

FCC SAR Test Report

APPLICANT : Motorola Mobility LLC
EQUIPMENT : Mobile Cellular Phone
BRAND NAME : Motorola
MODEL NAME : XT2659-1, XT2659-2
FCC ID : IHDT56AP9
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.

Hank Huang



Approved by: Hank Huang

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1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Motorola Mobility LLC, Mobile Cellular Phone, XT2659-1, XT2659-2**, are as follows.

Highest 1g SAR Summary					
Equipment Class	Frequency Band		Head (Separation 0mm)	Hotspot (Separation 5mm)	Body-worn (Separation 5mm)
			1g SAR (W/kg)		
Licensed	GSM	GSM850	0.17	0.56	0.56
		GSM1900	1.20	0.81	1.23
	WCDMA	WCDMA II	1.08	1.11	1.25
		WCDMA IV	1.04	1.03	1.19
		WCDMA V	0.22	1.02	1.02
	LTE	LTE Band 25/2	1.00	1.26	1.17
		LTE Band 66/4	0.88	1.25	1.17
		LTE Band 26/5	0.33	0.97	0.97
		LTE Band 7	1.01	1.23	1.22
		LTE Band 12/17	0.31	0.92	0.77
		LTE Band 13	0.26	0.68	0.68
		LTE Band 14	0.31	0.74	0.76
		LTE Band 30	0.76	1.27	1.26
		LTE Band 71	0.26	0.88	0.59
		LTE Band 41/38	1.21	1.25	1.28
		LTE Band 48	1.06	1.12	1.05
	5G NR	FR1 n25/2	1.14	1.16	1.12
		FR1 n26/5	0.22	0.82	0.82
		FR1 n7	1.24	1.26	1.21
		FR1 n12	0.21	0.61	0.69
		FR1 n14	0.17	0.63	0.65
		FR1 n30	0.94	0.98	1.23
		FR1 n66	1.02	1.25	1.25
		FR1 n70	0.85	1.28	0.96
		FR1 n71	0.21	0.69	0.63
		FR1 n41/38	1.28	1.26	1.25
		FR1 n48	0.95	1.00	1.08
		FR1 n77/78	0.77	0.83	1.25
DTS	WLAN	2.4GHz WLAN	0.80	0.84	1.02
NII		5GHz WLAN	1.03	1.19	1.04
6XD		WLAN 6GHz	0.29		0.11
DSS	Bluetooth	2.4GHz Bluetooth	1.24	1.11	1.23

Highest 10g SAR Summary			
Equipment Class	Frequency Band		Product Specific 10g SAR (W/kg) (Separation 0mm)
Licensed	GSM	GSM1900	0.94
	WCDMA	WCDMA II	2.87
		WCDMA IV	2.01
	LTE	LTE Band 25/2	3.07
		LTE Band 66/4	2.83
		LTE Band 7	2.76
		LTE Band 30	2.57
		LTE Band 41/38	2.88
		LTE Band 48	3.00
	5G NR	FR1 n25/2	2.69
		FR1 n7	3.07
		FR1 n30	3.13
		FR1 n66	2.63
		FR1 n70	3.06
		FR1 n41/38	3.13
		FR1 n48	2.62
		FR1 n77/78	3.01
DTS	WLAN	2.4GHz WLAN	2.32
NII		5GHz WLAN	2.53
6XD		WLAN 6GHz	0.21
DSS	Bluetooth	2.4GHz Bluetooth	3.12
DXX	NFC	13.56MHz	<0.10

Equipment Class	Frequency Band	Measured APD			Reported PD
		Head (W/m ²)	Body Worn (W/m ²)	Phablet (W/m ²)	psPD (W/m ²)
6XD	6GHz WLAN	1.01	0.42	3.26	5.78
Date of Testing:		2025/11/25 ~ 2025/12/14			

Remark:

- This device supports LTE B2 / B4 / B5 / B17 / B38 and B25 / B66 / B26 / B12 / B41. Since the supported frequency span for LTE B2 / B4 / B5 / B17 / B38 falls completely within the support's frequency span for LTE B25 / B66 / B26 / 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 B25 / B66 / B26 / B12 / B41.
- This device supports 5G NR n2/n5/n38/n78 and n25/n26/n41/n77. Since the supported frequency span for 5G NR n2/n5/n38/n78 falls completely within the support's frequency span for n25/n26/n41/n77, both 5G NR bands have the same target power, and both 5G NR bands share the same transmission path; therefore, SAR was only assessed for n25/n26/n41/n77.
- This is a variant report for model name XT2659-1, XT2659-2. the change notes could be referred to the XT2659-1, XT2659-2_Operational Description of Product Equality Declaration which is exhibit separately. According to the difference, only the worst cases from original test report (Sporton Report Number FA420703, FA420703A, and FA420703C, FA420703-10) were verified for the differences.

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 Human Exposure to RF Radiation Limits (1.0 mW/cm²=10 W/m²) specified in FCC 47 CFR part 1.1310 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.
	SAR02-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
- IEC/IEEE 62209-1528:2020
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 648474 D04 SAR Evaluation Considerations for Wireless Handsets v01r03
- FCC KDB 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB 616217 D04 SAR for laptop and tablets v01r02
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D05A Rel.10 LTE SAR Test Guidance v01r02
- FCC KDB 941225 D06 Hotspot Mode SAR v02r01
- IEC TR 63170:2018
- IEC 62479:2010
- SPEAG DASY6 Application Note (Interim Procedure for Device Operation at 6GHz-10GHz)

4. Equipment Under Test (EUT) Information

4.1 General Information

Product Feature & Specification	
Equipment Name	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT2659-1, XT2659-2
FCC ID	IHDT56AP9
IMEI Code	354410210014778/354410210014786, 354410210014711/354410210014729 354410210014810/354410210014828
Wireless Technology and Frequency Range	GSM850: 824 MHz ~ 849 MHz GSM1900: 1850 MHz ~ 1910 MHz WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 14: 788 MHz ~ 798 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 30: 2305 MHz ~ 2315 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz LTE Band 71: 663 MHz ~ 698 MHz 5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n7 : 2500 MHz ~ 2570 MHz 5G NR n12 : 699 MHz ~ 716 MHz 5G NR n14 : 788 MHz ~ 798 MHz 5G NR n25 : 1850 MHz ~ 1915 MHz 5G NR n26 : 814 MHz ~ 849 MHz 5G NR n30 : 2305 MHz ~ 2315 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n48 : 3550 MHz ~ 3700 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n70 : 1695 MHz ~ 1710 MHz 5G NR n71 : 663 MHz ~ 698 MHz 5G NR n77: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3980 MHz 5G NR n78: 3450 MHz ~ 3550 MHz, 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 WLAN 6GHz U-NII-5: 5925 MHz ~ 6425 MHz WLAN 6GHz U-NII-6: 6425 MHz ~ 6525 MHz WLAN 6GHz U-NII-7: 6525 MHz ~ 6875 MHz WLAN 6GHz U-NII-8: 6875 MHz ~ 7125 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC: 13.56 MHz WPT: 115 kHz ~ 145 kHz
Mode	GSM/GPRS/EGPRS

	RMC/AMR 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+ (16QAM uplink is not 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 2.4GHz 802.11ac VHT20/VHT40 WLAN 2.4GHz 802.11ax HE20/HE40 WLAN 2.4GHz 802.11be EHT20/EHT40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80/VHT160 WLAN 5GHz 802.11ax HE20/HE40/HE80/HE160 WLAN 5GHz 802.11be EHT20/EHT40/EHT80/EHT160 WLAN 6GHz 802.11a/ax HE20/HE40/HE80/HE160 WLAN 6GHz 802.11be EHT20/EHT40/EHT80/EHT160/EHT320 Bluetooth BR/EDR/LE NFC: ASK WPT: ASK
HW Version	DVT1
SW Version	WWS36.24
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, LTE and 5G NR (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. The 2.4GHz/5GHz/6GHz WLAN can transmit in MIMO antenna mode only. 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 the power management, Hall sensor and proximity sensor /receiver detection/hotspot mode for SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity) and the Qualcomm smart transmit will manage to ensure the power level not exceeding the associated power table. Details about the power management decision and sensor detection are provided in the operational description. And the device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to power table at original report. 8. This device implements antenna tuning techniques for several WWAN (cellular) operating modes and frequencies for the purpose of improving antenna efficiency over a broad range of frequencies. Specifically, these techniques are employed in the GSM, WCDMA, LTE and 5G NR modes. In this report SAR was measured according to the normally required SAR configurations with the tuner active and worst tune state (auto tune) was used for SAR testing. The detail descriptions of the antenna tuner and supplemental data for additional information can be referred to original report. 9. This device supports HPUE mode for LTE Band 41 and 5G NR n41/n77/n78 with higher power. 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 verified the worst case of power class 3 SAR. 10. For 5G NR n41/n77/n78 HPUE, 5G NR n41/77/78 PC2 Maximum Duty Cycle is 50%, using FTM (Factory Test Mode) with 50% duty cycle is considered during SAR testing. For 5G NR other bands, using FTM to perform SAR with default 100% transmission. 11. 5G NR n2/25/66/41/48/77/78 supports UL MIMO. 12. The device supports HPUE (power class 2) under SISO mode and HPUE (power class 1.5) under UL MIMO mode for 5G NR n41/n77. 13. The Part 0 and TAS Part2 report for model name XT2659-1, XT2659-2 are referenced from the approved reference model XT2451-1, XT2451-2. No Plimit and target changes have been made. No additional Part 0 and Part 2 testing was required since the changes do not impact the essential test cases evaluated in the original evaluation. Plimit and Targets for all other bands/exposure conditions can be found in the original filing. Therefore, the TAS Part2 report from the reference model are considered fully representative of the variant model name XT2659-1, XT2659-2.	



14. RF exposure report for WPC (Wireless power charging) will be separately submitted.
15. This device supports 5GNR FR1 bands as following table, including NSA mode and SA mode. NSA and SA mode performed SAR separately.

<5G NR>

Mode	Band	Duplex	SCS(KHz)	Bandwidths(BW)
NSA	n2	FDD	15	5, 10, 15, 20, 25, 30, 35, 40
	n5	FDD	15	5, 10, 15, 20
	n7	FDD	15	5, 10, 15, 20, 25, 30, 35, 40
	n12	FDD	15	5, 10, 15
	n25	FDD	15	5, 10, 15, 20, 25, 30, 35, 40
	n26	FDD	15	5, 10, 15, 20
	n66	FDD	15	5, 10, 15, 20, 25, 30, 35, 40
	n71	FDD	15	5, 10, 15, 20
	n38	TDD	30	10, 15, 20, 25, 30, 40
	n41	TDD	30	10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100
	n77	TDD	30	10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100
	n78	TDD	30	10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100
SA	n2	FDD	15	5, 10, 15, 20, 25, 30, 35, 40
	n5	FDD	15	5, 10, 15, 20
	n7	FDD	15	5, 10, 15, 20, 25, 30, 35, 40
	n12	FDD	15	5, 10, 15
	n14	FDD	15	5, 10
	n25	FDD	15	5, 10, 15, 20, 25, 30, 35, 40
	n26	FDD	15	5, 10, 15, 20
	n30	FDD	15	5, 10
	n66	FDD	15	5, 10, 15, 20, 25, 30, 35, 40
	n70	FDD	15	5, 10, 15
	n71	FDD	15	5, 10, 15, 20
	n38	TDD	30	10, 15, 20, 25, 30, 40
	n41	TDD	30	10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100
	n48	TDD	30	10, 15, 20, 30, 40
	n77	TDD	30	10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100
	n78	TDD	30	10, 15, 20, 25, 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	IHDT56AP9																																																																						
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 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 14: 788 MHz ~ 798 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 30: 2305 MHz ~ 2315 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz LTE Band 71: 663 MHz ~ 698 MHz																																																																						
Channel Bandwidth	LTE Band 2:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 4:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 5:1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 12:1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 13: 5MHz, 10MHz LTE Band 14: 5MHz, 10MHz LTE Band 17: 5MHz, 10MHz LTE Band 25:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz LTE Band 30: 5MHz, 10MHz LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 48: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 66:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 71: 5MHz, 10MHz, 15MHz, 20MHz																																																																						
uplink modulations used	QPSK / 16QAM / 64QAM / 256QAM																																																																						
LTE Voice / Data requirements	Voice and Data																																																																						
LTE Release Version	R17, Cat18																																																																						
CA Support	Supported, Uplink and Downlink																																																																						
LTE MPR permanently built-in by design	<table><tr><th colspan="8">Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3</th></tr><tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th><th rowspan="2">MPR (dB)</th></tr><tr><th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr><tr><td>QPSK</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 1</td></tr><tr><td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr><tr><td>16 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr><tr><td>64 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 2</td></tr><tr><td>64 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 3</td></tr><tr><td>256 QAM</td><td colspan="6">≥ 1</td><td>≤ 5</td></tr></table>	Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3								Modulation	Channel bandwidth / Transmission bandwidth (N _{RB})						MPR (dB)	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	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
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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 original report.																																																																						
LTE Carrier Aggregation Combinations	Inter-Band and Intra-Band possible combinations and the detail power verification please referred to original report.																																																																						
LTE Carrier Aggregation Additional Information	1. This device supports LTE Carrier Aggregation (CA) in the uplink for intra-band and inter-band with two component carriers in the uplink. SAR Measurements and conducted powers were evaluated per FCC Guidance. 2. This device supports maximum of 6 carriers in the downlink and 2 carriers in the uplink.																																																																						

Transmission (H, M, L) channel numbers and frequencies in each LTE band												
LTE Band 2												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855	18675	1857.5	18700	1860
M	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905	19125	1902.5	19100	1900
LTE Band 4												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715	20025	1717.5	20050	1720
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750	20325	1747.5	20300	1745
LTE Band 5												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20407	824.7	20415	825.5	20425	826.5	20450	829				
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5	20525	836.5		
H	20643	848.3	20635	847.5	20625	846.5	20600	844				
LTE Band 7												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510				
M	21100	2535	21100	2535	21100	2535	21100	2535				
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560				
LTE Band 12												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	23017	699.7	23025	700.5	23035	701.5	23060	704				
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5				
H	23173	715.3	23165	714.5	23155	713.5	23130	711				
LTE Band 13												
	Bandwidth 5 MHz				Bandwidth 10 MHz							
	Channel #		Freq.(MHz)		Channel #		Freq.(MHz)					
L	23205		779.5		23230		782					
M	23230		782									
H	23255		784.5									
LTE Band 14												
	Bandwidth 5 MHz				Bandwidth 10 MHz							
	Channel #		Channel #		Channel #		Freq.(MHz)					
L	23305		790.5		23330		793					
M	23330		793									
H	23355		795.5									
LTE Band 17												
	Bandwidth 5 MHz				Bandwidth 10 MHz							
	Channel #		Freq.(MHz)		Channel #		Freq. (MHz)					
L	23755		706.5		23780		709					
M	23790		710		23790		710					
H	23825		713.5		23800		711					
LTE Band 25												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26047	1850.7	26055	1851.5	26065	1852.5	26090	1855	26115	1857.5	26140	1860
M	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880
H	26683	1914.3	26675	1913.5	26665	1912.5	26640	1910	26615	1907.5	26590	1905
LTE Band 26												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz			
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26697	814.7	26705	815.5	26715	816.5	26740	819	26765	821.5		
M	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5		
H	27033	848.3	27025	847.5	27015	846.5	26990	844	26965	841.5		



LTE Band 30												
	Bandwidth 5 MHz				Bandwidth 10 MHz							
	Channel #		Freq.(MHz)		Channel #		Freq.(MHz)					
L	27685		2307.5		27710		2310					
M	27710		2310									
H	27735		2312.5									
LTE Band 38												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)				
L	37775	2572.5	37800	2575	37825	2577.5	37850	2580				
M	38000	2595	38000	2595	38000	2595	38000	2595				
H	38225	2617.5	38200	2615	38175	2612.5	38150	2610				
LTE Band 41												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)				
L	39675	2498.5	39700	2501	39725	2503.5	39750	2506				
LM	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5				
M	40620	2593	40620	2593	40620	2593	40620	2593				
HM	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5				
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680				
LTE Band 66												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	131979	1710.7	131987	1711.5	131997	1712.5	132022	1715	132047	1717.5	132072	1720
M	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745
H	132665	1779.3	132657	1778.5	132647	1777.5	132622	1775	132597	1772.5	132572	1770
LTE Band 71												
	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)		
L	133147	665.5	133172	668	133197	670.5	133222	673				
M	133247	675.5	133272	678	133297	680.5	133322	683				
H	133447	695.5	133422	693	133397	690.5	133372	688				
LTE Band 48												
	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	55265	3552.5	55290	3555	55315	3557.5	55340	3560				
LM	55810	3607	55815	3607.5	55820	3608	55830	3609				
MH	56170	3643	56165	3642.5	56160	3642	56150	3641				
H	56715	3697.5	56690	3695	56665	3692.5	56640	3690				

4.3 General 5G NR SAR Test and Reporting Considerations

5G NR Information	
Operating Frequency Range of each 5G NR transmission band	5G NR n2: 1850 MHz ~ 1910 MHz 5G NR n5: 824 MHz ~ 849 MHz 5G NR n7: 2500 MHz ~ 2570 MHz 5G NR n12: 699 MHz ~ 716 MHz 5G NR n14: 788 MHz ~ 798 MHz 5G NR n25: 1850 MHz ~ 1915 MHz 5G NR n26: 814 MHz ~ 849 MHz 5G NR n30: 2305 MHz ~ 2315 MHz 5G NR n66: 1710 MHz ~ 1780 MHz 5G NR n70: 1695 MHz ~ 1710 MHz 5G NR n71: 663 MHz ~ 698 MHz 5G NR n38: 2570 MHz ~ 2620 MHz 5G NR n41: 2496 MHz ~ 2690 MHz 5G NR n48: 3550 MHz ~ 3700 MHz 5G NR n77: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3980 MHz 5G NR n78: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3800 MHz
Channel Bandwidth	The detail please refers to section 4.1 5GNR FR1 bands table.
SCS	FDD: SCS15KHz, TDD: SCS30KHz
uplink modulations used	DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM
A-MPR (Additional MPR) disabled for SAR Testing?	Yes
LTE Anchor Bands for n2	LTE B4/5/7/12/13/14/30/48/66/71
LTE Anchor Bands for n5	LTE B2/7/30/66/48
LTE Anchor Bands for n7	LTE B2/4/5/12/66
LTE Anchor Bands for n12	LTE B2/66
LTE Anchor Bands for n25	LTE B7/12/26/66
LTE Anchor Bands for n26	LTE B7
LTE Anchor Bands for n38	LTE B2/4/5/12/66
LTE Anchor Bands for n41	LTE B2/4/5/12/25/26/66/71
LTE Anchor Bands for n66	LTE B2/5/7/12/13/14/30/48/71
LTE Anchor Bands for n71	LTE B2/7/66/48
LTE Anchor Bands for n77	LTE B2/5/7/12/13/14/25/30/66/41/71
LTE Anchor Bands for n78	LTE B2/4/5/7/12/13/25/26/66/71/38/41

Transmission (H, M, L) channel numbers and frequencies in each 5G NR band																
NR Band 2																
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 35MHz		Bandwidth 40MHz	
	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	370500	1852.5	371000	1855	371500	1857.5	372000	1860	372500	1862.5	373000	1865	373500	1867.5	374000	1870
M	376000	1880	376000	1880	376000	1880	376000	1880	376000	1880	376000	1880	376000	1880	376000	1880
H	381500	1907.5	381000	1905	380500	1902.5	380000	1900	379500	1897.5	379000	1895	378500	1892.5	378000	1890

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

NR Band 7																
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 35MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	500500	2502.5	501000	2505	501500	2507.5	502000	2510	502500	2512.5	503000	2515	503500	2517.5	504000	2520
M	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535
H	513500	2567.5	513000	2565	512500	2562.5	512000	2560	511500	2557.5	511000	2555	510500	2552.5	510000	2550

NR Band 12							
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	140300	701.5	140800	704	141300	706.5	
M	141500	707.5	141500	707.5	141500	707.5	
H	142700	713.5	142200	711	141700	708.5	



NR Band 14					
Bandwidth 5MHz			Bandwidth 10MHz		
	Ch. #	Freq. (MHz)		Ch. #	Freq. (MHz)
L	158100	790.5	158600	793	
M	158600	793			
H	159100	795.5			

NR Band 25																
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 35MHz		Bandwidth 40MHz	
	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	370500	1852.5	371000	1855	371500	1857.5	372000	1860	372500	1862.5	373000	1865	373500	1867.5	374000	1870
M	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5
H	382500	1912.5	382000	1910	381500	1907.5	381000	1905	380500	1902.5	380000	1900	379500	1897.5	379000	1895

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

NR Band 30					
Bandwidth 5MHz			Bandwidth 10MHz		
	Ch. #	Freq. (MHz)		Ch. #	Freq. (MHz)
L	461500	2307.5	462000	2310	
M	462000	2310			
H	462500	2312.5			

NR Band 66																
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 35MHz		Bandwidth 40MHz	
	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	342500	1712.5	343000	1715	343500	1717.5	344000	1720	344500	1722.5	345000	1725	345500	1727.5	346000	1730
M	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745
H	355500	1777.5	355000	1775	354500	1772.5	354000	1770	353500	1767.5	353000	1765	352500	1762.5	352000	1760

NR Band 70						
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	339500	1697.5	340000	1700	340500	1702.5
M	340500	1702.5	340500	1702.5		
H	341500	1707.5	341000	1705		

NR Band 71								
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	133100	665.5	133600	668	134100	670.5	134600	673
M	136100	680.5	136100	680.5	136100	680.5	136100	680.5
H	139100	695.5	138600	693	138100	690.5	137600	688

NR Band 38												
	Bandwidth10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	515004	2575.02	515502	2577.51	516000	2580	516504	2582.52	517002	2585.01	518004	2590.02
M	519000	2595	519000	2595	519000	2595	519000	2595	519000	2595	519000	2595
H	522996	2614.98	522498	2612.49	522000	2610	521496	2607.48	520998	2604.99	519996	2599.98

NR Band 41																								
Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		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)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	500202	2501.01	500700	2503.5	501204	2506.02	501702	2508.51	502200	2511	503202	2516.01	504204	2521.02	505200	2526	500202	2501.01	507204	2536.02	508200	2541	509202	2546.01
M	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99
H	537000	2685	536496	2682.48	535998	2679.99	535500	2677.5	534996	2674.98	534000	2670	532998	2664.99	531996	2659.98	537000	2685	529998	2649.99	528996	2644.98	528000	2640



NR Band 48										
Bandwidth 10MHz		Bandwidth15MHz		Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L 637000	3555	637168	3557.52	637334	3560.01	637668	3565.02	638000	3570	
M 641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	
H 646332	3694.98	646166	3692.49	646000	3690	645666	3684.99	645332	3679.98	

NR Band 77																							
Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		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)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L 647000	3705	647168	3707.52	647334	3710.01	647500	3712.5	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	3840.00	656000	3840.00	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840
H 665000	3975	664832	3972.48	664666	3969.99	664500	3967.50	664332	3964.98	664000	3960	663666	3954.99	663332	3949.98	663000	3945	662666	3939.99	662332	3934.98	662000	3930

NR Band 78																							
Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		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)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L 647000	3705	647168	3707.52	647334	3710.01	647500	3712.5	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	650000	3750	650000	3750	650000	3750
H 653000	3795	652832	3792.48	652666	3789.99	652500	3787.5	652332	3784.98	652000	3780	651666	3774.99	651332	3769.98	651000	3765	650666	3759.99	650332	3754.98		

For <3450 MHz ~ 3550 MHz >

NR Band 77																							
Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		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)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L 630334	3455.01	630500	3457.5	630668	3460.02	630834	3462.51	631000	3465	631334	3470.01	631668	3475.02	632000	3480	632334	3485.01	632668	3490.02	633000	3495		
M 633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98
H 636332	3544.98	636166	3542.49	636000	3540	635832	3537.48	635666	3534.99	635332	3529.98	635000	3525	634666	3519.99	634332	3514.98	634000	3510	633666	3504.99		

NR Band 78																							
Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		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)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L 630334	3455.01	630500	3457.5	630668	3460.02	630834	3462.51	631000	3465	631334	3470.01	631668	3475.02	632000	3480	632334	3485.01	632668	3490.02	633000	3495		
M 633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98
H 636332	3544.98	636166	3542.49	636000	3540	635832	3537.48	635666	3534.99	635332	3529.98	635000	3525	634666	3519.99	634332	3514.98	634000	3510	633666	3504.99		

5. RF Exposure Limits

5.1 Uncontrolled Environment

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

5.2 Controlled Environment

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

Limits for Occupational/Controlled Exposure (W/kg)

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

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

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

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.

5.3 RF Exposure limit for above 6GHz

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310. The unit of power density evaluation is W/m² or mW/cm².

Peak Spatially Averaged Power Density was evaluated over a square area of 4cm² per interim FCC Guidance for near-field power density evaluations per October 2018 TCB Workshop notes

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

Note: 1.0 mW/cm² is 10 W/m²

6. Specific Absorption Rate (SAR)

6.1 Introduction

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

6.2 SAR Definition

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

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

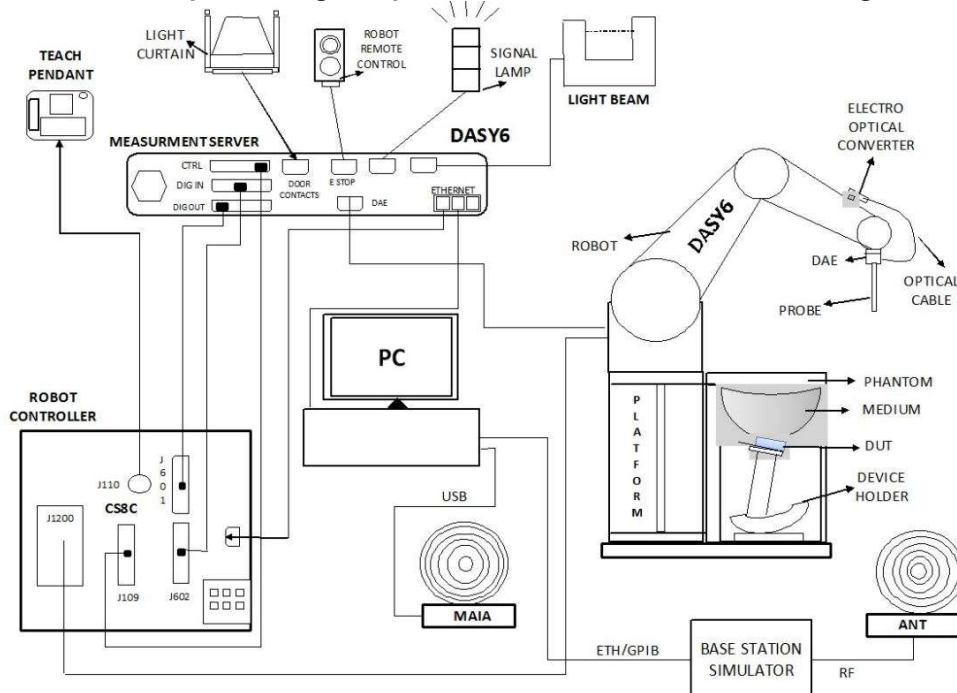
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

7. System Description and Setup

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



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP or Win10 and the DASY5 or DASY6⁽¹⁾ 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.

Note: 1. DASY6 software used: DASY6 mmWave V3.2.0.1840 and older generations and used the developed Plane-to-Plane Phase Reconstruction (PTP-PR) Algorithm which was used in PD measurement.

7.1 E-Field Probe

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

<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 μ W/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: 2.0 mm	

<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	4 MHz – 10 GHz Linearity: ± 0.2 dB (30 MHz – 10 GHz)	
Directivity	± 0.3 dB in TSL (rotation around probe axis) ± 0.5 dB in TSL (rotation normal to probe axis)	
Dynamic Range	10 μ W/g – >100 mW/g Linearity: ± 0.2 dB (noise: typically <1 μ W/g)	
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 2.5 mm (body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	

7.2 Data Acquisition Electronics (DAE)

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

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



Photo of DAE

7.3 Phantom

<SAM Twin Phantom>

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

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

<ELI Phantom>

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

The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices or for evaluating transmitters operating at low frequencies. ELI is fully compatible with standard and all known tissue simulating liquids.

7.4 Device Holder

<Mounting Device for Hand-Held Transmitter>

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



Mounting Device for Hand-Held Transmitters



Mounting Device Adaptor for Wide-Phones

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

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



Mounting Device for Laptops

8. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

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

<SAR measurement>

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

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

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

8.1 Spatial Peak SAR Evaluation

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

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

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

- (a) Extraction of the measured data (grid and values) from the Zoom Scan
- (b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
- (c) Generation of a high-resolution mesh within the measured volume
- (d) Interpolation of all measured values from 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

8.2 Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe 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.

8.3 Area Scan

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB) 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	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
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 $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

8.4 Zoom Scan

Zoom scans are used to 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 whose 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: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$			≤ 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: $\Delta z_{\text{Zoom}}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{\text{Zoom}}(1)$: between 1 st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{\text{Zoom}}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{\text{Zoom}}(n-1)$	
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 <i>reported</i> SAR from the <i>area scan based 1-g SAR estimation</i> procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.				

8.5 Volume Scan Procedures

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

8.6 Power Drift Monitoring

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

9. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1099	Dec. 13, 2024	Dec. 12, 2025
SPEAG	835MHz System Validation Kit	D835V2	4d162	Dec. 13, 2024	Dec. 12, 2025
SPEAG	1750MHz System Validation Kit	D1750V2	1090	Mar. 12, 2025	Mar. 11, 2026
SPEAG	1900MHz System Validation Kit	D1900V2	5d182	Dec. 16, 2024	Dec. 15, 2025
SPEAG	2300MHz System Validation Kit	D2300V2	1055	Aug. 21, 2023	Aug. 19, 2026
SPEAG	2450MHz System Validation Kit	D2450V2	1095	Feb. 08, 2024	Feb. 06, 2026
SPEAG	2600MHz System Validation Kit	D2600V2	1070	Dec. 13, 2024	Dec. 12, 2025
SPEAG	3500MHz System Validation Kit	D3500V2	1076	Apr. 16, 2025	Apr. 15, 2026
SPEAG	3700MHz System Validation Kit	D3700V2	1037	Apr. 16, 2025	Apr. 15, 2026
SPEAG	3900MHz System Validation Kit	D3900V2	1022	Aug. 13, 2025	Aug. 12, 2026
SPEAG	5000MHz System Validation Kit	D5GHzV2	1341	Dec. 12, 2024	Dec. 11, 2025
SPEAG	6500MHz System Validation Kit	D6.5GHzV2	1026	Jan. 28, 2025	Jan. 27, 2026
SPEAG	5G Verification Source	10GHz	2002	Feb. 20, 2025	Feb. 19, 2026
SPEAG	13MHz System Validation Kit	CLA13	1023	Jan. 20, 2025	Jan. 19, 2026
SPEAG	Data Acquisition Electronics	DAE4	1696	Sep. 10, 2025	Sep. 09, 2026
SPEAG	Data Acquisition Electronics	DAE4	1326	Jul. 11, 2025	Jul. 10, 2026
SPEAG	Dosimetric E-Field Probe	EX3DV4	7930	Jul. 21, 2025	Jul. 20, 2026
SPEAG	Dosimetric E-Field Probe	EX3DV4	7641	Jun. 26, 2025	Jun. 25, 2026
SPEAG	EUmmWV Probe Tip Protection	EUmmWV4	9432	Jan. 08, 2025	Jan. 07, 2026
SPEAG	mmWave Phantom	mmWave	1065	NCR	NCR
SPEAG	SAM Twin Phantom	QD 000 P41 AA	2033	NCR	NCR
SPEAG	ELI Phantom	QD OVA 004 AA	2131	NCR	NCR
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Anritsu	Radio communication analyzer	MT8820C	6201300653	Jul. 03, 2025	Jul. 02, 2026
Anritsu	Radio communication analyzer	MT8820C	6201341952	Dec. 26, 2024	Dec. 25, 2025
Anritsu	Radio communication analyzer	MT8821C	6262314715	Jul. 03, 2025	Jul. 02, 2026
Anritsu	Radio communication analyzer	MT8821C	6272278319	Jul. 03, 2025	Jul. 02, 2026
Agilent	Wireless Communication Test Set	E5515C	MY50267224	Jul. 04, 2025	Jul. 03, 2026
Keysight	Network Analyzer	E5071C	MY46523671	Oct. 14, 2025	Oct. 13, 2026
Speag	Dielectric Assessment KIT	DAK-3.5	1171	Feb. 24, 2025	Feb. 23, 2026
Speag	Dielectric Assessment KIT	DAK-12	1170	Sep. 22, 2025	Sep. 21, 2026
Agilent	Signal Generator	N5181A	MY50145381	Dec. 26, 2024	Dec. 25, 2025
R&S	Signal Generator	SMB100A	175779	Dec. 26, 2024	Dec. 25, 2025
R&S	Signal Generator	SMB100A	258306	Dec. 26, 2024	Dec. 25, 2025
R&S	Power Sensor	NRP50S	101254	Apr. 01, 2025	Mar. 31, 2026
R&S	Power Sensor	NRP50S	101548	Jan. 11, 2025	Jan. 10, 2026
R&S	Power Sensor	NRPZ51	103113	Apr. 01, 2025	Mar. 31, 2026
R&S	Power Sensor	NRP8S	109228	Apr. 01, 2025	Mar. 31, 2026
R&S	CBT BLUETOOTH TESTER	CBT	100963	Dec. 26, 2024	Dec. 25, 2025
R&S	Spectrum Analyzer	FSP7	100818	Jul. 03, 2025	Jul. 02, 2026
R&S	Spectrum Analyzer	FSV40	101164	Dec. 25, 2024	Dec. 24, 2025
TES	Hygrometer	1310	200505600	Jul. 05, 2025	Jul. 04, 2026
Anymetre	Thermo-Hygrometer	JR593	2015030903	Dec. 28, 2024	Dec. 27, 2025
Anymetre	Thermo-Hygrometer	JR593	2015102801	Dec. 28, 2024	Dec. 27, 2025
SPEAG	Device Holder	N/A	N/A	N/A	N/A

ARRA	Power Divider	A3200-2	N/A	Note 1
ET Industries	Dual Directional Coupler	C-058-10	N/A	Note 1
ATM	Dual Directional Coupler	C122H-10	P610410z-02	Note 1
Warison	Directional Coupler	WCOU-10-50S-10	WR889BMC4BMC1	Note 1
Jinkexinhua	Attenuator 1	10db-8G	N/A	Note 1
Weinschel	Attenuator 2	3M-20	N/A	Note 1
Mini-Circuits	Amplifier	ZVA-183W-S+	726202215	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.

10. System Verification

10.1 Tissue Simulating Liquids

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

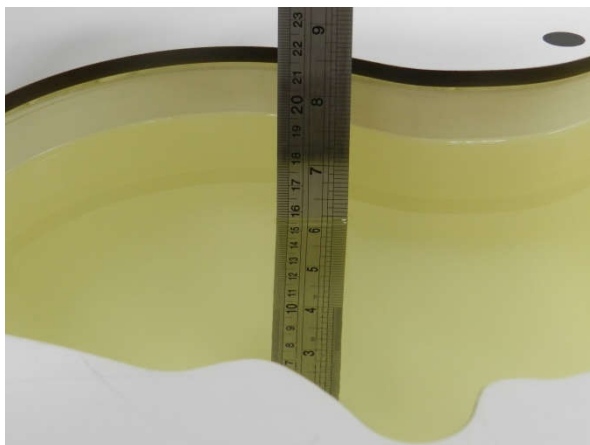


Fig 11.1 Photo of Liquid Height for Head SAR



Fig 11.2 Photo of Liquid Height for Body SAR

10.2 Tissue Verification

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

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (ϵ_r)
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. (°C)	Conductivity (σ)	Permittivity (ϵ_r)	Conductivity Target (σ)	Permittivity Target (ϵ_r)	Delta (σ) (%)	Delta (ϵ_r) (%)	Limit (%)	Date
750	Head	22.6	0.882	43.500	0.89	41.90	-0.90	3.82	±5	2025/11/25
750	Head	22.2	0.885	43.900	0.89	41.90	-0.56	4.77	±5	2025/11/27
835	Head	22.8	0.914	43.300	0.90	41.50	1.56	4.34	±5	2025/12/2
835	Head	22.4	0.919	43.200	0.90	41.50	2.11	4.10	±5	2025/12/5
1750	Head	22.7	1.340	41.900	1.37	40.10	-2.19	4.49	±5	2025/12/9
1750	Head	22.5	1.360	41.700	1.37	40.10	-0.73	3.99	±5	2025/12/11
1900	Head	22.3	1.440	41.600	1.40	40.00	2.86	4.00	±5	2025/12/13
1900	Head	22.6	1.420	41.300	1.40	40.00	1.43	3.25	±5	2025/12/14
2300	Head	22.8	1.720	41.400	1.67	39.50	2.99	4.81	±5	2025/11/26
2300	Head	22.2	1.710	41.200	1.67	39.50	2.40	4.30	±5	2025/11/28
2450	Head	22.5	1.810	41.100	1.80	39.20	0.56	4.85	±5	2025/11/29
2450	Head	22.3	1.820	41.000	1.80	39.20	1.11	4.59	±5	2025/11/30
2600	Head	22.7	1.910	40.500	1.96	39.00	-2.55	3.85	±5	2025/12/1
2600	Head	22.4	1.940	40.700	1.96	39.00	-1.02	4.36	±5	2025/12/3
3500	Head	22.5	2.820	39.200	2.91	37.90	-3.09	3.43	±5	2025/12/4
3500	Head	22.8	2.770	39.100	2.91	37.90	-4.81	3.17	±5	2025/12/6
3700	Head	22.2	3.120	38.600	3.12	37.70	0.00	2.39	±5	2025/12/7
3700	Head	22.4	3.100	38.900	3.12	37.70	-0.64	3.18	±5	2025/12/8
3900	Head	22.3	3.240	38.500	3.33	37.51	-2.70	2.64	±5	2025/12/10
3900	Head	22.7	3.200	38.600	3.33	37.51	-3.90	2.91	±5	2025/12/12
5250	Head	22.6	4.620	36.100	4.71	35.95	-1.91	0.42	±5	2025/12/8
5250	Head	22.8	4.590	36.200	4.71	35.95	-2.55	0.70	±5	2025/11/27
5600	Head	22.2	5.050	35.400	5.07	35.50	-0.39	-0.28	±5	2025/11/26
5600	Head	22.5	5.000	35.600	5.07	35.50	-1.38	0.28	±5	2025/12/1
5800	Head	22.6	5.250	35.500	5.27	35.30	-0.38	0.57	±5	2025/12/6
5800	Head	22.7	5.230	35.300	5.27	35.30	-0.76	0.00	±5	2025/12/8
6500	Head	22.3	6.020	34.500	6.07	34.50	-0.82	0.00	±5	2025/12/12
6500	Head	22.5	6.080	34.000	6.07	34.50	0.16	-1.45	±5	2025/12/14
13	Head	22.4	0.743	54.200	0.75	55.00	-0.93	-1.45	±5	2025/11/29

10.3 System Performance Check Results

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

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 (%)	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
2025/11/25	750	Head	250	1099	7930	1696	2.150	8.280	8.6	3.86	1.400	5.370	5.6	4.28
2025/11/27	750	Head	250	1099	7930	1696	2.140	8.280	8.56	3.38	1.390	5.370	5.56	3.54
2025/12/2	835	Head	250	4d162	7930	1696	2.250	9.080	9	-0.88	1.510	5.850	6.04	3.25
2025/12/5	835	Head	250	4d162	7930	1696	2.370	9.080	9.48	4.41	1.510	5.850	6.04	3.25
2025/12/9	1750	Head	250	1090	7930	1696	9.180	36.600	36.72	0.33	4.950	19.500	19.8	1.54
2025/12/11	1750	Head	250	1090	7930	1696	8.810	36.600	35.24	-3.72	4.690	19.500	18.76	-3.79
2025/12/13	1900	Head	250	5d182	7930	1696	10.100	39.800	40.4	1.51	5.320	21.000	21.28	1.33
2025/12/14	1900	Head	250	5d182	7930	1696	9.730	39.800	38.92	-2.21	5.010	21.000	20.04	-4.57
2025/11/26	2300	Head	250	1055	7641	1696	11.900	48.400	47.6	-1.65	5.680	23.700	22.72	-4.14
2025/11/28	2300	Head	250	1055	7641	1696	11.900	48.400	47.6	-1.65	5.670	23.700	22.68	-4.30
2025/11/29	2450	Head	250	1095	7930	1696	12.500	52.600	50	-4.94	5.910	24.700	23.64	-4.29
2025/11/30	2450	Head	250	1095	7930	1696	13.000	52.600	52	-1.14	6.020	24.700	24.08	-2.51
2025/12/1	2600	Head	250	1070	7930	1696	13.600	56.500	54.4	-3.72	6.130	25.200	24.52	-2.70
2025/12/3	2600	Head	250	1070	7930	1696	13.500	56.500	54	-4.42	6.050	25.200	24.2	-3.97
2025/12/4	3500	Head	100	1076	7930	1696	6.410	65.800	64.1	-2.58	2.470	25.000	24.7	-1.20
2025/12/6	3500	Head	100	1076	7930	1696	6.510	65.800	65.1	-1.06	2.490	25.000	24.9	-0.40
2025/12/7	3700	Head	100	1037	7930	1696	7.010	67.000	70.1	4.63	2.500	24.400	25	2.46
2025/12/8	3700	Head	100	1037	7930	1696	7.020	67.000	70.2	4.78	2.530	24.400	25.3	3.69
2025/12/10	3900	Head	100	1022	7930	1696	6.850	70.100	68.5	-2.28	2.420	24.600	24.2	-1.63
2025/12/12	3900	Head	100	1022	7930	1696	7.210	70.100	72.1	2.85	2.570	24.600	25.7	4.47
2025/12/8	5250	Head	100	1341	7930	1696	7.750	79.100	77.5	-2.02	2.200	22.400	22	-1.79
2025/11/27	5250	Head	100	1341	7930	1696	8.110	79.100	81.1	2.53	2.340	22.400	23.4	4.46
2025/11/26	5600	Head	100	1341	7930	1696	8.300	82.800	83	0.24	2.350	23.800	23.5	-1.26
2025/12/1	5600	Head	100	1341	7930	1696	8.660	82.800	86.6	4.59	2.490	23.800	24.9	4.62
2025/12/6	5800	Head	100	1341	7930	1696	8.350	79.900	83.5	4.51	2.320	22.900	23.2	1.31
2025/12/8	5800	Head	100	1341	7930	1696	7.690	79.900	76.9	-3.75	2.210	22.900	22.1	-3.49
2025/12/12	6500	Head	100	1026	7930	1696	29.100	296.000	291	-1.69	5.290	54.800	52.9	-3.47
2025/12/14	6500	Head	100	1026	7930	1696	31.400	296.000	314	6.08	5.730	54.800	57.3	4.56
2025/11/29	13	Head	1000	1023	7641	1326	0.602	0.587	0.602	2.03	0.373	0.366	0.373	0.81

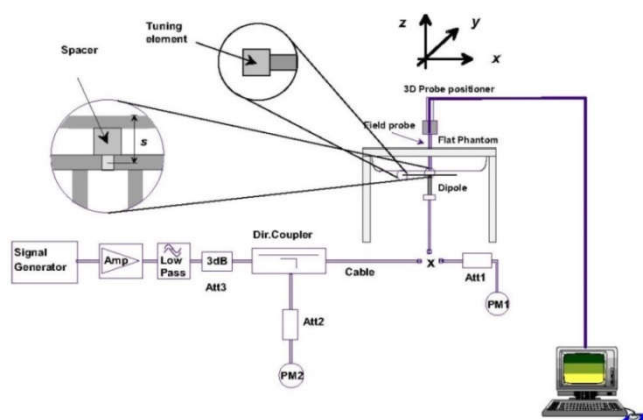


Fig 11.3.1 System Performance Check Setup



Fig 11.3.2 Setup Photo

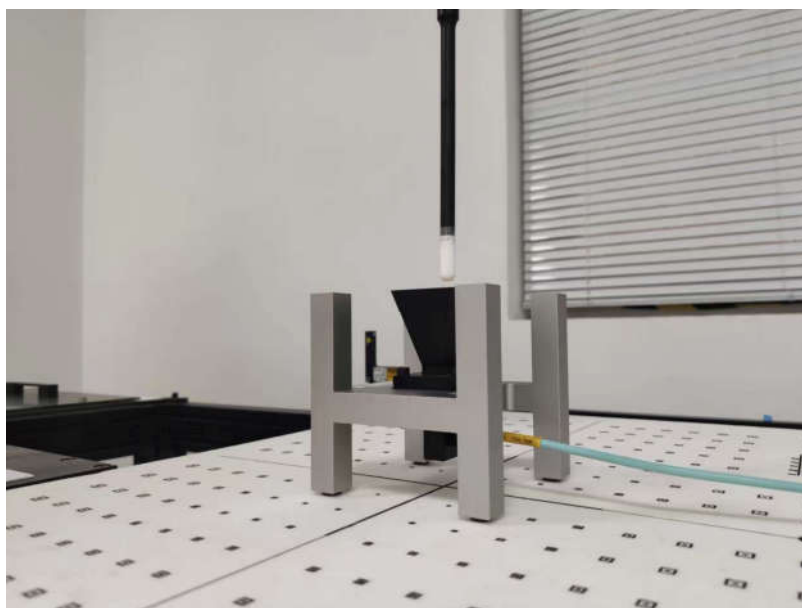


Fig 8.3.2 Setup Photo

10.4 PD System Verification Results

The system was verified to be within ± 0.66 dB of the power density targets on the calibration certificate according to the test system specification in the user's manual and calibration facility recommendation. The 0.66 dB deviation threshold represents the expanded uncertainty for system performance checks using SPEAG's mmWave verification sources. The same spatial resolution and measurement region used in the source calibration was applied during the system check. The measured power density distribution of verification source was also confirmed through visual inspection to have no noticeable differences, both spatially (shape) and numerically (level) from the distribution provided by the manufacturer, per November 2017 TCBC Workshop Notes.

Frequency (GHz)	5G Verification Source	Probe S/N	DAE S/N	Distance (mm)	Prad (mW)	Measured psPDn+ 4 cm ² (W/m ²)	Targeted psPDn+ 4 cm ² (W/m ²)	Deviation (dB)	Measured psPDtot+ 4 cm ² (W/m ²)	Targeted psPDtot+ 4 cm ² (W/m ²)	Deviation (dB)	Measured psPDmod+ 4 cm ² (W/m ²)	Targeted psPDmod+ 4 cm ² (W/m ²)	Deviation (dB)	Test date
10	10GHz_2002	9432	1696	10	138	156	166	-0.27	158	167	-0.24	160	172	-0.31	2025/11/28



System Verification Setup Photo

11. RF Exposure Positions

11.1 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.

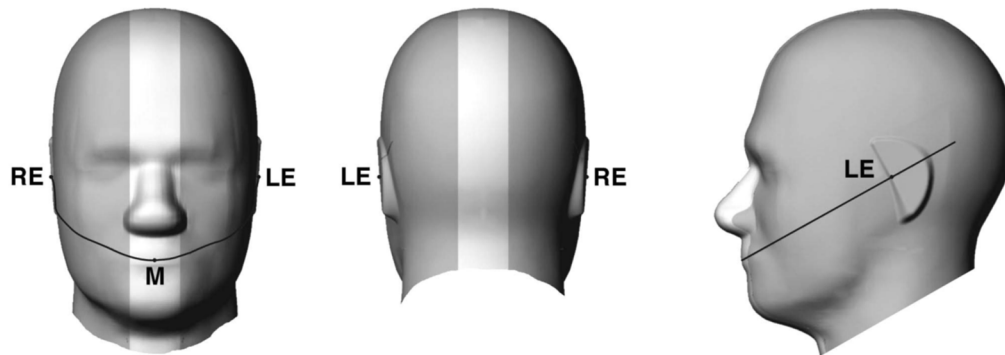


Fig 12.1.1 Front, back, and side views of SAM twin phantom

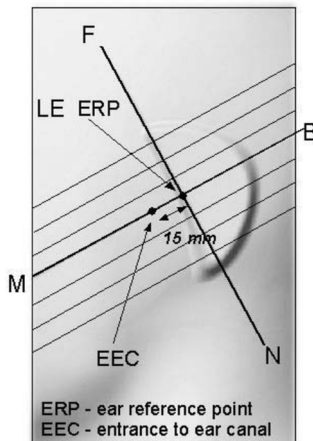


Fig 12.1.2 Close-up side view of phantom showing the ear region.

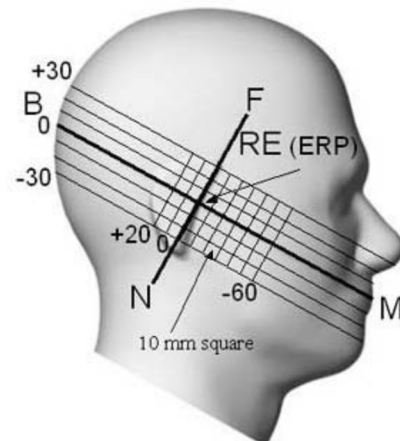


Fig 12.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

11.2 Definition of the cheek position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. Define two imaginary lines on the handset—the vertical centerline and the horizontal line. The vertical centerline passes through two points on the front side of the handset—the midpoint of the width w_t 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 w_b 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.

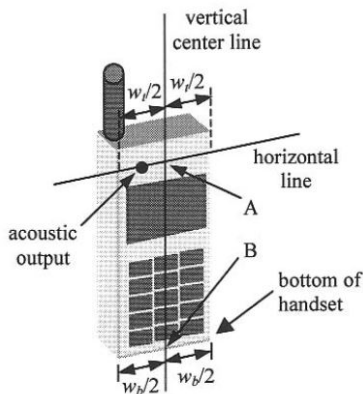


Fig 12.2.1 Handset vertical and horizontal reference lines—"fixed case"

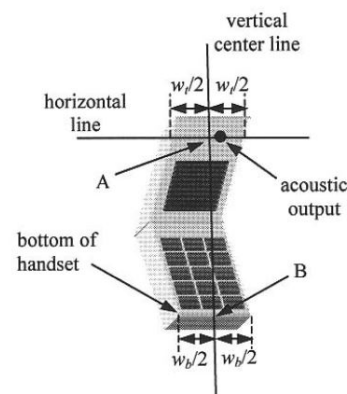


Fig 12.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

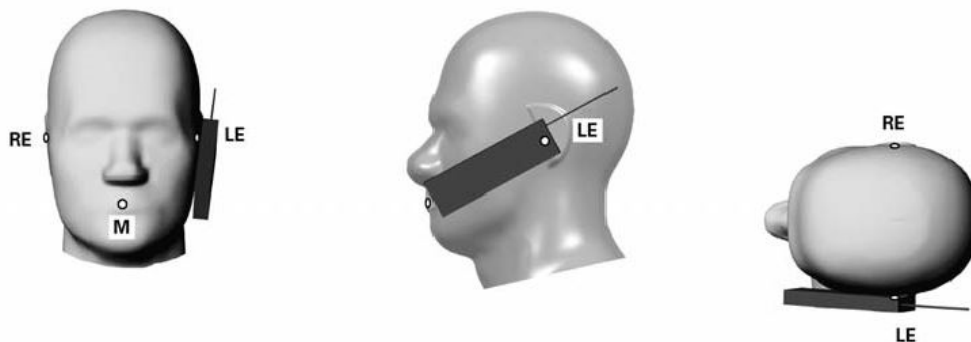


Fig 12.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

11.3 Definition of the tilt position

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

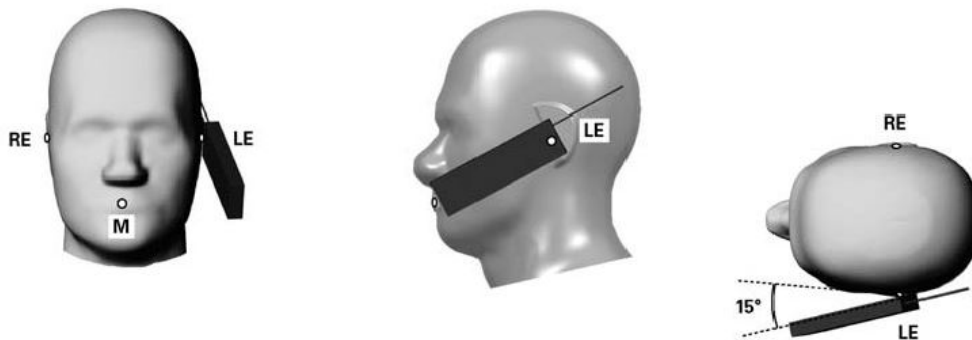


Fig 12.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

11.4 Body Worn Accessory

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 11.4). 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 $> 1.2 \text{ W/kg}$, 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-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

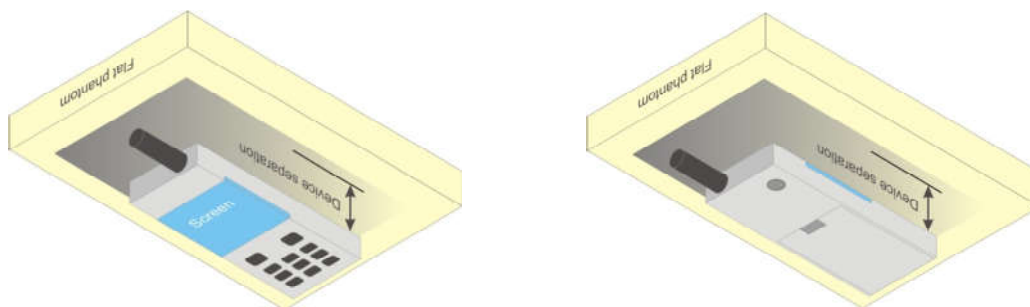


Fig 12.4 Body Worn Position

11.5 Product Specific 10g SAR Exposure

For smart phones with a display diagonal dimension $> 15.0 \text{ cm}$ or an overall diagonal dimension $> 16.0 \text{ cm}$, 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 $\leq 25 \text{ mm}$ 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 $> 1.2 \text{ W/kg}$.

11.6 Wireless Router

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 v02r01 where SAR test considerations for handsets (L x W $\geq$ 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 from 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.

11.7 Miscellaneous Testing Considerations

- Evaluate SAR using 6-7 GHz parameters per IEC/IEEE 62209-1528:2020.
 - Per procedures of KDB Pubs. 447498 and 248227, and applicable product-specific procedures among KDB Pubs. 648474 (handsets/phablets).
 - Where supported by the test system, also report estimated absorbed (epithelial) power density (for reference purposes only, not specifically for compliance) and estimated incident PD, derived from measured SAR.
 - In addition, for the highest SAR test configurations evaluate incident PD using the mmw near-field probe and total-field/power-density reconstruction method (2 mm closest meas. plane)
- Adjust measured results per amount that measurement uncertainty exceeds 30 % (see e.g. IEC 62479:2010)

12. LTE Downlink Carrier Aggregation

General Note:

1. Per Oct. 2024 TCB workshop, the downlink (DL) pertains to receiver functionality, thus it is not related to RF exposure compliance limits related to cumulative effects of different transmitters.
2. Per Oct. 2024 TCB workshop, equipment authorization applications shall refer to the worst-case UL powers resulting from all the possible modes of operations. Accordingly, CA-DL cases do not need to be analyzed separately, unless pertinent to establishing UL power setting.
3. Per Oct. 2024 TCB workshop, Manufacturer declares that TX power measurement for multiple DL CA configurations is deemed not required as the DL CA has no impact on the TX power according to preliminary scan. TX power measured in LTE standalone operation represents the worst case.
4. This device supports LTE carrier aggregation in the downlink. All 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.



13. SAR Test Results

13.1 Head SAR

<Flip Open>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
750 MHz																				
01	LTE Band 71	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	DSI 2	133297	680.5	22.50	24.00	1.413	-	-	-0.01	0.184	0.260
	LTE Band 71	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI 2	133297	680.5	22.52	24.00	1.406	-	-	-0.14	0.067	0.094
02	LTE Band 12	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	DSI 2	23095	707.5	23.05	24.00	1.245	-	-	-0.05	0.245	0.305
	LTE Band 12	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI 2	23095	707.5	22.85	24.00	1.303	-	-	-0.09	0.079	0.103
03	LTE Band 13	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	DSI 2	23230	782	22.75	24.00	1.334	-	-	0.05	0.192	0.256
	LTE Band 13	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI 2	23230	782	22.45	24.00	1.429	-	-	0.06	0.076	0.109
04	LTE Band 14	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	DSI 2	23330	793	22.80	24.00	1.318	-	-	0.01	0.234	0.308
	LTE Band 14	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI 2	23330	793	22.49	24.00	1.416	-	-	-0.02	0.060	0.085
05	FR1 n71	20M	QPSK	50	25	DFT-15	Left Cheek	0mm	Ant 0	DSI 2	136100	680.5	23.10	24.00	1.230	-	-	-0.05	0.174	0.214
	FR1 n71	20M	QPSK	50	25	DFT-15	Left Cheek	0mm	Ant 1	DSI 2	136100	680.5	22.80	24.00	1.318	-	-	-0.14	0.011	0.015
06	FR1 n12	15M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 0	DSI 2	141500	707.5	23.10	24.00	1.230	-	-	0.03	0.168	0.207
	FR1 n12	15M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 1	DSI 2	141500	707.5	22.90	24.00	1.288	-	-	-0.05	0.016	0.021
07	FR1 n14	10M	QPSK	25	14	DFT-15	Left Cheek	0mm	Ant 0	DSI 2	158600	793	23.26	24.00	1.186	-	-	-0.02	0.147	0.174
	FR1 n14	10M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 1	DSI 2	158600	793	23.07	24.00	1.239	-	-	0.06	0.009	0.011
835 MHz																				
08	GSM850	-	-	-	-	GPRS (3 Tx slots)	Left Cheek	0mm	Ant 0	DSI 2	251	848.8	27.87	28.80	1.239	-	-	0.02	0.135	0.167
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Left Cheek	0mm	Ant 1	DSI 2	128	824.2	27.50	28.80	1.349	-	-	0.19	0.071	0.096
09	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	DSI 2	4132	826.4	23.38	24.00	1.153	-	-	0.01	0.190	0.219
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 1	DSI 2	4132	826.4	23.29	24.00	1.178	-	-	-0.14	0.150	0.177
10	LTE Band 26	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	DSI 2	26865	831.5	22.77	24.00	1.327	-	-	-0.01	0.246	0.327
	LTE Band 26	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	26965	841.5	22.51	24.00	1.409	-	-	-0.02	0.134	0.189
11	FR1 n26	20M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 0	DSI 2	166300	831.5	23.01	24.00	1.256	-	-	0.11	0.178	0.224
	FR1 n26	20M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 1	DSI 2	166300	831.5	22.87	24.00	1.297	-	-	-0.05	0.053	0.069
1750 MHz																				
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	DSI 2	1413	1732.6	23.40	24.00	1.148	-	-	0.12	0.092	0.106
12	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 2	DSI 2	1513	1752.6	18.33	19.30	1.250	-	-	-0.01	0.834	1.043
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	DSI 2	132322	1745	23.55	24.00	1.109	-	-	-0.06	0.060	0.067
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	132572	1770	23.40	24.00	1.148	-	-	-0.03	0.164	0.188
13	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 2	DSI 2	132572	1770	17.69	18.80	1.291	-	-	-0.01	0.678	0.875
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 3	DSI 2	132572	1770	18.43	19.80	1.371	-	-	-0.13	0.545	0.747
	FR1 n66	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 0	DSI 2	349000	1745	23.00	24.00	1.259	-	-	-0.17	0.027	0.034
	FR1 n66	40M	QPSK	108	54	DFT-15	Right Cheek	0mm	Ant 1	DSI 2	349000	1745	23.05	24.00	1.245	-	-	-0.19	0.078	0.097
14	FR1 n66	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 2	DSI 2	349000	1745	19.94	20.50	1.138	-	-	0.03	0.899	1.023
	FR1 n66	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 3	DSI 2	349000	1745	19.93	21.00	1.279	-	-	-0.12	0.786	1.006
	FR1 n70	15M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 0	DSI 2	340500	1702.5	23.70	24.00	1.072	-	-	-0.14	0.036	0.039
	FR1 n70	15M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 1	DSI 2	340500	1702.5	23.00	24.00	1.259	-	-	0.18	0.049	0.062
15	FR1 n70	15M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 2	DSI 2	340500	1702.5	18.87	19.50	1.156	-	-	0.03	0.736	0.851
	FR1 n70	15M	QPSK	36	22	DFT-15	Right Cheek	0mm	Ant 3	DSI 2	340500	1702.5	18.61	19.50	1.227	-	-	-0.05	0.670	0.822
1900 MHz																				
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Right Cheek	0mm	Ant 0	DSI 2	512	1850.2	25.29	25.80	1.125	-	-	0.07	0.054	0.061
16	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Right Cheek	0mm	Ant 2	DSI 2	512	1850.2	22.30	23.30	1.259	-	-	0.01	0.952	1.198
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	DSI 2	9262	1852.4	23.08	24.00	1.236	-	-	0.02	0.133	0.164
17	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 2	DSI 2	9262	1852.4	18.20	18.90	1.175	-	-	0.01	0.923	1.084
	LTE Band 25	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	DSI 2	26590	1905	23.85	24.00	1.035	-	-	0.1	0.077	0.080
	LTE Band 25	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	26590	1905	23.77	24.00	1.054	-	-	-0.14	0.101	0.106



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18	LTE Band 25	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 2	DSI 2	26140	1860	17.62	18.50	1.225	-	-	0.07	0.820	1.004
	LTE Band 25	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 3	DSI 2	26140	1860	18.15	19.50	1.365	-	-	0	0.730	0.996
	FR1 n25	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 0	DSI 2	376500	1882.5	23.50	24.00	1.122	-	-	0.05	0.049	0.055
	FR1 n25	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 1	DSI 2	376500	1882.5	23.40	24.00	1.148	-	-	0.06	0.044	0.051
19	FR1 n25	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 2	DSI 2	376500	1882.5	17.68	18.50	1.208	-	-	0.01	0.946	1.143
	FR1 n25	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 3	DSI 2	376500	1882.5	18.49	19.50	1.262	-	-	-0.12	0.754	0.951
2300 MHz																				
	LTE Band 30	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	DSI 2	27710	2310	23.59	24.00	1.099	-	-	-0.13	0.187	0.206
	LTE Band 30	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	27710	2310	23.16	24.00	1.213	-	-	0.17	0.061	0.074
20	LTE Band 30	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 2	DSI 2	27710	2310	19.25	20.30	1.274	-	-	0.04	0.594	0.756
	LTE Band 30	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 3	DSI 2	27710	2310	16.40	18.00	1.445	-	-	-0.05	0.511	0.739
	FR1 n30	10M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 0	DSI 2	462000	2310	23.50	24.00	1.122	-	-	-0.15	0.219	0.246
	FR1 n30	10M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 1	DSI 2	462000	2310	23.50	24.00	1.122	-	-	-0.09	0.016	0.018
	FR1 n30	10M	QPSK	25	14	DFT-15	Right Cheek	0mm	Ant 2	DSI 2	462000	2310	19.02	20.00	1.253	-	-	-0.13	0.750	0.940
21	FR1 n30	10M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 3	DSI 2	462000	2310	17.52	18.50	1.253	-	-	0.02	0.752	0.942
2600 MHz																				
	LTE Band 7	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	DSI 2	21350	2560	23.35	24.00	1.161	-	-	0.13	0.438	0.509
	LTE Band 7	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	21350	2560	23.23	24.00	1.194	-	-	0.17	0.185	0.221
22	LTE Band 7	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 2	DSI 2	21350	2560	15.77	16.40	1.156	-	-	0.02	0.875	1.012
	LTE Band 7	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 3	DSI 2	21350	2560	16.18	17.10	1.236	-	-	0.02	0.559	0.691
	LTE Band 41	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	DSI 2	41490	2680	23.32	24.00	1.169	62.9	1.006	0.12	0.462	0.544
	LTE Band 41_HPUE	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	DSI 2	41490	2680	26.47	27.00	1.130	42.9	1.009	0.02	0.605	0.690
	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	41055	2636.5	23.38	24.00	1.153	62.9	1.006	0.12	0.139	0.161
	LTE Band 41_HPUE	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	41055	2636.5	26.26	27.00	1.186	42.9	1.009	-0.19	0.171	0.205
23	LTE Band 41	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 2	DSI 2	41490	2680	18.08	18.80	1.180	62.9	1.006	-0.01	1.020	1.211
	LTE Band 41_HPUE	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 2	DSI 2	41490	2680	19.76	20.40	1.159	42.9	1.009	0.08	0.999	1.168
	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 3	DSI 2	41490	2680	16.18	16.80	1.153	62.9	1.006	0.08	0.517	0.600
	LTE Band 41_HPUE	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 3	DSI 2	41490	2680	17.50	18.40	1.230	42.9	1.009	0.1	0.789	0.979
	FR1 n7	40M	QPSK	1	1	DFT-15	Left Cheek	0mm	Ant 0	DSI 2	507000	2535	23.45	24.00	1.135	-	-	0.1	0.373	0.423
	FR1 n7	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 1	DSI 2	507000	2535	23.24	24.00	1.191	-	-	0.05	0.079	0.094
	FR1 n7	40M	QPSK	108	54	DFT-15	Left Cheek	0mm	Ant 2	DSI 2	507000	2535	16.35	17.00	1.161	-	-	-0.09	0.933	1.084
24	FR1 n7	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 3	DSI 2	507000	2535	17.48	18.50	1.265	-	-	-0.02	0.980	1.239
	FR1 n41	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 0	DSI 2	518598	2592.99	23.39	24.00	1.151	-	-	0.05	0.370	0.426
	FR1 n41_HPUE	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 0	DSI 2	518598	2592.99	25.98	27.00	1.265	50	1.000	0.19	0.372	0.470
	FR1 n41	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 1	DSI 2	518598	2592.99	23.38	24.00	1.153	-	-	0.09	0.093	0.107
	FR1 n41_HPUE	100M	QPSK	135	69	DFT-30	Right Cheek	0mm	Ant 1	DSI 2	518598	2592.99	25.91	27.00	1.285	50	1.000	0.13	0.092	0.118
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 2	DSI 2	518598	2592.99	17.96	18.50	1.132	-	-	0.02	1.100	1.246
25	FR1 n41_HPUE	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 2	DSI 2	518598	2592.99	20.68	21.50	1.208	50	1.000	0.05	1.060	1.280
	FR1 n41	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 3	DSI 2	518598	2592.99	16.36	17.50	1.300	-	-	0.16	0.817	1.062
	FR1 n41_HPUE	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 3	DSI 2	518598	2592.99	19.54	20.50	1.247	50	1.000	-0.06	0.836	1.043
3-5GHz																				
	LTE Band 48	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 3	DSI 2	56640	3690	16.30	17.10	1.202	62.9	1.006	0.11	0.329	0.398
26	LTE Band 48	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI 2	55340	3560	17.01	17.80	1.199	62.9	1.006	-0.01	0.881	1.063
	LTE Band 48	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 6	DSI 2	55340	3560	15.59	17.20	1.449	62.9	1.006	0.14	0.322	0.469
	LTE Band 48	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 8	DSI 2	56640	3690	19.55	20.30	1.189	62.9	1.006	-0.01	0.424	0.507
	FR1 n48	40M	QPSK	50	28	DFT-30	Right Tilted	0mm	Ant 3	DSI 2	641666	3624.99	15.19	16.00	1.205	-	-	-0.1	0.584	0.704
27	FR1 n48	40M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 4	DSI 2	641666	3624.99	16.80	17.50	1.175	-	-	0.01	0.806	0.947
	FR1 n48	40M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 6	DSI 2	641666	3624.99	13.16	14.00	1.213	-	-	-0.06	0.638	0.774
	FR1 n48	40M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 8	DSI 2	641666	3624.99	18.39	19.00	1.151	-	-	-0.14	0.753	0.867
	FR1 n77_Part270	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 3	DSI 2	656000	3840	13.98	14.50	1.127	-	-	0.11	0.470	0.530
	FR1 n77_Part270_HPUE	100M	QPSK	1	1	DFT-30	Right Tilted	0mm	Ant 3	DSI 2	656000	3840	16.83	17.50	1.167	50	1.000	0.11	0.493	0.575
	FR1 n77_Part27Q	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 4	DSI 2	633332	3499.98	15.35	16.00	1.161	-	-	0.18	0.509	0.591
	FR1 n77_Part27Q_HPUE	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 4	DSI 2	633332	3499.98	18.27	19.00	1.183	50	1.000	0.02	0.516	0.610
28	FR1 n77_Part27Q	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 6	DSI 2	633332	3499.98	13.03	14.00	1.250	-	-	0.02	0.612	0.765
	FR1 n77_Part27Q_HPUE	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 6	DSI 2	633332	3499.98	16.11	17.00	1.227	50	1.000	0.11	0.617	0.757



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FR1 n77_Part27O	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 8	DSI 2	656000	3840	17.40	18.00	1.148	-	-	-0.03	0.450	0.517
FR1 n77_Part27O_HPUE	100M	QPSK	1	1	DFT-30	Left Cheek	0mm	Ant 8	DSI 2	656000	3840	20.31	21.00	1.172	50	1.000	0.12	0.481	0.564

UL MIMO

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
1750MHz																				
	FR1 n66	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 2+3	DSI 2	349000	1745	21.72	22.50	1.197	-	-	0.07	0.850	1.017
	FR1 n66	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 2+1	DSI 2	349000	1745	22.59	23.00	1.099	-	-	0.18	0.922	1.013
	FR1 n66	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 0+3	DSI 2	349000	1745	23.35	24.00	1.162	-	-	-0.13	0.870	1.011
	FR1 n66	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 0+1	DSI 2	349000	1745	26.51	27.00	1.119	-	-	0.19	0.091	0.102
1900MHz																				
	FR1 n25	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 2+3	DSI 2	376500	1882.5	20.05	21.00	1.244	-	-	0.07	0.870	1.082
	FR1 n25	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 2+1	DSI 2	376500	1882.5	21.43	22.00	1.139	-	-	0.08	0.904	1.030
	FR1 n25	40M	QPSK	1	1	DFT-15	Right Cheek	0mm	Ant 0+3	DSI 2	376500	1882.5	21.83	22.50	1.167	-	-	0.13	0.950	1.108
	FR1 n25	40M	QPSK	108	54	DFT-15	Right Cheek	0mm	Ant 0+1	DSI 2	376500	1882.5	26.00	27.00	1.260	-	-	-0.09	0.063	0.079
2600MHz																				
	FR1 n41_PC1.5	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 2+3	DSI 2	518598	2592.99	25.25	26.00	1.189	25	1.000	0.16	0.971	1.155
	FR1 n41_PC2	100M	QPSK	135	69	DFT-30	Left Cheek	0mm	Ant 2+1	DSI 2	518598	2592.99	22.52	23.50	1.254	50	1.000	-0.1	0.954	1.197
	FR1 n41_PC2	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 0+3	DSI 2	518598	2592.99	23.09	24.00	1.233	50	1.000	0.07	0.472	0.582
	FR1 n41_PC1.5	100M	QPSK	135	69	DFT-30	Left Tilted	0mm	Ant 0+1	DSI 2	518598	2592.99	28.70	30.00	1.349	25	1.000	-0.14	0.046	0.062
3G-4G																				
	FR1 n48	40M	QPSK	53	27	CP-30	Right Cheek	0mm	Ant 4+8	DSI 2	645332	3679.98	18.66	20.00	1.360	-	-	0.14	0.680	0.925
	FR1 n48	40M	QPSK	53	27	CP-30	Left Tilted	0mm	Ant 4+6	DSI 2	645332	3679.98	16.01	17.50	1.410	-	-	0.1	0.367	0.517
	FR1 n48	40M	QPSK	1	1	CP-30	Right Tilted	0mm	Ant 3+8	DSI 2	645332	3679.98	16.48	18.00	1.421	-	-	0.01	0.508	0.722
	FR1 n48	40M	QPSK	53	27	CP-30	Left Tilted	0mm	Ant 3+6	DSI 2	645332	3679.98	15.09	17.00	1.551	-	-	-0.02	0.417	0.647
	FR1 n77_Part27Q_PC2	100M	QPSK	1	1	DFT-30	Right Cheek	0mm	Ant 4+8	DSI 2	633332	3499.98	21.71	22.50	1.201	50	1.000	0.02	0.620	0.744
	FR1 n77_Part27Q_PC2	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 4+6	DSI 2	633332	3499.98	19.29	20.00	1.177	50	1.000	-0.19	0.576	0.678
	FR1 n77_Part27Q_PC1.5	100M	QPSK	135	69	DFT-30	Right Tilted	0mm	Ant 3+8	DSI 2	633332	3499.98	22.66	23.50	1.213	25	1.000	0.02	0.464	0.563
	FR1 n77_Part27Q_PC2	100M	QPSK	1	1	DFT-30	Left Tilted	0mm	Ant 3+6	DSI 2	633332	3499.98	18.70	19.50	1.202	50	1.000	-0.18	0.523	0.629

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
2450 MHz																
29	Bluetooth	DH5 1Mbps	Left Cheek	0mm	Ant 7	DSI 2	78	2480	14.35	16.00	1.462	77.07	1.298	0.01	0.652	1.237
	Bluetooth	DH5 1Mbps	Right Cheek	0mm	Ant 5	DSI 2	78	2480	16.11	17.50	1.377	77.07	1.298	0.06	0.455	0.813
30	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 7+5	DSI 2	11	2462	15.26	17.00	1.493	98.53	1.015	0.02	0.525	0.795
5 GHz																
31	WLAN5.3GHz	802.11ac-VHT160 MCS0	Left Cheek	0mm	Ant 7+5	DSI 2	50	5250	18.11	19.50	1.377	98.75	1.013	-0.03	0.737	1.028
32	WLAN5.5GHz	802.11ac-VHT160 MCS0	Left Cheek	0mm	Ant 7+5	DSI 2	114	5570	17.21	18.50	1.346	98.75	1.013	0.03	0.612	0.834
33	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 7+5	DSI 2	155	5775	17.22	18.50	1.343	99.26	1.007	0.01	0.605	0.818

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Measured APD (W/m^2)
34	WLAN6GHz	802.11be-EHT320 MCS0	Left Cheek	0mm	Ant 7+5(5)	DSI 2	191	6905	11.23	13.00	1.503	98.85	1.012	-0.05	0.188	0.286	1.01



13.2 Hotspot SAR

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	EUT Flip State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
750 MHz																					
35	LTE Band 71	20M	QPSK	1	0	-	Left Side	5mm	Ant 0	DSI 7	Open	133297	680.5	22.50	24.00	1.413	-	-	0.02	0.624	0.881
	LTE Band 71	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 11	Close	133297	680.5	22.50	24.00	1.413	-	-	0.01	0.386	0.545
	LTE Band 71	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	DSI 7	Open	133297	680.5	22.52	24.00	1.406	-	-	-0.13	0.466	0.655
	LTE Band 71	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	DSI 11	Close	133297	680.5	22.52	24.00	1.406	-	-	0.13	0.362	0.509
36	LTE Band 12	10M	QPSK	1	0	-	Left Side	5mm	Ant 0	DSI 7	Open	23095	707.5	23.05	24.00	1.245	-	-	-0.01	0.738	0.918
	LTE Band 12	10M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 11	Close	23095	707.5	23.05	24.00	1.245	-	-	0.09	0.629	0.783
	LTE Band 12	10M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	DSI 7	Open	23095	707.5	22.85	24.00	1.303	-	-	-0.15	0.700	0.912
	LTE Band 12	10M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	DSI 11	Close	23095	707.5	22.85	24.00	1.303	-	-	-0.17	0.568	0.740
	LTE Band 13	10M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 7	Open	23230	782	22.75	24.00	1.334	-	-	0.12	0.500	0.667
37	LTE Band 13	10M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 11	Close	23230	782	22.75	24.00	1.334	-	-	0.02	0.513	0.684
	LTE Band 13	10M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	DSI 7	Open	23230	782	22.45	24.00	1.429	-	-	0.12	0.470	0.672
	LTE Band 13	10M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 11	Close	23230	782	22.45	24.00	1.429	-	-	-0.12	0.386	0.552
	LTE Band 14	10M	QPSK	1	0	-	Left Side	5mm	Ant 0	DSI 7	Open	23330	793	22.80	24.00	1.318	-	-	-0.16	0.560	0.738
38	LTE Band 14	10M	QPSK	1	0	-	Left Side	5mm	Ant 0	DSI 11	Close	23330	793	22.80	24.00	1.318	-	-	-0.17	0.562	0.741
	LTE Band 14	10M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	DSI 7	Open	23330	793	22.49	24.00	1.416	-	-	0.09	0.510	0.722
	LTE Band 14	10M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	DSI 11	Close	23330	793	22.49	24.00	1.416	-	-	0.02	0.513	0.726
39	FR1 n71	20M	QPSK	50	25	DFT-15	Left Side	5mm	Ant 0	DSI 7	Open	136100	680.5	23.10	24.00	1.230	-	-	0.06	0.557	0.685
	FR1 n71	20M	QPSK	50	25	DFT-15	Back	5mm	Ant 0	DSI 11	Close	136100	680.5	23.10	24.00	1.230	-	-	-0.15	0.352	0.433
	FR1 n71	20M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 1	DSI 7	Open	136100	680.5	22.85	24.00	1.303	-	-	-0.13	0.428	0.558
	FR1 n71	20M	QPSK	50	25	DFT-15	Bottom Side	5mm	Ant 1	DSI 11	Close	136100	680.5	22.80	24.00	1.318	-	-	-0.13	0.320	0.422
	FR1 n12	15M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 0	DSI 7	Open	141500	707.5	23.10	24.00	1.230	-	-	-0.02	0.496	0.610
	FR1 n12	15M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	DSI 11	Close	141500	707.5	23.10	24.00	1.230	-	-	0.07	0.487	0.599
40	FR1 n12	15M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 1	DSI 7	Open	141500	707.5	22.90	24.00	1.288	-	-	-0.14	0.477	0.614
	FR1 n12	15M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 1	DSI 11	Close	141500	707.5	22.90	24.00	1.288	-	-	-0.05	0.448	0.577
	FR1 n14	10M	QPSK	25	14	DFT-15	Left Side	5mm	Ant 0	DSI 7	Open	158600	793	23.26	24.00	1.186	-	-	0.15	0.412	0.489
	FR1 n14	10M	QPSK	25	14	DFT-15	Back	5mm	Ant 0	DSI 11	Close	158600	793	23.26	24.00	1.186	-	-	-0.17	0.449	0.532
41	FR1 n14	10M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 1	DSI 7	Open	158600	793	23.07	24.00	1.239	-	-	-0.14	0.512	0.634
	FR1 n14	10M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 1	DSI 11	Close	158600	793	23.07	24.00	1.239	-	-	-0.09	0.374	0.463
835 MHz																					
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Left Side	5mm	Ant 0	DSI 7	Open	251	848.8	27.87	28.80	1.239	-	-	0.1	0.436	0.540
42	GSM850	-	-	-	-	GPRS (3 Tx slots)	Back	5mm	Ant 0	DSI 11	Close	128	824.2	27.79	28.80	1.262	-	-	-0.02	0.442	0.558
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Back	5mm	Ant 1	DSI 7	Open	189	836.4	27.75	28.80	1.274	-	-	-0.11	0.400	0.509
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Bottom Side	5mm	Ant 1	DSI 11	Close	189	836.4	27.75	28.80	1.274	-	-	-0.06	0.381	0.485
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 7	Open	4132	826.4	23.38	24.00	1.153	-	-	0.17	0.730	0.842
43	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 11	Close	4132	826.4	23.38	24.00	1.153	-	-	-0.03	0.888	1.024
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 1	DSI 7	Open	4132	826.4	23.29	24.00	1.178	-	-	-0.09	0.690	0.813
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 1	DSI 11	Close	4233	846.6	23.27	24.00	1.183	-	-	0.09	0.446	0.528
	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 7	Open	26965	841.5	22.74	24.00	1.337	-	-	-0.1	0.712	0.952
44	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 11	Close	26965	841.5	22.74	24.00	1.337	-	-	-0.01	0.729	0.974
	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 7	Open	26965	841.5	22.51	24.00	1.409	-	-	0.06	0.674	0.950
	LTE Band 26	15M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	DSI 11	Close	26865	831.5	22.66	24.00	1.361	-	-	-0.05	0.636	0.866
45	FR1 n26	20M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	DSI 7	Open	166300	831.5	23.01	24.00	1.256	-	-	-0.03	0.651	0.818
	FR1 n26	20M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	DSI 11	Close	166300	831.5	23.01	24.00	1.256	-	-	-0.05	0.534	0.671
	FR1 n26	20M	QPSK	1	1	DFT-15	Back	5mm	Ant 1	DSI 7	Open	166300	831.5	22.87	24.00	1.297	-	-	-0.07	0.524	0.680
	FR1 n26	20M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 1	DSI 11	Close	166300	831.5	22.87	24.00	1.297	-	-	-0.02	0.499	0.647
1750 MHz																					
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Side	5mm	Ant 0	DSI 7	Open	1513	1752.6	20.69	21.50	1.205	-	-	-0.03	0.829	0.999



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	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Side	5mm	Ant 0	DSI 11	Close	1513	1752.6	22.39	23.30	1.233	-	-	0.14	0.748	0.922
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Side	5mm	Ant 2	DSI 7	Open	1513	1752.6	19.08	19.80	1.180	-	-	-0.09	0.871	1.028
46	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Side	5mm	Ant 2	DSI 11	Close	1513	1752.6	19.60	20.50	1.230	-	-	-0.17	0.838	1.031
	LTE Band 66	20M	QPSK	1	0	-	Left Side	5mm	Ant 0	DSI 7	Open	132072	1720	20.68	21.50	1.208	-	-	0.03	1.010	1.220
	LTE Band 66	20M	QPSK	1	0	-	Left Side	5mm	Ant 0	DSI 11	Close	132072	1720	22.60	23.40	1.202	-	-	-0.13	0.932	1.121
	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	DSI 7	Open	132322	1745	22.38	23.10	1.180	-	-	-0.06	1.020	1.204
	LTE Band 66	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 11	Close	132322	1745	22.81	23.40	1.146	-	-	-0.07	0.940	1.077
	LTE Band 66	20M	QPSK	1	0	-	Left Side	5mm	Ant 2	DSI 7	Open	132572	1770	19.22	20.20	1.253	-	-	0.02	0.954	1.195
	LTE Band 66	20M	QPSK	1	0	-	Left Side	5mm	Ant 2	DSI 11	Close	132072	1720	20.01	20.90	1.227	-	-	0.19	0.695	0.853
	LTE Band 66	20M	QPSK	1	0	-	Top Side	5mm	Ant 3	DSI 7	Open	132072	1720	20.70	22.00	1.349	-	-	0.05	0.760	1.025
47	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 3	DSI 11	Close	132572	1770	20.80	22.00	1.318	-	-	0.02	0.950	1.252
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 0	DSI 7	Open	349000	1745	20.06	21.00	1.242	-	-	-0.15	0.823	1.022
48	FR1 n66	40M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 0	DSI 11	Close	349000	1745	22.02	23.00	1.253	-	-	0.16	1.000	1.253
	FR1 n66	40M	QPSK	108	54	DFT-15	Bottom Side	5mm	Ant 1	DSI 7	Open	349000	1745	19.40	20.50	1.288	-	-	0.06	0.666	0.858
	FR1 n66	40M	QPSK	108	54	DFT-15	Back	5mm	Ant 1	DSI 11	Close	349000	1745	21.51	22.50	1.256	-	-	0	0.717	0.901
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 2	DSI 7	Open	349000	1745	18.93	19.50	1.140	-	-	0.19	0.821	0.936
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 2	DSI 11	Close	349000	1745	19.92	20.50	1.143	-	-	-0.05	0.921	1.053
	FR1 n66	40M	QPSK	108	54	DFT-15	Top Side	5mm	Ant 3	DSI 7	Open	349000	1745	20.24	21.50	1.337	-	-	0.16	0.812	1.085
	FR1 n66	40M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 3	DSI 11	Close	349000	1745	21.50	22.50	1.259	-	-	-0.09	0.666	0.838
49	FR1 n70	15M	QPSK	36	22	DFT-15	Left Side	5mm	Ant 0	DSI 7	Open	340500	1702.5	22.54	23.00	1.112	-	-	-0.14	1.150	1.278
	FR1 n70	15M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 0	DSI 11	Close	340500	1702.5	23.70	24.00	1.072	-	-	-0.07	0.967	1.036
	FR1 n70	15M	QPSK	1	1	DFT-15	Back	5mm	Ant 1	DSI 7	Open	340500	1702.5	23.00	24.00	1.259	-	-	0.11	0.849	1.069
	FR1 n70	15M	QPSK	36	22	DFT-15	Back	5mm	Ant 1	DSI 11	Close	340500	1702.5	22.92	24.00	1.282	-	-	-0.14	0.953	1.222
	FR1 n70	15M	QPSK	36	22	DFT-15	Left Side	5mm	Ant 2	DSI 7	Open	340500	1702.5	18.24	19.00	1.191	-	-	0.03	0.959	1.142
	FR1 n70	15M	QPSK	36	22	DFT-15	Left Side	5mm	Ant 2	DSI 11	Close	340500	1702.5	19.38	20.00	1.153	-	-	-0.16	1.060	1.223
	FR1 n70	15M	QPSK	1	1	DFT-15	Top Side	5mm	Ant 3	DSI 7	Open	340500	1702.5	20.30	21.00	1.175	-	-	0.09	0.925	1.087
	FR1 n70	15M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 3	DSI 11	Close	340500	1702.5	20.80	21.50	1.175	-	-	0	0.864	1.015
1900 MHz																					
50	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Left Side	5mm	Ant 0	DSI 7	Open	512	1850.2	25.40	25.80	1.096	-	-	-0.03	0.742	0.814
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Back	5mm	Ant 0	DSI 11	Close	512	1850.2	25.40	25.80	1.096	-	-	-0.19	0.625	0.685
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Left Side	5mm	Ant 2	DSI 7	Open	661	1880	21.61	23.00	1.377	-	-	-0.05	0.590	0.813
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Left Side	5mm	Ant 2	DSI 11	Close	810	1909.8	22.16	23.10	1.242	-	-	-0.02	0.641	0.796
51	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Side	5mm	Ant 0	DSI 7	Open	9262	1852.4	22.10	23.2	1.288	-	-	-0.04	0.862	1.110
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 11	Close	9262	1852.4	22.22	23.40	1.312	-	-	0.07	0.787	1.033
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Side	5mm	Ant 2	DSI 7	Open	9262	1852.4	19.14	19.70	1.138	-	-	-0.12	0.920	1.047
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 2	DSI 11	Close	9262	1852.4	18.78	19.50	1.180	-	-	0.13	0.493	0.582
52	LTE Band 25	20M	QPSK	1	0	-	Left Side	5mm	Ant 0	DSI 7	Open	26140	1860	22.98	23.50	1.127	-	-	-0.15	1.120	1.262
	LTE Band 25	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 11	Close	26140	1860	23.75	24.00	1.059	-	-	0.08	0.949	1.005
	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	DSI 7	Open	26590	1905	21.43	22.10	1.167	-	-	-0.01	1.050	1.225
	LTE Band 25	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 11	Close	26590	1905	23.77	24.00	1.054	-	-	0.18	1.190	1.255
	LTE Band 25	20M	QPSK	1	0	-	Left Side	5mm	Ant 2	DSI 7	Open	26590	1905	17.65	18.50	1.216	-	-	0.07	0.921	1.120
	LTE Band 25	20M	QPSK	1	0	-	Left Side	5mm	Ant 2	DSI 11	Close	26590	1905	17.25	18.10	1.216	-	-	-0.01	0.890	1.082
	LTE Band 25	20M	QPSK	1	0	-	Top Side	5mm	Ant 3	DSI 7	Open	26140	1860	19.40	20.80	1.380	-	-	-0.07	0.910	1.256
	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 3	DSI 11	Close	26140	1860	19.99	21.30	1.352	-	-	0.15	0.900	1.217
	FR1 n25	40M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 0	DSI 7	Open	376500	1882.5	20.90	21.50	1.148	-	-	0.14	0.840	0.964
	FR1 n25	40M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	DSI 11	Close	376500	1882.5	23.50	24.00	1.122	-	-	-0.06	0.910	1.021
	FR1 n25	40M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 1	DSI 7	Open	376500	1882.5	20.35	21.00	1.161	-	-	-0.1	0.922	1.071
	FR1 n25	40M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 1	DSI 11	Close	376500	1882.5	21.88	22.50	1.153	-	-	0.16	0.868	1.001
	FR1 n25	40M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 2	DSI 7	Open	376500	1882.5	16.68	17.50	1.208	-	-	-0.05	0.802	0.969
	FR1 n25	40M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 2	DSI 11	Close	376500	1882.5	16.68	17.50	1.208	-	-	0.12	0.919	1.110
53	FR1 n25	40M	QPSK	1	1	DFT-15	Top Side	5mm	Ant 3	DSI 7	Open	376500	1882.5	19.44	20.50	1.276	-	-	-0.02	0.906	1.156
	FR1 n25	40M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 3	DSI 11	Close	376500	1882.5	20.00	21.00	1.259	-	-	0.17	0.901	1.134



2300 MHz																					
	LTE Band 30	10M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 7	Open	27710	2310	23.59	24.00	1.099	-	-	0.16	1.110	1.220
	LTE Band 30	10M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 11	Close	27710	2310	23.59	24.00	1.099	-	-	0.03	1.010	1.110
	LTE Band 30	10M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	DSI 7	Open	27710	2310	19.88	21.00	1.294	-	-	0.01	0.970	1.255
54	LTE Band 30	10M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	DSI 11	Close	27710	2310	20.30	21.60	1.349	-	-	0.16	0.940	1.268
	LTE Band 30	10M	QPSK	1	0	-	Left Side	5mm	Ant 2	DSI 7	Open	27710	2310	19.25	20.40	1.303	-	-	0.01	0.875	1.140
	LTE Band 30	10M	QPSK	1	0	-	Left Side	5mm	Ant 2	DSI 11	Close	27710	2310	19.67	20.60	1.239	-	-	0.04	0.950	1.177
	LTE Band 30	10M	QPSK	1	0	-	Top Side	5mm	Ant 3	DSI 7	Open	27710	2310	18.42	19.90	1.406	-	-	-0.07	0.698	0.981
	LTE Band 30	10M	QPSK	1	0	-	Bottom Side	5mm	Ant 3	DSI 11	Close	27710	2310	19.66	21.20	1.426	-	-	-0.08	0.795	1.133
	FR1 n30	10M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 0	DSI 7	Open	462000	2310	23.50	24.00	1.122	-	-	-0.04	0.839	0.941
	FR1 n30	10M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	DSI 11	Close	462000	2310	23.50	24.00	1.122	-	-	0.15	0.817	0.917
55	FR1 n30	10M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 1	DSI 7	Open	462000	2310	20.00	20.50	1.122	-	-	0.19	0.871	0.977
	FR1 n30	10M	QPSK	25	14	DFT-15	Bottom Side	5mm	Ant 1	DSI 11	Close	462000	2310	19.95	20.50	1.135	-	-	-0.07	0.834	0.947
	FR1 n30	10M	QPSK	25	14	DFT-15	Left Side	5mm	Ant 2	DSI 7	Open	462000	2310	19.62	20.50	1.225	-	-	0.03	0.793	0.971
	FR1 n30	10M	QPSK	25	14	DFT-15	Left Side	5mm	Ant 2	DSI 11	Close	462000	2310	19.12	20.00	1.225	-	-	0.17	0.790	0.967
	FR1 n30	10M	QPSK	25	14	DFT-15	Top Side	5mm	Ant 3	DSI 7	Open	462000	2310	19.39	20.50	1.291	-	-	-0.12	0.730	0.943
	FR1 n30	10M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 3	DSI 11	Close	462000	2310	19.03	20.00	1.250	-	-	-0.12	0.728	0.910
2600 MHz																					
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 7	Open	21100	2535	21.31	22.20	1.227	-	-	-0.1	0.838	1.029
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 11	Close	21100	2535	21.31	22.30	1.256	-	-	-0.15	0.967	1.215
	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	DSI 7	Open	21100	2535	19.90	20.90	1.259	-	-	0.1	0.910	1.146
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 11	Close	21100	2535	20.95	21.80	1.216	-	-	-0.19	0.950	1.155
	LTE Band 7	20M	QPSK	1	0	-	Left Side	5mm	Ant 2	DSI 7	Open	21350	2560	17.95	18.70	1.189	-	-	-0.16	0.807	0.959
	LTE Band 7	20M	QPSK	1	0	-	Left Side	5mm	Ant 2	DSI 11	Close	21100	2535	17.96	18.60	1.159	-	-	-0.18	0.914	1.059
	LTE Band 7	20M	QPSK	1	0	-	Top Side	5mm	Ant 3	DSI 7	Open	20850	2510	16.40	17.20	1.202	-	-	0.09	0.948	1.140
56	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 3	DSI 11	Close	20850	2510	18.13	19.50	1.371	-	-	-0.07	0.894	1.226
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 7	Open	40185	2549.5	23.49	24.00	1.125	62.9	1.006	0.18	0.957	1.083
	LTE Band 41_HPUE	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI 7	Open	40185	2549.5	25.70	26.30	1.148	42.9	1.009	-0.12	0.970	1.124
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 11	Close	40185	2549.5	23.49	24.00	1.125	62.9	1.006	-0.14	1.040	1.177
	LTE Band 41_HPUE	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 11	Close	40185	2549.5	26.53	27.00	1.114	42.9	1.009	-0.16	1.050	1.181
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	DSI 7	Open	40620	2593	23.33	24.00	1.167	62.9	1.006	0.11	0.992	1.164
	LTE Band 41_HPUE	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	DSI 7	Open	40620	2593	24.97	25.50	1.130	42.9	1.009	0.19	0.909	1.036
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 11	Close	40185	2549.5	23.42	24.00	1.143	62.9	1.006	-0.06	0.980	1.127
57	LTE Band 41_HPUE	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 11	Close	40185	2549.5	25.80	26.50	1.175	42.9	1.009	-0.11	1.050	1.245
	LTE Band 41	20M	QPSK	1	0	-	Left Side	5mm	Ant 2	DSI 7	Open	40185	2549.5	21.30	21.90	1.148	62.9	1.006	0.19	1.020	1.178
	LTE Band 41_HPUE	20M	QPSK	1	0	-	Left Side	5mm	Ant 2	DSI 7	Open	40185	2549.5	23.00	23.50	1.122	42.9	1.009	-0.19	1.040	1.177
	LTE Band 41	20M	QPSK	1	0	-	Left Side	5mm	Ant 2	DSI 11	Close	40620	2593	19.95	20.60	1.161	62.9	1.006	-0.05	0.696	0.813
	LTE Band 41_HPUE	20M	QPSK	1	0	-	Left Side	5mm	Ant 2	DSI 11	Close	40620	2593	21.77	22.20	1.104	42.9	1.009	0.06	0.719	0.801
	LTE Band 41	20M	QPSK	1	0	-	Top Side	5mm	Ant 3	DSI 7	Open	41490	2680	16.37	17.60	1.327	62.9	1.006	0.07	0.874	1.167
	LTE Band 41_HPUE	20M	QPSK	1	0	-	Top Side	5mm	Ant 3	DSI 7	Open	41490	2680	18.08	19.20	1.294	42.9	1.009	0.06	0.845	1.103
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 3	DSI 11	Close	41490	2680	17.69	18.90	1.321	62.9	1.006	0.13	0.740	0.984
	LTE Band 41_HPUE	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 3	DSI 11	Close	41490	2680	19.35	20.50	1.303	42.9	1.009	-0.15	0.757	0.995
	FR1 n7	40M	QPSK	108	54	DFT-15	Back	5mm	Ant 0	DSI 7	Open	507000	2535	23.41	24.00	1.146	-	-	0.04	1.040	1.191
58	FR1 n7	40M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	DSI 11	Close	507000	2535	23.45	24.00	1.135	-	-	-0.09	1.110	1.260
	FR1 n7	40M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 1	DSI 7	Open	507000	2535	19.71	20.50	1.199	-	-	0.09	0.877	1.052
	FR1 n7	40M	QPSK	108	54	DFT-15	Bottom Side	5mm	Ant 1	DSI 11	Close	507000	2535	21.19	22.00	1.205	-	-	0.05	0.914	1.101
	FR1 n7	40M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 2	DSI 7	Open	507000	2535	17.90	18.50	1.148	-	-	0.16	0.781	0.897
	FR1 n7	40M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 2	DSI 11	Close	507000	2535	17.37	18.00	1.156	-	-	0.1	0.838	0.969
	FR1 n7	40M	QPSK	108	54	DFT-15	Top Side	5mm	Ant 3	DSI 7	Open	507000	2535	16.88	18.00	1.294	-	-	-0.14	0.895	1.158
	FR1 n7	40M	QPSK	108	54	DFT-15	Bottom Side	5mm	Ant 3	DSI 11	Close	507000	2535	18.85	20.00	1.303	-	-	0.18	0.895	1.166
	FR1 n41	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 0	DSI 7	Open	518598	2592.99	23.39	24.00	1.151	-	-	0.19	1.060	1.220
	FR1 n41	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 0	DSI 11	Close	518598	2592.99	23.39	24.00	1.151	-	-	0.11	0.810	0.932
	FR1 n41_HPUE	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 0	DSI 11	Close	518598	2592.99	25.98	27.00	1.265	50	1.000	-0.1	0.828	1.047
59	FR1 n41	100M	QPSK	1	1	DFT-30	Bottom Side	5mm	Ant 1	DSI 7	Open	518598	2592.99	21.46	22.00	1.132	-	-	0.18	1.110	1.257
	FR1 n41_HPUE	100M	QPSK	1	1	DFT-30	Bottom Side	5mm	Ant 1	DSI 7	Open	518598	2592.99	24.18	25.00	1.208	50	1.000	0.09	1.030	1.244
	FR1 n41	100M	QPSK	1	1	DFT-30	Bottom Side	5mm	Ant 1	DSI 11	Close	518598	2592.99	19.00	19.50	1.122	-	-	-0.14	0.520	0.583



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	FR1 n41_HPUE	100M	QPSK	1	1	DFT-30	Bottom Side	5mm	Ant 1	DSI 11	Close	518598	2592.99	21.71	22.50	1.199	50	1.000	-0.15	0.544	0.653
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Side	5mm	Ant 2	DSI 7	Open	518598	2592.99	18.46	19.00	1.132	-	-	0.08	0.736	0.833
	FR1 n41_HPUE	100M	QPSK	1	1	DFT-30	Left Side	5mm	Ant 2	DSI 7	Open	518598	2592.99	21.12	22.00	1.225	50	1.000	-0.02	0.757	0.927
	FR1 n41	100M	QPSK	1	1	DFT-30	Left Side	5mm	Ant 2	DSI 11	Close	518598	2592.99	18.47	19.00	1.130	-	-	-0.19	0.894	1.010
	FR1 n41_HPUE	100M	QPSK	1	1	DFT-30	Left Side	5mm	Ant 2	DSI 11	Close	518598	2592.99	21.16	22.00	1.213	50	1.000	0.03	0.877	1.064
	FR1 n41_HPUE	100M	QPSK	1	1	DFT-30	Top Side	5mm	Ant 3	DSI 7	Open	518598	2592.99	20.05	21.00	1.245	50	1.000	-0.15	0.909	1.131
	FR1 n41	100M	QPSK	270	0	DFT-30	Top Side	5mm	Ant 3	DSI 7	Open	518598	2592.99	16.78	18.00	1.324	-	-	-0.19	0.904	1.197
	FR1 n41	100M	QPSK	1	1	DFT-30	Bottom Side	5mm	Ant 3	DSI 11	Close	518598	2592.99	18.45	19.50	1.274	-	-	0.12	0.851	1.084
	FR1 n41_HPUE	100M	QPSK	1	1	DFT-30	Bottom Side	5mm	Ant 3	DSI 11	Close	518598	2592.99	21.71	22.50	1.199	50	1.000	-0.04	0.880	1.056
3-5GHz																					
60	LTE Band 48	20M	QPSK	1	0	-	Top Side	5mm	Ant 3	DSI 7	Open	56640	3690	18.13	19.00	1.222	62.9	1.006	-0.02	0.907	1.115
	LTE Band 48	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 3	DSI 11	Close	55340	3560	19.85	20.50	1.161	62.9	1.006	0.16	0.716	0.837
	LTE Band 48	20M	QPSK	1	0	-	Left Side	5mm	Ant 4	DSI 7	Open	55340	3560	16.97	17.70	1.183	62.9	1.006	0.17	0.699	0.832
	LTE Band 48	20M	QPSK	1	0	-	Left Side	5mm	Ant 4	DSI 11	Close	55340	3560	19.07	19.70	1.156	62.9	1.006	-0.1	0.823	0.957
	LTE Band 48	20M	QPSK	1	0	-	Top Side	5mm	Ant 6	DSI 7	Open	55340	3560	15.39	17.10	1.483	62.9	1.006	-0.01	0.609	0.908
	LTE Band 48	10M	QPSK	1	0	-	Bottom Side	5mm	Ant 6	DSI 11	Close	55830	3609	16.31	18.20	1.545	62.9	1.006	0.03	0.633	0.984
	LTE Band 48	20M	QPSK	1	0	-	Right Side	5mm	Ant 8	DSI 7	Open	56640	3690	19.44	20.10	1.164	62.9	1.006	0.05	0.492	0.576
	LTE Band 48	20M	QPSK	1	0	-	Right Side	5mm	Ant 8	DSI 11	Close	56150	3641	20.12	21.00	1.225	62.9	1.006	-0.15	0.697	0.859
	FR1 n48	40M	QPSK	50	28	DFT-30	Top Side	5mm	Ant 3	DSI 7	Open	545332	3679.98	15.59	16.50	1.233	-	-	-0.04	0.793	0.978
	FR1 n48	40M	QPSK	50	28	DFT-30	Bottom Side	5mm	Ant 3	DSI 11	Close	538000	3570	16.07	17.00	1.239	-	-	-0.19	0.660	0.818
	FR1 n48	40M	QPSK	50	28	DFT-30	Left Side	5mm	Ant 4	DSI 7	Open	545332	3679.98	13.97	15.00	1.268	-	-	-0.02	0.603	0.764
	FR1 n48	40M	QPSK	1	1	DFT-30	Left Side	5mm	Ant 4	DSI 11	Close	538000	3570	15.73	16.50	1.194	-	-	-0.18	0.747	0.892
	FR1 n48	40M	QPSK	50	28	DFT-30	Top Side	5mm	Ant 6	DSI 7	Open	538000	3570	13.03	14.00	1.250	-	-	0.16	0.766	0.958
	FR1 n48	40M	QPSK	50	28	DFT-30	Bottom Side	5mm	Ant 6	DSI 11	Close	538000	3570	13.03	14.00	1.250	-	-	0	0.714	0.893
	FR1 n48	40M	QPSK	1	1	DFT-30	Right Side	5mm	Ant 8	DSI 7	Open	538000	3570	17.35	18.00	1.161	-	-	-0.11	0.850	0.987
61	FR1 n48	40M	QPSK	1	1	DFT-30	Right Side	5mm	Ant 8	DSI 11	Close	545332	3679.98	18.28	19.00	1.180	-	-	-0.05	0.845	0.997
	FR1 n77_Part27Q	100M	QPSK	1	1	DFT-30	Bottom Side	5mm	Ant 3	DSI 11	Close	533332	3499.98	17.89	18.50	1.151	-	-	0.04	0.707	0.814
	FR1 n77_Part27Q_HPUE	100M	QPSK	1	1	DFT-30	Bottom Side	5mm	Ant 3	DSI 11	Close	533332	3499.98	20.66	21.50	1.213	50	1.000	-0.06	0.659	0.800
	FR1 n77_Part27O	100M	QPSK	1	1	DFT-30	Top Side	5mm	Ant 3	DSI 7	Open	556000	3840	15.98	16.50	1.127	-	-	0.07	0.703	0.792
62	FR1 n77_Part27O_HPUE	100M	QPSK	1	1	DFT-30	Top Side	5mm	Ant 3	DSI 7	Open	556000	3840	18.83	19.50	1.167	50	1.000	-0.03	0.708	0.826
	FR1 n77_Part27Q	100M	QPSK	1	1	DFT-30	Left Side	5mm	Ant 4	DSI 7	Open	533332	3499.98	14.85	15.50	1.161	-	-	0.09	0.709	0.823
	FR1 n77_Part27Q_HPUE	100M	QPSK	1	1	DFT-30	Left Side	5mm	Ant 4	DSI 7	Open	533332	3499.98	17.77	18.50	1.183	50	1.000	0.04	0.674	0.797
	FR1 n77_Part27Q	100M	QPSK	1	1	DFT-30	Left Side	5mm	Ant 4	DSI 11	Close	533332	3499.98	15.35	16.00	1.161	-	-	0	0.703	0.816
	FR1 n77_Part27Q_HPUE	100M	QPSK	1	1	DFT-30	Left Side	5mm	Ant 4	DSI 11	Close	533332	3499.98	18.27	19.00	1.183	50	1.000	-0.02	0.675	0.799
	FR1 n77_Part27Q	100M	QPSK	1	1	DFT-30	Top Side	5mm	Ant 6	DSI 7	Open	533332	3499.98	12.53	13.50	1.250	-	-	-0.19	0.650	0.813
	FR1 n77_Part27Q_HPUE	100M	QPSK	1	1	DFT-30	Top Side	5mm	Ant 6	DSI 7	Open	533332	3499.98	15.61	16.50	1.227	50	1.000	-0.17	0.635	0.779
	FR1 n77_Part27Q	100M	QPSK	1	1	DFT-30	Bottom Side	5mm	Ant 6	DSI 11	Close	533332	3499.98	13.03	14.00	1.250	-	-	0.13	0.638	0.798
	FR1 n77_Part27Q_HPUE	100M	QPSK	1	1	DFT-30	Bottom Side	5mm	Ant 6	DSI 11	Close	533332	3499.98	16.11	17.00	1.227	50	1.000	0	0.664	0.815
	FR1 n77_Part27O	100M	QPSK	1	1	DFT-30	Right Side	5mm	Ant 8	DSI 7	Open	556000	3840	15.40	16.00	1.148	-	-	0.13	0.529	0.607
	FR1 n77_Part27O_HPUE	100M	QPSK	1	1	DFT-30	Right Side	5mm	Ant 8	DSI 7	Open	556000	3840	18.31	19.00	1.172	50	1.000	0.1	0.534	0.626
	FR1 n77_Part27O	100M	QPSK	1	1	DFT-30	Right Side	5mm	Ant 8	DSI 11	Close	556000	3840	17.90	18.50	1.148	-	-	0.04	0.652	0.749
	FR1 n77_Part27O_HPUE	100M	QPSK	1	1	DFT-30	Right Side	5mm	Ant 8	DSI 11	Close	556000	3840	20.81	21.50	1.172	50	1.000	-0.06	0.668	0.783



UL MIMO

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	EUT Flip State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
1750MHz																					
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 2+3	DSI 7	Open	349000	1745	21.16	22.00	1.214	-	-	0.17	0.935	1.135
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 2+1	DSI 11	Close	349000	1745	22.59	23.00	1.099	-	-	-0.05	0.973	1.069
	FR1 n66	40M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 0+3	DSI 11	Close	349000	1745	24.29	25.00	1.179	-	-	0.12	0.967	1.140
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 0+1	DSI 7	Open	349000	1745	23.56	24.00	1.106	-	-	0.01	1.110	1.228
1900MHz																					
	FR1 n25	40M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 2+3	DSI 7	Open	376500	1882.5	19.06	20.00	1.241	-	-	0.13	0.746	0.925
	FR1 n25	40M	QPSK	1	1	DFT-15	Left Side	5mm	Ant 2+1	DSI 11	Close	376500	1882.5	19.92	20.50	1.144	-	-	-0.01	0.567	0.649
	FR1 n25	40M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 0+3	DSI 11	Close	376500	1882.5	23.89	24.50	1.151	-	-	0.02	0.950	1.094
	FR1 n25	40M	QPSK	1	1	DFT-15	Bottom Side	5mm	Ant 0+1	DSI 11	Close	376500	1882.5	24.62	25.50	1.224	-	-	0.05	0.910	1.114
2600MHz																					
	FR1 n41_PC2	100M	QPSK	135	69	DFT-30	Top Side	5mm	Ant 2+3	DSI 7	Open	518598	2592.99	23.75	24.50	1.189	50	1.000	0.06	0.505	0.600
	FR1 n41_PC2	100M	QPSK	1	1	DFT-30	Left Side	5mm	Ant 2+1	DSI 7	Open	518598	2592.99	23.54	24.50	1.249	50	1.000	-0.04	0.589	0.735
	FR1 n41_PC2	100M	QPSK	1	1	DFT-30	Bottom Side	5mm	Ant 0+3	DSI 11	Close	518598	2592.99	24.12	25.00	1.226	50	1.000	-0.15	0.643	0.788
	FR1 n41_PC2	100M	QPSK	135	69	DFT-30	Bottom Side	5mm	Ant 0+1	DSI 7	Open	518598	2592.99	25.73	26.50	1.193	50	1.000	0.19	0.625	0.746
3G-4G																					
	FR1 n48	40M	QPSK	53	27	CP-30	Left Side	5mm	Ant 4+8	DSI 11	Close	638000	3570	18.20	19.50	1.349	-	-	0.18	0.704	0.950
	FR1 n48	40M	QPSK	1	1	CP-30	Left Side	5mm	Ant 4+6	DSI 7	Open	638000	3570	16.11	17.50	1.379	-	-	0.12	0.632	0.871
	FR1 n48	40M	QPSK	53	27	CP-30	Top Side	5mm	Ant 3+8	DSI 7	Open	645332	3679.98	17.96	19.50	1.427	-	-	-0.16	0.671	0.958
	FR1 n48	40M	QPSK	53	27	CP-30	Bottom Side	5mm	Ant 3+6	DSI 11	Close	645332	3679.98	15.68	17.50	1.521	-	-	0.15	0.450	0.684
	FR1 n77_Part27Q_PC1.5	100M	QPSK	1	1	DFT-30	Left Side	5mm	Ant 4+8	DSI 11	Close	656000	3840	24.22	25.00	1.197	25	1.000	-0.03	0.689	0.824
	FR1 n77_Part27Q_PC1.5	100M	QPSK	1	1	DFT-30	Bottom Side	5mm	Ant 4+6	DSI 11	Close	633332	3499.98	22.26	23.00	1.187	25	1.000	-0.05	0.694	0.824
	FR1 n77_Part27Q_PC1.5	100M	QPSK	1	1	DFT-30	Right Side	5mm	Ant 3+8	DSI 11	Close	656000	3840	26.24	27.00	1.192	25	1.000	0.08	0.613	0.731
	FR1 n77_Part27Q_PC2	100M	QPSK	1	1	DFT-30	Bottom Side	5mm	Ant 3+6	DSI 11	Close	633332	3499.98	18.70	19.50	1.202	50	1.000	0.05	0.684	0.822

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	EUT Flip State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
2450 MHz																	
63	Bluetooth	DH5 1Mbps	Right Side	5mm	Ant 7	DSI 7	Open	0	2402	13.45	15.00	1.429	77.07	1.298	0.02	0.600	1.113
	Bluetooth	DH5 1Mbps	Right Side	5mm	Ant 7	DSI 11	Close	39	2441	15.05	16.50	1.396	77.07	1.298	-0.11	0.604	1.095
	Bluetooth	DH5 1Mbps	Top Side	5mm	Ant 5	DSI 7	Open	0	2402	17.30	19.00	1.479	77.07	1.298	-0.01	0.445	0.854
	Bluetooth	DH5 1Mbps	Bottom Side	5mm	Ant 5	DSI 11	Close	0	2402	17.30	19.00	1.479	77.07	1.298	0.06	0.333	0.639
	WLAN2.4GHz	802.11b 1Mbps	Right Side	5mm	Ant 7+5	DSI 7	Open	11	2462	13.52	15.50	1.578	98.53	1.015	0.13	0.375	0.600
64	WLAN2.4GHz	802.11b 1Mbps	Right Side	5mm	Ant 7+5	DSI 11	Close	11	2462	15.96	17.50	1.426	98.53	1.015	-0.03	0.578	0.836
5-6 GHz																	
	WLAN5.2GHz	802.11ac-VHT80 MCS0	Right Side	5mm	Ant 7+5	DSI 7	Open	42	5210	18.91	20.50	1.442	99.26	1.007	-0.01	0.708	1.028
65	WLAN5.2GHz	802.11ac-VHT80 MCS0	Right Side	5mm	Ant 7+5	DSI 11	Close	42	5210	19.86	21.50	1.459	99.26	1.007	-0.06	0.812	1.193
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Side	5mm	Ant 7+5	DSI 7	Open	155	5775	18.09	19.50	1.384	99.26	1.007	-0.14	0.700	0.975
66	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Side	5mm	Ant 7+5	DSI 11	Close	155	5775	20.14	21.50	1.368	99.26	1.007	0.06	0.803	1.106



13.3 Body Worn Accessory SAR

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	EUT Flip State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
750 MHz																					
67	LTE Band 71	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3	Open	133297	680.5	22.50	24.00	1.413	-	-	0.02	0.417	0.589
	LTE Band 71	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 10	Close	133297	680.5	22.50	24.00	1.413	-	-	-0.19	0.381	0.538
	LTE Band 71	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 3	Open	133297	680.5	22.52	24.00	1.406	-	-	0.07	0.369	0.519
	LTE Band 71	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 10	Close	133297	680.5	22.52	24.00	1.406	-	-	-0.17	0.400	0.562
68	LTE Band 12	10M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3	Open	23095	707.5	23.05	24.00	1.245	-	-	-0.06	0.615	0.765
	LTE Band 12	10M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 10	Close	23095	707.5	23.05	24.00	1.245	-	-	0.08	0.600	0.747
	LTE Band 12	10M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 3	Open	23095	707.5	22.85	24.00	1.303	-	-	0.03	0.489	0.637
	LTE Band 12	10M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 10	Close	23095	707.5	22.85	24.00	1.303	-	-	0.07	0.401	0.523
	LTE Band 13	10M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3	Open	23230	782	22.75	24.00	1.334	-	-	0.04	0.500	0.667
69	LTE Band 13	10M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 10	Close	23230	782	22.75	24.00	1.334	-	-	0.03	0.513	0.684
	LTE Band 13	10M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 3	Open	23230	782	22.45	24.00	1.429	-	-	-0.07	0.470	0.672
	LTE Band 13	10M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 10	Close	23230	782	22.45	24.00	1.429	-	-	-0.11	0.386	0.552
70	LTE Band 14	10M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3	Open	23330	793	22.80	24.00	1.318	-	-	0.03	0.578	0.762
	LTE Band 14	10M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 10	Close	23330	793	22.80	24.00	1.318	-	-	-0.09	0.553	0.729
	LTE Band 14	10M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 3	Open	23330	793	22.49	24.00	1.416	-	-	0.03	0.483	0.684
	LTE Band 14	10M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 10	Close	23330	793	22.49	24.00	1.416	-	-	0	0.402	0.569
71	FR1 n71	20M	QPSK	50	28	DFT-15	Back	5mm	Ant 0	DSI 3	Open	136100	680.5	23.10	24.00	1.230	-	-	-0.05	0.511	0.629
	FR1 n71	20M	QPSK	50	28	DFT-15	Back	5mm	Ant 0	DSI 10	Close	136100	680.5	23.10	24.00	1.230	-	-	0.19	0.352	0.433
	FR1 n71	20M	QPSK	1	1	DFT-15	Back	5mm	Ant 1	DSI 3	Open	136100	680.5	22.85	24.00	1.303	-	-	-0.06	0.338	0.440
	FR1 n71	20M	QPSK	50	28	DFT-15	Back	5mm	Ant 1	DSI 10	Close	136100	680.5	22.80	24.00	1.318	-	-	-0.13	0.290	0.382
72	FR1 n12	15M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	DSI 3	Open	141500	707.5	23.10	24.00	1.230	-	-	0.11	0.560	0.689
	FR1 n12	15M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	DSI 10	Close	141500	707.5	23.10	24.00	1.230	-	-	0.15	0.487	0.599
	FR1 n12	15M	QPSK	1	1	DFT-15	Back	5mm	Ant 1	DSI 3	Open	141500	707.5	22.90	24.00	1.288	-	-	-0.1	0.504	0.649
	FR1 n12	15M	QPSK	1	1	DFT-15	Back	5mm	Ant 1	DSI 10	Close	141500	707.5	22.90	24.00	1.288	-	-	-0.06	0.347	0.447
73	FR1 n14	10M	QPSK	25	14	DFT-15	Back	5mm	Ant 0	DSI 3	Open	158600	793	23.26	24.00	1.186	-	-	0.04	0.547	0.649
	FR1 n14	10M	QPSK	25	14	DFT-15	Back	5mm	Ant 0	DSI 10	Close	158600	793	23.26	24.00	1.186	-	-	-0.15	0.449	0.532
	FR1 n14	10M	QPSK	1	1	DFT-15	Back	5mm	Ant 1	DSI 3	Open	158600	793	23.07	24.00	1.239	-	-	0.06	0.429	0.531
	FR1 n14	10M	QPSK	1	1	DFT-15	Back	5mm	Ant 1	DSI 10	Close	158600	793	23.07	24.00	1.239	-	-	0.02	0.318	0.394
835 MHz																					
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Back	5mm	Ant 0	DSI 3	Open	189	836.4	27.90	28.80	1.230	-	-	-0.02	0.438	0.539
74	GSM850	-	-	-	-	GPRS (3 Tx slots)	Back	5mm	Ant 0	DSI 10	Close	128	824.2	27.79	28.80	1.262	-	-	-0.02	0.442	0.558
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Back	5mm	Ant 1	DSI 3	Open	189	836.4	27.75	28.80	1.274	-	-	0.09	0.400	0.509
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Back	5mm	Ant 1	DSI 10	Close	128	824.2	27.50	28.80	1.349	-	-	-0.04	0.207	0.279
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	Open	4132	826.4	23.38	24.00	1.153	-	-	0.12	0.730	0.842
75	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 10	Close	4132	826.4	23.38	24.00	1.153	-	-	-0.03	0.888	1.024
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 1	DSI 3	Open	4132	826.4	23.29	24.00	1.178	-	-	0.03	0.714	0.841
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 1	DSI 10	Close	4132	826.4	23.29	24.00	1.178	-	-	0.19	0.521	0.614
	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3	Open	26965	841.5	22.74	24.00	1.337	-	-	0.08	0.712	0.952
76	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 10	Close	26965	841.5	22.74	24.00	1.337	-	-	-0.01	0.729	0.974
	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 3	Open	26965	841.5	22.51	24.00	1.409	-	-	-0.14	0.674	0.950
	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 10	Close	26965	841.5	22.51	24.00	1.409	-	-	-0.18	0.456	0.643
77	FR1 n26	20M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	DSI 3	Open	166300	831.5	23.01	24.00	1.256	-	-	-0.03	0.651	0.818
	FR1 n26	20M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	DSI 10	Close	166300	831.5	23.01	24.00	1.256	-	-	-0.07	0.534	0.671
	FR1 n26	20M	QPSK	1	1	DFT-15	Back	5mm	Ant 1	DSI 3	Open	166300	831.5	22.87	24.00	1.297	-	-	0.08	0.524	0.680
	FR1 n26	20M	QPSK	50	28	DFT-15	Back	5mm	Ant 1	DSI 10	Close	166300	831.5	22.74	24.00	1.337	-	-	-0.03	0.370	0.495
1750 MHz																					
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	Open	1513	1752.6	22.76	23.50	1.186	-	-	-0.01	0.885	1.049
78	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 10	Close	1513	1752.6	23.20	24.00	1.202	-	-	-0.07	0.988	1.188
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 2	DSI 3	Open	1513	1752.6	21.33	22.10	1.194	-	-	-0.09	0.991	1.183



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	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 2	DSI 10	Close	1513	1752.6	23.55	24.00	1.109	-	-	-0.18	1.040	1.154
	LTE Band 66	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3	Open	132572	1770	22.20	23.00	1.202	-	-	0.06	0.640	0.769
	LTE Band 66	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 10	Close	132072	1720	23.47	24.00	1.130	-	-	-0.05	1.020	1.152
79	LTE Band 66	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 3	Open	132572	1770	21.40	22.10	1.175	-	-	0	0.995	1.169
	LTE Band 66	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 10	Close	132322	1745	22.81	23.40	1.146	-	-	0.05	0.970	1.111
	LTE Band 66	20M	QPSK	1	0	-	Front	5mm	Ant 2	DSI 3	Open	132572	1770	20.72	21.70	1.253	-	-	-0.06	0.646	0.810
	LTE Band 66	20M	QPSK	1	0	-	Front	5mm	Ant 2	DSI 10	Close	132572	1770	23.18	24.00	1.208	-	-	-0.04	0.961	1.161
	LTE Band 66	20M	QPSK	1	0	-	Back	5mm	Ant 3	DSI 3	Open	132072	1720	21.60	23.20	1.445	-	-	-0.02	0.767	1.109
	LTE Band 66	20M	QPSK	1	0	-	Front	5mm	Ant 3	DSI 10	Close	132572	1770	22.94	24.00	1.276	-	-	0.02	0.661	0.844
	FR1 n66	40M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	DSI 3	Open	349000	1745	23.00	24.00	1.259	-	-	-0.01	0.985	1.240
	FR1 n66	40M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	DSI 10	Close	349000	1745	23.00	24.00	1.259	-	-	0.18	0.864	1.088
	FR1 n66	40M	QPSK	108	54	DFT-15	Back	5mm	Ant 1	DSI 3	Open	349000	1745	20.05	21.00	1.245	-	-	-0.04	0.763	0.950
	FR1 n66	40M	QPSK	108	54	DFT-15	Back	5mm	Ant 1	DSI 10	Close	349000	1745	21.51	22.50	1.256	-	-	0.17	0.733	0.921
	FR1 n66	40M	QPSK	1	1	DFT-15	Front	5mm	Ant 2	DSI 3	Open	349000	1745	21.38	22.00	1.153	-	-	-0.13	0.719	0.829
	FR1 n66	40M	QPSK	1	1	DFT-15	Front	5mm	Ant 2	DSI 10	Close	349000	1745	23.44	24.00	1.138	-	-	0.17	0.879	1.000
80	FR1 n66	40M	QPSK	1	1	DFT-15	Back	5mm	Ant 3	DSI 3	Open	349000	1745	23.02	24.00	1.253	-	-	-0.03	1.000	1.253
	FR1 n66	40M	QPSK	1	1	DFT-15	Front	5mm	Ant 3	DSI 10	Close	349000	1745	23.02	24.00	1.253	-	-	0.15	0.747	0.936
	FR1 n70	15M	QPSK	36	22	DFT-15	Back	5mm	Ant 0	DSI 3	Open	340500	1702.5	23.66	24.00	1.081	-	-	0.11	0.786	0.850
	FR1 n70	15M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	DSI 10	Close	340500	1702.5	23.70	24.00	1.072	-	-	0	0.824	0.883
	FR1 n70	15M	QPSK	1	1	DFT-15	Back	5mm	Ant 1	DSI 3	Open	340500	1702.5	23.00	24.00	1.259	-	-	0.12	0.705	0.888
	FR1 n70	15M	QPSK	36	22	DFT-15	Back	5mm	Ant 1	DSI 10	Close	340500	1702.5	22.92	24.00	1.282	-	-	0.05	0.552	0.708
	FR1 n70	15M	QPSK	36	22	DFT-15	Front	5mm	Ant 2	DSI 3	Open	340500	1702.5	21.34	22.00	1.164	-	-	-0.08	0.815	0.949
	FR1 n70	15M	QPSK	36	22	DFT-15	Front	5mm	Ant 2	DSI 10	Close	340500	1702.5	23.37	24.00	1.156	-	-	0.13	0.809	0.935
81	FR1 n70	15M	QPSK	1	1	DFT-15	Back	5mm	Ant 3	DSI 3	Open	340500	1702.5	21.82	22.50	1.169	-	-	0.03	0.823	0.962
	FR1 n70	15M	QPSK	1	1	DFT-15	Front	5mm	Ant 3	DSI 10	Close	340500	1702.5	22.82	23.50	1.169	-	-	-0.19	0.812	0.950
1900 MHz																					
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Back	5mm	Ant 0	DSI 3	Open	512	1850.2	25.40	25.80	1.096	-	-	0.12	0.769	0.843
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Back	5mm	Ant 0	DSI 10	Close	512	1850.2	25.40	25.80	1.096	-	-	-0.05	0.625	0.685
82	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Front	5mm	Ant 2	DSI 3	Open	512	1850.2	24.30	25.30	1.259	-	-	0.06	0.977	1.230
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Front	5mm	Ant 2	DSI 10	Close	661	1880	24.70	25.80	1.288	-	-	-0.15	0.830	1.069
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 3	Open	9262	1852.4	23.08	24.00	1.236	-	-	0.06	1.000	1.236
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 10	Close	9262	1852.4	22.22	23.40	1.312	-	-	0.07	0.787	1.033
83	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 2	DSI 3	Open	9538	1907.6	21.30	22.10	1.202	-	-	0.03	1.040	1.250
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 2	DSI 10	Close	9262	1852.4	22.06	22.50	1.107	-	-	0.06	1.040	1.151
	LTE Band 25	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3	Open	26140	1860	23.75	24.00	1.059	-	-	0.05	1.030	1.091
	LTE Band 25	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 10	Close	26140	1860	23.75	24.00	1.059	-	-	0.18	0.949	1.005
84	LTE Band 25	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 3	Open	26590	1905	21.43	22.10	1.167	-	-	0.01	1.000	1.167
	LTE Band 25	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 10	Close	26590	1905	23.77	24.00	1.054	-	-	-0.13	1.060	1.118
	LTE Band 25	20M	QPSK	1	0	-	Front	5mm	Ant 2	DSI 3	Open	26140	1860	19.72	20.50	1.197	-	-	0.04	0.863	1.033
	LTE Band 25	20M	QPSK	1	0	-	Front	5mm	Ant 2	DSI 10	Close	26140	1860	20.66	21.50	1.213	-	-	0.06	0.948	1.150
	LTE Band 25	20M	QPSK	1	0	-	Back	5mm	Ant 3	DSI 3	Open	26140	1860	20.87	22.20	1.358	-	-	-0.06	0.800	1.087
	LTE Band 25	20M	QPSK	1	0	-	Front	5mm	Ant 3	DSI 10	Close	26140	1860	22.20	23.40	1.318	-	-	0.14	0.879	1.159
	FR1 n25	40M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	DSI 3	Open	376500	1882.5	22.48	23.00	1.127	-	-	-0.17	0.930	1.048
	FR1 n25	40M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	DSI 10	Close	376500	1882.5	23.50	24.00	1.122	-	-	0.11	0.910	1.021
85	FR1 n25	40M	QPSK	1	1	DFT-15	Back	5mm	Ant 1	DSI 3	Open	376500	1882.5	21.41	22.00	1.146	-	-	0.01	0.979	1.121
	FR1 n25	40M	QPSK	1	1	DFT-15	Back	5mm	Ant 1	DSI 10	Close	376500	1882.5	23.40	24.00	1.148	-	-	-0.09	0.960	1.102
	FR1 n25	40M	QPSK	1	1	DFT-15	Front	5mm	Ant 2	DSI 3	Open	376500	1882.5	19.72	20.50	1.197	-	-	0.18	0.935	1.119
	FR1 n25	40M	QPSK	1	1	DFT-15	Front	5mm	Ant 2	DSI 10	Close	376500	1882.5	19.72	20.50	1.197	-	-	-0.12	0.913	1.093
	FR1 n25	40M	QPSK	1	1	DFT-15	Back	5mm	Ant 3	DSI 3	Open	376500	1882.5	21.47	22.50	1.268	-	-	-0.11	0.774	0.981
	FR1 n25	40M	QPSK	108	54	DFT-15	Front	5mm	Ant 3	DSI 10	Close	376500	1882.5	21.90	23.00	1.288	-	-	-0.19	0.837	1.078
2300 MHz																					
	LTE Band 30	10M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3	Open	27710	2310	23.59	24.00	1.099	-	-	-0.19	0.828	0.910
	LTE Band 30	10M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 10	Close	27710	2310	23.59	24.00	1.099	-	-	-0.01	0.800	0.879
	LTE Band 30	10M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 3	Open	27710	2310	21.80	23.10	1.349	-	-	0.03	0.860	1.160
	LTE Band 30	10M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 10	Close	27710	2310	21.56	22.50	1.242	-	-	0.13	0.863	1.072
	LTE Band 30	10M	QPSK	1	0	-	Back	5mm	Ant 2	DSI 3	Open	27710	2310	21.70	22.80	1.288	-	-	-0.1	0.834	1.074



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86	LTE Band 30	10M	QPSK	1	0	-	Front	5mm	Ant 2	DSI 10	Close	27710	2310	22.40	23.50	1.288	-	-	0.03	0.975	1.256
	LTE Band 30	10M	QPSK	1	0	-	Back	5mm	Ant 3	DSI 3	Open	27710	2310	19.66	21.10	1.393	-	-	-0.17	0.708	0.986
	LTE Band 30	10M	QPSK	1	0	-	Front	5mm	Ant 3	DSI 10	Close	27710	2310	20.75	22.10	1.365	-	-	-0.07	0.748	1.021
	FR1 n30	10M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	DSI 3	Open	462000	2310	23.50	24.00	1.122	-	-	0.08	0.841	0.944
	FR1 n30	10M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	DSI 10	Close	462000	2310	23.50	24.00	1.122	-	-	-0.1	0.807	0.905
	FR1 n30	10M	QPSK	1	1	DFT-15	Back	5mm	Ant 1	DSI 3	Open	462000	2310	22.48	23.00	1.127	-	-	0.06	1.000	1.127
87	FR1 n30	10M	QPSK	25	14	DFT-15	Back	5mm	Ant 1	DSI 10	Close	462000	2310	21.92	22.50	1.143	-	-	0.05	1.080	1.234
	FR1 n30	10M	QPSK	25	14	DFT-15	Front	5mm	Ant 2	DSI 3	Open	462000	2310	22.53	23.50	1.250	-	-	-0.06	0.960	1.200
	FR1 n30	10M	QPSK	25	14	DFT-15	Front	5mm	Ant 2	DSI 10	Close	462000	2310	22.12	23.00	1.225	-	-	0.03	0.918	1.124
	FR1 n30	10M	QPSK	25	14	DFT-15	Back	5mm	Ant 3	DSI 3	Open	462000	2310	21.00	22.00	1.259	-	-	-0.05	0.945	1.190
	FR1 n30	10M	QPSK	1	1	DFT-15	Front	5mm	Ant 3	DSI 10	Close	462000	2310	20.60	21.50	1.230	-	-	-0.06	0.866	1.065
2600 MHz																					
88	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3	Open	21100	2535	21.31	22.20	1.227	-	-	-0.03	0.990	1.215
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 10	Close	21100	2535	21.31	22.30	1.256	-	-	0.15	0.909	1.142
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 3	Open	21100	2535	20.95	21.90	1.245	-	-	-0.04	0.735	0.915
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 10	Close	21100	2535	20.95	21.80	1.216	-	-	0.04	0.790	0.961
	LTE Band 7	20M	QPSK	1	0	-	Front	5mm	Ant 2	DSI 3	Open	21350	2560	19.42	20.20	1.197	-	-	0.04	0.992	1.187
	LTE Band 7	20M	QPSK	1	0	-	Front	5mm	Ant 2	DSI 10	Close	21350	2560	19.26	20.00	1.186	-	-	-0.1	0.977	1.158
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 3	DSI 3	Open	21100	2535	19.72	21.00	1.343	-	-	0.07	0.890	1.195
	LTE Band 7	20M	QPSK	1	0	-	Front	5mm	Ant 3	DSI 10	Close	20850	2510	19.62	20.70	1.282	-	-	-0.09	0.696	0.893
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3	Open	40185	2549.5	23.49	24.00	1.125	62.9	1.006	-0.04	1.110	1.256
	LTE Band 41_HPUE	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 3	Open	40185	2549.5	25.70	26.30	1.148	42.9	1.009	0	1.080	1.251
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 10	Close	40185	2549.5	23.49	24.00	1.125	62.9	1.006	0.02	0.817	0.924
	LTE Band 41_HPUE	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 10	Close	40185	2549.5	26.53	27.00	1.114	42.9	1.009	0.12	0.883	0.993
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 3	Open	41490	2680	23.39	24.00	1.151	62.9	1.006	-0.04	1.070	1.239
	LTE Band 41_HPUE	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 3	Open	41490	2680	25.79	26.40	1.151	42.9	1.009	0.01	1.040	1.208
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 10	Close	40185	2549.5	23.42	24.00	1.143	62.9	1.006	0.01	0.910	1.046
	LTE Band 41_HPUE	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 10	Close	40185	2549.5	25.80	26.50	1.175	42.9	1.009	-0.14	0.980	1.162
	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 2	DSI 3	Open	40620	2593	20.70	21.20	1.122	62.9	1.006	0.09	0.854	0.964
	LTE Band 41_HPUE	20M	QPSK	1	0	-	Front	5mm	Ant 2	DSI 3	Open	40620	2593	22.18	22.80	1.153	42.9	1.009	0.09	0.806	0.938
	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 2	DSI 10	Close	40620	2593	22.28	23.10	1.208	62.9	1.006	-0.01	1.010	1.227
	LTE Band 41_HPUE	20M	QPSK	1	0	-	Front	5mm	Ant 2	DSI 10	Close	40620	2593	24.18	24.70	1.127	42.9	1.009	-0.04	0.983	1.118
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 3	DSI 3	Open	41490	2680	19.58	20.80	1.324	62.9	1.006	0.02	0.950	1.266
89	LTE Band 41_HPUE	20M	QPSK	1	0	-	Back	5mm	Ant 3	DSI 3	Open	41490	2680	21.50	22.40	1.230	42.9	1.009	-0.11	1.030	1.279
	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 3	DSI 10	Close	41490	2680	20.84	22.00	1.306	62.9	1.006	0.14	0.898	1.180
	LTE Band 41_HPUE	20M	QPSK	1	0	-	Front	5mm	Ant 3	DSI 10	Close	41490	2680	22.61	23.60	1.256	42.9	1.009	-0.16	0.883	1.119
	FR1 n7	40M	QPSK	108	54	DFT-15	Back	5mm	Ant 0	DSI 3	Open	507000	2535	23.41	24.00	1.146	-	-	-0.01	0.934	1.070
	FR1 n7	40M	QPSK	1	1	DFT-15	Back	5mm	Ant 0	DSI 10	Close	507000	2535	23.45	24.00	1.135	-	-	-0.03	0.919	1.043
90	FR1 n7	40M	QPSK	108	54	DFT-15	Back	5mm	Ant 1	DSI 3	Open	507000	2535	21.69	22.50	1.205	-	-	0.08	1.000	1.205
	FR1 n7	40M	QPSK	108	54	DFT-15	Back	5mm	Ant 1	DSI 10	Close	507000	2535	21.69	22.50	1.205	-	-	-0.01	0.980	1.181
	FR1 n7	40M	QPSK	1	1	DFT-15	Front	5mm	Ant 2	DSI 3	Open	507000	2535	19.92	20.50	1.143	-	-	0	1.050	1.200
	FR1 n7	40M	QPSK	1	1	DFT-15	Front	5mm	Ant 2	DSI 10	Close	507000	2535	19.92	20.50	1.143	-	-	0.02	1.020	1.166
	FR1 n7	40M	QPSK	1	1	DFT-15	Front	5mm	Ant 3	DSI 3	Open	507000	2535	18.45	19.50	1.274	-	-	-0.07	0.662	0.843
	FR1 n7	40M	QPSK	108	54	DFT-15	Front	5mm	Ant 3	DSI 10	Close	507000	2535	19.97	21.00	1.268	-	-	-0.1	0.623	0.790
	FR1 n41_HPUE	100M	QPSK	1	1	DFT-30	Back	5mm	Ant 0	DSI 3	Open	518598	2592.99	26.32	27.00	1.169	50	1.000	0.01	1.030	1.205
	FR1 n41	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 0	DSI 3	Open	518598	2592.99	23.39	24.00	1.151	-	-	0.06	1.020	1.174
	FR1 n41	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 0	DSI 10	Close	518598	2592.99	23.39	24.00	1.151	-	-	0.1	0.910	1.047
	FR1 n41_HPUE	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 0	DSI 10	Close	518598	2592.99	25.98	27.00	1.265	50	1.000	0.03	0.815	1.031
	FR1 n41	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 1	DSI 3	Open	518598	2592.99	22.95	23.50	1.135	-	-	0.07	1.090	1.237
	FR1 n41_HPUE	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 1	DSI 3	Open	518598	2592.99	25.74	26.50	1.191	50	1.000	0.01	1.010	1.203
	FR1 n41	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 1	DSI 10	Close	518598	2592.99	22.95	23.50	1.135	-	-	0.08	1.100	1.249
	FR1 n41_HPUE	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 1	DSI 10	Close	518598	2592.99	25.74	26.50	1.191	50	1.000	0.03	1.010	1.203
	FR1 n41	100M	QPSK	135	69	DFT-30	Front	5mm	Ant 2	DSI 3	Open	518598	2592.99	19.42	20.00	1.143	-	-	0.01	0.992	1.134
	FR1 n41_HPUE	100M	QPSK	135	69	DFT-30	Front	5mm	Ant 2	DSI 3	Open	518598	2592.99	22.21	23.00	1.199	50	1.000	-0.01	0.961	1.153
	FR1 n41	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 2	DSI 10	Close	518598	2592.99	19.45	20.00	1.135	-	-	0.16	0.886	1.006
	FR1 n41_HPUE	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 2	DSI 10	Close	518598	2592.99	22.25	23.00	1.189	50	1.000	0.19	0.872	1.036



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91	FR1 n41	100M	QPSK	1	1	DFT-30	Back	5mm	Ant 3	DSI 3	Open	518598	2592.99	19.93	21.00	1.279	-	-	0.07	0.980	1.254
	FR1 n41_HPUE	100M	QPSK	1	1	DFT-30	Back	5mm	Ant 3	DSI 3	Open	518598	2592.99	23.16	24.00	1.213	50	1.000	-0.09	0.935	1.135
	FR1 n41	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 3	DSI 10	Close	518598	2592.99	20.91	22.00	1.285	-	-	-0.09	0.939	1.207
	FR1 n41_HPUE	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 3	DSI 10	Close	518598	2592.99	24.15	25.00	1.216	50	1.000	0.16	0.932	1.133
3-5GHz																					
92	LTE Band 48	20M	QPSK	1	0	-	Front	5mm	Ant 3	DSI 3	Open	56640	3690	22.39	23.00	1.151	62.9	1.006	0.02	0.910	1.054
	LTE Band 48	20M	QPSK	1	0	-	Front	5mm	Ant 3	DSI 10	Close	55340	3560	22.40	22.90	1.122	62.9	1.006	0.13	0.383	0.432
	LTE Band 48	20M	QPSK	1	0	-	Front	5mm	Ant 4	DSI 3	Open	56150	3641	21.12	21.80	1.169	62.9	1.006	0.01	0.555	0.653
	LTE Band 48	20M	QPSK	1	0	-	Front	5mm	Ant 4	DSI 10	Close	55340	3560	22.65	23.50	1.216	62.9	1.006	0.09	0.853	1.044
	LTE Band 48	20M	QPSK	1	0	-	Front	5mm	Ant 6	DSI 3	Open	55340	3560	19.63	21.40	1.503	62.9	1.006	-0.19	0.674	1.019
	LTE Band 48	20M	QPSK	1	0	-	Front	5mm	Ant 6	DSI 10	Close	55340	3560	19.83	21.60	1.503	62.9	1.006	-0.1	0.610	0.922
	LTE Band 48	20M	QPSK	1	0	-	Back	5mm	Ant 8	DSI 3	Open	56640	3690	21.90	22.40	1.122	62.9	1.006	-0.12	0.472	0.533
	LTE Band 48	20M	QPSK	1	0	-	Front	5mm	Ant 8	DSI 10	Close	56150	3641	22.20	22.90	1.175	62.9	1.006	0.08	0.855	1.011
	FR1 n48	40M	QPSK	50	28	DFT-30	Front	5mm	Ant 3	DSI 3	Open	545332	3679.98	19.76	20.50	1.186	-	-	0.14	0.897	1.064
	FR1 n48	40M	QPSK	50	28	DFT-30	Front	5mm	Ant 3	DSI 10	Close	538000	3570	19.77	20.50	1.183	-	-	0.04	0.652	0.771
	FR1 n48	40M	QPSK	50	28	DFT-30	Front	5mm	Ant 4	DSI 3	Open	545332	3679.98	19.23	20.00	1.194	-	-	0.06	0.875	1.045
93	FR1 n48	40M	QPSK	1	1	DFT-30	Front	5mm	Ant 4	DSI 10	Close	545332	3679.98	22.22	23.00	1.197	-	-	-0.08	0.905	1.083
	FR1 n48	40M	QPSK	1	1	DFT-30	Front	5mm	Ant 6	DSI 3	Open	545332	3679.98	17.22	18.00	1.197	-	-	-0.17	0.712	0.852
	FR1 n48	40M	QPSK	1	1	DFT-30	Front	5mm	Ant 6	DSI 10	Close	545332	3679.98	18.22	19.00	1.197	-	-	-0.03	0.837	1.002
	FR1 n48	40M	QPSK	1	1	DFT-30	Back	5mm	Ant 8	DSI 3	Open	538000	3570	18.85	19.50	1.161	-	-	0.11	0.502	0.583
	FR1 n48	40M	QPSK	50	28	DFT-30	Front	5mm	Ant 8	DSI 10	Close	545332	3679.98	19.73	20.50	1.194	-	-	-0.13	0.821	0.980
	FR1 n77_Part27O	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 3	DSI 3	Open	556000	3840	19.02	19.50	1.117	-	-	-0.15	0.990	1.106
	FR1 n77_Part27O_HPUE	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 3	DSI 3	Open	556000	3840	21.89	22.50	1.151	50	1.000	-0.15	0.952	1.096
	FR1 n77_Part27Q	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 3	DSI 10	Close	533332	3499.98	20.38	21.00	1.153	-	-	-0.09	0.799	0.922
	FR1 n77_Part27Q_HPUE	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 3	DSI 10	Close	533332	3499.98	23.15	24.00	1.216	50	1.000	-0.19	0.786	0.956
	FR1 n77_Part27Q	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 4	DSI 3	Open	533332	3499.98	18.88	19.50	1.153	-	-	-0.08	0.972	1.121
	FR1 n77_Part27Q_HPUE	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 4	DSI 3	Open	533332	3499.98	21.85	22.50	1.161	50	1.000	-0.17	0.961	1.116
	FR1 n77_Part27Q	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 4	DSI 10	Close	533332	3499.98	19.40	20.00	1.148	-	-	-0.14	0.908	1.043
	FR1 n77_Part27Q_HPUE	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 4	DSI 10	Close	533332	3499.98	22.35	23.00	1.161	50	1.000	0	0.891	1.035
	FR1 n77_Part27Q	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 6	DSI 3	Open	533332	3499.98	18.15	19.00	1.216	-	-	0.03	0.790	0.961
	FR1 n77_Part27Q_HPUE	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 6	DSI 3	Open	533332	3499.98	21.16	22.00	1.213	50	1.000	0.16	0.776	0.942
	FR1 n77_Part27Q	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 6	DSI 10	Close	533332	3499.98	17.66	18.50	1.213	-	-	0.17	0.838	1.017
	FR1 n77_Part27Q_HPUE	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 6	DSI 10	Close	533332	3499.98	20.65	21.50	1.216	50	1.000	-0.16	0.822	1.000
94	FR1 n77_Part27O	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 8	DSI 3	Open	556000	3840	20.31	21.00	1.172	-	-	0.03	1.070	1.254
	FR1 n77_Part27O_HPUE	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 8	DSI 3	Open	556000	3840	23.32	24.00	1.169	50	1.000	0.11	1.060	1.240
	FR1 n77_Part27Q	100M	QPSK	135	69	DFT-30	Front	5mm	Ant 8	DSI 10	Close	533332	3499.98	21.28	22.00	1.180	-	-	-0.14	0.708	0.836
	FR1 n77_Part27Q_HPUE	100M	QPSK	135	69	DFT-30	Front	5mm	Ant 8	DSI 10	Close	533332	3499.98	24.20	25.00	1.202	50	1.000	-0.02	0.716	0.861

UL MIMO

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	EUT Flip State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
1750MHz																					
	FR1 n66	40M	QPSK	1	1	DFT-15	Front	5mm	Ant 2+3	DSI 3	Open	349000	1745	23.68	24.50	1.209	-	-	-0.16	1.000	1.209
	FR1 n66	40M	QPSK	1	1	DFT-15	Front	5mm	Ant 2+1	DSI 3	Open	349000	1745	22.59	23.00	1.099	-	-	-0.04	0.636	0.699
	FR1 n66	40M	QPSK	1	1	DFT-15	Back	5mm	Ant 0+3	DSI 10	Close	349000	1745	26.27	27.00	1.184	-	-	-0.18	0.954	1.129
	FR1 n66	40M	QPSK	1	1	DFT-15	Back	5mm	Ant 0+1	DSI 3	Open	349000	1745	22.56	23.00	1.106	-	-	-0.12	0.770	0.852
1900MHz																					
	FR1 n25	40M	QPSK	1	1	DFT-15	Front	5mm	Ant 2+3	DSI 10	Close	376500	1882.5	22.09	23.00	1.233	-	-	0.12	0.905	1.115
	FR1 n25	40M	QPSK	1	1	DFT-15	Front	5mm	Ant 2+1	DSI 3	Open	376500	1882.5	22.44	23.00	1.137	-	-	0.07	0.869	0.988
	FR1 n25	40M	QPSK	1	1	DFT-15	Front	5mm	Ant 0+3	DSI 3	Open	376500	1882.5	24.89	25.50	1.150	-	-	-0.19	0.910	1.046
	FR1 n25	40M	QPSK	1	1	DFT-15	Back	5mm	Ant 0+1	DSI 10	Close	376500	1882.5	26.15	27.00	1.216	-	-	-0.11	0.900	1.094
2600MHz																					
	FR1 n41_PC2	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 2+3	DSI 10	Close	518598	2592.99	24.81	25.50	1.171	50	1.000	0.16	0.685	0.802
	FR1 n41_PC2	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 2+1	DSI 10	Close	518598	2592.99	25.07	26.00	1.239	50	1.000	0.04	0.727	0.901
	FR1 n41_PC2	100M	QPSK	1	1	DFT-30	Back	5mm	Ant 0+3	DSI 3	Open	518598	2592.99	26.14	27.00	1.219	50	1.000	0.02	0.675	0.823

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FR1 n41_PC1.5	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 0+1	DSI 3	Open	518598	2592.99	28.70	30.00	1.349	25	1.000	-0.13	0.584	0.788
3G-4G																				
FR1 n48	40M	QPSK	1	1	CP-30	Front	5mm	Ant 4+8	DSI 3	Open	641666	3624.99	21.76	23.00	1.329	-	-	0.08	0.804	1.069
FR1 n48	40M	QPSK	1	1	CP-30	Front	5mm	Ant 4+6	DSI 10	Close	641666	3624.99	20.69	22.50	1.517	-	-	0.18	0.702	1.065
FR1 n48	40M	QPSK	1	1	CP-30	Front	5mm	Ant 3+8	DSI 10	Close	641666	3624.99	21.53	23.00	1.403	-	-	0.06	0.600	0.842
FR1 n48	40M	QPSK	53	27	CP-30	Front	5mm	Ant 3+6	DSI 10	Close	641666	3624.99	20.70	22.50	1.513	-	-	0.18	0.531	0.804
FR1 n77_Part27Q_PC2	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 4+8	DSI 3	Open	633332	3499.98	24.23	25.00	1.194	50	1.000	-0.16	0.960	1.146
FR1 n77_Part27O_PC2	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 4+6	DSI 3	Open	656000	3840	23.72	24.50	1.197	50	1.000	0.09	0.980	1.173
FR1 n77_Part27O_PC2	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 3+8	DSI 10	Close	656000	3840	25.25	26.00	1.188	50	1.000	0.11	0.747	0.888
FR1 n77_Part27Q_PC2	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 3+6	DSI 10	Close	633332	3499.98	23.20	24.00	1.203	50	1.000	-0.14	0.751	0.904

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	EUT Flip State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
2450 MHz																	
95	Bluetooth	DH5 1Mbps	Front	5mm	Ant 7	DSI 3	Open	0	2402	16.85	18.50	1.462	77.07	1.298	0.01	0.650	1.234
	Bluetooth	DH5 1Mbps	Front	5mm	Ant 7	DSI 10	Close	0	2402	16.85	18.50	1.462	77.07	1.298	-0.1	0.409	0.776
	Bluetooth	DH5 1Mbps	Front	5mm	Ant 5	DSI 3	Open	0	2402	17.30	19.00	1.479	77.07	1.298	0.08	0.537	1.031
	Bluetooth	DH5 1Mbps	Front	5mm	Ant 5	DSI 10	Close	78	2480	18.40	20.00	1.445	77.07	1.298	-0.16	0.339	0.636
	WLAN2.4GHz	802.11b 1Mbps	Front	5mm	Ant 7+5	DSI 3	Open	11	2462	19.17	20.50	1.358	98.53	1.015	-0.04	0.653	0.900
96	WLAN2.4GHz	802.11b 1Mbps	Front	5mm	Ant 7+5	DSI 10	Close	11	2462	19.76	21.50	1.493	98.53	1.015	-0.02	0.676	1.024
5 GHz																	
	WLAN5.3GHz	802.11n-HT40 MCS0	Back	5mm	Ant 7+5	DSI 3	Open	54	5270	20.98	22.50	1.419	100	1.000	0.12	0.704	0.999
97	WLAN5.3GHz	802.11n-HT40 MCS0	Front	5mm	Ant 7+5	DSI 10	Close	54	5270	20.98	22.50	1.419	100	1.000	-0.06	0.730	1.036
98	WLAN5.5GHz	802.11n-HT40 MCS0	Back	5mm	Ant 7+5	DSI 3	Open	134	5670	21.12	22.50	1.374	100	1.000	-0.08	0.709	0.974
	WLAN5.5GHz	802.11n-HT40 MCS0	Front	5mm	Ant 7+5(7)	DSI 10	Close	134	5670	18.24	20.00	1.498	100	1.000	-0.09	0.642	0.962
	WLAN5.8GHz	802.11n-HT40 MCS0	Back	5mm	Ant 7+5	DSI 3	Open	159	5795	20.66	22.00	1.361	100	1.000	-0.18	0.680	0.926
99	WLAN5.8GHz	802.11n-HT40 MCS0	Front	5mm	Ant 7+5(7)	DSI 10	Close	159	5795	18.03	19.50	1.401	100	1.000	-0.06	0.663	0.929

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	EUT Flip State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Measured APD (W/m^2)
100	WLAN6GHz	802.11be-EHT320 MCS0	Back	5mm	Ant 7+5(5)	DSI 3	Open	191	6905	11.23	13.00	1.503	98.85	1.012	0.02	0.069	0.105	0.415
	WLAN6GHz	802.11be-EHT320 MCS0	Front	5mm	Ant 7+5(5)	DSI 10	Close	191	6905	11.23	13.00	1.503	98.85	1.012	0.03	0.042	0.064	0.145



13.4 Product specific 10g SAR

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	EUT Flip State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
1750 MHz																					
101	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6/9	Open	1413	1732.6	23.40	24.00	1.148	-	-	-0.01	1.750	2.009
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Side	0mm	Ant 2	DSI 5/6	Open	1513	1752.6	23.55	24.00	1.109	-	-	-0.02	1.600	1.775
	LTE Band 66	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6/9	Open	132072	1720	23.47	24.00	1.130	-	-	0.05	2.100	2.373
102	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 1	DSI 6/9	Open	132072	1720	23.39	24.00	1.151	-	-	-0.08	2.460	2.831
	LTE Band 66	20M	QPSK	1	0	-	Back	0mm	Ant 2	DSI 5/6	Open	132572	1770	23.18	24.00	1.208	-	-	0.14	2.150	2.597
	LTE Band 66	20M	QPSK	1	0	-	Front	0mm	Ant 3	DSI 5	Open	132572	1770	22.94	24.00	1.276	-	-	0.17	1.990	2.540
	FR1 n66	40M	QPSK	1	1	DFT-15	Back	0mm	Ant 0	DSI 6/9	Open	349000	1745	23.00	24.00	1.259	-	-	0.15	1.330	1.674
	FR1 n66	40M	QPSK	108	54	DFT-15	Back	0mm	Ant 1	DSI 6/9	Open	349000	1745	23.05	24.00	1.245	-	-	-0.19	2.020	2.514
	FR1 n66	40M	QPSK	108	54	DFT-15	Left Side	0mm	Ant 2	DSI 5/6	Open	349000	1745	23.40	24.00	1.148	-	-	-0.18	2.260	2.595
103	FR1 n66	40M	QPSK	108	54	DFT-15	Top Side	0mm	Ant 3	DSI 5	Open	349000	1745	22.99	24.00	1.262	-	-	-0.16	2.080	2.625
	FR1 n70	15M	QPSK	36	22	DFT-15	Left Side	0mm	Ant 0	DSI 6/9	Open	340500	1702.5	23.66	24.00	1.081	-	-	0	1.590	1.719
104	FR1 n70	15M	QPSK	36	22	DFT-15	Left Side	0mm	Ant 2	DSI 5/6	Open	340500	1702.5	23.37	24.00	1.156	-	-	0.19	2.650	3.064
	FR1 n70	15M	QPSK	1	1	DFT-15	Top Side	0mm	Ant 3	DSI 5	Open	340500	1702.5	22.80	23.50	1.175	-	-	-0.1	2.600	3.055
1900 MHz																					
105	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Front	0mm	Ant 2	DSI 5/6	Open	512	1850.2	25.16	25.80	1.159	-	-	0.02	0.808	0.936
106	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	DSI 6/9	Open	9400	1880	23.10	24.00	1.230	-	-	-0.18	2.330	2.867
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	0mm	Ant 2	DSI 5/6	Open	9262	1852.4	23.67	24.00	1.079	-	-	-0.1	2.170	2.341
	LTE Band 25	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6/9	Open	26140	1860	23.75	24.00	1.059	-	-	0.02	2.370	2.510
107	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 1	DSI 6/9	Open	26590	1905	23.77	24.00	1.054	-	-	-0.12	2.910	3.068
	LTE Band 25	20M	QPSK	1	0	-	Front	0mm	Ant 2	DSI 5/6	Open	26590	1905	23.10	24.00	1.230	-	-	0.13	1.980	2.436
	LTE Band 25	20M	QPSK	1	0	-	Top Side	0mm	Ant 3	DSI 5	Open	26340	1880	22.96	24.00	1.271	-	-	0	1.970	2.503
	FR1 n25	40M	QPSK	1	1	DFT-15	Back	0mm	Ant 0	DSI 6/9	Open	376500	1882.5	23.50	24.00	1.122	-	-	-0.17	1.910	2.143
	FR1 n25	40M	QPSK	1	1	DFT-15	Bottom Side	0mm	Ant 1	DSI 6/9	Open	376500	1882.5	23.40	24.00	1.148	-	-	0.13	2.030	2.331
	FR1 n25	40M	QPSK	1	1	DFT-15	Back	0mm	Ant 2	DSI 5/6	Open	376500	1882.5	22.77	23.50	1.183	-	-	0.07	2.190	2.591
108	FR1 n25	40M	QPSK	1	1	DFT-15	Top Side	0mm	Ant 3	DSI 5	Open	376500	1882.5	22.99	24.00	1.262	-	-	0.08	2.130	2.688
2300 MHz																					
109	LTE Band 30	10M	QPSK	1	0	-	Bottom Side	0mm	Ant 1	DSI 6/9	Open	27710	2310	22.26	23.50	1.330	-	-	-0.12	1.930	2.568
	LTE Band 30	10M	QPSK	1	0	-	Left Side	0mm	Ant 2	DSI 5/6	Open	27710	2310	22.40	23.50	1.288	-	-	-0.06	1.950	2.512
	LTE Band 30	10M	QPSK	1	0	-	Front	0mm	Ant 3	DSI 5	Open	27710	2310	21.80	23.40	1.445	-	-	-0.16	1.760	2.544
110	FR1 n30	10M	QPSK	1	1	DFT-15	Bottom Side	0mm	Ant 1	DSI 6/9	Open	462000	2310	23.00	23.50	1.122	-	-	-0.04	2.790	3.130
	FR1 n30	10M	QPSK	1	1	DFT-15	Left Side	0mm	Ant 2	DSI 5/6	Open	462000	2310	23.18	24.00	1.208	-	-	0.03	1.740	2.102
	FR1 n30	10M	QPSK	25	14	DFT-15	Top Side	0mm	Ant 3	DSI 5	Open	462000	2310	21.50	22.50	1.259	-	-	0.16	2.370	2.984
2600 MHz																					
	LTE Band 7	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6/9	Open	21100	2535	23.38	24.00	1.153	-	-	0.12	2.350	2.711
111	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 1	DSI 6/9	Open	21100	2535	22.10	23.10	1.259	-	-	0.12	2.190	2.757
	LTE Band 7	20M	QPSK	1	0	-	Left Side	0mm	Ant 2	DSI 5/6	Open	20850	2510	22.00	22.70	1.175	-	-	-0.15	2.000	2.350
	LTE Band 7	20M	QPSK	1	0	-	Top Side	0mm	Ant 3	DSI 5	Open	21350	2560	19.00	20.50	1.413	-	-	-0.08	1.760	2.486
	LTE Band 41	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6/9	Open	40185	2549.5	23.49	24.00	1.125	62.9	1.006	-0.02	1.740	1.969
	LTE Band 41_HPUE	20M	QPSK	1	0	-	Back	0mm	Ant 0	DSI 6/9	Open	40185	2549.5	26.53	27.00	1.114	42.9	1.009	-0.01	2.010	2.260
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 1	DSI 6/9	Open	39790	2510	23.27	24.00	1.183	62.9	1.006	0.14	2.230	2.654
112	LTE Band 41_HPUE	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 1	DSI 6/9	Open	40620	2593	26.18	27.00	1.208	42.9	1.009	0.15	2.360	2.876
	LTE Band 41	20M	QPSK	1	0	-	Front	0mm	Ant 2	DSI 5/6	Open	40620	2593	23.36	24.00	1.159	62.9	1.006	-0.05	2.300	2.681
	LTE Band 41_HPUE	20M	QPSK	1	0	-	Front	0mm	Ant 2	DSI 5/6	Open	40620	2593	26.42	27.00	1.143	42.9	1.009	-0.09	2.470	2.848
	LTE Band 41	20M	QPSK	1	0	-	Top Side	0mm	Ant 3	DSI 5	Open	41055	2636.5	21.38	22.60	1.324	62.9	1.006	0.08	1.630	2.172
	LTE Band 41_HPUE	20M	QPSK	1	0	-	Top Side	0mm	Ant 3	DSI 5	Open	41055	2636.5	23.12	24.20	1.282	42.9	1.009	-0.15	1.770	2.290
	FR1 n7	40M	QPSK	1	1	DFT-15	Back	0mm	Ant 0	DSI 6/9	Open	507000	2535	23.45	24.00	1.135	-	-	0.17	1.940	2.202



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113	FR1 n7	40M	QPSK	1	1	DFT-15	Bottom Side	0mm	Ant 1	DSI 6/9	Open	507000	2535	22.75	23.50	1.189	-	-	-0.06	2.580	3.066
	FR1 n7	40M	QPSK	1	1	DFT-15	Left Side	0mm	Ant 2	DSI 5/6	Open	507000	2535	22.88	23.50	1.153	-	-	0.19	2.020	2.330
	FR1 n7	40M	QPSK	108	54	DFT-15	Top Side	0mm	Ant 3	DSI 5	Open	507000	2535	20.47	21.50	1.268	-	-	-0.18	1.940	2.459
	FR1 n41	100M	QPSK	1	1	DFT-30	Back	0mm	Ant 0	DSI 6/9	Open	518598	2592.99	23.45	24.00	1.135	-	-	-0.03	2.050	2.327
	FR1 n41_HPUE	100M	QPSK	1	1	DFT-30	Back	0mm	Ant 0	DSI 6/9	Open	518598	2592.99	26.32	27.00	1.169	50	1.000	-0.06	2.030	2.374
	FR1 n41	100M	QPSK	1	1	DFT-30	Bottom Side	0mm	Ant 1	DSI 6/9	Open	518598	2592.99	23.50	24.00	1.122	-	-	0.05	2.340	2.626
	FR1 n41_HPUE	100M	QPSK	1	1	DFT-30	Bottom Side	0mm	Ant 1	DSI 6/9	Open	518598	2592.99	26.23	27.00	1.194	50	1.000	-0.18	2.260	2.698
	FR1 n41	100M	QPSK	1	1	DFT-30	Front	0mm	Ant 2	DSI 5/6	Open	518598	2592.99	23.00	23.50	1.122	-	-	-0.11	2.350	2.637
	FR1 n41_HPUE	100M	QPSK	1	1	DFT-30	Front	0mm	Ant 2	DSI 5/6	Open	518598	2592.99	25.75	26.50	1.189	50	1.000	0.09	2.260	2.686
114	FR1 n41	100M	QPSK	1	1	DFT-30	Top Side	0mm	Ant 3	DSI 5	Open	518598	2592.99	20.42	21.50	1.282	-	-	0.14	2.440	3.129
	FR1 n41_HPUE	100M	QPSK	1	1	DFT-30	Top Side	0mm	Ant 3	DSI 5	Open	518598	2592.99	23.62	24.50	1.225	50	1.000	-0.1	2.470	3.025
3-5GHz																					
	LTE Band 48	20M	QPSK	1	0	-	Top Side	0mm	Ant 3	DSI 5	Open	56640	3690	22.01	22.50	1.119	62.9	1.006	0.19	1.840	2.072
	LTE Band 48	20M	QPSK	1	0	-	Left Side	0mm	Ant 4	DSI 5/6	Open	56150	3641	22.01	22.80	1.199	62.9	1.006	-0.19	2.320	2.800
	LTE Band 48	20M	QPSK	1	0	-	Top Side	0mm	Ant 6	DSI 5	Open	56640	3690	21.72	23.50	1.507	62.9	1.006	0.07	1.750	2.652
115	LTE Band 48	20M	QPSK	1	0	-	Right Side	0mm	Ant 8	DSI 5/6	Open	56640	3690	22.81	23.50	1.172	62.9	1.006	-0.18	2.540	2.995
	FR1 n48	40M	QPSK	50	28	DFT-30	Top Side	0mm	Ant 3	DSI 5	Open	541668	3624.99	19.83	20.50	1.167	-	-	-0.16	2.040	2.380
116	FR1 n48	40M	QPSK	50	28	DFT-30	Left Side	0mm	Ant 4	DSI 5/6	Open	545332	3679.98	19.62	20.50	1.225	-	-	-0.11	2.140	2.621
	FR1 n48	40M	QPSK	1	1	DFT-30	Top Side	0mm	Ant 6	DSI 5	Open	545332	3679.98	19.11	20.00	1.227	-	-	-0.14	2.060	2.529
	FR1 n48	40M	QPSK	50	28	DFT-30	Right Side	0mm	Ant 8	DSI 5/6	Open	538000	3570	19.71	20.50	1.199	-	-	-0.14	1.980	2.375
	FR1 n77_Part270	100M	QPSK	1	1	DFT-30	Top Side	0mm	Ant 3	DSI 5	Open	556000	3840	19.91	20.50	1.146	-	-	0.07	1.750	2.005
	FR1 n77_Part270_HPUE	100M	QPSK	1	1	DFT-30	Top Side	0mm	Ant 3	DSI 5	Open	556000	3840	22.88	23.50	1.153	50	1.000	0.02	1.730	1.995
	FR1 n77_Part270	100M	QPSK	1	1	DFT-30	Left Side	0mm	Ant 4	DSI 5/6	Open	556000	3840	20.92	21.50	1.143	-	-	0.01	2.540	2.903
117	FR1 n77_Part270_HPUE	100M	QPSK	1	1	DFT-30	Left Side	0mm	Ant 4	DSI 5/6	Open	556000	3840	23.63	24.50	1.222	50	1.000	-0.09	2.460	3.006
	FR1 n77_Part270	100M	QPSK	1	1	DFT-30	Top Side	0mm	Ant 6	DSI 5	Open	556000	3840	19.77	20.50	1.183	-	-	0.13	2.430	2.875
	FR1 n77_Part270_HPUE	100M	QPSK	1	1	DFT-30	Top Side	0mm	Ant 6	DSI 5	Open	556000	3840	22.57	23.50	1.239	50	1.000	0.01	2.310	2.862
	FR1 n77_Part270	100M	QPSK	1	1	DFT-30	Right Side	0mm	Ant 8	DSI 5/6	Open	556000	3840	20.88	21.50	1.153	-	-	0.05	2.390	2.757
	FR1 n77_Part270_HPUE	100M	QPSK	1	1	DFT-30	Right Side	0mm	Ant 8	DSI 5/6	Open	556000	3840	23.85	24.50	1.161	50	1.000	0.16	2.220	2.578

UL MIMO

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	EUT Flip State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
1750MHz																					
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Side	0mm	Ant 2+3	DSI 5/6	Open	349000	1745	26.16	27.00	1.213	-	-	-0.14	2.140	2.595
	FR1 n66	40M	QPSK	1	1	DFT-15	Left Side	0mm	Ant 2+1	DSI 5/6/9	Open	349000	1745	26.62	27.00	1.093	-	-	0.09	2.020	2.207
	FR1 n66	40M	QPSK	1	1	DFT-15	Top Side	0mm	Ant 0+3	DSI 5/6/9	Open	349000	1745	26.27	27.00	1.184	-	-	0.06	2.160	2.557
	FR1 n66	40M	QPSK	1	1	DFT-15	Back	0mm	Ant 0+1	DSI 6/9	Open	349000	1745	26.51	27.00	1.119	-	-	-0.12	2.280	2.552
1900MHz																					
	FR1 n25	40M	QPSK	1	1	DFT-15	Back	0mm	Ant 2+3	DSI 5/6	Open	376500	1882.5	25.58	26.50	1.237	-	-	-0.06	2.110	2.609
	FR1 n25	40M	QPSK	1	1	DFT-15	Back	0mm	Ant 2+1	DSI 5/6/9	Open	376500	1882.5	25.90	26.50	1.148	-	-	-0.04	1.950	2.239
	FR1 n25	40M	QPSK	1	1	DFT-15	Top Side	0mm	Ant 0+3	DSI 5/6/9	Open	376500	1882.5	26.35	27.00	1.162	-	-	0.02	2.250	2.614
	FR1 n25	40M	QPSK	1	1	DFT-15	Bottom Side	0mm	Ant 0+1	DSI 6/9	Open	376500	1882.5	26.15	27.00	1.216	-	-	-0.09	2.150	2.614
2600MHz																					
	FR1 n41_PC2	100M	QPSK	135	69	DFT-30	Top Side	0mm	Ant 2+3	DSI 5/6	Open	518598	2592.99	26.14	27.00	1.219	50	1.000	-0.12	2.070	2.523
	FR1 n41_PC2	100M	QPSK	1	1	DFT-30	Bottom Side	0mm	Ant 2+1	DSI 5/6/9	Open	518598	2592.99	26.06	27.00	1.243	50	1.000	-0.09	0.861	1.070
	FR1 n41_PC1.5	100M	QPSK	135	69	DFT-30	Top Side	0mm	Ant 0+3	DSI 5/6/9	Open	518598	2592.99	28.56	30.00	1.392	25	1.000	0.14	1.420	1.977
	FR1 n41_PC1.5	100M	QPSK	135	69	DFT-30	Bottom Side	0mm	Ant 0+1	DSI 6/9	Open	518598	2592.99	28.70	30.00	1.349	25	1.000	-0.07	0.924	1.246
3G-4G																					
	FR1 n48	40M	QPSK	1	1	CP-30	Left Side	0mm	Ant 4+8	DSI 5/6	Open	545332	3679.98	22.66	24.00	1.362	-	-	0.04	1.850	2.520
	FR1 n48	40M	QPSK	1	1	CP-30	Left Side	0mm	Ant 4+6	DSI 5/6	Open	545332	3679.98	21.64	23.50	1.536	-	-	-0.18	1.680	2.580
	FR1 n48	40M	QPSK	1	1	CP-30	Top Side	0mm	Ant 3+8	DSI 5/6	Open	545332	3679.98	22.40	24.00	1.445	-	-	0.11	1.800	2.602
	FR1 n48	40M	QPSK	53	27	CP-30	Top Side	0mm	Ant 3+6	DSI 5	Open	545332	3679.98	20.18	22.00	1.520	-	-	-0.01	1.720	2.615
	FR1 n77_Part270_PC1.5	100M	QPSK	1	1	DFT-30	Left Side	0mm	Ant 4+8	DSI 5/6	Open	556000	3840	28.20	29.00	1.202	25	1.000	0.16	1.800	2.164
	FR1 n77_Part270_PC1.5	100M	QPSK	135	69	DFT-30	Left Side	0mm	Ant 4+6	DSI 5/6	Open	533332	3499.98	28.58	29.50	1.237	25	1.000	0.16	2.160	2.672

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FR1 n77_Part27Q_PC2	100M	QPSK	1	1	DFT-30	Right Side	0mm	Ant 3+8	DSI 5/6	Open	633332	3499.98	25.15	26.00	1.215	50	1.000	0.08	1.500	1.823
FR1 n77_Part27O_PC2	100M	QPSK	270	0	DFT-30	Top Side	0mm	Ant 3+6	DSI 5	Open	656000	3840	25.63	26.50	1.222	50	1.000	0.11	2.170	2.651

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	EUT Flip State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
2450 MHz																	
118	Bluetooth	DH5 1Mbps	Right Side	0mm	Ant 7	DSI 5/6	Open	0	2402	16.32	18.00	1.472	77.07	1.298	0.03	1.630	3.115
	Bluetooth	DH5 1Mbps	Top Side	0mm	Ant 5	DSI 5	Open	39	2441	19.00	20.50	1.413	77.07	1.298	-0.01	0.150	0.275
119	WLAN2.4GHz	802.11b 1Mbps	Right Side	0mm	Ant 7+5	DSI 5/6	Open	11	2462	18.09	20.00	1.552	98.53	1.015	0.06	1.470	2.316
5 GHz																	
120	WLAN5.2GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 7+5(7)	DSI 5/6	Open	46	5230	18.40	20.00	1.444	100	1.000	0.05	1.750	2.527
121	WLAN5.3GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 7+5(7)	DSI 5/6	Open	54	5270	18.22	20.00	1.505	100	1.000	0	1.530	2.303
122	WLAN5.5GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 7+5(7)	DSI 5/6	Open	110	5550	18.18	20.00	1.519	100	1.000	-0.02	1.270	1.929
123	WLAN5.8GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 7+5(7)	DSI 5/6	Open	159	5795	18.03	19.50	1.401	100	1.000	-0.15	1.760	2.466

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	EUT Flip State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)	Measured APD (W/m^2)
124	WLAN6GHz	802.11be-EHT320 MCS0	Right Side	0mm	Ant 7+5(7)	DSI 5/6	Open	127	6585	11.34	13.00	1.465	98.85	1.012	0.03	0.140	0.208	3.26

<NFC SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Freq. (MHz)	EUT Flip State	Power Drift (dB)	Measured 10g SAR (W/kg)
125	NFC	ASK	Back	0mm	13.56	Flip Open	-0.19	0.019

13.5 6GHz PD Test Result

<WLAN PD>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	EUT Flip State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Grid Step (A)	Scaling Factor for Measurement Uncertainty	Power Drift (dB)	Normal psPD (W/m^2)	Scaled Normal psPD (W/m^2)	Total psPD (W/m^2)	Scaled Total psPD (W/m^2)
01	WLAN6GHz	802.11be-EHT320 MCS0	Right Side	2mm	Ant 7+5(7)	Open	127	6585	11.34	13.00	1.465	98.85	1.012	0.0625	1.5535	-0.03	1.7	3.92	2.51	5.78
	WLAN6GHz	802.11be-EHT320 MCS0	Front	2mm	Ant 7+5(7)	Close	127	6585	11.34	13.00	1.465	98.85	1.012	0.0625	1.5535	0.06	1.84	4.24	2.13	4.91



13.6 Repeated SAR Measurement

<1g>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	EUT Flip State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 11	Close	4132	826.4	23.38	24.00	1.153	-	-	-0.03	0.888	1	1.024
2nd	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI 11	Close	4132	826.4	23.38	24.00	1.153	-	-	-0.03	0.841	1.056	0.970
1st	FR1 n70	15M	QPSK	36	22	DFT-15	Left Side	5mm	Ant 0	DSI 7	Open	340500	1702.5	22.54	23.00	1.112	-	-	-0.14	1.150	1	1.278
2nd	FR1 n70	15M	QPSK	36	22	DFT-15	Left Side	5mm	Ant 0	DSI 7	Open	340500	1702.5	22.54	23.00	1.112	-	-	0.05	1.050	1.095	1.167
1st	LTE Band 25	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 11	Close	26590	1905	23.77	24.00	1.054	-	-	0.18	1.190	1	1.255
2nd	LTE Band 25	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI 11	Close	26590	1905	23.77	24.00	1.054	-	-	0.05	1.100	1.082	1.160
1st	LTE Band 30	10M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 7	Open	27710	2310	23.59	24.00	1.099	-	-	0.16	1.110	1	1.220
2nd	LTE Band 30	10M	QPSK	1	0	-	Back	5mm	Ant 0	DSI 7	Open	27710	2310	23.59	24.00	1.099	-	-	0.02	1.010	1.099	1.110
1st	FR1 n41	100M	QPSK	1	1	DFT-30	Bottom Side	5mm	Ant 1	DSI 7	Open	518598	2592.99	21.46	22.00	1.132	-	-	0.18	1.110	1	1.257
2nd	FR1 n41	100M	QPSK	1	1	DFT-30	Bottom Side	5mm	Ant 1	DSI 7	Open	518598	2592.99	21.46	22.00	1.132	-	-	0.06	1.000	1.110	1.132
1st	WLAN5.8GHz	-	-	-	-	802.11ac-VHT80 MCS0	Right Side	5mm	Ant 7+5	DSI 11	Close	155	5775	20.14	21.50	1.368	99.26	1.007	0.06	0.803	1	1.106
2nd	WLAN5.8GHz	-	-	-	-	802.11ac-VHT80 MCS0	Right Side	5mm	Ant 7+5	DSI 11	Close	155	5775	20.14	21.50	1.368	99.26	1.007	0.02	0.750	1.071	1.033
1st	LTE Band 48	20M	QPSK	1	0	-	Front	5mm	Ant 3	DSI 3	Open	56640	3690	22.39	23.00	1.151	62.9	1.006	0.02	0.910	1	1.054
2nd	LTE Band 48	20M	QPSK	1	0	-	Front	5mm	Ant 3	DSI 3	Open	56640	3690	22.39	23.00	1.151	62.9	1.006	0.05	0.840	1.083	0.972
1st	FR1 n77_Part27Q	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 4	DSI 3	Open	633332	3499.98	18.88	19.50	1.153	-	-	-0.08	0.972	1	1.121
2nd	FR1 n77_Part27Q	100M	QPSK	1	1	DFT-30	Front	5mm	Ant 4	DSI 3	Open	633332	3499.98	18.88	19.50	1.153	-	-	0.04	0.940	1.034	1.084
1st	FR1 n77_Part27O	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 8	DSI 3	Open	656000	3840	20.31	21.00	1.172	-	-	0.03	1.070	1	1.254
2nd	FR1 n77_Part27O	100M	QPSK	135	69	DFT-30	Back	5mm	Ant 8	DSI 3	Open	656000	3840	20.31	21.00	1.172	-	-	0.11	0.930	1.151	1.090

<10g>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	EUT Flip State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Ratio	Reported 10g SAR (W/kg)
1st	FR1 n70	15M	QPSK	36	22	DFT-15	Left Side	0mm	Ant 2	DSI 5/6	Open	340500	1702.5	23.37	24.00	1.156	-	-	0.19	2.650	1	3.064
2nd	FR1 n70	15M	QPSK	36	22	DFT-15	Left Side	0mm	Ant 2	DSI 5/6	Open	340500	1702.5	23.37	24.00	1.156	-	-	0.19	2.570	1.031	2.971
1st	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 1	DSI 6/9	Open	26590	1905	23.77	24.00	1.054	-	-	-0.12	2.910	1	3.068
2nd	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 1	DSI 6/9	Open	26590	1905	23.77	24.00	1.054	-	-	-0.12	2.740	1.062	2.889
1st	FR1 n30	10M	QPSK	1	1	DFT-15	Bottom Side	0mm	Ant 1	DSI 6/9	Open	462000	2310	23.00	23.50	1.122	-	-	-0.04	2.790	1	3.130
2nd	FR1 n30	10M	QPSK	1	1	DFT-15	Bottom Side	0mm	Ant 1	DSI 6/9	Open	462000	2310	23.00	23.50	1.122	-	-	0.02	2.610	1.069	2.928
1st	FR1 n7	40M	QPSK	1	1	DFT-15	Bottom Side	0mm	Ant 1	DSI 6/9	Open	507000	2535	22.75	23.50	1.189	-	-	-0.06	2.580	1	3.066
2nd	FR1 n7	40M	QPSK	1	1	DFT-15	Bottom Side	0mm	Ant 1	DSI 6/9	Open	507000	2535	22.75	23.50	1.189	-	-	-0.01	2.370	1.089	2.817
1st	LTE Band 48	20M	QPSK	1	0	-	Right Side	0mm	Ant 8	DSI 5/6	Open	56640	3690	22.81	23.50	1.172	62.9	1.006	-0.18	2.540	1	2.995
2nd	LTE Band 48	20M	QPSK	1	0	-	Right Side	0mm	Ant 8	DSI 5/6	Open	56640	3690	22.81	23.50	1.172	62.9	1.006	-0.18	2.370	1.072	2.795
1st	FR1 n77_Part27O	100M	QPSK	1	1	DFT-30	Left Side	0mm	Ant 4	DSI 5/6	Open	656000	3840	20.92	21.50	1.143	-	-	0.01	2.540	1	2.903
2nd	FR1 n77_Part27O	100M	QPSK	1	1	DFT-30	Left Side	0mm	Ant 4	DSI 5/6	Open	656000	3840	20.92	21.50	1.143	-	-	0.05	2.400	1.058	2.743

General Note:

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

14. 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 + WLAN6GHz	Yes	Yes		Yes
4.	WWAN + Bluetooth	Yes	Yes	Yes	Yes
5.	WLAN5GHz + Bluetooth	Yes	Yes	Yes	Yes
6.	WLAN6GHz + Bluetooth	Yes	Yes		Yes
7.	WLAN2.4GHz + WLAN5GHz	Yes	Yes	Yes	Yes
8.	WLAN2.4GHz + WLAN6GHz	Yes	Yes		Yes
9.	WWAN + WLAN5GHz + Bluetooth	Yes	Yes	Yes	Yes
10.	WWAN + WLAN6GHz + Bluetooth	Yes	Yes		Yes
11.	WWAN + WLAN2.4GHz + WLAN5GHz	Yes	Yes	Yes	Yes
12.	WWAN + WLAN2.4GHz + WLAN6GHz	Yes	Yes		Yes
13.	WWAN + WLAN2.4GHz + NFC				Yes
14.	WWAN + WLAN5GHz/6GHz + NFC				Yes
15.	WWAN + Bluetooth + NFC				Yes
16.	WLAN5GHz/6GHz + Bluetooth + NFC				Yes
17.	WLAN2.4GHz + WLAN5GHz/6GHz + NFC				Yes
18.	WWAN + WLAN5GHz/6GHz + Bluetooth + NFC				Yes
19.	WWAN + WLAN2.4GHz + WLAN5GHz/6GHz +NFC				Yes

General Note:

- This device supports VoIP in GPRS, EGPRS, WCDMA, LTE and 5GNR (e.g. for 3rd-party VoIP), LTE supports VoLTE operation.
- WWAN above includes 5G NR bands and EN-DC combination.
- EUT will choose each GSM, WCDMA, LTE and 5GNR according to the network signal condition; therefore, they will not operate simultaneously at any moment.
- This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications.
- 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). WLAN6GHz has no hotspot function.
- The worst case 5 GHz WLAN SAR for each configuration was used for SAR summation.
- According to the EUT characteristic, WLAN 5GHz/6GHz and Bluetooth can transmit simultaneously.
- According to the EUT characteristic, WLAN 5GHz/6GHz and WLAN 2.4GHz can't transmit simultaneously.
- According to the EUT characteristic, WLAN 5GHz and WLAN 6GHz can't transmit simultaneously.
- According to the EUT characteristic, WLAN 2.4GHz and Bluetooth cannot transmit simultaneously.
- NFC can transmit simultaneously with other Radios in extremity exposure condition.
- The maximum SAR summation is calculated based on the same configuration and test position.
- The equipment under test (EUT) contains the Qualcomm modems supporting WWAN/WLAN/BT technologies. these modems are always enabled with Qualcomm Smart Transmit feature to control and manage transmitting power in real time and to ensure the time-averaged RF exposure follows the FCC requirement. Qualcomm Smart Transmit algorithm in WWAN/WLAN/BT directly adds the time-averaged RF exposure from WWAN/WLAN/BT. Smart Transmit algorithm controls the total RF exposure from all WWAN/WLAN/BT to not exceed FCC limit. Therefore, simultaneous transmission compliance between WWAN/WLAN/BT operations is demonstrated in the Part 2 Report during algorithm validation. Simultaneous SAR for WWAN/WLAN/BT in a DSI is the worst-case reported SAR of WWAN/WLAN/BT.
- Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
 - 1g Scalar SAR summation < 1.6W/kg and 10g Scalar SAR summation < 4.0W/kg.
 - $SPLSR = (SAR1 + SAR2)^{1.5} / (\min. \text{ separation distance, mm})$, 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.
 - If $SPLSR \leq 0.04$ for 1g SAR and $SPLSR \leq 0.10$ for 10g SAR, simultaneously transmission SAR measurement is not necessary.
 - Simultaneously transmission SAR measurement, and the reported multi-band 1g SAR < 1.6W/kg and 10g SAR < 4.0W/kg.



Conclusion: For simultaneously transmission SAR analysis, the maximum SAR from chapter 13.1 to 13.4 are most less than original report (Sporton Report Number FA420703). However, 2G/3G/4G/5G/wifi/BT all support Qualcomm Smart Transmit algorithm and are all in the same group, and the maximum SAR of each exposure conditions is smaller than that of each exposure conditions in the original report, so the standalone reported SAR in the original filing was used to determine simultaneous transmission compliance as it is more conservative. Please see the original filing for complete evaluation of simultaneous transmission analysis.

Test Engineer : Kevin Xu, David Dai, Bin He

15. 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 $\leq 30\%$, 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.

Declaration of Conformity:

The test results with all measurement uncertainty excluded is 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.

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

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

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

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

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

(b) k is the coverage factor

Standard Uncertainty for Assumed Distribution

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

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

The judgment of conformity in the report is based on the measurement results excluding the measurement uncertainty.

Uncertainty Budget According to IEC/IEEE 62209-1528 (Frequency band: 4 MHz - 10 GHz range)							
Error Description	Uncert. Value (±%)	Prob. Dist.	Div.	(Ci) 1g	(Ci) 10g	Standard Uncertainty (1g) (±%)	Standard Uncertainty (10g) (±%)
Measurement System errors							
Probe calibration	18.6	N	2	1	1	9.3	9.3
Probe calibration drift	1.7	R	1.732	1	1	1.0	1.0
Probe linearity and detection Limit	4.7	R	1.732	1	1	2.7	2.7
Broadband signal	2.8	R	1.732	1	1	1.6	1.6
Probe isotropy	7.6	R	1.732	1	1	4.4	4.4
Other probe and data acquisition errors	2.4	N	1	1	1	2.4	2.4
RF ambient and noise	1.8	N	1	1	1	1.8	1.8
Probe positioning errors	0.006	N	1	0.5	0.5	0.0	0.0
Data processing errors	4.0	N	1	1	1	4.0	4.0
Phantom and Device Errors							
Measurement of phantom conductivity (σ)	2.5	N	1	0.78	0.71	2.0	1.8
Temperature effects (medium)	5.4	R	1.732	0.78	0.71	2.4	2.2
Shell permittivity	14.0	R	1.732	0.5	0.5	4.0	4.0
Distance between the radiating element of the DUT and the phantom medium	2.0	N	1	2	2	4.0	4.0
Repeatability of positioning the DUT or source against the phantom	1.0	N	1	1	1	1.0	1.0
Device holder effects	3.6	N	1	1	1	3.6	3.6
Effect of operating mode on probe sensitivity	2.4	R	1.732	1	1	1.4	1.4
Time-average SAR	1.7	R	1.732	1	1	1.0	1.0
Variation in SAR due to drift in output of DUT	2.5	N	1	1	1	2.5	2.5
Validation antenna uncertainty (validation measurement only)	0.0	N	1	1	1	0.0	0.0
Uncertainty in accepted power (validation measurement only)	0.0	N	1	1	1	0.0	0.0
Correction to the SAR results							
Phantom deviation from target ($\epsilon^{\sim}, \sigma$)	1.9	N	1	1	0.84	1.9	1.6
SAR scaling	0.0	R	1.732	1	1	0.0	0.0
Combined Std. Uncertainty						14.5%	14.4%
Coverage Factor for 95 %						K=2	K=2
Expanded STD Uncertainty						29.0%	28.8%

cDASY6 Module mmWave Uncertainty Budget Evaluation Distances to the Antennas > $\lambda/2\pi$ In Compliance with IEC TR 63170					
Error Description	Uncertainty Value ($\pm$ dB)	Probability	Divisor	(Ci)	Standard Uncertainty ($\pm$ dB)
Uncertainty terms dependent on the measurement system					
Probe Calibration	0.49	N	1	1	0.49
Probe correction	0.00	R	1.732	1	0.00
Frequency response	0.20	R	1.732	1	0.12
Sensor cross coupling	0.00	R	1.732	1	0.00
Isotropy	0.50	R	1.732	1	0.29
Linearity	0.20	R	1.732	1	0.12
Probe scattering	0.00	R	1.732	1	0.00
Probe positioning offset	0.30	R	1.732	1	0.17
Probe positioning repeatability	0.04	R	1.732	1	0.02
Sensor mechanical offset	0.00	R	1.732	1	0.00
Probe spatial resolution	0.00	R	1.732	1	0.00
Field impedance dependence	0.00	R	1.732	1	0.00
Amplitude and phase drift	0.00	R	1.732	1	0.00
Amplitude and phase noise	0.04	R	1.732	1	0.02
Measurement area truncation	0.00	R	1.732	1	0.00
Data acquisition	0.03	N	1	1	0.03
Sampling	0.00	R	1.732	1	0.00
Field reconstruction	2.00	R	1.732	1	1.15
Forward transformation	0.00	R	1.732	1	0.00
Power density scaling	0.00	R	1.732	1	0.00
Spatial averaging	0.10	R	1.732	1	0.06
System detection limit	0.04	R	1.732	1	0.02
Uncertainty terms dependent on the DUT and environmental factors					
Probe coupling with DUT	0.00	R	1.732	1	0.0
Modulation response	0.40	R	1.732	1	0.2
Integration time	0.00	R	1.732	1	0.0
Response time	0.00	R	1.732	1	0.0
Device holder influence	0.10	R	1.732	1	0.1
DUT alignment	0.00	R	1.732	1	0.0
RF ambient conditions	0.04	R	1.732	1	0.0
Ambient reflections	0.04	R	1.732	1	0.0
Immunity / secondary reception	0.00	R	1.732	1	0.0
Drift of the DUT		R	1.732	1	
Combined Std. Uncertainty					1.34
Expanded STD Uncertainty (95%)					2.68

PD Uncertainty Budget

16. References

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- [18] SPEAG DASY6 Application Note (Interim Procedures for Devices Operating at 6-10 GHz)



Appendixes

Please refer to separated files for the following appendixes

Appendix A. Plots of System Performance Check

Appendix B. Plots of High SAR Measurement

Appendix C. DASY Calibration Certificate

Appendix D. Test Setup Photos

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