yes	Yes	Yes

General Note:

1. This device supports VoIP in GPRS, EGPRS, WCDMA and LTE (e.g. for 3rd-party VoIP), LTE supports VoLTE operation.
2. WWAN above includes 5G NR bands.
3. EUT will choose each GSM, WCDMA, LTE and 5GNR according to the network signal condition; therefore, they will not operate simultaneously at any moment.
4. This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications.
5. This device 5.2GHz WLAN/5.8GHz WLAN support hotspot operation, and 5.2GHz WLAN/5.8GHz WLAN supports WLAN Direct (GC/GO), and 5.3GHz / 5.5GHz supports WLAN Direct (GC only).
6. The worst case 5 GHz WLAN SAR for each configuration was used for SAR summation.
7. WLAN 2.4GHz and Bluetooth share the same antenna so can't transmit simultaneously.
8. According to the EUT characteristic, WLAN 5GHz and Bluetooth can transmit simultaneously.
9. According to the EUT characteristic, WLAN 5GHz and WLAN 2.4GHz can't transmit simultaneously.
10. The maximum SAR summation is calculated based on the same configuration and test position.
11. For Back/Back with headset always chose higher SAR to do co-located analysis.
12. For simultaneously analysis, since the SAR summation of 3 transmitters can cover others combination of 2 transmitters, therefore in this section did not additional to evaluate 2TX combination of simultaneously transmission.
13. For head simultaneous transmission analysis, standalone WWAN always choose the highest SAR among all WWAN bands which are at the same antennas for each exposure position to perform simultaneous transmission analysis with WLAN/BT. This is the worst co-located analysis and can represent each bands.
14. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
    i) 1g Scalar SAR summation < 1.6W/kg and 10g Scalar SAR summation < 4.0W/kg.
    ii) SPLSR = (SAR1 + SAR2)^1.5 / (min. separation distance, mm), and the peak separation distance is determined from the square root of [(x1-x2)2 + (y1-y2)2 + (z1-z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
    iii) If SPLSR ≤ 0.04 for 1g SAR and SPLSR≤ 0.10 for 10g SAR , simultaneously transmission SAR measurement is not necessary.
    iv) Simultaneously transmission SAR measurement, and the reported multi-band 1g SAR < 1.6W/kg and 10g SAR < 4.0W/kg.
    v) The SPLSR calculated results please refer to section 16.5.

16.1 Head Exposure Conditions

WWAN Band	Exposure Position	1	3	4	5	1+3	1+4+5
		WWAN	WLAN2.4GHz Ant 8	WLAN5GHz Ant 8	Bluetooth Ant 8	Summed	Summed
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
Ant 0	Right Cheek	0.292	0.393	0.231	0.088	0.69	0.61
	Right Tilted	0.183	0.393	0.289	0.082	0.58	0.55
	Left Cheek	0.236	0.393	0.315	0.211	0.63	0.76
	Left Tilted	0.204	0.393	0.375	0.123	0.60	0.70
Ant 1	Right Cheek	0.958	0.393	0.231	0.088	1.35	1.28
	Right Tilted	1.176	0.393	0.289	0.082	1.57	1.55
	Left Cheek	0.349	0.393	0.315	0.211	0.74	0.88
	Left Tilted	0.417	0.393	0.375	0.123	0.81	0.92
Ant 2	Right Cheek	0.728	0.393	0.231	0.088	1.12	1.05
	Right Tilted	0.702	0.393	0.289	0.082	1.10	1.07
	Left Cheek	1.031	0.393	0.315	0.211	1.42	1.56
	Left Tilted	0.997	0.393	0.375	0.123	1.39	1.50
Ant 3	Right Cheek	0.127	0.393	0.231	0.088	0.52	0.45
	Right Tilted	0.069	0.393	0.289	0.082	0.46	0.44
	Left Cheek	0.111	0.393	0.315	0.211	0.50	0.64
	Left Tilted	0.095	0.393	0.375	0.123	0.49	0.59
Ant 5	Right Cheek	0.141	0.393	0.231	0.088	0.53	0.46
	Right Tilted	0.172	0.393	0.289	0.082	0.57	0.54
	Left Cheek	0.272	0.393	0.315	0.211	0.67	0.80
	Left Tilted	0.121	0.393	0.375	0.123	0.51	0.62
Ant 7	Right Cheek	0.087	0.393	0.231	0.088	0.48	0.41
	Right Tilted	0.080	0.393	0.289	0.082	0.47	0.45
	Left Cheek	0.101	0.393	0.315	0.211	0.49	0.63
	Left Tilted	0.076	0.393	0.375	0.123	0.47	0.57

16.2 Hotspot Exposure Conditions

WWAN Band	Exposure Position	1	3	4	5	1+3	1+4+5	SPLSR
		WWAN	WLAN2.4GHz Ant 8	WLAN5GHz Ant 8	Bluetooth Ant 8	Summed	Summed	
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
GSM850 Ant 0	Front	0.442	0.154	0.130	0.101	0.60	0.67	
	Back	1.325	0.382	0.324	0.199	**1.71**	**1.85**	**Case 1/2**
	Left side	0.231				0.23	0.23	
	Right side	0.397	0.203	0.153	0.134	0.60	0.68	
	Top side		0.164	0.381	0.123	0.16	0.50	
	Bottom side	0.568				0.57	0.57	
GSM1900 Ant 0	Front	0.579	0.154	0.130	0.101	0.73	0.81	
	Back	1.353	0.382	0.324	0.199	**1.74**	**1.88**	**Case 3/4**
	Left side	0.085				0.09	0.09	
	Right side	0.099	0.203	0.153	0.134	0.30	0.39	
	Top side		0.164	0.381	0.123	0.16	0.50	
	Bottom side	1.321				1.32	1.32	
WCDMA II Ant 0	Front	0.697	0.154	0.130	0.101	0.85	0.93	
	Back	1.398	0.382	0.324	0.199	**1.78**	**1.92**	**Case 5/6**
	Left side	0.092				0.09	0.09	
	Right side	0.096	0.203	0.153	0.134	0.30	0.38	
	Top side		0.164	0.381	0.123	0.16	0.50	
	Bottom side	1.369				1.37	1.37	
WCDMA IV Ant 0	Front	0.662	0.154	0.130	0.101	0.82	0.89	
	Back	1.357	0.382	0.324	0.199	**1.74**	**1.88**	**Case 7/8**
	Left side	0.048				0.05	0.05	
	Right side	0.105	0.203	0.153	0.134	0.31	0.39	
	Top side		0.164	0.381	0.123	0.16	0.50	
	Bottom side	1.356				1.36	1.36	
WCDMA V Ant 0	Front	0.743	0.154	0.130	0.101	0.90	0.97	
	Back	1.399	0.382	0.324	0.199	**1.78**	**1.92**	**Case 9/10**
	Left side	0.235				0.24	0.24	
	Right side	0.435	0.203	0.153	0.134	0.64	0.72	
	Top side		0.164	0.381	0.123	0.16	0.50	
	Bottom side	0.618				0.62	0.62	
LTE Band 2 Ant 0	Front	0.660	0.154	0.130	0.101	0.81	0.89	
	Back	1.442	0.382	0.324	0.199	**1.82**	**1.97**	**Case 11/12**
	Left side	0.094				0.09	0.09	
	Right side	0.100	0.203	0.153	0.134	0.30	0.39	
	Top side		0.164	0.381	0.123	0.16	0.50	
	Bottom side	1.441				1.44	1.44	
LTE Band 4 Ant 0	Front	0.726	0.154	0.130	0.101	0.88	0.96	
	Back	1.435	0.382	0.324	0.199	**1.82**	**1.96**	**Case 13/14**
	Left side					0.00	0.00	
	Right side	0.129	0.203	0.153	0.134	0.33	0.42	
	Top side		0.164	0.381	0.123	0.16	0.50	
	Bottom side	1.431				1.43	1.43	
LTE Band 12 Ant 0	Front	0.421	0.154	0.130	0.101	0.58	0.65	
	Back	0.939	0.382	0.324	0.199	1.32	1.46	
	Left side	0.354				0.35	0.35	
	Right side	0.700	0.203	0.153	0.134	0.90	0.99	
	Top side		0.164	0.381	0.123	0.16	0.50	
	Bottom side	0.491				0.49	0.49	
LTE Band 26 Ant 0	Front	0.780	0.154	0.130	0.101	0.93	1.01	
	Back	1.401	0.382	0.324	0.199	**1.78**	**1.92**	**Case 15/16**

	Left side	0.209				0.21	0.21	
	Right side	0.398	0.203	0.153	0.134	0.60	0.69	
	Top side		0.164	0.381	0.123	0.16	0.50	
	Bottom side	0.645				0.65	0.65	
LTE Band 41 Ant 1	Front	0.400	0.154	0.130	0.101	0.55	0.63	
	Back	1.196	0.382	0.324	0.199	**1.58**	**1.72**	**Case 17**
	Left side	0.268				0.27	0.27	
	Right side		0.203	0.153	0.134	0.20	0.29	
	Top side	1.068	0.164	0.381	0.123	1.23	1.57	
	Bottom side					0.00	0.00	
LTE Band 42 Ant 2	Front	0.458	0.154	0.130	0.101	0.61	0.69	
	Back	1.001	0.382	0.324	0.199	1.38	1.52	
	Left side	0.090				0.09	0.09	
	Right side	0.183	0.203	0.153	0.134	0.39	0.47	
	Top side	0.914	0.164	0.381	0.123	1.08	1.42	
	Bottom side					0.00	0.00	
FR1 n77 Ant 2	Front	0.373	0.154	0.130	0.101	0.53	0.60	
	Back	0.937	0.382	0.324	0.199	1.32	1.46	
	Left side	0.106				0.11	0.11	
	Right side	0.279	0.203	0.153	0.134	0.48	0.57	
	Top side	0.679	0.164	0.381	0.123	0.84	1.18	
	Bottom side					0.00	0.00	
FR1 n77 Ant 3	Front		0.154	0.130	0.101	0.15	0.23	
	Back	1.130	0.382	0.324	0.199	1.51	**1.65**	**Case 19**
	Left side	0.206				0.21	0.21	
	Right side		0.203	0.153	0.134	0.20	0.29	
	Top side	0.065	0.164	0.381	0.123	0.23	0.57	
	Bottom side					0.00	0.00	
FR1 n77 Ant 5	Front	0.535	0.154	0.130	0.101	0.69	0.77	
	Back	0.922	0.382	0.324	0.199	1.30	1.45	
	Left side	0.623				0.62	0.62	
	Right side		0.203	0.153	0.134	0.20	0.29	
	Top side		0.164	0.381	0.123	0.16	0.50	
	Bottom side	0.187				0.19	0.19	
FR1 n77 Ant 7	Front	0.024	0.154	0.130	0.101	0.18	0.26	
	Back	1.188	0.382	0.324	0.199	1.57	**1.71**	**Case 22**
	Left side					0.00	0.00	
	Right side	0.160	0.203	0.153	0.134	0.36	0.45	
	Top side	0.076	0.164	0.381	0.123	0.24	0.58	
	Bottom side					0.00	0.00	

16.3 Body-Worn Accessory Exposure Conditions

WWAN Band	Exposure Position	1	3	4	5	1+3	1+4+5	SPLSR
		WWAN	WLAN2.4GHz Ant 8	WLAN5GHz Ant 8	Bluetooth Ant 8	Summed	Summed	
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
GSM850 Ant 0	Front	0.442	0.154	0.389	0.101	0.60	0.93	
	Back	1.325	0.382	0.389	0.199	**1.71**	**1.91**	**Case 1/23**
GSM1900 Ant 0	Front	0.579	0.154	0.389	0.101	0.73	1.07	
	Back	1.353	0.382	0.389	0.199	**1.74**	**1.94**	**Case 3/24**
WCDMA II Ant 0	Front	0.697	0.154	0.389	0.101	0.85	1.19	
	Back	1.398	0.382	0.389	0.199	**1.78**	**1.99**	**Case 5/25**
WCDMA IV Ant 0	Front	0.662	0.154	0.389	0.101	**0.82**	**1.15**	
	Back	1.357	0.382	0.389	0.199	**1.74**	**1.95**	**Case 7/26**
WCDMA V Ant 0	Front	0.743	0.154	0.389	0.101	0.90	1.23	
	Back	1.399	0.382	0.389	0.199	**1.78**	**1.99**	**Case 9/27**
LTE Band 2 Ant 0	Front	0.660	0.154	0.389	0.101	0.81	1.15	
	Back	1.442	0.382	0.389	0.199	**1.82**	**2.03**	**Case 11/28**
LTE Band 4 Ant 0	Front	0.726	0.154	0.389	0.101	0.88	1.22	
	Back	1.435	0.382	0.389	0.199	**1.82**	**2.02**	**Case 13/29**
LTE Band 12 Ant 0	Front	0.421	0.154	0.389	0.101	0.58	0.91	
	Back	0.939	0.382	0.389	0.199	1.32	1.53	
LTE Band 26 Ant 0	Front	0.780	0.154	0.389	0.101	0.93	1.27	
	Back	1.401	0.382	0.389	0.199	**1.78**	**1.99**	**Case 15/30**
LTE Band 41 Ant 1	Front	0.400	0.154	0.389	0.101	0.55	0.89	
	Back	1.196	0.382	0.389	0.199	1.58	**1.78**	**Case 31**
LTE Band 42 Ant 2	Front	0.458	0.154	0.389	0.101	0.61	0.95	
	Back	1.001	0.382	0.389	0.199	1.38	**1.59**	
FR1 n77 Ant 2	Front	0.373	0.154	0.389	0.101	0.53	0.86	
	Back	0.937	0.382	0.389	0.199	1.32	1.53	
FR1 n77 Ant 3	Front		0.154	0.389	0.101	0.15	0.49	
	Back	1.130	0.382	0.389	0.199	1.51	**1.72**	**Case 32**
FR1 n77 Ant 5	Front	0.535	0.154	0.389	0.101	0.69	1.03	
	Back	0.922	0.382	0.389	0.199	1.30	1.51	
FR1 n77 Ant 7	Front	0.024	0.154	0.389	0.101	0.18	0.51	
	Back	1.188	0.382	0.389	0.199	1.57	**1.78**	**Case 34**

Sensor off

WWAN Band	Exposure Position	1	3	4	1+3	1+4
		WWAN	WLAN2.4GHz Ant 8	WLAN5GHz Ant 8	Summed	Summed
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
GSM850 Ant 0	Front at 15mm	0.298	0.141	0.538	0.44	0.84
	Back at 20mm	0.310	0.210	0.538	0.52	0.85
GSM1900 Ant 0	Front at 15mm	0.435	0.141	0.538	0.58	0.97
	Back at 20mm	0.446	0.210	0.538	0.66	0.98
WCDMA II Ant 0	Front at 15mm	0.507	0.141	0.538	0.65	1.05
	Back at 20mm	0.512	0.210	0.538	0.72	1.05
WCDMA IV Ant 0	Front at 15mm	0.341	0.141	0.538	0.48	0.88
	Back at 20mm	0.349	0.210	0.538	0.56	0.89
WCDMA V Ant 0	Front at 15mm	0.277	0.141	0.538	0.42	0.82
	Back at 20mm	0.288	0.210	0.538	0.50	0.83
LTE Band 2 Ant 0	Front at 15mm	0.466	0.141	0.538	0.61	1.00
	Back at 20mm	0.474	0.210	0.538	0.68	1.01
LTE Band 4 Ant 0	Front at 15mm	0.309	0.141	0.538	0.45	0.85
	Back at 20mm	0.320	0.210	0.538	0.53	0.86
LTE Band 26 Ant 0	Front at 15mm	0.288	0.141	0.538	0.43	0.83
	Back at 20mm	0.306	0.210	0.538	0.52	0.84
LTE Band 41 Ant 1	Front at 15mm	0.333	0.141	0.538	0.47	0.87
	Back at 20mm	0.398	0.210	0.538	0.61	0.94
LTE Band 42 Ant 2	Front at 15mm	0.360	0.141	0.538	0.50	0.90
	Back at 20mm	0.299	0.210	0.538	0.51	0.84
FR1 n77 Ant 2	Front at 15mm	0.364	0.141	0.538	0.51	0.90
	Back at 20mm	0.333	0.210	0.538	0.54	0.87
FR1 n77 Ant 3	Front at 15mm		0.141	0.538	0.14	0.54
	Back at 20mm	0.371	0.210	0.538	0.58	0.91
FR1 n77 Ant 7	Front at 15mm		0.141	0.538	0.14	0.54
	Back at 20mm	0.104	0.210	0.538	0.31	0.64

16.4 Product specific 10g SAR Exposure Conditions

Remark:

1. For Bluetooth Product specific 10g stand-alone SAR is not required for a transmitter or antenna, due to 1g hotspot SAR is <1.2W/kg.

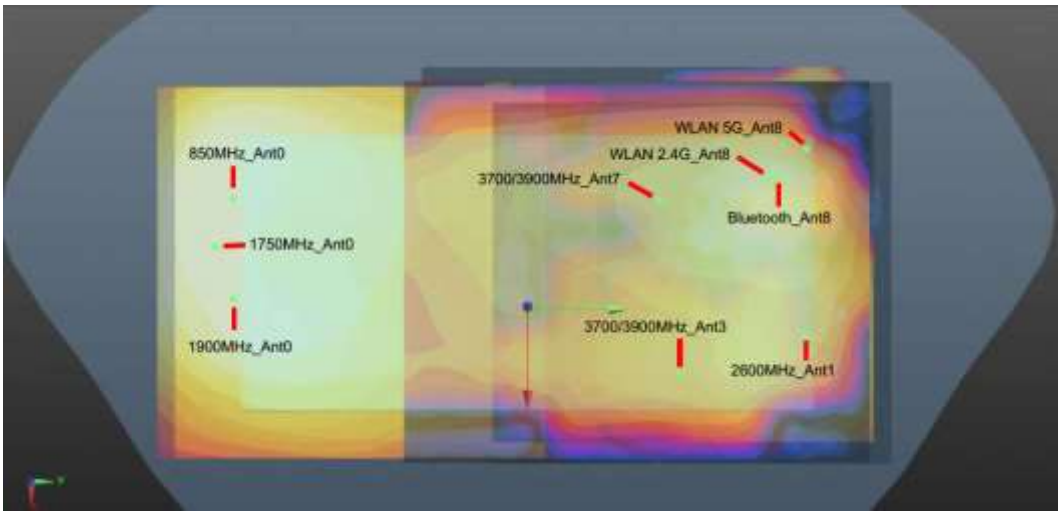
WWAN Band	Exposure Position	1	3	4	1+3	1+4	SPLSR
		WWAN	WLAN2.4GHz Ant 8	WLAN5GHz Ant 8	Summed	Summed	
		10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	
GSM850 Ant 0	Front			0.998	1.00	0.00	
	Back	2.695	0.912	0.998	3.61	3.69	
	Left side				0.00	0.00	
	Right side			0.998	0.00	1.00	
	Top side			0.979	0.00	0.98	
	Bottom side				0.00	0.00	
GSM1900 Ant 0	Front	1.674		0.998	1.67	2.67	
	Back	3.311	0.912	0.998	**4.22**	**4.31**	**Case 35/36**
	Left side				0.00	0.00	
	Right side			0.998	0.00	1.00	
	Top side			0.979	0.00	0.98	
	Bottom side	2.908			2.91	2.91	
WCDMA II Ant 0	Front	1.834		0.998	1.83	2.83	
	Back	3.589	0.912	0.998	**4.50**	**4.59**	**Case 37/38**
	Left side				0.00	0.00	
	Right side			0.998	0.00	1.00	
	Top side			0.979	0.00	0.98	
	Bottom side	2.651			2.65	2.65	
WCDMA IV Ant 0	Front	1.102		0.998	1.10	2.10	
	Back	1.908	0.912	0.998	2.82	2.91	
	Left side				0.00	0.00	
	Right side			0.998	0.00	1.00	
	Top side			0.979	0.00	0.98	
	Bottom side	3.553			3.55	3.55	
WCDMA V Ant 0	Front			0.998	0.00	1.00	
	Back	2.626	0.912	0.998	3.54	3.62	
	Left side				0.00	0.00	
	Right side			0.998	0.00	1.00	
	Top side			0.979	0.00	0.98	
	Bottom side				0.00	0.00	
LTE Band 2 Ant 0	Front	1.640		0.998	1.64	2.64	
	Back	3.575	0.912	0.998	**4.49**	**4.57**	**Case 39/40**
	Left side				0.00	0.00	
	Right side			0.998	0.00	1.00	
	Top side			0.979	0.00	0.98	
	Bottom side	2.496			2.50	2.50	
LTE Band 4 Ant 0	Front	1.118		0.998	1.12	2.12	
	Back	2.163	0.912	0.998	3.08	3.16	
	Left side				0.00	0.00	
	Right side			0.998	0.00	1.00	
	Top side			0.979	0.00	0.98	
	Bottom side	3.463			3.46	3.46	
LTE Band 26 Ant 0	Front			0.998	0.00	1.00	
	Back	2.439	0.912	0.998	3.35	3.44	
	Left side				0.00	0.00	
	Right side			0.998	0.00	1.00	
	Top side			0.979	0.00	0.98	
	Bottom side				0.00	0.00	

LTE Band 41 Ant 1	Front	1.138		0.998	1.14	2.14	
	Back	2.979	0.912	0.998	**3.89**	**3.98**	
	Left side	1.160			1.16	1.16	
	Right side			0.998	0.00	1.00	
	Top side	1.402		0.979	1.40	2.38	
	Bottom side				0.00	0.00	
LTE Band 42 Ant 2	Front	2.470		0.998	2.47	3.47	
	Back	2.825	0.912	0.998	3.74	3.82	
	Left side				0.00	0.00	
	Right side			0.998	0.00	1.00	
	Top side	1.655		0.979	1.66	2.63	
	Bottom side				0.00	0.00	
FR1 n77 Ant 2	Front	2.145		0.998	2.15	3.14	
	Back	2.795	0.912	0.998	3.71	3.79	
	Left side				0.00	0.00	
	Right side			0.998	0.00	1.00	
	Top side	1.573		0.979	1.57	2.55	
	Bottom side				0.00	0.00	
FR1 n77 Ant 3	Front			0.998	0.00	1.00	
	Back	2.907	0.912	0.998	3.82	3.91	
	Left side	0.567			0.57	0.57	
	Right side			0.998	0.00	1.00	
	Top side			0.979	0.00	0.98	
	Bottom side				0.00	0.00	
FR1 n77 Ant 5	Front			0.998	0.00	1.00	
	Back		0.912	0.998	0.91	1.00	
	Left side				0.00	0.00	
	Right side			0.998	0.00	1.00	
	Top side			0.979	0.00	0.98	
	Bottom side				0.00	0.00	
FR1 n77 Ant 7	Front			0.998	0.00	1.00	
	Back	2.089	0.912	0.998	3.00	3.09	
	Left side				0.00	0.00	
	Right side			0.998	0.00	1.00	
	Top side			0.979	0.00	0.98	
	Bottom side				0.00	0.00	

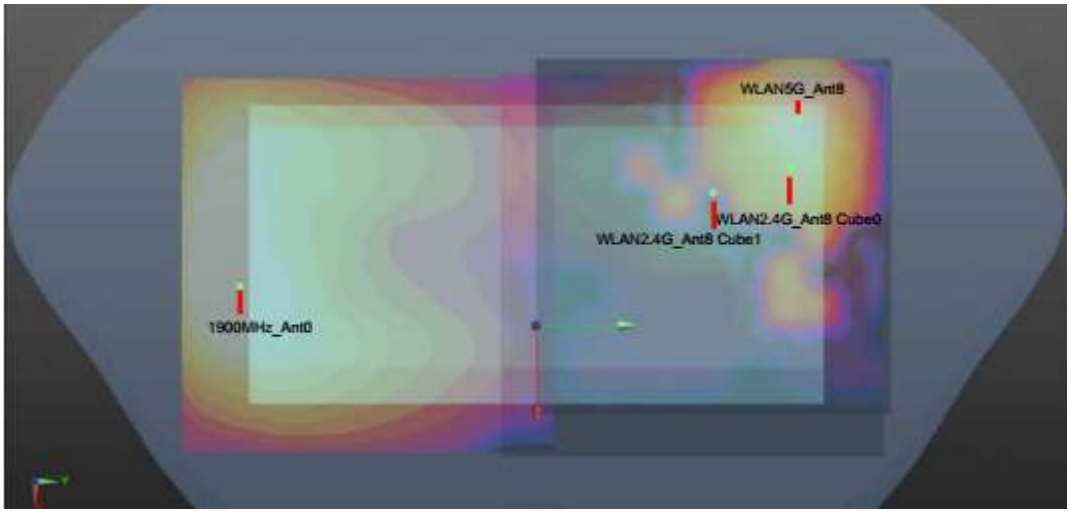
16.5 SPLSR Evaluation and Analysis

General Note:

1. When standalone SAR is measured for both antennas in the pair, the peak location separation distance is computed by the square root of [(x1−x2)2 + (y1−y2)2 + (z1−z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates in the area scans or extrapolated peak SAR locations in the zoom scans, as appropriate.
2. SPLSR = (SAR1 + SAR2)1.5 / (min. separation distance, mm). If SPLSR ≤ 0.04 for 1g SAR and SPLSR ≤ 0.10 for 10g SAR, simultaneously transmission SAR measurement is not necessary.



Hotspot&Body worn_Back_5mm



Handheld_Back_0mm

Hotspot											
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 1	GSM850_Ant 0	Back	1.325	5mm	-13	-83.5	-1.44	152.5	1.71	0.01	Not required
	WLAN2.4GHz		0.382	5mm	-28.4	68.2	-1.44				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 2	GSM850_Ant 0	Back	1.325	5mm	-13	-83.5	-1.44	174.6	1.65	0.01	Not required
	WLAN5GHz		0.324	5mm	-19	91	-1.03				
	GSM850_Ant 0	Back	1.325	5mm	-13	-83.5	-1.44	158.1	1.52	0.01	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	WLAN5GHz	Back	0.324	5mm	-19	91	-1.03	17.3	0.52	0.02	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 3	GSM1900_Ant0	Back	1.353	5mm	7.5	-85.1	-1.39	157.4	1.74	0.01	Not required
	WLAN2.4GHz		0.382	5mm	-28.4	68.2	-1.44				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 4	GSM1900_Ant0	Back	1.353	5mm	7.5	-85.1	-1.39	178.1	1.68	0.01	Not required
	WLAN5GHz		0.324	5mm	-19	91	-1.03				
	GSM1900_Ant0	Back	1.353	5mm	7.5	-85.1	-1.39	161.1	1.55	0.01	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	WLAN5GHz	Back	0.324	5mm	-19	91	-1.03	17.3	0.52	0.02	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 5	WCDMA II_Ant0	Back	1.398	5mm	4.4	-86.7	-1.56	158.3	1.78	0.01	Not required
	WLAN2.4GHz		0.382	5mm	-28.4	68.2	-1.44				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 6	WCDMA II_Ant0	Back	1.398	5mm	4.4	-86.7	-1.56	179.2	1.72	0.01	Not required
	WLAN5GHz		0.324	5mm	-19	91	-1.03				
	WCDMA II_Ant0	Back	1.398	5mm	4.4	-86.7	-1.56	162.3	1.60	0.01	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	WLAN5GHz	Back	0.324	5mm	-19	91	-1.03	17.3	0.52	0.02	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 7	WCDMA IV_Ant0	Back	1.357	5mm	-9.1	-88.5	-1.53	157.9	1.74	0.01	Not required
	WLAN2.4GHz		0.382	5mm	-28.4	68.2	-1.44				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 8	WCDMA IV_Ant0	Back	1.357	5mm	-9.1	-88.5	-1.53	179.8	1.68	0.01	Not required
	WLAN5GHz		0.324	5mm	-19	91	-1.03				
	WCDMA IV_Ant0	Back	1.357	5mm	-9.1	-88.5	-1.53	163.2	1.56	0.01	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	WLAN5GHz	Back	0.324	5mm	-19	91	-1.03	17.3	0.52	0.02	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 9	WCDMA V_Ant0	Back	1.399	5mm	-10.5	-85.1	-1.43	154.3	1.78	0.02	Not required
	WLAN2.4GHz		0.382	5mm	-28.4	68.2	-1.44				

	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 10	WCDMA V_Ant0	Back	1.399	5mm	-10.5	-85.1	-1.43	176.3	1.72	0.01	Not required
	WLAN5GHz		0.324	5mm	-19	91	-1.03				
	WCDMA V_Ant0	Back	1.399	5mm	-10.5	-85.1	-1.43	159.7	1.60	0.01	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	WLAN5GHz	Back	0.324	5mm	-19	91	-1.03	17.3	0.52	0.02	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
Case 11	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	LTE Band 2_Ant0	Back	1.442	5mm	4.8	-87.7	-1.57	159.4	1.82	0.02	Not required
	WLAN2.4GHz		0.382	5mm	-28.4	68.2	-1.44				
Case 12	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	LTE Band 2_Ant0	Back	1.442	5mm	4.8	-87.7	-1.57	180.3	1.77	0.01	Not required
	WLAN5GHz		0.324	5mm	-19	91	-1.03				
	LTE Band 2_Ant0	Back	1.442	5mm	4.8	-87.7	-1.57	163.3	1.64	0.01	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	WLAN5GHz	Back	0.324	5mm	-19	91	-1.03	17.3	0.52	0.02	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
Case 13	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	LTE Band 4_Ant0	Back	1.435	5mm	-13.9	-88.1	-1.58	157.0	1.82	0.02	Not required
	WLAN2.4GHz		0.382	5mm	-28.4	68.2	-1.44				
Case 14	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	LTE Band 4_Ant0	Back	1.435	5mm	-13.9	-88.1	-1.58	179.2	1.76	0.01	Not required
	WLAN5GHz		0.324	5mm	-19	91	-1.03				
	LTE Band 4_Ant0	Back	1.435	5mm	-13.9	-88.1	-1.58	162.7	1.63	0.01	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	WLAN5GHz	Back	0.324	5mm	-19	91	-1.03	17.3	0.52	0.02	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
Case 15	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	LTE Band 26_Ant0	Back	1.401	5mm	-10.6	-85.2	-1.6	154.4	1.78	0.02	Not required
	WLAN2.4GHz		0.382	5mm	-28.4	68.2	-1.44				
Case 16	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	LTE Band 26_Ant0	Back	1.401	5mm	-10.6	-85.2	-1.6	176.4	1.73	0.01	Not required
	WLAN5GHz		0.324	5mm	-19	91	-1.03				
	LTE Band 26_Ant0	Back	1.401	5mm	-10.6	-85.2	-1.6	159.8	1.60	0.01	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	WLAN5GHz	Back	0.324	5mm	-19	91	-1.03	17.3	0.52	0.02	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
Case 17	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	LTE Band 41_Ant1	Back	1.196	5mm	25	76.8	-1.53	46.2	1.52	0.04	Not required
	WLAN5GHz		0.324	5mm	-19	91	-1.03				
	LTE Band 41_Ant1	Back	1.196	5mm	25	76.8	-1.53	38.5	1.40	0.04	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	WLAN5GHz	Back	0.324	5mm	-19	91	-1.03	17.3	0.52	0.02	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
Case 19	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	FR1 n77_Ant3	Back	1.13	5mm	24.8	43	-1.45	65.0	1.45	0.03	Not required

	WLAN5GHz		0.324	5mm	-19	91	-1.03				
	FR1 n77_Ant3	Back	1.13	5mm	24.8	43	-1.45	49.6	1.33	0.03	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	WLAN5GHz	Back	0.324	5mm	-19	91	-1.03	17.3	0.52	0.02	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
Case 22	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	FR1 n77_Ant7	Back	1.188	5mm	-22.4	33.2	-2.25	57.9	1.51	0.03	Not required
	WLAN5GHz		0.324	5mm	-19	91	-1.03				
	FR1 n77_Ant7	Back	1.188	5mm	-22.4	33.2	-2.25	42.4	1.39	0.04	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	WLAN5GHz	Back	0.324	5mm	-19	91	-1.03	17.3	0.52	0.02	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				

Body-worn

Case 1	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM850_Ant 0	Back	1.325	5mm	-13	-83.5	-1.44	152.5	1.71	0.01	Not required
	WLAN2.4GHz		0.382	5mm	-28.4	68.2	-1.44				
Case 23	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM850_Ant 0	Back	1.325	5mm	-13	-83.5	-1.44	175.6	1.71	0.01	Not required
	WLAN5GHz		0.389	5mm	-20	92	-1.03				
	GSM850_Ant 0	Back	1.325	5mm	-13	-83.5	-1.44	158.1	1.52	0.01	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	WLAN5GHz	Back	0.389	5mm	-20	92	-1.03	18.6	0.59	0.02	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
Case 3	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM1900_Ant0	Back	1.353	5mm	7.5	-85.1	-1.39	157.4	1.74	0.01	Not required
	WLAN2.4GHz		0.382	5mm	-28.4	68.2	-1.44				
Case 24	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM1900_Ant0	Back	1.353	5mm	7.5	-85.1	-1.39	179.2	1.74	0.01	Not required
	WLAN5GHz		0.389	5mm	-20	92	-1.03				
	GSM1900_Ant0	Back	1.353	5mm	7.5	-85.1	-1.39	161.1	1.55	0.01	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	WLAN5GHz	Back	0.389	5mm	-20	92	-1.03	18.6	0.59	0.02	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
Case 5	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA II_Ant0	Back	1.398	5mm	4.4	-86.7	-1.56	158.3	1.78	0.01	Not required
	WLAN2.4GHz		0.382	5mm	-28.4	68.2	-1.44				
Case 25	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA II_Ant0	Back	1.398	5mm	4.4	-86.7	-1.56	180.4	1.79	0.01	Not required
	WLAN5GHz		0.389	5mm	-20	92	-1.03				
	WCDMA II_Ant0	Back	1.398	5mm	4.4	-86.7	-1.56	162.3	1.60	0.01	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	WLAN5GHz	Back	0.389	5mm	-20	92	-1.03	18.6	0.59	0.02	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
Case 7	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA IV_Ant0	Back	1.357	5mm	-9.1	-88.5	-1.53	157.9	1.74	0.01	Not required
	WLAN2.4GHz		0.382	5mm	-28.4	68.2	-1.44				

	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 26	WCDMA IV_Ant0	Back	1.357	5mm	-9.1	-88.5	-1.53	180.8	1.75	0.01	Not required
	WLAN5GHz		0.389	5mm	-20	92	-1.03				
	WCDMA IV_Ant0	Back	1.357	5mm	-9.1	-88.5	-1.53	163.2	1.56	0.01	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	WLAN5GHz	Back	0.389	5mm	-20	92	-1.03	18.6	0.59	0.02	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
Case 9	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	WCDMA V_Ant0	Back	1.399	5mm	-10.5	-85.1	-1.43	154.3	1.78	0.02	Not required
	WLAN2.4GHz		0.382	5mm	-28.4	68.2	-1.44				
Case 27	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	WCDMA V_Ant0	Back	1.399	5mm	-10.5	-85.1	-1.43	177.4	1.79	0.01	Not required
	WLAN5GHz		0.389	5mm	-20	92	-1.03				
	WCDMA V_Ant0	Back	1.399	5mm	-10.5	-85.1	-1.43	159.7	1.60	0.01	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	WLAN5GHz	Back	0.389	5mm	-20	92	-1.03	18.6	0.59	0.02	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
Case 11	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	LTE Band 2_Ant0	Back	1.442	5mm	4.8	-87.7	-1.57	159.4	1.82	0.02	Not required
	WLAN2.4GHz		0.382	5mm	-28.4	68.2	-1.44				
Case 28	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	LTE Band 2_Ant0	Back	1.442	5mm	4.8	-87.7	-1.57	181.4	1.83	0.01	Not required
	WLAN5GHz		0.389	5mm	-20	92	-1.03				
	LTE Band 2_Ant0	Back	1.442	5mm	4.8	-87.7	-1.57	163.3	1.64	0.01	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	WLAN5GHz	Back	0.389	5mm	-20	92	-1.03	18.6	0.59	0.02	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
Case 13	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	LTE Band 4_Ant0	Back	1.435	5mm	-13.9	-88.1	-1.58	157.0	1.82	0.02	Not required
	WLAN2.4GHz		0.382	5mm	-28.4	68.2	-1.44				
Case 29	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	LTE Band 4_Ant0	Back	1.435	5mm	-13.9	-88.1	-1.58	180.2	1.82	0.01	Not required
	WLAN5GHz		0.389	5mm	-20	92	-1.03				
	LTE Band 4_Ant0	Back	1.435	5mm	-13.9	-88.1	-1.58	162.7	1.63	0.01	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	WLAN5GHz	Back	0.389	5mm	-20	92	-1.03	18.6	0.59	0.02	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
Case 15	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	LTE Band 26_Ant0	Back	1.401	5mm	-10.6	-85.2	-1.6	154.4	1.78	0.02	Not required
	WLAN2.4GHz		0.382	5mm	-28.4	68.2	-1.44				
Case 30	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	LTE Band 26_Ant0	Back	1.401	5mm	-10.6	-85.2	-1.6	177.5	1.79	0.01	Not required
	WLAN5GHz		0.389	5mm	-20	92	-1.03				
	LTE Band 26_Ant0	Back	1.401	5mm	-10.6	-85.2	-1.6	159.8	1.60	0.01	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	WLAN5GHz	Back	0.389	5mm	-20	92	-1.03	18.6	0.59	0.02	Not required

	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
Case 31	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 41_Ant1	Back	1.196	5mm	25	76.8	-1.53	47.5	1.59	0.04	Not required
	WLAN5GHz		0.389	5mm	-20	92	-1.03				
	LTE Band 41_Ant1	Back	1.196	5mm	25	76.8	-1.53	38.5	1.40	0.04	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	WLAN5GHz	Back	0.389	5mm	-20	92	-1.03	18.6	0.59	0.02	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
Case 32	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	FR1 n77_Ant3	Back	1.13	5mm	24.8	43	-1.45	66.4	1.52	0.03	Not required
	WLAN5GHz		0.389	5mm	-20	92	-1.03				
	FR1 n77_Ant3	Back	1.13	5mm	24.8	43	-1.45	49.6	1.33	0.03	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	WLAN5GHz	Back	0.389	5mm	-20	92	-1.03	18.6	0.59	0.02	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
Case 34	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	FR1 n77_Ant7	Back	1.188	5mm	-22.4	33.2	-2.25	58.9	1.58	0.03	Not required
	WLAN5GHz		0.389	5mm	-20	92	-1.03				
	FR1 n77_Ant7	Back	1.188	5mm	-22.4	33.2	-2.25	42.4	1.39	0.04	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				
	WLAN5GHz	Back	0.389	5mm	-20	92	-1.03	18.6	0.59	0.02	Not required
	Bluetooth		0.199	5mm	-13.4	74.6	-1.32				

Handheld											
	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case 35	GSM1900_Ant0	Back	3.311	0mm	4.5	-83.5	-1.44	159.2	4.22	0.05	Not required
	WLAN2.4GHz		0.912	0mm	-35.6	70.6	-1.3				
	GSM1900_Ant0	Back	3.311	0mm	4.5	-83.5	-1.44	133.6	3.99	0.06	Not required
	WLAN2.4GHz		0.681	0mm	-12.4	49	-1.07				
Case 36	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	GSM1900_Ant0	Back	3.311	0mm	4.5	-83.5	-1.44	161.8	4.31	0.06	Not required
	WLAN5GHz		0.998	0mm	-31.6	74.2	-0.98				
Case 37	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	WCDMA II_Ant0	Back	3.589	0mm	6	-85.1	-1.4	161.2	4.50	0.06	Not required
	WLAN2.4GHz		0.912	0mm	-35.6	70.6	-1.3				
	WCDMA II_Ant0	Back	3.589	0mm	6	-85.1	-1.4	135.4	4.27	0.07	Not required
	WLAN2.4GHz		0.681	0mm	-12.4	49	-1.07				
Case 38	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	WCDMA II_Ant0	Back	3.589	0mm	6	-85.1	-1.4	163.7	4.59	0.06	Not required
	WLAN5GHz		0.998	0mm	-31.6	74.2	-0.98				
Case 39	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	LTE Band 2_Ant0	Back	3.575	0mm	6	-85.1	-1.46	161.2	4.49	0.06	Not required
	WLAN2.4GHz		0.912	0mm	-35.6	70.6	-1.3				
	LTE Band 2_Ant0	Back	3.575	0mm	6	-85.1	-1.46	135.4	4.26	0.06	Not required
	WLAN2.4GHz		0.681	0mm	-12.4	49	-1.07				
Case 40	Band	Position	SAR (W/kg)	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
	LTE Band 2_Ant0	Back	3.575	0mm	6	-85.1	-1.46	163.7	4.57	0.06	Not required
	WLAN5GHz		0.998	0mm	-31.6	74.2	-0.98				

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17. Uncertainty Assessment

Per KDB 865664 D01 SAR measurement 100MHz to 6GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be ≤ 30%, for a confidence interval of k = 2. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. For this device, the highest measured 1-g SAR is less 1.5W/kg and highest measured 10-g SAR is less 3.75W/kg. Therefore, the measurement uncertainty table is not required in this report.

18. References

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

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

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

[4] SPEAG DASY System Handbook

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

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

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

[8] FCC KDB 648474 D04 v01r03, “SAR Evaluation Considerations for Wireless Handsets”, Oct 2015.

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

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

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

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

[13] FCC KDB 941225 D05A v01r02, “Rel. 10 LTE SAR Test Guidance and KDB Inquiries”, Oct 2015

[14] FCC KDB 941225 D06 v02r01, "SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities", Oct 2015.

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Appendix A. Plots of System Performance Check

The plots are shown as follows.

Appendix B. Plots of High SAR Measurement

The plots are shown as follows.

Appendix C. DASY Calibration Certificate

The DASY calibration certificates are shown as follows.

Appendix E. Conducted RF Output Power Table

The detailed power table are shown as follows.