

FCC SAR Test Report

APPLICANT : Xiaomi Communications Co., Ltd.
EQUIPMENT : Mobile Phone
BRAND NAME : Redmi
MODEL NAME : 24090RA29G
FCC ID : 2AFZZRA29G
STANDARD : FCC 47 CFR Part 2 (2.1093)

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



Approved by: Si Zhang

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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA471506	Rev. 01	Initial issue of report.	Aug. 19, 2024
FA471506	Rev. 02	Updated LTE Band 7/38/41 and 5GNR n7/41 at ant4 relevant data. This report is an updated version, replacing the report issued on Aug. 19, 2024.	Sep. 11, 2024
FA471506	Rev. 03	Added CA_2A-2A-5A 3CC Downlink Carrier Aggregation and DC_2A-5A_n78A EN-DC combination This report is an updated version, replacing the report issued on Sep. 11, 2024.	Sep. 26, 2024



1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Xiaomi Communications Co., Ltd., Mobile Phone, 24090RA29G**, are as follows.

Highest 1g SAR Summary						
Equipment Class	Frequency Band		Head (Separation 0mm)	Hotspot (Separation 10mm)	Body-worn (Separation 10mm)	Highest Simultaneous Transmission 1g SAR (W/kg)
			1g SAR (W/kg)			
Licensed	GSM	GSM850	0.96	0.59	0.53	1.59
		GSM1900	0.97	0.96	0.52	
	WCDMA	WCDMA II	0.96	0.85	0.47	
		WCDMA IV	0.85	1.04	0.72	
		WCDMA V	1.04	0.46	0.43	
	LTE	LTE Band 2	0.85	0.99	0.40	
		LTE Band 4	0.81	1.06	0.71	
		LTE Band 5	0.96	0.36	0.36	
		LTE Band 7	0.82	0.97	0.48	
		LTE Band 12/17	0.92	0.50	0.30	
		LTE Band 13	1.01	0.34	0.26	
		LTE Band 26	1.05	0.44	0.44	
		LTE Band 66	0.94	1.04	0.64	
		LTE Band 38	0.73	0.43	0.31	
		LTE Band 41	0.82	0.42	0.30	
		LTE Band 42	0.98	1.06	1.06	
		LTE Band 48	1.09	0.75	0.75	
		5G NR	FR1 n2	1.07	1.09	
	FR1 n5		1.07	0.44	0.38	
	FR1 n7		0.93	0.76	0.50	
	FR1 n66		1.04	1.09	0.73	
	FR1 n38		0.78	0.72	0.56	
	FR1 n41		0.91	0.76	0.58	
FR1 n48	1.09		1.08	0.96		
FR1 n77	1.08		0.80	0.79		
	FR1 n78	1.06	1.06	0.86		
DTS	WLAN	2.4GHz WLAN	1.05	0.38	0.24	1.58
NII		5GHz WLAN	1.09	0.59	0.59	1.59
DSS	Bluetooth	2.4GHz Bluetooth	0.17	<0.01	<0.01	1.59
Highest 10g SAR Summary						
Equipment Class	Frequency Band		Product Specific 10g SAR (W/kg) (Separation 0mm)			Highest Simultaneous Transmission 10g SAR (W/kg)
NII	WLAN	5GHz WLAN	1.68			1.68
Date of Testing:			2024/7/20~ 2024/9/2			
Remark: This device supports LTE B17 and B12. Since the supported frequency span for LTE B17 falls completely within the supports frequency span for LTE B12, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE B12.						



Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg for Partial-Body 1g SAR, 4.0 W/kg for Product Specific 10g SAR) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications.

2. Administration Data

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

Table with 4 columns: Test Firm, Test Site Location, Test Site No., and FCC Test Firm Registration No. under the heading 'Testing Laboratory'.

Table with 2 columns: Company Name and Address under the heading 'Applicant'.

Table with 2 columns: Company Name and Address under the heading 'Manufacturer'.



3. Guidance Applied

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards:

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 648474 D04 SAR Evaluation Considerations for Wireless Handsets v01r03
- FCC KDB 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB 616217 D04 SAR for laptop and tablets v01r02
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D05A Rel.10 LTE SAR Test Guidance v01r02
- FCC KDB 941225 D06 Hotspot Mode SAR v02r01



4. Equipment Under Test (EUT) Information

4.1 General Information

Product Feature & Specification	
Equipment Name	Mobile Phone
Brand Name	Redmi
Model Name	24090RA29G
FCC ID	2AFZZRA29G
IMEI Code	Sample 1: IMEI1:861793070042864 IMEI2:861793070042872 Sample 2: IMEI1:861793070060502 IMEI2:861793070060510 Sample 4: IMEI1:861793070045545 IMEI2:861793070045552
Wireless Technology and Frequency Range	GSM850: 824 MHz ~ 849 MHz GSM1900: 1850 MHz ~ 1910 MHz WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 42: 3450 MHz ~ 3550 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz 5G NR n2: 1850 MHz ~ 1910 MHz 5G NR n5: 824 MHz ~ 849 MHz 5G NR n7: 2500 MHz ~ 2570 MHz 5G NR n66: 1710 MHz ~ 1780 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 WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5720 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC: 13.56 MHz
Mode	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+(16QAM uplink is supported) LTE: QPSK, 16QAM, 64QAM, 256QAM 5G NR: CP-OFDM / DFT-s-OFDM, PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM



	WLAN 2.4GHz 802.11b/g/n HT20 WLAN 2.4GHz 802.11ax HE20 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac/ax VHT20/VHT40/VHT80/HE20/HE40/HE80 Bluetooth BR/EDR/LE NFC: ASK
HW Version	135300O16
SW Version	Xiaomi HyperOS 1.0
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. For dual SIM card mobile has two SIM slots and supports Dual SIM Dual Access. Dual-SIM Dual-Access means that two mobile phone cards can be inserted into the mobile phone and it can answer calls at the same time.
6. The device implements Proximity sensors/receiver detect mechanism reduced power for the power management for SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity). The device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to appendix E. power table.
7. For WLAN/BT when transmit simultaneously with each other, or when transmit simultaneous with WWAN/BT, power reduction will be activated to head, Body and hotspot exposure conditions.
8. 5G NR n77/n78 supports HPUE mode, HPUE power and SAR testing performed separately.
9. 5G NR n77/n78 HUPE with higher power, 5G NR n77/n78 HUPE SAR can represent power class 3 level SAR.
10. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
11. For 5G NR EN-DC mode, standalone SAR performed for 5G NR NSA band with the maximum power, EN-DC SAR summed EN-DC mode 5G NR standalone SAR and LTE standalone SAR, the result of EN-DC SAR is more conservatively.
12. The device supports the UL duty cycle detection mechanism limited to LTE TDD frequency bands (LTE Band 38/41/42/48) and 5G NR TDD frequency bands (5G NR n38/41/48/77/78).
13. There are four samples for the differences are as the following table shows. According to the difference, sample 1 was chosen to perform full test and sample 2/4 verified the worst cases. For sample 3, the differences do not affect the test, so sample3 is not tested.

Sample	Memory	Battery	Screen
Sample 1	8+256G	Battery 1(NVT)	3rd Screen(Visionox)
Sample 2	8+128G	Battery 2(SWD)	2nd Screen(TIANMA)
Sample 3	12+256G	Battery 1(NVT)	3rd Screen(Visionox)
Sample 4	12+512G	Battery 1(NVT)	1st Screen(China Star)

14. This device has NFC function and the NFC SAR report will be separately submitted.
15. This device supports 5G NR 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	n5	FDD	15	5, 10, 15, 20
	n7	FDD	15	5, 10, 15, 20, 25, 30, 40, 50
	n66	FDD	15	5, 10, 15, 20, 25, 30, 40
	n38	TDD	30	10, 15, 20, 25, 30, 40
	n41	TDD	30	10, 15, 20, 30, 40, 50, 60, 80, 90, 100
	n77	TDD	30	10, 15, 20, 40, 50, 60, 80, 90, 100
	n78	TDD	30	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100
SA	n2	FDD	15	5, 10, 15, 20
	n5	FDD	15	5, 10, 15, 20
	n7	FDD	15	5, 10, 15, 20, 25, 30, 40, 50
	n66	FDD	15	5, 10, 15, 20, 25, 30, 40
	n38	TDD	30	10, 15, 20, 25, 30, 40
	n41	TDD	30	10, 15, 20, 30, 40, 50, 60, 80, 90, 100
	n48	TDD	30	10, 15, 20, 30, 40
	n77	TDD	30	10, 15, 20, 40, 50, 60, 80, 90, 100
n78	TDD	30	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100	



4.2 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05																																																															
FCC ID	2AFZZRA29G																																																														
Equipment Name	Mobile Phone																																																														
Operating Frequency Range of each LTE transmission band	LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 42: 3450 MHz ~ 3550 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz																																																														
Channel Bandwidth	LTE Band 2: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 4: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 5: 1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 12: 1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 13: 5MHz, 10MHz LTE Band 17: 5MHz, 10MHz LTE Band 26: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 42: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 48: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 66: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz																																																														
uplink modulations used	QPSK / 16QAM / 64QAM / 256QAM																																																														
LTE Voice / Data requirements	Voice and Data																																																														
LTE Release Version	R15																																																														
CA Support	Supported, Uplink and Downlink																																																														
LTE MPR permanently built-in by design	<p>Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3</p> <table border="1"> <thead> <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> </thead> <tbody> <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> </tbody> </table>	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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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 detect mechanism, head/body -worn /hotspot/extremity will trigger reduced power for some bands applied to satisfy SAR compliance, the detail please referred to section 13.																																																														
LTE Carrier Aggregation Combinations	Inter-Band and Intra-Band possible combinations and the detail power verification please referred to section 13.																																																														
LTE Carrier Aggregation Additional Information	1. This device supports LTE Carrier Aggregation (CA) in the uplink for intra-band with two component carriers in the uplink. SAR Measurements and conducted powers were evaluated per FCC Guidance. 2. This device supports maximum of 3 carriers in the downlink and 2 carriers in the uplink.																																																														



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)
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)
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510		
M	21100	2535	21100	2535	21100	2535	21100	2535		
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560		

LTE Band 12								
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	23017	699.7	23025	700.5	23035	701.5	23060	704
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5
H	23173	715.3	23165	714.5	23155	713.5	23130	711

LTE Band 13					
	Bandwidth 5 MHz		Bandwidth 10 MHz		
	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)	Freq.(MHz)
L	23205	779.5	23230	782	782
M	23230	782			
H	23255	784.5			

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



LTE Band 26										
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26697	814.7	26705	815.5	26715	816.5	26740	819	26765	821.5
M	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5
H	27033	848.3	27025	847.5	27015	846.5	26990	844	26965	841.5

LTE Band 38									
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	37775	2572.5	37800	2575	37825	2577.5	37850	2580	
M	38000	2595	38000	2595	38000	2595	38000	2595	
H	38225	2617.5	38200	2615	38175	2612.5	38150	2610	

LTE Band 41									
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	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 42									
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	42115	3452.5	42140	3455	42165	3457.5	42190	3460	
M	42590	3500	42590	3500	42590	3500	42590	3500	
H	43065	3547.5	43040	3545	43015	3542.5	42990	3540	

LTE Band 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	

<For LTE Overlap Bands Description>

1) LTE Bands BW

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

2) LTE Bands tune up:

Band	Antenna	DSI 1 Tune-up Limit	DSI 2 Tune-up Limit	DSI 3 Tune-up Limit	DSI 4 Tune-up Limit	Default Tune-up Limit
LTE Band 12(17)	Ant 1	25.50	25.50	25.50	25.50	25.50
LTE Band 12(17)	Ant 4	25.50	25.50	25.50	25.50	25.50



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 n66: 1710 MHz ~ 1780 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 n5	LTE B7
LTE Anchor Bands for n7	LTE B4/5/7/66
LTE Anchor Bands for n38	LTE B4/66
LTE Anchor Bands for n41	LTE B4/66/41/38
LTE Anchor Bands for n66	LTE B2/5/7/66
LTE Anchor Bands for n77	LTE B2
LTE Anchor Bands for n78	LTE B2/4/5/7/26/38/41/66

Transmission (H, M, L) channel numbers and frequencies in each 5G NR band								
NR Band 2								
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	370500	1852.5	371000	1855	371500	1857.5	372000	1860
M	376000	1880	376000	1880	376000	1880	376000	1880
H	381500	1907.5	381000	1905	380500	1902.5	380000	1900

NR Band 5								
	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 SCS15KHz																
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	500500	2502.5	501000	2505	501500	2507.5	502000	2510	502500	2512.5	503000	2515	504000	2520	505000	2525
M	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535
H	513500	2567.5	513000	2565	512500	2562.5	512000	2560	511500	2557.5	511000	2555	510000	2550	509000	2545

NR Band 66														
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	342500	1712.5	343000	1715	343500	1717.5	344000	1720	344500	1722.5	345000	1725	346000	1730
M	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	352000	1760

NR Band 38												
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
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 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz		
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	500202	2501.01	500700	2503.5	501204	2506.02	502200	2511	503202	2516.01	504204	2521.02	505200	2526	507204	2536.02	508200	2541	509202	2546.01
M	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99
H	537000	2685	536496	2682.48	535998	2679.99	534996	2674.98	534000	2670	532998	2664.99	531996	2659.98	529998	2649.99	528996	2644.98	528000	2640

NR Band 48										
Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
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	3695	646166	3692.49	646000	3690	645666	3684.99	645332	3680

NR Band 77																		
Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz		
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	647000	3705	647168	3707.52	647334	3710.01	648000	3720	648334	3725.01	648668	3730.02	649334	3740.01	649668	3745.02	650000	3750
M	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840
H	665000	3975	664834	3972.51	664668	3970.02	664000	3960	663668	3955.02	663334	3950.01	662668	3940.02	662334	3935.01	662000	3930

NR Band 78																						
Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz		
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	647000	3705	647168	3707.52	647334	3710.01	647668	3715.02	648000	3720	648334	3725.01	648668	3730.02	649000	3735	649334	3740.01	649668	3745.02		
M	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750
H	653000	3795	652834	3792.51	652668	3790.02	652334	3785.01	652000	3780	651668	3775.02	651334	3770.01	651000	3765	650668	3760.02	650334	3755.01		

For <3450 MHz ~ 3550 MHz >

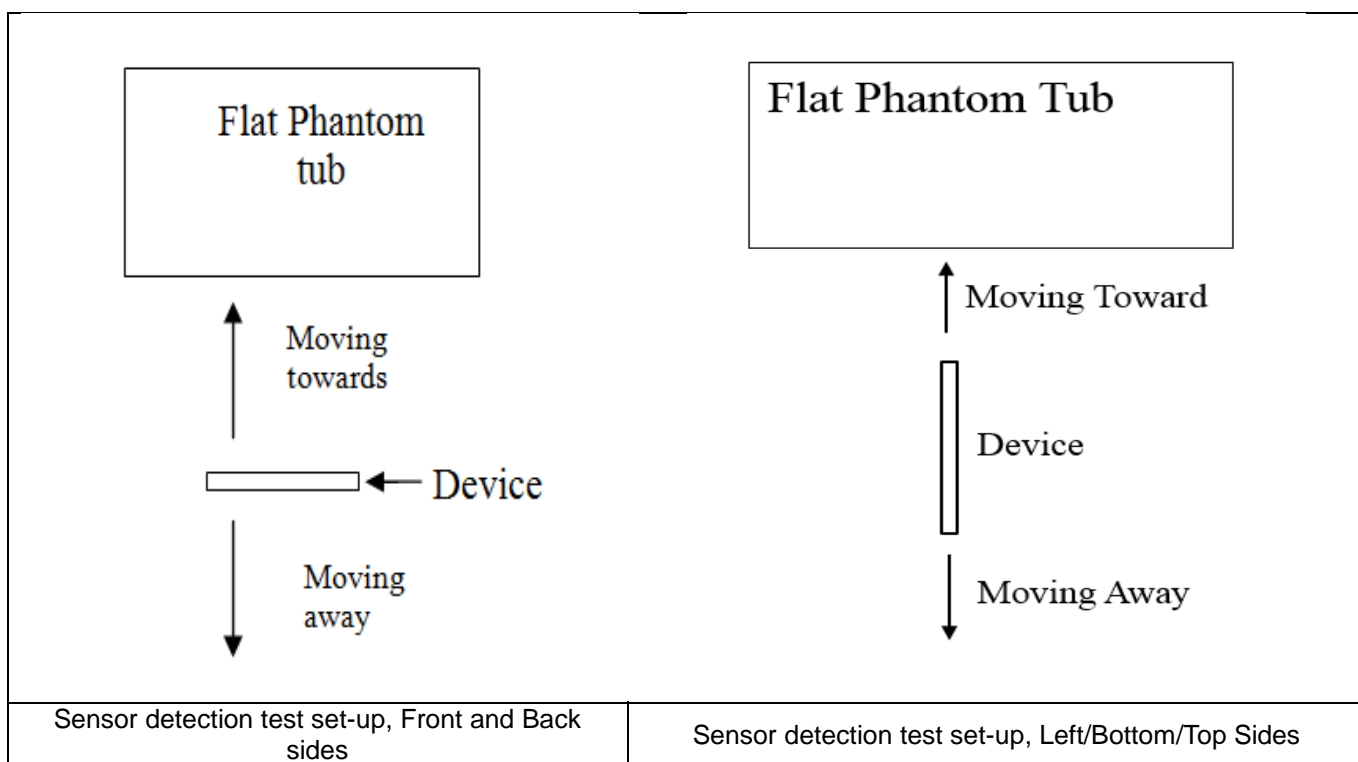
NR Band 77																		
Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz		
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	630334	3455.01	630500	3457.5	630668	3460.02	631334	3470.01	631668	3475.02	632000	3480	632668	3490.02	633000	3495		
M	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01
H	636334	3545.01	636168	3542.52	636000	3540	635334	3530.01	635000	3525	634668	3520.02	634000	3510	633668	3505.02		

NR Band 78																						
Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz		
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	630334	3455.01	630500	3457.5	630668	3460.02	631000	3465	631334	3470.01	631668	3475.02	632000	3480	632334	3485.01	632668	3490.02	633000	3495		
M	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01
H	636334	3545.01	636168	3542.52	636000	3540	635668	3535.02	635334	3530.01	635000	3525	634668	3520.02	634334	3515.01	634000	3510	633668	3505.02		

5. Proximity Sensor Triggering Test

<Proximity Sensor Triggering Distance>:

1. Proximity sensor triggering distance testing was performed according to the procedures outlined in KDB 616217 D04 section 6.2, and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed and the tissue-equivalent medium for highest frequency (3980MHz) and lowest (835MHz) frequency was used for proximity sensor triggering testing.
2. Capacitive proximity sensors placed coincident with antenna elements at the top and bottom ends of the phone are utilized to determine when the device comes in proximity of the user's body or finger or hand at the front or back or bottom or left or top side of the device. There is no need to do sensor coverage testing for the proximity sensor is designed to support sufficient detection range and sensitivity to cover regions of the sensors in all applicable directions since the proximity sensor entirely covers the antenna.
3. The sensors can use to detect the proximity of the user's body or handheld states at the front or back or bottom or left or top side of the device use a detection threshold distance. When front/back/left/top/bottom sides of body or handheld condition is detected reduced power will be active. The trigger distance shown in the sections below.
4. For verification of compliance of power reduction scheme, additional SAR testing with EUT transmitting at full RF power at a conservative trigger distance -1mm was performed:



<P-Sensor>

< Sensor for Ant1>

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

< Sensor for Ant4/5>

Proximity Sensor Triggering Distance (mm)								
Position	Front		Back		Top Side		Left Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	16	16	16	16	16	16	6	6

< Sensor for Ant2/3>

Proximity Sensor Triggering Distance (mm)						
Position	Front		Back		Left Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	6	6	6	6	6	6

6. RF Exposure Limits

6.1 Uncontrolled Environment

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

6.2 Controlled Environment

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

Limits for Occupational/Controlled Exposure (W/kg)

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

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

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

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

7. Specific Absorption Rate (SAR)

7.1 Introduction

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

7.2 SAR Definition

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

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

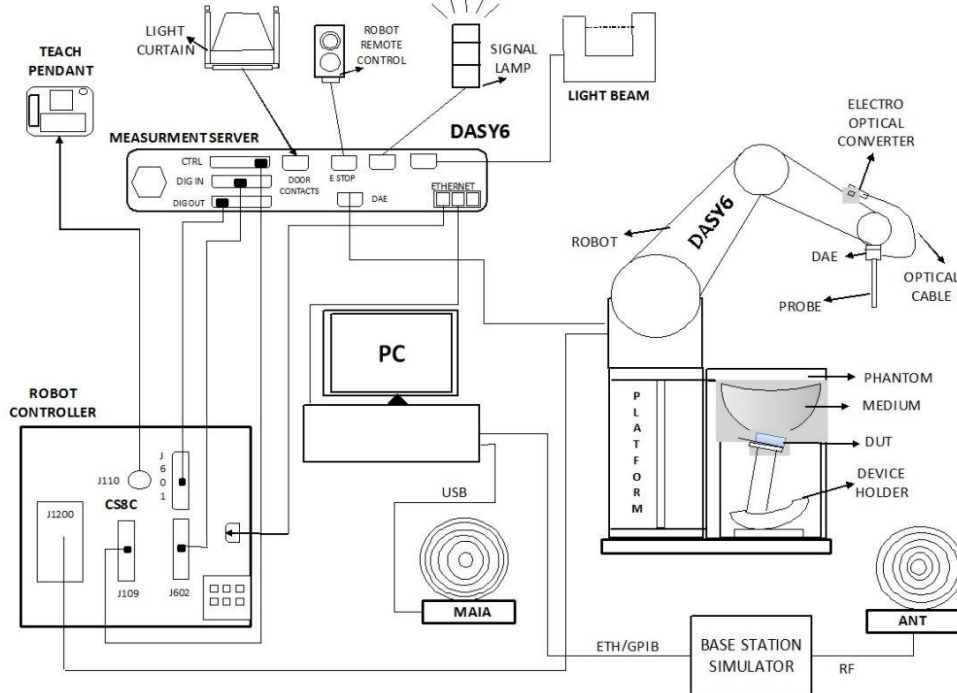
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

8. System Description and Setup

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




- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running Win7 or Win10 and the DASY5 or DASY6 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

8.1 E-Field Probe

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

<EX3DV4 Probe>

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

8.2 Data Acquisition Electronics (DAE)

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


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



Photo of DAE

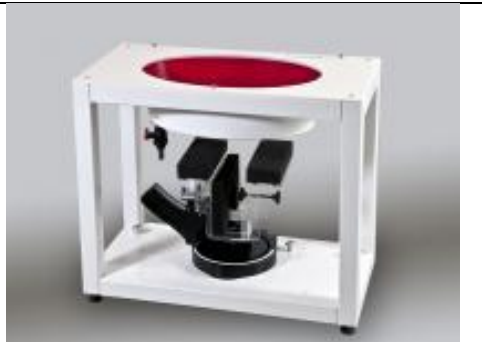
8.3 Phantom

<SAM Twin Phantom>

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

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

<ELI Phantom>

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

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

8.4 Device Holder

<Mounting Device for Hand-Held Transmitter>

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



Mounting Device for Hand-Held Transmitters



Mounting Device Adaptor for Wide-Phones

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

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



Mounting Device for Laptops

9. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

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

<SAR measurement>

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

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

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

9.1 Spatial Peak SAR Evaluation

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

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

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

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

9.2 Power Reference Measurement

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

9.3 Area Scan

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

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

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ 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: $\Delta x_{Area}, \Delta y_{Area}$	≤ 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.	

9.4 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: $\Delta x_{Zoom}, \Delta y_{Zoom}$			≤ 2 GHz: ≤ 8 mm $2 - 3$ GHz: ≤ 5 mm*	$3 - 4$ GHz: ≤ 5 mm* $4 - 6$ GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	$3 - 4$ GHz: ≤ 4 mm $4 - 5$ GHz: ≤ 3 mm $5 - 6$ GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 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
		$\Delta z_{Zoom}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	$3 - 4$ GHz: ≥ 28 mm $4 - 5$ GHz: ≥ 25 mm $5 - 6$ GHz: ≥ 22 mm
Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details. * When zoom scan is required and the <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.				

9.5 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.

9.6 Power Drift Monitoring

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

10. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1087	2022/2/24	2025/2/22
SPEAG	835MHz System Validation Kit	D835V2	4d091	2022/8/19	2025/8/18
SPEAG	1750MHz System Validation Kit	D1750V2	1090	2022/2/24	2025/2/22
SPEAG	1900MHz System Validation Kit	D1900V2	5d118	2022/3/30	2025/3/28
SPEAG	2450MHz System Validation Kit	D2450V2	1095	2024/2/8	2025/2/7
SPEAG	2600MHz System Validation Kit	D2600V2	1112	2023/12/18	2024/12/17
SPEAG	3500MHz System Validation Kit	D3500V2	1037	2023/11/20	2024/11/19
SPEAG	3700MHz System Validation Kit	D3700V2	1008	2023/11/20	2024/11/19
SPEAG	3900MHz System Validation Kit	D3900V2	1048	2023/3/9	2026/3/8
SPEAG	5000MHz System Validation Kit	D5GHzV2	1113	2022/9/23	2025/9/22
SPEAG	Data Acquisition Electronics	DAE4	1303	2023/11/20	2024/11/19
SPEAG	Dosimetric E-Field Probe	EX3DV4	7729	2024/1/22	2025/1/21
SPEAG	SAM Twin Phantom	SAM Twin	TP-2024	NCR	NCR
CHIGO	Thermo-Hygrometer	HTC-1	55009	2024/1/4	2025/1/3
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Rohde & Schwarz	Signal Generator	SMB100A	100455	2024/1/2	2025/1/1
Keysight	Preamplifier	83017A	MY57280106	2024/4/18	2025/4/17
Anritsu	Radio Communication Analyzer	MT8821C	6262306175	2024/7/4	2025/7/3
Agilent	ENA Series Network Analyzer	E5071C	MY46112129	2024/7/4	2025/7/3
SPEAG	Dielectric Probe Kit	DAK-3.5	1144	2023/8/17	2024/8/16
Anritsu	Vector Signal Generator	MG3710A	6201682672	2024/1/2	2025/1/1
Rohde & Schwarz	Power Meter	NRVD	102081	2024/7/4	2025/7/3
Rohde & Schwarz	Power Sensor	NRV-Z5	100538	2024/7/4	2025/7/3
Rohde & Schwarz	Power Sensor	NRP50S	101385	2023/10/11	2024/10/10
R&S	BLUETOOTH TESTER	CBT	101246	2024/7/4	2025/7/3
Rohde & Schwarz	Spectrum Analyzer	FSV7	101631	2023/10/11	2024/10/10
TES	DIGITAC THERMOMETER	TYPE-K	220305411	2024/1/4	2025/1/3
ARRA	Power Divider	A3200-2	N/A	Note 1	
MCL	Attenuation1	BW-S10W5+	N/A	Note 1	
MCL	Attenuation2	BW-S10W5+	N/A	Note 1	
MCL	Attenuation3	BW-S10W5+	N/A	Note 1	
BONN	POWER AMPLIFIER	BLMA 0830-3	087193A	Note 1	
BONN	POWER AMPLIFIER	BLMA 2060-2	087193B	Note 1	
Agilent	Dual Directional Coupler	778D	20500	Note 1	
Agilent	Dual Directional Coupler	11691D	MY48151020	Note 1	

Note:

1. Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check.
2. Referring to KDB 865664 D01v01r04, the dipole calibration interval can be extended to 3 years with justification. The dipoles are also not physically damaged, or repaired during the interval.
3. The justification data of dipole can be found in appendix C. The return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration.

11. System Verification

11.1 Tissue Simulating Liquids

For the measurement of the field distribution inside the SAM phantom with DASY, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 11.1. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 11.2.

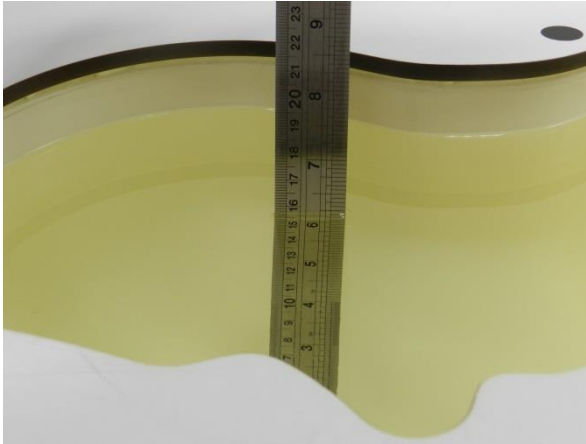


Fig 11.1 Photo of Liquid Height for Head SAR

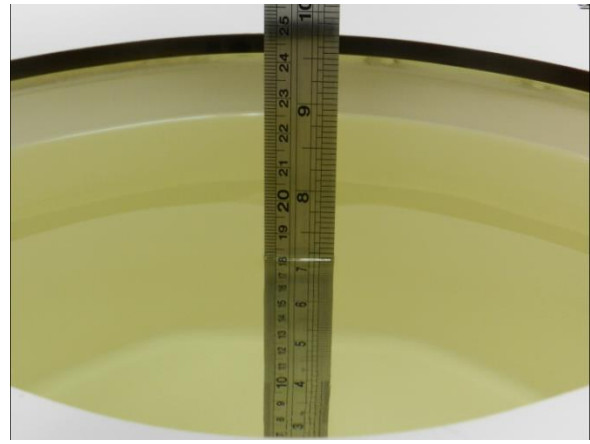


Fig 11.2 Photo of Liquid Height for Body SAR

11.2 Tissue Verification

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

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (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	22.8	0.900	41.2	0.89	41.90	1.12	-1.67	±5	2024/7/20
835	Head	22.8	0.902	41.2	0.90	41.50	0.22	-0.72	±5	2024/7/20
1750	Head	22.7	1.41	40.7	1.37	40.10	2.92	1.50	±5	2024/7/21
1900	Head	22.6	1.40	39.0	1.40	40.00	0.00	-2.50	±5	2024/7/21
2600	Head	22.8	1.93	38.2	1.96	39.00	-1.53	-2.05	±5	2024/7/22
3500	Head	22.8	2.78	38.9	2.91	37.90	-4.47	2.64	±5	2024/7/23
3700	Head	22.6	2.99	38.7	3.12	37.70	-4.17	2.65	±5	2024/7/24
3900	Head	22.9	3.19	38.4	3.32	37.50	-3.92	2.40	±5	2024/7/25
750	Head	22.7	0.872	41.1	0.89	41.90	-2.02	-1.91	±5	2024/7/26
835	Head	22.6	0.911	42.7	0.90	41.50	1.22	2.89	±5	2024/7/26
1750	Head	22.9	1.34	38.5	1.37	40.10	-2.19	-3.99	±5	2024/7/27
1900	Head	22.7	1.40	41.4	1.40	40.00	0.00	3.50	±5	2024/7/27
2600	Head	22.9	1.93	38.3	1.96	39.00	-1.53	-1.79	±5	2024/7/28
3500	Head	22.7	2.85	38.6	2.91	37.90	-2.06	1.85	±5	2024/7/29
3700	Head	22.6	3.08	38.0	3.12	37.70	-1.28	0.80	±5	2024/7/30
3900	Head	22.9	3.28	37.6	3.32	37.50	-1.20	0.27	±5	2024/7/31
2450	Head	22.9	1.83	37.5	1.80	39.20	1.67	-4.34	±5	2024/8/1
5250	Head	22.7	4.60	35.9	4.71	35.90	-2.34	0.00	±5	2024/8/2
5600	Head	22.6	5.00	35.3	5.07	35.50	-1.38	-0.56	±5	2024/8/3
5750	Head	22.9	5.17	35.1	5.22	35.40	-0.96	-0.85	±5	2024/8/4
2600	Head	22.8	1.96	40.4	1.96	39.00	0.00	3.59	±5	2024/9/2



11.3 System Performance Check Results

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

<1g SAR>

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
2024/7/20	750	Head	50	1087	7729	1303	0.435	8.58	8.7	1.40
2024/7/20	835	Head	50	4d091	7729	1303	0.505	9.45	10.1	6.88
2024/7/21	1750	Head	50	1090	7729	1303	1.990	37.00	39.8	7.57
2024/7/21	1900	Head	50	5d118	7729	1303	2.090	39.30	41.8	6.36
2024/7/22	2600	Head	50	1112	7729	1303	2.820	55.10	56.4	2.36
2024/7/23	3500	Head	50	1037	7729	1303	3.410	65.40	68.2	4.28
2024/7/24	3700	Head	50	1008	7729	1303	3.450	67.20	69	2.68
2024/7/25	3900	Head	50	1048	7729	1303	3.320	69.10	66.4	-3.91
2024/7/26	750	Head	50	1087	7729	1303	0.426	8.58	8.52	-0.70
2024/7/26	835	Head	50	4d091	7729	1303	0.504	9.45	10.08	6.67
2024/7/27	1750	Head	50	1090	7729	1303	1.840	37.00	36.8	-0.54
2024/7/27	1900	Head	50	5d118	7729	1303	2.060	39.30	41.2	4.83
2024/7/28	2600	Head	50	1112	7729	1303	2.680	55.10	53.6	-2.72
2024/7/29	3500	Head	50	1037	7729	1303	3.190	65.40	63.8	-2.45
2024/7/30	3700	Head	50	1008	7729	1303	3.310	67.20	66.2	-1.49
2024/7/31	3900	Head	50	1048	7729	1303	3.230	69.10	64.6	-6.51
2024/8/1	2450	Head	50	1095	7729	1303	2.760	52.60	55.2	4.94
2024/8/2	5250	Head	50	1113	7729	1303	3.840	81.50	76.8	-5.77
2024/8/3	5600	Head	50	1113	7729	1303	4.250	82.60	85	2.91
2024/8/4	5750	Head	50	1113	7729	1303	3.820	80.80	76.4	-5.45
2024/9/2	2600	Head	50	1112	7729	1303	2.850	55.10	57	3.45

<10g SAR>

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
2024/7/20	750	Head	50	1087	7729	1303	0.292	5.65	5.84	3.36
2024/7/20	835	Head	50	4d091	7729	1303	0.328	6.22	6.56	5.47
2024/7/21	1750	Head	50	1090	7729	1303	1.010	19.50	20.2	3.59
2024/7/21	1900	Head	50	5d118	7729	1303	1.100	20.40	22	7.84
2024/7/22	2600	Head	50	1112	7729	1303	1.290	24.80	25.8	4.03
2024/7/23	3500	Head	50	1037	7729	1303	1.310	24.70	26.2	6.07
2024/7/24	3700	Head	50	1008	7729	1303	1.300	24.40	26	6.56
2024/7/25	3900	Head	50	1048	7729	1303	1.190	24.10	23.8	-1.24
2024/7/26	750	Head	50	1087	7729	1303	0.277	5.65	5.54	-1.95
2024/7/26	835	Head	50	4d091	7729	1303	0.325	6.22	6.5	4.50
2024/7/27	1750	Head	50	1090	7729	1303	0.965	19.50	19.3	-1.03
2024/7/27	1900	Head	50	5d118	7729	1303	1.050	20.40	21	2.94
2024/7/28	2600	Head	50	1112	7729	1303	1.210	24.80	24.2	-2.42
2024/7/29	3500	Head	50	1037	7729	1303	1.220	24.70	24.4	-1.21
2024/7/30	3700	Head	50	1008	7729	1303	1.230	24.40	24.6	0.82
2024/7/31	3900	Head	50	1048	7729	1303	1.160	24.10	23.2	-3.73
2024/8/1	2450	Head	50	1095	7729	1303	1.310	24.70	26.2	6.07
2024/8/2	5250	Head	50	1113	7729	1303	1.160	23.30	23.2	-0.43
2024/8/3	5600	Head	50	1113	7729	1303	1.220	23.70	24.4	2.95
2024/8/4	5750	Head	50	1113	7729	1303	1.150	23.00	23	0.00
2024/9/2	2600	Head	50	1112	7729	1303	1.280	24.80	25.6	3.23

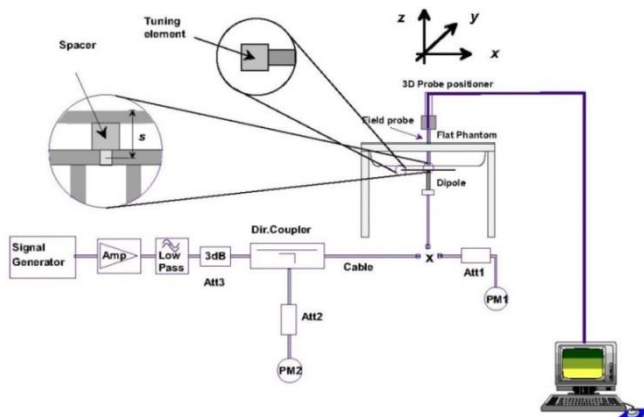


Fig 11.3.1 System Performance Check Setup



Fig 11.3.2 Setup Photo

12. RF Exposure Positions

12.1 Ear and handset reference point

Figure 12.1.1 shows the front, back, and side views of the SAM phantom. The center-of-mouth reference point is labeled “M,” the left ear reference point (ERP) is marked “LE,” and the right ERP is marked “RE.” Each ERP is 15 mm along the B-M (back-mouth) line behind the entrance-to-ear-canal (EEC) point, as shown in Figure 12.1.2 The Reference Plane is defined as passing through the two ear reference points and point M. The line N-F (neck-front), also called the reference pivoting line, is normal to the Reference Plane and perpendicular to both a line passing through RE and LE and the B-M line (see Figure 12.1.3). Both N-F and B-M lines should be marked on the exterior of the phantom shell to facilitate handset positioning. Posterior to the N-F line the ear shape is a flat surface with 6 mm thickness at each ERP, and forward of the N-F line the ear is truncated, as illustrated in Figure 12.1.2. The ear truncation is introduced to preclude the ear lobe from interfering with handset tilt, which could lead to unstable positioning at the cheek.

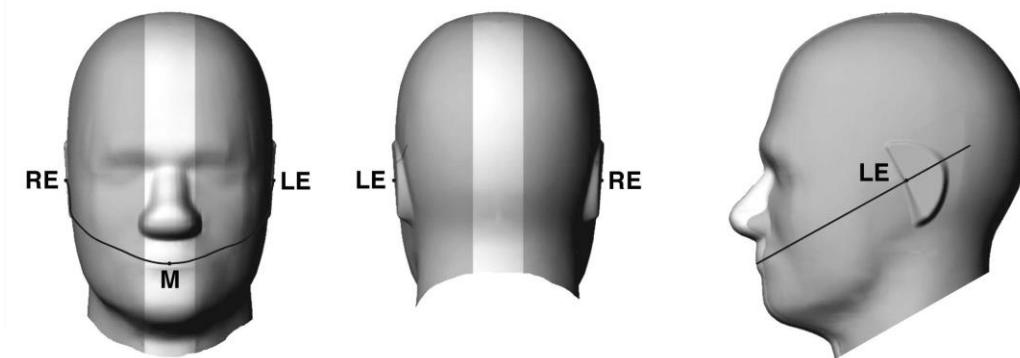


Fig 12.1.1 Front, back, and side views of SAM twin phantom

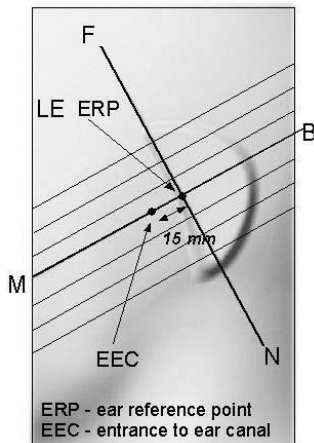


Fig 12.1.2 Close-up side view of phantom showing the ear region.

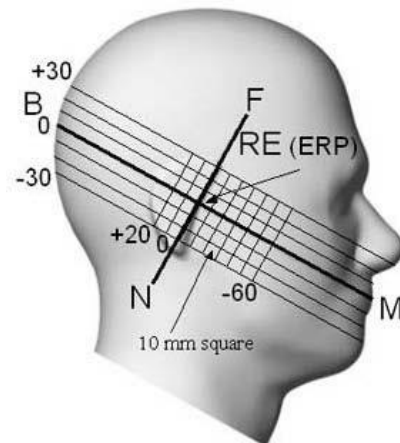


Fig 12.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

12.2 Definition of the cheek position

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

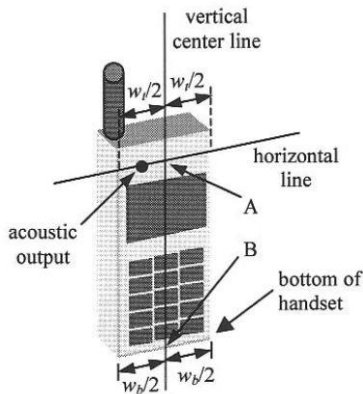


Fig 12.2.1 Handset vertical and horizontal reference lines—“fixed case”

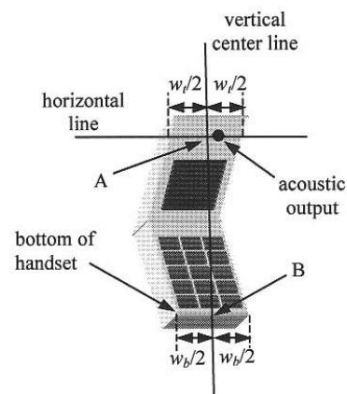


Fig 12.2.2 Handset vertical and horizontal reference lines—“clam-shell case”

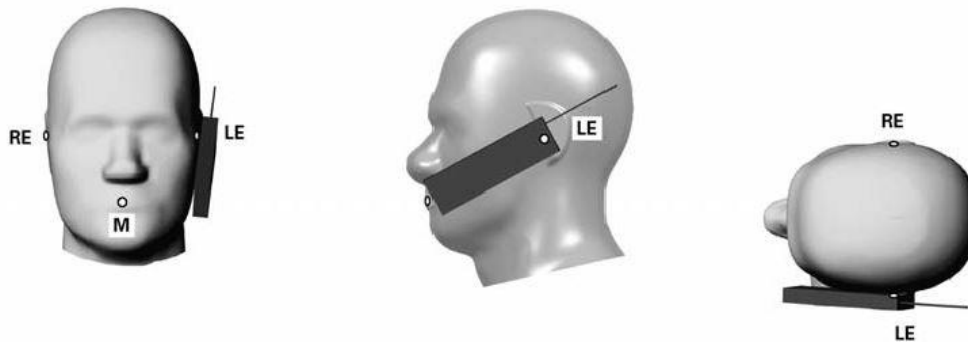


Fig 12.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

12.3 Definition of the tilt position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. While maintaining the orientation of the handset, move the handset away from the pinna along the line passing through RE and LE far enough to allow a rotation of the handset away from the cheek by 15°.
3. Rotate the handset around the horizontal line by 15°.
4. While maintaining the orientation of the handset, move the handset towards the phantom on the line passing through RE and LE until any part of the handset touches the ear. The tilt position is obtained when the contact point is on the pinna. See Figure 12.3.1. If contact occurs at any location other than the pinna, e.g., the antenna at the back of the phantom head, the angle of the handset should be reduced. In this case, the tilt position is obtained if any point on the handset is in contact with the pinna and a second point

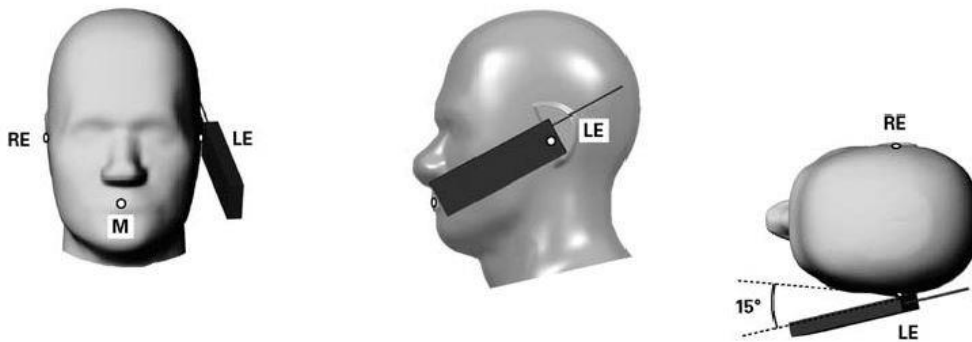


Fig 12.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

12.4 Body Worn Accessory

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 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 headset attached to the handset.

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

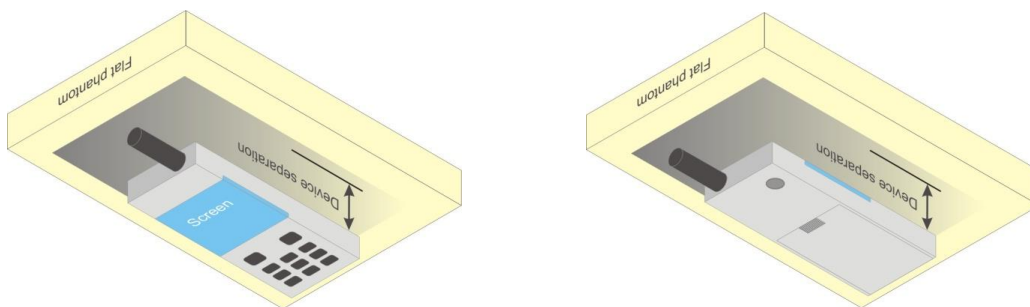


Fig 12.4 Body Worn Position

12.5 Product Specific 10g SAR Exposure

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

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

12.6 Wireless Router

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 v02r01 where SAR test considerations for handsets ($L \times W \geq 9$ 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.

13. Conducted RF Output Power (Unit: dBm)

The detailed conducted power table can refer to Appendix E.

<GSM Conducted Power>

1. Per KDB 447498 D01v06, the maximum output power channel is used for SAR testing and for further SAR test reduction.
2. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.
3. Other configurations of GSM / GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq 1/4$ dB higher than the primary mode, SAR measurement is not required for the secondary mode.

<WCDMA Conducted Power>

1. The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
2. The procedures in KDB 941225 D01v03r01 are applied for 3GPP Rel. 6 HSPA to configure the device in the required sub-test mode(s) to determine SAR test exclusion.
3. For HSPA+ devices supporting 16 QAM in the uplink, power measurements procedure is according to the configurations in Table C.11.1.4 of 3GPP TS 34.121-1.
4. For DC-HSDPA, the device was configured according to the H-Set 12, Fixed Reference Channel (FRC) configuration in Table C.8.1.12 of 3GPP TS 34.121-1, with the primary and the secondary serving HS-DSCH Cell enabled during the power measurement.

A summary of these settings are illustrated below:

HSDPA Setup Configuration:

- a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
- b. The RF path losses were compensated into the measurements.
- c. A call was established between EUT and Base Station with following setting:
 - i. Set Gain Factors (β_c and β_d) and parameters were set according to each
 - ii. Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
 - iii. Set RMC 12.2Kbps + HSDPA mode.
 - iv. Set Cell Power = -86 dBm
 - v. Set HS-DSCH Configuration Type to FRC (H-set 1, QPSK)
 - vi. Select HSDPA Uplink Parameters
 - vii. Set Delta ACK, Delta NACK and Delta CQI = 8
 - viii. Set Ack-Nack Repetition Factor to 3
 - ix. Set CQI Feedback Cycle (k) to 4 ms
 - x. Set CQI Repetition Factor to 2
 - xi. Power Ctrl Mode = All Up bits
- d. The transmitted maximum output power was recorded.

Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH

Sub-test	β_c	β_d	β_d (SF)	β_o/β_d	β_{HS} (Note 1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 (Note 4)	15/15 (Note 4)	64	12/15 (Note 4)	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 30/15$ with $\beta_{HS} = 30/15 * \beta_c$.

Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and $\Delta_{NACK} = 30/15$ with $\beta_{HS} = 30/15 * \beta_c$, and $\Delta_{CQI} = 24/15$ with $\beta_{HS} = 24/15 * \beta_c$.

Note 3: CM = 1 for $\beta_o/\beta_d = 12/15$, $\beta_{HS}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 4: For subtest 2 the β_o/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$.

Setup Configuration

HSUPA Setup Configuration:

- a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
- b. The RF path losses were compensated into the measurements.
- c. A call was established between EUT and Base Station with following setting * :
 - i. Call Configs = 5.2B, 5.9B, 5.10B, and 5.13.2B with QPSK
 - ii. Set the Gain Factors (β_c and β_d) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.3, quoted from the TS 34.121
 - iii. Set Cell Power = -86 dBm
 - iv. Set Channel Type = 12.2k + HSPA
 - v. Set UE Target Power
 - vi. Power Ctrl Mode= Alternating bits
 - vii. Set and observe the E-TFCI
 - viii. Confirm that E-TFCI is equal to the target E-TFCI of 75 for sub-test 1, and other subtest's E-TFCI
- d. The transmitted maximum output power was recorded.

Table C.11.1.3: β values for transmitter characteristics tests with HS-DPCCH and E-DCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (Note 4) (Note 5)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2) (Note 6)	AG Index (Note 5)	E-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/25	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1} : 47/15 β_{ed2} : 47/15	4 4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15	0	-	-	5/15	5/15	47/15	4	1	1.0	0.0	12	67

Note 1: For sub-test 1 to 4, Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 30/15$ with $\beta_{hs} = 30/15 * \beta_c$. For sub-test 5, Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 5/15$ with $\beta_{hs} = 5/15 * \beta_c$.

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.

Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF0) to $\beta_c = 10/15$ and $\beta_d = 15/15$.

Note 4: In case of testing by UE using E-DPDCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.

Note 5: β_{ed} can not be set directly; it is set by Absolute Grant Value.

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

Setup Configuration

DC-HSDPA 3GPP release 8 Setup Configuration:

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

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

C.8.1.12 Fixed Reference Channel Definition H-Set 12

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

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

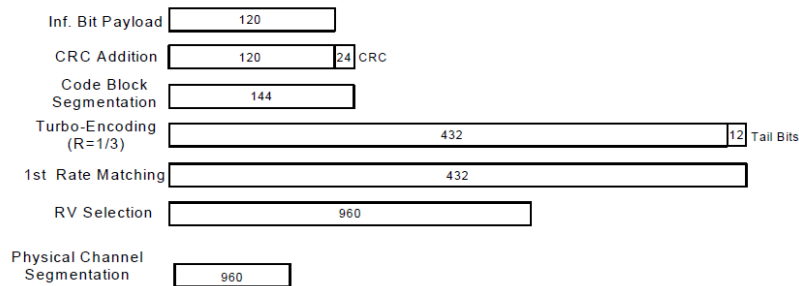


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK) Setup Configuration

HSPA+ 3GPP release 7 (uplink category 7) 16QAM, Setup Configuration:

1. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
2. The RF path losses were compensated into the measurements.
3. A call was established between EUT and Base Station with following setting * :
 - i. Call Configs = 5.2E:HSPA+:UL with 16QAM
 - ii. Set the Gain Factors (β_c and β_d) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.4, quoted from the TS 34.121-1 s5.2E
 - iii. Set Channel Parms
 - iv. Set Cell Power = -86 dBm
 - v. Set Channel Type = HSPA
 - vi. Set UE Target Power =21 dBm
 - vii. Power Ctrl Mode= All Up Bits
 - viii. Set Manual Uplink DPCH Bc/Bd = Manual
 - ix. Set Manual Uplink DPCH Bc and Bd=15,15(for 34.121-1 v8.10.0 table C11.1.4 sub-test 1)
 - x. Set HSPA Conn DL Channel Levels
 - xi. Set HS-SCCH Configs
 - xii. Set RB Test Mode Setup
 - xiii. Set Common HSUPA Parameters
 - xiv. Set Serving Grant
 - xv. Confirm that E-TFCl is equal to the target E-TFCl of 105 for sub-test 1, and other subtest's E-TFCl
4. The transmitted maximum output power was recorded.

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

Sub-test	β_c (Note3)	β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (2xSF2) (Note 4)	β_{ed} (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCl (Note 5)	E-TFCl (boost)
1	1	0	30/15	30/15	β_{ed1} : 30/15 β_{ed2} : 30/15	β_{ed3} : 24/15 β_{ed4} : 24/15	3.5	2.5	14	105	105

Note 1: $\Delta_{ACK}, \Delta_{NACK}$ and $\Delta_{CQI} = 30/15$ with $\beta_{fs} = 30/15 * \beta_c$.

Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).

Note 3: DPDCH is not configured, therefore the β_c is set to 1 and $\beta_d = 0$ by default.

Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value.

Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signaled to use the extrapolation algorithm.

Setup Configuration

<WCDMA Conducted Power>

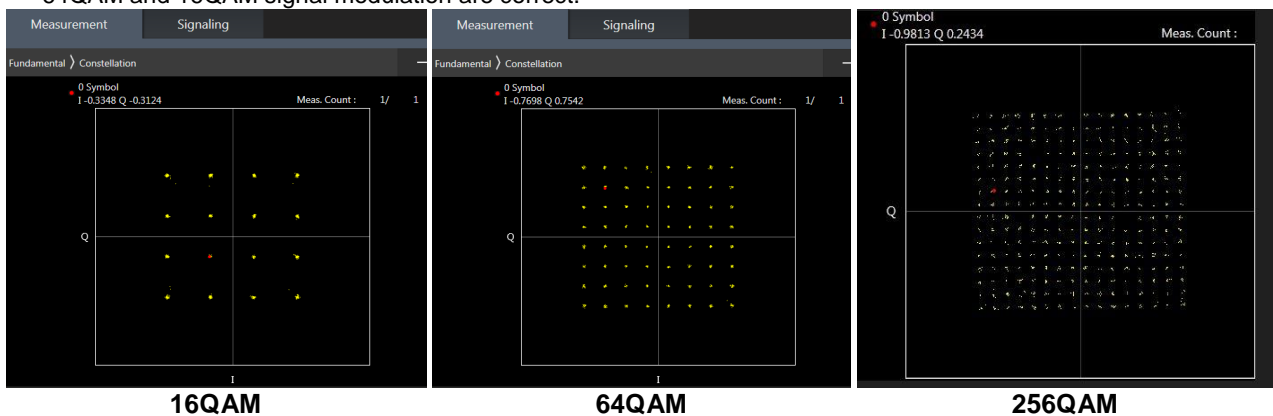
General Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA / HSPA+ is $\leq 1/4$ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA / HSPA+ to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+, and according to the following RF output power, the output power results of the secondary modes (HSDPA / HSUPA / DC-HSDPA / HSPA+) are less than $1/4$ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+.

<LTE Conducted Power>

General Note:

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r05, for QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r05, 16QAM/64QAM/256QAM output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM/64QAM/256QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B4 / B5 / B12 / B17 / B26 / B38 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
9. LTE B17 SAR test was covered by B12; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
 - a. the maximum output power, including tolerance, for the smaller band is \leq the larger band to qualify for the SAR test exclusion
 - b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band
10. According to May 2017 TCB workshop, for 16QAM and 64QAM, 256QAM should be verified by checking the signal constellation with a call box to avoid incorrect maximum power levels due to MPR and other requirements associated with signal modulation, and the following figure is taken from the "Fundamental Measurement >> Modulation Analysis >> constellation" mode of the device connect to the MT8821C base station, therefore, the device 256QAM, 64QAM and 16QAM signal modulation are correct.



<TDD LTE SAR Measurement>

TDD LTE configuration setup for SAR measurement

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

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

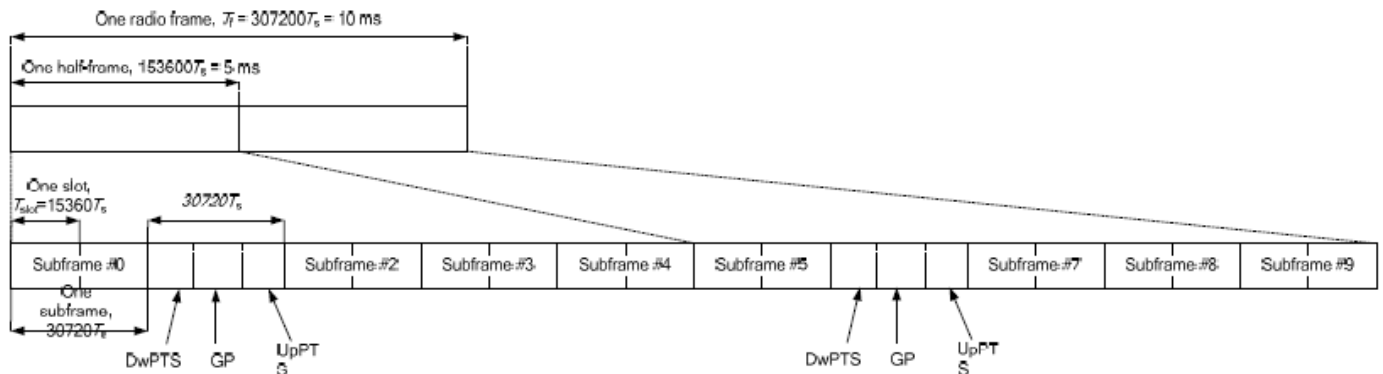


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

Table 4.2-2: Uplink-downlink configurations.

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

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

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

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

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

The highest duty factor is resulted from:

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



<LTE Carrier Aggregation>

The detailed LTE Carrier Aggregation conducted power table can refer to Appendix F.

General Note:

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

2CC Downlink Carrier Aggregation				3CC Downlink Carrier Aggregation			
Number	Combination	4X4 MIMO	Covered by	Number	Combination	4X4 MIMO	Covered by
			Measurement Superset				Measurement Superset
1	CA_26A-38A	38A		1	CA_2A-4A-5A	4A	
2	CA_26A-41A	41A		2	CA_2A-4A-7A	4A/7A	
3	CA_2A-26A			3	CA_2A-5A-7A	7A	
4	CA_2A-2A			4	CA_2A-7A-66A	7A/66A	
5	CA_2A-5A		3CC_1	5	CA_2A-7A-7A	7A	
6	CA_2A-66A	66A	3CC_4	6	CA_2A-7C	7C	
7	CA_2A-7A	7A	3CC_2	7	CA_41A-41A-41A	41A	
8	CA_2C			8	CA_41D	41D	
9	CA_38C	38C		9	CA_4A-4A-7A	4A/7A	
10	CA_41A-41A	41A	3CC_7	10	CA_4A-7C	4A/7C	
11	CA_41C	41C		11	CA_5A-7A-66A	7A/66A	
12	CA_4A-17A	4A		12	CA_5A-7C	7C	
13	CA_4A-4A	4A	3CC_9	13	CA_7A-66A-66A	7A/66A	
14	CA_5A-66A	66A	3CC_11	14	CA_5A-7A-7A	7A	
15	CA_5A-7A	7A	3CC_11	15	CA_2A-2A-5A		
16	CA_66A-66A	66A	3CC_13				
17	CA_66C	66C					
18	CA_7A-26A	7A					
19	CA_7A-66A	7A/66A	3CC_13				
20	CA_7A-7A	7A	3CC_14				
21	CA_66B	66B					
22	CA_38A-41A	38A/41A					

LTE Carrier Aggregation Conducted Power (Downlink)

- i. According to KDB941225 D05A v01r02, Uplink maximum output power measurement with downlink carrier aggregation active should be measured, using the highest output channel measured without downlink carrier aggregation, to confirm that uplink maximum output power with downlink carrier aggregation active remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output measured without downlink carrier aggregation active.
- ii. Uplink maximum output power with downlink carrier aggregation active does not show more than ¼ dB higher than the maximum output power without downlink carrier aggregation active, therefore SAR evaluation with downlink carrier aggregation active can be excluded.
- iii. The device supports downlink three carrier aggregation. For power measurement were control and acknowledge data is sent on uplink channels that operate identical to specifications when downlink carrier aggregation is inactive.
- iv. Selected highest measured power when downlink carrier aggregation is inactive for conducted power comparison with downlink carrier aggregation is active, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.
- v. For inter-band CA, the SCC selected highest bandwidth and near the middle of its transmission band. For SCC DL RB size and offset will base on the PCC corresponding RB allocation.
- vi. For non-contiguous intra-band CA, the SCC selected to provide maximum separation from the PCC and must remain fully within the downlink transmission band.
- vii. For Intra-band, contiguous CA, the downlink channels selected to perform the uplink power measurement must satisfy 3GPP channel spacing (5.4.1A of 3GPP TS 36.521 or equivalent) and channel bandwidth (5.4.2A) requirements.

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

LTE 4x4 MIMO (Downlink)

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

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

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

LTE Carrier Aggregation Conducted Power (Uplink)

LTE Uplink CA	2CC Uplink Carrier Aggregation
Intra-band	Antenna Tx
CA_7C	Ant1/4
CA_38C	Ant1/4

<Intra-band>

General Note:

- i. The device supports intra-band uplink carrier aggregation for LTE B7/38 with a maximum of two uplink component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre 3GPP requirement.
- ii. The device supports uplink carrier aggregation with a maximum of two uplink component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre the 3GPP requirement.
- iii. According Nov. 2017 TCB workshop, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.
- iv. Additional SAR measurement for LTE UL CA with other DL CA combinations active were not required since the maximum output power for this configuration was not > 0.25dB higher than the maximum output power for UL CA active.

<Inter-band uplink carrier aggregation consideration>

LTE Uplink CA	2CC Uplink Carrier Aggregation	
Inter -band	LTE Tx	LTE Tx
CA_2A-4A	Ant2	Ant1
CA_4A-5A	Ant1	Ant4
CA_4A-7A	Ant2	Ant3

General Note:

1. The single carrier of inter band CA uplink power level is the same as Non-CA standalone LTE power level.
2. For Inter band CA co-located SAR analysis is performed using standalone SAR summed together and they are more conservatively for inter band CA.

5G NR Output Power (Unit: dBm)

General Note:

1. 5G NR n5/n7/n66/n38/n41/n77/n78 is NSA mode.
2. 5G NR n2/n5/n7/n66/n38/n41/n48/n77/n78 is SA mode.
3. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
 - a. For DFT-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class2 and 3, the CP-OFDM mode will not higher than DFT-OFDM mode, therefore, similar FCC KDB 941225 D05 procedure for other modulation output power for each RB allocation configuration is > not ½ dB higher than the same configuration in DFT-s QPSK and the reported SAR for the DFT-s QPSK configuration is ≤ 1.45 W/kg; CP-OFDM testing is not required.
 - b. For DFT-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class2 and 3, for 16QAM/64QAM/256QAM and smaller bandwidth output power will spot check largest channel bandwidth worst RB configuration to ensure the 16QAM/64QAM/256QAM and smaller bandwidth output power will not ½ dB higher than the same configuration in the largest supported bandwidth.
 - c. SAR testing start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel
 - d. 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure
 - e. QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested
 - f. PI/2 BPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in QPSK, also reported SAR for the QPSK configuration is less than 1.45 W/kg, PI/2 BPSK /16QAM/64QAM/256QAM SAR testing are not required.
 - g. Smaller bandwidth output power for each RB allocation configuration for this device will not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device
4. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
5. For 5G NR, the simultaneous transmission analysis is used standalone SAR at total power level to show compliance.
6. NSA and SA mode should perform SAR separately. For the maximum power of NSA mode is the same as SA total power level, so SA SAR can represent NSA mode SAR.
7. 5G NR NSA mode, the power level is the same as 5G NR SA mode, so 5G NR NSA mode and SA mode power table only show one time.
8. 5G NR supports CP-OFDM and DFT-s-OFDM modulation, for DFT-s-OFDM power is higher than CP-OFDM, so only show DFT-s-OFDM power table and chose DFT-s-OFDM to perform SAR testing.
9. For DFT-s-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for the CP-OFDM mode will not higher than DFT-s-OFDM mode, therefore, CP-OFDM measurement is unnecessary.
10. 5G NR n77/n78 supports HPUE mode, HPUE power and SAR testing performed separately.
11. This device supports HPUE for 5G NR n77/78 with class 2 level, HPUE power has been measured separately. For 5G NR n77/78 performed full SAR testing with class 2, and 5G NR n77/78 HPUE SAR can represent power class 3 level SAR.
12. For 5G NR EN-DC mode, standalone SAR performed for 5G NR NSA band with the maximum power, EN-DC SAR summed EN-DC mode 5G NR standalone SAR and LTE standalone SAR, the result of EN-DC SAR is more conservatively.
13. For DSDA bands mode co-located SAR analysis is performed using standalone SAR summed together and they are more conservatively for DSDA bands mode.

<3GPP 38.101 MPR for EN-DC>

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

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

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

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

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

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

<EN-DC combination>

EN-DC combinations	LTE TX	NR TX
DC_26A_n78A	Ant1	Ant5
DC_2A_n66A	Ant2	Ant1
DC_2A_n77A	Ant1	Ant5
DC_2A_n78A	Ant1	Ant5
DC_38A_n78A	Ant2	Ant5
DC_41A_n78A	Ant2	Ant5
DC_4A_n38A	Ant2	Ant3
DC_4A_n41A	Ant2	Ant3
DC_4A_n78A	Ant2	Ant5
DC_4A_n7A	Ant2	Ant3
DC_5A_n66A	Ant4	Ant1
DC_5A_n78A	Ant1	Ant5
DC_5A_n7A	Ant4	Ant1
DC_66A_n38A	Ant2	Ant3
DC_66A_n41A	Ant2	Ant3
DC_66A_n78A	Ant2	Ant5
DC_66A_n7A	Ant2	Ant3
DC_7A_n5A	Ant1	Ant4
DC_7A_n78A	Ant2	Ant5
DC_41_n41A	Ant2	Ant1
DC_7A_n7A	Ant2	Ant1
DC_7A_n66A	Ant3	Ant2
DC_66A_n66A	Ant2	Ant1
DC_38A_n41A	Ant2	Ant1
DC_2A-5A_n78A	LTE B2:Ant2	Ant5
	LTE B5:Ant1	Ant5

Note: * For EN-DC combinations with uplink assigned to one LTE band and one NR band only.

<DSDA Configuration>

DSDA	LTE TX	NR TX
DSDA_B5+n41	Ant4	Ant1
DSDA_B5+n77	Ant1	Ant5
DSDA_B7+n77	Ant2	Ant5
DSDA_B41+n77	Ant2	Ant5

<WLAN Conducted Power>

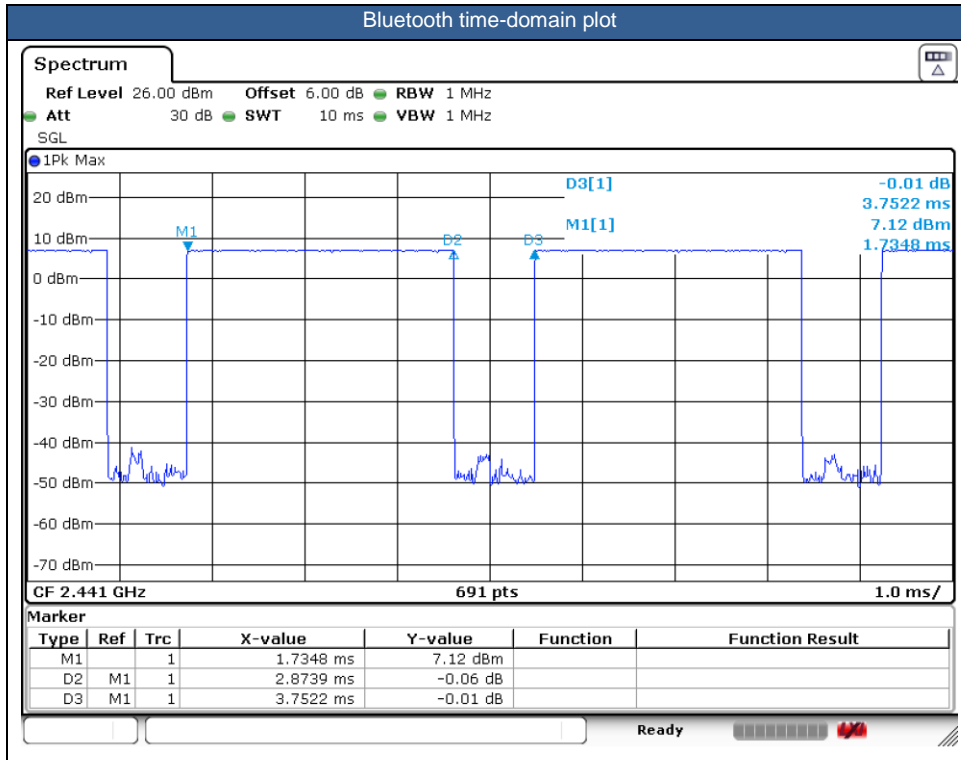
General Note:

1. The maximum output power specified for production units are determined for all applicable 802.11 transmission modes in each standalone and aggregated frequency band. Maximum output power is measured for the highest maximum output power configuration(s) in each frequency band according to the default power measurement procedures. For “Not required”, SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration. Additional output power measurements were not necessary.
2. Per KDB 248227 D01v02r02, SAR test reduction is determined according to 802.11 transmission mode configurations and certain exposure conditions with multiple test positions. In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements. For OFDM, in both 2.4 and 5 GHz bands, an initial test configuration must be determined for each standalone and aggregated frequency band, according to the transmission mode configuration with the highest maximum output power specified for production units to perform SAR measurements. If the same highest maximum output power applies to different combinations of channel bandwidths, modulations and data rates, additional procedures are applied to determine which test configurations require SAR measurement. When applicable, an initial test position may be applied to reduce the number of SAR measurements required for next to the ear, UMPC mini-tablet or hotspot mode configurations with multiple test positions.
3. For 2.4 GHz 802.11b DSSS, either the initial test position procedure for multiple exposure test positions or the DSSS procedure for fixed exposure position is applied; these are mutually exclusive. For 2.4 GHz and 5 GHz OFDM configurations, the initial test configuration is applied to measure SAR using either the initial test position procedure for multiple exposure test position configurations or the initial test configuration procedures for fixed exposure test conditions. Based on the reported SAR of the measured configurations and maximum output power of the transmission mode configurations that are not included in the initial test configuration, the subsequent test configuration and initial test position procedures are applied to determine if SAR measurements are required for the remaining OFDM transmission configurations. In general, the number of test channels that require SAR measurement is minimized based on maximum output power measured for the test sample(s).
4. For OFDM transmission configurations in the 2.4 GHz and 5 GHz bands, When the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel for each frequency band.
5. DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures.18 The initial test position procedure is described in the following:
 - a. When the reported SAR of the initial test position is ≤ 0.4 W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band.
 - b. When the reported SAR of the test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is ≤ 0.8 W/kg or all required test position are tested.
 - c. For all positions/configurations, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.
6. 802.11 ax supports both full tone size mode and partial tone size mode, after verification on partial tone size mode that partial size tone mode power will not be higher than full tone size mode, therefore, full tone mode power was chosen to be measured in this report.

<2.4GHz Bluetooth>

General Note:

1. For 2.4GHz Bluetooth SAR testing was selected 1Mbps, due to its highest average power.
2. The Bluetooth duty cycle are 76.59% as following figure, for Bluetooth SAR scaling need further consideration and the theoretical duty cycle is 100%, therefore the actual duty cycle will be scaled up to 83.3% for Bluetooth reported SAR calculation.





14. Antenna Location

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

15. SAR Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
 - a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
 - b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
 - c. For SAR testing of Bluetooth signal with 83.3% theoretical duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle) *83.3%".
 - d. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
 - e. For BT/WLAN: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
 - f. For TDD LTE SAR measurement of power class 3, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The reported TDD LTE SAR (W/kg) = Measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
 - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
 - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
 - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required when the measured SAR is ≥ 0.8W/kg. Per KDB 865664 D01v01r04, if the extremity repeated SAR is necessary, the same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.
4. The device implements Proximity sensors/receiver detect mechanism reduced power for the power management for SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity). The device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to appendix E. power table.
5. For WLAN/BT when transmit simultaneously with each other, or when transmit simultaneous with WWAN/BT, power reduction will be activated to head, Body and hotspot exposure conditions.
6. 5G NR n77/n78 supports HPUE mode, HPUE power and SAR testing performed separately.
7. 5G NR n77/n78 HUPE with higher power, 5G NR n77/n78 HUPE SAR can represent power class 3 level SAR.
8. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
9. For 5G NR EN-DC mode, standalone SAR performed for 5G NR NSA band with the maximum power, EN-DC SAR summed EN-DC mode 5G NR standalone SAR and LTE standalone SAR, the result of EN-DC SAR is more conservatively.
10. Per KDB648474 D04v01r03, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg, however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power (for handheld on state, the maximum full power means reduced power), including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.
 - a. WLAN 5.3/5.5GHz tested the product specific 10g SAR since it has no hotspot mode.
 - b. When 10-g product specific 10g SAR is considered, SAR thresholds is specified in the procedures for SAR test reduction and exclusion should be multiplied by 2.5.
11. According to Nov. 2017 TCB workshop, when the reported 1gSAR for UL CA configuration is <1.2 W/kg, UL CA 1gSAR is not required for all required test channels (PCC based).
12. SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hotspot SAR.
13. For Phablet devices, when hotspot mode is not supported, Product specific 10-g SAR is required for all surfaces and edges with an antenna located at ≤ 25mm from that surface or edge in direct contact with a flat phantom, to address interactive hand use exposure conditions.
14. For WLAN distance SAR test at Top Side 15mm for simultaneous transmission analysis.
15. The device for SAR testing was configured by the 3GPP MPR implementations and in order to more conservative RF exposure assessment to determine SAR compliance, the actual maximum output power in production unit refer to Part 96 report and tune up document.

UL duty cycle detection mechanism specification:

The device supports the UL duty cycle detection mechanism for LTE TDD & 5G NR TDD (including FR1 SA and FR1 ENDC). The mechanism is that the output power (maximum burst power) is different at different UL duty cycle levels, but maintaining the maximum average power is matched to the SAR is compliant. When at low duty cycle, the transmit power is compensated but does not exceed the upper range defined by the 3GPP standard, thus improving the OTA performance

Note:

1. SAR is not required because the average output power is not higher than the Max UL duty cycle configuration.
2. For each band, the SAR evaluation uses the highest Time-average power configuration.
3. The detail results please referred to KDB inquiry with the FCC and Duty cycle_OD.

GSM Note:

1. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.
2. Other configurations of GSM / GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is \leq ¼ dB higher than the primary mode, SAR measurement is not required for the secondary mode.

WCDMA Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA / HSPA+ is \leq ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA/ HSPA+ to RMC12.2Kbps and the adjusted SAR is \leq 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+, and according to the following RF output power, the output power results of the secondary modes (HSDPA / HSUPA / DC-HSDPA / HSPA+) are less than ¼ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+ .

LTE Note:

1. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
2. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. Per KDB 941225 D05v02r05, for QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are \leq 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is $>$ 1.45 W/kg, the remaining required test channels must also be tested.
4. Per KDB 941225 D05v02r05, 16QAM/64QAM/256QAM output power for each RB allocation configuration is $>$ not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is \leq 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM/64QAM/256QAM SAR testing is not required.
5. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is $>$ not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is \leq 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B4 / B5 / B12 / B17 / B26 / B38 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
7. LTE B17 SAR test was covered by B12; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
 - a. the maximum output power, including tolerance, for the smaller band is \leq the larger band to qualify for the SAR test exclusion
 - b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band

5G NR Note:

1. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
 - a. SAR testing start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
 - b. 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure
 - c. QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
 - d. PI/2 BPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not $\frac{1}{2}$ dB higher than the same configuration in QPSK, also reported SAR for the QPSK configuration is less than 1.45 W/kg, PI/2 BPSK /16QAM/64QAM/256QAM SAR testing are not required.
 - e. Smaller bandwidth output power for each RB allocation configuration for this device will not $\frac{1}{2}$ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device
 - f. For 5G FR1 n5 /n7/n66/n38/n41/n77 the maximum bandwidth does not support three non-overlapping channels, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

WLAN/Bluetooth Note:

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

DSI status description:

The device has the following DSI state which used at different exposure condition.

Exposure Condition	DSI	Trigger conditions
Head SAR	DSI 1	Earpiece On
Body worn/Hotspot/Extremity SAR	DSI 4	Sensor On for top Ant (Ant2/4/5/7)
Body worn/Hotspot/Extremity SAR	DSI 3	Sensor On for bottom Ant (Ant1)
Body worn/Hotspot/Extremity SAR	DSI 2	Sensor Off/ receiver off



15.1 Head SAR

Table with columns: 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). Rows include 750MHz and 835MHz test results for LTE and GSM bands.



	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 4	DSI 1	4132	826.4	22.90	24.00	1.288	-	-	0.02	0.766	0.987
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 4	DSI 1	4233	846.6	22.96	24.00	1.271	-	-	0.12	0.809	1.028
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 4	DSI 1	4182	836.4	22.97	24.00	1.268	-	-	-0.16	0.627	0.795
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 4	DSI 1	4182	836.4	22.97	24.00	1.268	-	-	-0.02	0.577	0.731
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 4	DSI 1	4182	836.4	22.97	24.00	1.268	-	-	0.08	0.510	0.647
	LTE Band 5	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 1	20525	836.5	24.34	25.50	1.306	-	-	0.07	0.238	0.311
	LTE Band 5	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 1	DSI 1	20525	836.5	23.37	24.50	1.297	-	-	-0.11	0.188	0.244
	LTE Band 5	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 1	20525	836.5	24.34	25.50	1.306	-	-	-0.06	0.111	0.145
	LTE Band 5	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 1	DSI 1	20525	836.5	23.37	24.50	1.297	-	-	-0.15	0.088	0.114
	LTE Band 5	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI 1	20525	836.5	24.34	25.50	1.306	-	-	0.03	0.187	0.244
	LTE Band 5	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 1	DSI 1	20525	836.5	23.37	24.50	1.297	-	-	-0.13	0.149	0.193
	LTE Band 5	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	DSI 1	20525	836.5	24.34	25.50	1.306	-	-	0.16	0.112	0.146
	LTE Band 5	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 1	DSI 1	20525	836.5	23.37	24.50	1.297	-	-	-0.15	0.089	0.115
05	LTE Band 5	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI 1	20525	836.5	22.53	23.50	1.250	-	-	-0.05	0.766	0.958
	LTE Band 5	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 4	DSI 1	20450	829	22.40	23.50	1.288	-	-	-0.1	0.741	0.955
	LTE Band 5	10M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	DSI 1	20600	844	22.35	23.50	1.303	-	-	0.05	0.732	0.954
	LTE Band 5	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI 1	20525	836.5	22.53	23.50	1.250	-	-	0.02	0.596	0.745
	LTE Band 5	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 4	DSI 1	20450	829	22.40	23.50	1.288	-	-	0.07	0.570	0.734
	LTE Band 5	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	DSI 1	20525	836.5	22.53	23.50	1.250	-	-	-0.05	0.541	0.676
	LTE Band 5	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 4	DSI 1	20450	829	22.40	23.50	1.288	-	-	-0.08	0.518	0.667
	LTE Band 5	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	DSI 1	20525	836.5	22.53	23.50	1.250	-	-	-0.13	0.481	0.601
	LTE Band 5	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 4	DSI 1	20450	829	22.40	23.50	1.288	-	-	0.01	0.461	0.594
	LTE Band 5 ENDC	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI 1	20525	836.5	19.55	20.50	1.245	-	-	0.06	0.422	0.525
	LTE Band 26	15M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 1	26865	831.5	24.41	25.50	1.285	-	-	0.02	0.244	0.314
	LTE Band 26	15M	QPSK	36	0	-	Right Cheek	0mm	Ant 1	DSI 1	26865	831.5	23.48	24.50	1.265	-	-	0.16	0.189	0.239
	LTE Band 26	15M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 1	26865	831.5	24.41	25.50	1.285	-	-	0.01	0.113	0.145
	LTE Band 26	15M	QPSK	36	0	-	Right Tilted	0mm	Ant 1	DSI 1	26865	831.5	23.48	24.50	1.265	-	-	-0.16	0.089	0.113
	LTE Band 26	15M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI 1	26865	831.5	24.41	25.50	1.285	-	-	0.1	0.193	0.248
	LTE Band 26	15M	QPSK	36	0	-	Left Cheek	0mm	Ant 1	DSI 1	26865	831.5	23.48	24.50	1.265	-	-	-0.04	0.154	0.195
	LTE Band 26	15M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	DSI 1	26865	831.5	24.41	25.50	1.285	-	-	-0.01	0.115	0.148
	LTE Band 26	15M	QPSK	36	0	-	Left Tilted	0mm	Ant 1	DSI 1	26865	831.5	23.48	24.50	1.265	-	-	0.02	0.089	0.113
06	LTE Band 26	15M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI 1	26865	831.5	23.01	24.00	1.256	-	-	-0.01	0.837	1.051
	LTE Band 26	15M	QPSK	36	0	-	Right Cheek	0mm	Ant 4	DSI 1	26865	831.5	22.95	24.00	1.274	-	-	0.03	0.656	0.835
	LTE Band 26	15M	QPSK	75	0	-	Right Cheek	0mm	Ant 4	DSI 1	26865	831.5	22.93	24.00	1.279	-	-	-0.05	0.816	1.044
	LTE Band 26	15M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI 1	26865	831.5	23.01	24.00	1.256	-	-	0.14	0.621	0.780
	LTE Band 26	15M	QPSK	36	0	-	Right Tilted	0mm	Ant 4	DSI 1	26865	831.5	22.95	24.00	1.274	-	-	-0.01	0.495	0.630
	LTE Band 26	15M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	DSI 1	26865	831.5	23.01	24.00	1.256	-	-	0.07	0.586	0.736
	LTE Band 26	15M	QPSK	36	0	-	Left Cheek	0mm	Ant 4	DSI 1	26865	831.5	22.95	24.00	1.274	-	-	0.09	0.451	0.574
	LTE Band 26	15M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	DSI 1	26865	831.5	23.01	24.00	1.256	-	-	0.11	0.515	0.647
	LTE Band 26	15M	QPSK	36	0	-	Left Tilted	0mm	Ant 4	DSI 1	26865	831.5	22.95	24.00	1.274	-	-	-0.13	0.397	0.506
	FR1 n5	20M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 1	DSI 1	167300	836.5	24.58	25.70	1.294	-	-	-0.09	0.259	0.335
	FR1 n5	20M	QPSK	50	28	DFT-SCS-15KHz	Right Cheek	0mm	Ant 1	DSI 1	167300	836.5	24.47	25.70	1.327	-	-	-0.02	0.247	0.328
	FR1 n5	20M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 1	DSI 1	167300	836.5	24.58	25.70	1.294	-	-	-0.09	0.152	0.197
	FR1 n5	20M	QPSK	50	28	DFT-SCS-15KHz	Right Tilted	0mm	Ant 1	DSI 1	167300	836.5	24.47	25.70	1.327	-	-	0.14	0.152	0.202
	FR1 n5	20M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 1	DSI 1	167300	836.5	24.58	25.70	1.294	-	-	0.1	0.217	0.281
	FR1 n5	20M	QPSK	50	28	DFT-SCS-15KHz	Left Cheek	0mm	Ant 1	DSI 1	167300	836.5	24.47	25.70	1.327	-	-	-0.09	0.211	0.280
	FR1 n5	20M	QPSK	1	1	DFT-SCS-15KHz	Left Tilted	0mm	Ant 1	DSI 1	167300	836.5	24.58	25.70	1.294	-	-	0.07	0.138	0.179
	FR1 n5	20M	QPSK	50	28	DFT-SCS-15KHz	Left Tilted	0mm	Ant 1	DSI 1	167300	836.5	24.47	25.70	1.327	-	-	-0.09	0.141	0.187
	FR1 n5	20M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	DSI 1	167300	836.5	23.27	24.20	1.239	-	-	-0.01	0.810	1.003
07	FR1 n5	20M	QPSK	50	28	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	DSI 1	167300	836.5	23.26	24.20	1.242	-	-	0.08	0.860	1.068
	FR1 n5	20M	QPSK	100	0	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	DSI 1	167300	836.5	23.23	24.20	1.250	-	-	-0.08	0.851	1.064
	FR1 n5	20M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	DSI 1	167300	836.5	23.27	24.20	1.239	-	-	0.05	0.618	0.766
	FR1 n5	20M	QPSK	50	28	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	DSI 1	167300	836.5	23.26	24.20	1.242	-	-	0.06	0.641	0.796
	FR1 n5	20M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 4	DSI 1	167300	836.5	23.27	24.20	1.239	-	-	-0.08	0.561	0.695
	FR1 n5	20M	QPSK	50	28	DFT-SCS-15KHz	Left Cheek	0mm	Ant 4	DSI 1	167300	836.5	23.26	24.20	1.242	-	-	0.13	0.597	0.741
	FR1 n5	20M	QPSK	1	1	DFT-SCS-15KHz	Left Tilted	0mm	Ant 4	DSI 1	167300	836.5	23.27	24.20	1.239	-	-	0.03	0.519	0.643



FCC SAR Test Report

Report No. : FA471506

	FR1 n5	20M	QPSK	50	28	DFT-SCS-15KHz	Left Tilted	0mm	Ant 4	DSI 1	167300	836.5	23.26	24.20	1.242	-	-	0.18	0.549	0.682
	FR1 n5 ENDC	20M	QPSK	50	28	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	DSI 1	167300	836.5	20.30	21.20	1.230	-	-	0.01	0.425	0.523
1750MHz																				
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 1	DSI 1	1413	1732.6	23.96	25.00	1.271	-	-	0.06	0.068	0.086
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 1	DSI 1	1413	1732.6	23.96	25.00	1.271	-	-	-0.16	0.030	0.038
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 1	DSI 1	1413	1732.6	23.96	25.00	1.271	-	-	-0.18	0.065	0.083
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 1	DSI 1	1413	1732.6	23.96	25.00	1.271	-	-	-0.07	0.022	0.028
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 4	DSI 1	1413	1732.6	14.80	15.50	1.175	-	-	-0.04	0.687	0.807
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 4	DSI 1	1312	1712.4	14.77	15.50	1.183	-	-	-0.09	0.664	0.786
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 4	DSI 1	1413	1732.6	14.80	15.50	1.175	-	-	-0.1	0.686	0.806
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 4	DSI 1	1312	1712.4	14.77	15.50	1.183	-	-	0.18	0.645	0.763
08	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 4	DSI 1	1513	1752.6	14.71	15.50	1.199	-	-	-0.01	0.706	0.847
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 4	DSI 1	1413	1732.6	14.80	15.50	1.175	-	-	-0.17	0.392	0.461
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 4	DSI 1	1413	1732.6	14.80	15.50	1.175	-	-	0.01	0.454	0.533
	LTE Band 4	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 1	20175	1732.5	23.86	25.00	1.300	-	-	0.06	0.063	0.082
	LTE Band 4	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI 1	20175	1732.5	22.86	24.00	1.300	-	-	0.11	0.049	0.064
	LTE Band 4	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 1	20175	1732.5	23.86	25.00	1.300	-	-	-0.08	0.010	0.013
	LTE Band 4	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI 1	20175	1732.5	22.86	24.00	1.300	-	-	-0.1	0.006	0.008
	LTE Band 4	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI 1	20175	1732.5	23.86	25.00	1.300	-	-	-0.01	0.062	0.081
	LTE Band 4	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 1	DSI 1	20175	1732.5	22.86	24.00	1.300	-	-	-0.09	0.052	0.068
	LTE Band 4	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	DSI 1	20175	1732.5	23.86	25.00	1.300	-	-	-0.06	0.003	0.004
	LTE Band 4	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 1	DSI 1	20175	1732.5	22.86	24.00	1.300	-	-	-0.17	0.001	0.001
	LTE Band 4 Other PA	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 2	DSI 1	20175	1732.5	22.32	23.00	1.169	-	-	0.01	0.431	0.504
	LTE Band 4 Other PA	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 2	DSI 1	20175	1732.5	22.25	23.00	1.189	-	-	-0.01	0.357	0.424
	LTE Band 4 Other PA	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 2	DSI 1	20175	1732.5	22.32	23.00	1.169	-	-	-0.11	0.089	0.104
	LTE Band 4 Other PA	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 2	DSI 1	20175	1732.5	22.25	23.00	1.189	-	-	0.14	0.074	0.088
	LTE Band 4 Other PA	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 2	DSI 1	20175	1732.5	22.32	23.00	1.169	-	-	0.03	0.274	0.320
	LTE Band 4 Other PA	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 2	DSI 1	20175	1732.5	22.25	23.00	1.189	-	-	0.1	0.219	0.260
	LTE Band 4 Other PA	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 2	DSI 1	20175	1732.5	22.32	23.00	1.169	-	-	0.16	0.060	0.070
	LTE Band 4 Other PA	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 2	DSI 1	20175	1732.5	22.25	23.00	1.189	-	-	-0.06	0.050	0.059
	LTE Band 4	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI 1	20175	1732.5	15.21	16.00	1.199	-	-	-0.11	0.667	0.800
	LTE Band 4	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	DSI 1	20175	1732.5	15.17	16.00	1.211	-	-	0.17	0.662	0.801
	LTE Band 4	20M	QPSK	100	0	-	Right Cheek	0mm	Ant 4	DSI 1	20175	1732.5	15.12	16.00	1.225	-	-	-0.16	0.652	0.798
09	LTE Band 4	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI 1	20175	1732.5	15.21	16.00	1.199	-	-	-0.05	0.672	0.806
	LTE Band 4	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	DSI 1	20175	1732.5	15.17	16.00	1.211	-	-	-0.17	0.652	0.789
	LTE Band 4	20M	QPSK	100	0	-	Right Tilted	0mm	Ant 4	DSI 1	20175	1732.5	15.12	16.00	1.225	-	-	0.11	0.657	0.805
	LTE Band 4	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	DSI 1	20175	1732.5	15.21	16.00	1.199	-	-	-0.05	0.417	0.500
	LTE Band 4	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 4	DSI 1	20175	1732.5	15.17	16.00	1.211	-	-	-0.01	0.410	0.496
	LTE Band 4	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	DSI 1	20175	1732.5	15.21	16.00	1.199	-	-	-0.15	0.476	0.571
	LTE Band 4	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 4	DSI 1	20175	1732.5	15.17	16.00	1.211	-	-	-0.12	0.471	0.570
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 1	132322	1745	23.94	25.00	1.276	-	-	0.09	0.068	0.087
	LTE Band 66	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI 1	132322	1745	22.98	24.00	1.265	-	-	0.02	0.063	0.080
	LTE Band 66	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 1	132322	1745	23.94	25.00	1.276	-	-	-0.16	0.046	0.059
	LTE Band 66	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI 1	132322	1745	22.98	24.00	1.265	-	-	0.05	0.044	0.056
	LTE Band 66	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI 1	132322	1745	23.94	25.00	1.276	-	-	-0.03	0.066	0.084
	LTE Band 66	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 1	DSI 1	132322	1745	22.98	24.00	1.265	-	-	0.17	0.064	0.081
	LTE Band 66	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	DSI 1	132322	1745	23.94	25.00	1.276	-	-	-0.15	0.020	0.026
	LTE Band 66	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 1	DSI 1	132322	1745	22.98	24.00	1.265	-	-	0.16	0.011	0.014
	LTE Band 66 Other PA	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 2	DSI 1	132322	1745	22.40	23.00	1.148	-	-	0.16	0.438	0.503
	LTE Band 66 Other PA	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 2	DSI 1	132322	1745	22.38	23.00	1.153	-	-	0.05	0.370	0.427
	LTE Band 66 Other PA	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 2	DSI 1	132322	1745	22.40	23.00	1.148	-	-	-0.06	0.086	0.099
	LTE Band 66	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 2	DSI 1	132322	1745	22.38	23.00	1.153	-	-	-0.13	0.075	0.087



FCC SAR Test Report

Report No. : FA471506

Table with columns for frequency bands (LTE, FR1, GSM), power, modulation, and SAR values. Includes a section for 1900MHz GSM bands.



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Report No. : FA471506

	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Right Cheek	0mm	Ant 4	DSI 1	512	1850.2	18.33	19.50	1.309	-	-	-0.15	0.555	0.727
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Right Cheek	0mm	Ant 4	DSI 1	810	1909.8	18.32	19.50	1.312	-	-	0.19	0.734	0.963
12	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Right Tilted	0mm	Ant 4	DSI 1	661	1880	18.37	19.50	1.297	-	-	-0.01	0.745	0.966
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Right Tilted	0mm	Ant 4	DSI 1	512	1850.2	18.33	19.50	1.309	-	-	0.07	0.587	0.768
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Right Tilted	0mm	Ant 4	DSI 1	810	1909.8	18.32	19.50	1.312	-	-	-0.18	0.722	0.947
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Left Cheek	0mm	Ant 4	DSI 1	661	1880	18.37	19.50	1.297	-	-	0.03	0.378	0.490
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Left Tilted	0mm	Ant 4	DSI 1	661	1880	18.37	19.50	1.297	-	-	0.11	0.461	0.598
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 1	DSI 1	9400	1880	22.98	24.00	1.265	-	-	-0.12	0.070	0.089
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 1	DSI 1	9400	1880	22.98	24.00	1.265	-	-	-0.12	0.057	0.072
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 1	DSI 1	9400	1880	22.98	24.00	1.265	-	-	-0.03	0.065	0.082
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 1	DSI 1	9400	1880	22.98	24.00	1.265	-	-	0.02	0.055	0.070
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 4	DSI 1	9400	1880	15.65	16.50	1.216	-	-	-0.18	0.710	0.863
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 4	DSI 1	9262	1852.4	15.55	16.50	1.245	-	-	0.02	0.668	0.831
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 4	DSI 1	9538	1907.6	15.58	16.50	1.236	-	-	0.16	0.700	0.865
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 4	DSI 1	9400	1880	15.65	16.50	1.216	-	-	-0.03	0.671	0.816
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 4	DSI 1	9262	1852.4	15.55	16.50	1.245	-	-	0.07	0.670	0.834
13	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 4	DSI 1	9538	1907.6	15.58	16.50	1.236	-	-	-0.03	0.776	0.959
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 4	DSI 1	9400	1880	15.65	16.50	1.216	-	-	0.03	0.373	0.454
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 4	DSI 1	9400	1880	15.65	16.50	1.216	-	-	0.01	0.452	0.550
	LTE Band 2	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 1	18900	1880	22.98	24.00	1.265	-	-	-0.08	0.060	0.076
	LTE Band 2	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI 1	18900	1880	22.00	23.00	1.259	-	-	0.01	0.043	0.054
	LTE Band 2	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 1	18900	1880	22.98	24.00	1.265	-	-	-0.1	0.048	0.061
	LTE Band 2	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI 1	18900	1880	22.00	23.00	1.259	-	-	0.05	0.038	0.048
	LTE Band 2	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI 1	18900	1880	22.98	24.00	1.265	-	-	0.03	0.057	0.072
	LTE Band 2	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 1	DSI 1	18900	1880	22.00	23.00	1.259	-	-	0.07	0.046	0.058
	LTE Band 2	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	DSI 1	18900	1880	22.98	24.00	1.265	-	-	0.15	0.044	0.056
	LTE Band 2	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 1	DSI 1	18900	1880	22.00	23.00	1.259	-	-	-0.05	0.034	0.043
	LTE Band 2 Other PA	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 2	DSI 1	18900	1880	14.57	15.50	1.239	-	-	-0.03	0.411	0.509
	LTE Band 2 Other PA	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 2	DSI 1	18900	1880	14.50	15.50	1.259	-	-	0.11	0.338	0.426
	LTE Band 2 Other PA	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 2	DSI 1	18900	1880	14.57	15.50	1.239	-	-	-0.17	0.071	0.088
	LTE Band 2 Other PA	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 2	DSI 1	18900	1880	14.50	15.50	1.259	-	-	0.17	0.058	0.073
	LTE Band 2 Other PA	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 2	DSI 1	18900	1880	14.57	15.50	1.239	-	-	-0.05	0.226	0.280
	LTE Band 2 Other PA	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 2	DSI 1	18900	1880	14.50	15.50	1.259	-	-	-0.17	0.180	0.227
	LTE Band 2 Other PA	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 2	DSI 1	18900	1880	14.57	15.50	1.239	-	-	0.05	0.059	0.073
	LTE Band 2 Other PA	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 2	DSI 1	18900	1880	14.50	15.50	1.259	-	-	0.06	0.050	0.063
	LTE Band 2	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI 1	18900	1880	15.12	16.00	1.225	-	-	0.08	0.659	0.807
	LTE Band 2	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI 1	18700	1860	15.09	16.00	1.233	-	-	0.01	0.665	0.820
	LTE Band 2	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI 1	19100	1900	14.98	16.00	1.265	-	-	0.03	0.641	0.811
	LTE Band 2	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	DSI 1	18900	1880	15.08	16.00	1.236	-	-	-0.08	0.660	0.816
	LTE Band 2	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	DSI 1	18700	1860	15.04	16.00	1.247	-	-	-0.08	0.596	0.743
	LTE Band 2	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	DSI 1	19100	1900	14.88	16.00	1.294	-	-	0.1	0.626	0.810
	LTE Band 2	20M	QPSK	100	0	-	Right Cheek	0mm	Ant 4	DSI 1	18900	1880	15.05	16.00	1.245	-	-	-0.18	0.558	0.694
	LTE Band 2	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI 1	18900	1880	15.12	16.00	1.225	-	-	0.1	0.667	0.817
	LTE Band 2	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI 1	18700	1860	15.09	16.00	1.233	-	-	0.12	0.579	0.714
14	LTE Band 2	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI 1	19100	1900	14.98	16.00	1.265	-	-	0.07	0.670	0.847
	LTE Band 2	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	DSI 1	18900	1880	15.08	16.00	1.236	-	-	0.08	0.650	0.803
	LTE Band 2	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	DSI 1	18700	1860	15.04	16.00	1.247	-	-	-0.17	0.573	0.715
	LTE Band 2	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	DSI 1	19100	1900	14.88	16.00	1.294	-	-	-0.03	0.637	0.824
	LTE Band 2	20M	QPSK	100	0	-	Right Tilted	0mm	Ant 4	DSI 1	18900	1880	15.05	16.00	1.245	-	-	0.14	0.600	0.747
	LTE Band 2	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	DSI 1	18900	1880	15.12	16.00	1.225	-	-	0.11	0.336	0.411
	LTE Band 2	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 4	DSI 1	18900	1880	15.08	16.00	1.236	-	-	-0.05	0.331	0.409
	LTE Band 2	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	DSI 1	18900	1880	15.12	16.00	1.225	-	-	0.18	0.402	0.492
	LTE Band 2	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 4	DSI 1	18900	1880	15.08	16.00	1.236	-	-	0.17	0.397	0.491



	FR1 n2	20M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 1	DSI 1	376000	1880	23.07	24.50	1.390	-	-	-0.08	0.071	0.099
	FR1 n2	20M	QPSK	50	28	DFT-SCS-15KHz	Right Cheek	0mm	Ant 1	DSI 1	376000	1880	23.05	24.50	1.396	-	-	-0.03	0.078	0.109
	FR1 n2	20M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 1	DSI 1	376000	1880	23.07	24.50	1.390	-	-	-0.08	0.056	0.078
	FR1 n2	20M	QPSK	50	28	DFT-SCS-15KHz	Right Tilted	0mm	Ant 1	DSI 1	376000	1880	23.05	24.50	1.396	-	-	-0.13	0.064	0.089
	FR1 n2	20M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 1	DSI 1	376000	1880	23.07	24.50	1.390	-	-	0.01	0.070	0.097
	FR1 n2	20M	QPSK	50	28	DFT-SCS-15KHz	Left Cheek	0mm	Ant 1	DSI 1	376000	1880	23.05	24.50	1.396	-	-	-0.11	0.075	0.105
	FR1 n2	20M	QPSK	1	1	DFT-SCS-15KHz	Left Tilted	0mm	Ant 1	DSI 1	376000	1880	23.07	24.50	1.390	-	-	0.03	0.060	0.083
	FR1 n2	20M	QPSK	50	28	DFT-SCS-15KHz	Left Tilted	0mm	Ant 1	DSI 1	376000	1880	23.05	24.50	1.396	-	-	-0.05	0.060	0.084
	FR1 n2 Other PA	20M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 2	DSI 1	376000	1880	0.00	0.00	1.000	-	-	-0.09	0.711	0.711
	FR1 n2 Other PA	20M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 2	DSI 1	372000	1860	23.07	24.50	1.390	-	-	-0.08	0.677	0.941
	FR1 n2 Other PA	20M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 2	DSI 1	380000	1900	23.05	24.50	1.396	-	-	0.13	0.732	1.022
	FR1 n2 Other PA	20M	QPSK	50	28	DFT-SCS-15KHz	Right Cheek	0mm	Ant 2	DSI 1	376000	1880	23.07	24.50	1.390	-	-	0.12	0.694	0.965
	FR1 n2 Other PA	20M	QPSK	50	28	DFT-SCS-15KHz	Right Cheek	0mm	Ant 2	DSI 1	372000	1860	23.05	24.50	1.396	-	-	0.03	0.687	0.959
	FR1 n2 Other PA	20M	QPSK	50	28	DFT-SCS-15KHz	Right Cheek	0mm	Ant 2	DSI 1	380000	1900	23.07	24.50	1.390	-	-	-0.07	0.758	1.054
	FR1 n2 Other PA	20M	QPSK	100	0	DFT-SCS-15KHz	Right Cheek	0mm	Ant 2	DSI 1	376000	1880	23.05	24.50	1.396	-	-	0.18	0.668	0.933
	FR1 n2 Other PA	20M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 2	DSI 1	376000	1880	23.07	24.50	1.390	-	-	0.16	0.142	0.197
	FR1 n2 Other PA	20M	QPSK	50	28	DFT-SCS-15KHz	Right Tilted	0mm	Ant 2	DSI 1	376000	1880	23.05	24.50	1.396	-	-	-0.1	0.140	0.195
	FR1 n2 Other PA	20M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 2	DSI 1	376000	1880	0.00	0.00	1.000	-	-	0.07	0.475	0.475
	FR1 n2 Other PA	20M	QPSK	50	28	DFT-SCS-15KHz	Left Cheek	0mm	Ant 2	DSI 1	376000	1880	17.64	19.00	1.368	-	-	0.01	0.466	0.637
	FR1 n2 Other PA	20M	QPSK	1	1	DFT-SCS-15KHz	Left Tilted	0mm	Ant 2	DSI 1	376000	1880	17.62	19.00	1.374	-	-	-0.18	0.114	0.157
	FR1 n2 Other PA	20M	QPSK	50	28	DFT-SCS-15KHz	Left Tilted	0mm	Ant 2	DSI 1	376000	1880	17.54	19.00	1.400	-	-	0.03	0.114	0.160
	FR1 n2	20M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	DSI 1	376000	1880	14.59	16.00	1.384	-	-	-0.15	0.653	0.903
	FR1 n2	20M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	DSI 1	372000	1860	14.53	16.00	1.403	-	-	-0.15	0.617	0.866
	FR1 n2	20M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	DSI 1	380000	1900	14.53	16.00	1.403	-	-	0.11	0.660	0.926
	FR1 n2	20M	QPSK	50	28	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	DSI 1	376000	1880	14.55	16.00	1.396	-	-	-0.08	0.619	0.864
	FR1 n2	20M	QPSK	50	28	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	DSI 1	372000	1860	14.53	16.00	1.403	-	-	-0.17	0.636	0.892
	FR1 n2	20M	QPSK	50	28	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	DSI 1	380000	1900	14.51	16.00	1.409	-	-	-0.08	0.710	1.001
	FR1 n2	20M	QPSK	100	0	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	DSI 1	376000	1880	14.58	16.00	1.387	-	-	-0.04	0.607	0.842
	FR1 n2	20M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	DSI 1	376000	1880	14.59	16.00	1.384	-	-	-0.08	0.649	0.898
	FR1 n2	20M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	DSI 1	372000	1860	14.53	16.00	1.403	-	-	0.17	0.657	0.922
	FR1 n2	20M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	DSI 1	380000	1900	14.53	16.00	1.403	-	-	0.18	0.730	1.024
	FR1 n2	20M	QPSK	50	28	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	DSI 1	376000	1880	14.55	16.00	1.396	-	-	-0.04	0.665	0.929
	FR1 n2	20M	QPSK	50	28	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	DSI 1	372000	1860	14.53	16.00	1.403	-	-	-0.08	0.670	0.940
15	FR1 n2	20M	QPSK	50	28	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	DSI 1	380000	1900	14.51	16.00	1.409	-	-	0.18	0.758	1.068
	FR1 n2	20M	QPSK	100	0	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	DSI 1	376000	1880	14.58	16.00	1.387	-	-	-0.13	0.668	0.926
	FR1 n2	20M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 4	DSI 1	376000	1880	14.59	16.00	1.384	-	-	-0.13	0.354	0.490
	FR1 n2	20M	QPSK	50	28	DFT-SCS-15KHz	Left Cheek	0mm	Ant 4	DSI 1	376000	1880	14.55	16.00	1.396	-	-	0.06	0.365	0.510
	FR1 n2	20M	QPSK	1	1	DFT-SCS-15KHz	Left Tilted	0mm	Ant 4	DSI 1	376000	1880	14.59	16.00	1.384	-	-	-0.03	0.420	0.581
	FR1 n2	20M	QPSK	50	28	DFT-SCS-15KHz	Left Tilted	0mm	Ant 4	DSI 1	376000	1880	14.55	16.00	1.396	-	-	-0.07	0.440	0.614
2600MHz																				
	LTE Band 7	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 1	21100	2535	23.47	24.50	1.268	-	-	-0.09	0.110	0.139
	LTE Band 7	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI 1	21100	2535	22.52	23.50	1.253	-	-	0.14	0.084	0.105
	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 1	21100	2535	23.47	24.50	1.268	-	-	-0.01	0.087	0.110
	LTE Band 7	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI 1	21100	2535	22.52	23.50	1.253	-	-	-0.12	0.067	0.084
	LTE Band 7	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI 1	21100	2535	23.47	24.50	1.268	-	-	0.07	0.044	0.056
	LTE Band 7	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 1	DSI 1	21100	2535	22.52	23.50	1.253	-	-	0.09	0.034	0.043
	LTE Band 7	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	DSI 1	21100	2535	23.47	24.50	1.268	-	-	0.04	0.082	0.104
	LTE Band 7	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 1	DSI 1	21100	2535	22.52	23.50	1.253	-	-	0.11	0.060	0.075
	LTE Band 7C	20M	QPSK	1	99	-	Right Cheek	0mm	Ant 1	DSI 1	21100+21298	2535+2554.8	23.29	24.50	1.321	-	-	0.05	0.095	0.126
	LTE Band 7 Other PA	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 2	DSI 1	21100	2535	20.29	21.00	1.178	-	-	-0.13	0.437	0.515
	LTE Band 7 Other PA	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 2	DSI 1	21100	2535	20.28	21.00	1.180	-	-	-0.11	0.346	0.408
	LTE Band 7 Other PA	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 2	DSI 1	21100	2535	20.29	21.00	1.178	-	-	-0.16	0.090	0.106
	LTE Band 7 Other PA	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 2	DSI 1	21100	2535	20.28	21.00	1.180	-	-	-0.17	0.075	0.089
	LTE Band 7 Other PA	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 2	DSI 1	21100	2535	20.29	21.00	1.178	-	-	0.11	0.283	0.333



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	LTE Band 7 Other PA	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 2	DSI 1	21100	2535	20.28	21.00	1.180	-	-	-0.05	0.216	0.255
	LTE Band 7 Other PA	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 2	DSI 1	21100	2535	20.29	21.00	1.178	-	-	-0.01	0.067	0.079
	LTE Band 7 Other PA	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 2	DSI 1	21100	2535	20.28	21.00	1.180	-	-	-0.14	0.053	0.063
	LTE Band 7 ENDC&UL_CA	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 3	DSI 1	21100	2535	19.22	20.00	1.197	-	-	0.03	0.431	0.516
	LTE Band 7 ENDC&UL_CA	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 3	DSI 1	21100	2535	19.21	20.00	1.199	-	-	-0.02	0.409	0.491
	LTE Band 7 ENDC&UL_CA	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 3	DSI 1	21100	2535	19.22	20.00	1.197	-	-	-0.05	0.216	0.258
	LTE Band 7 ENDC&UL_CA	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 3	DSI 1	21100	2535	19.21	20.00	1.199	-	-	0.05	0.157	0.188
	LTE Band 7 ENDC&UL_CA	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 3	DSI 1	21100	2535	19.22	20.00	1.197	-	-	-0.03	0.143	0.171
	LTE Band 7 ENDC&UL_CA	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 3	DSI 1	21100	2535	19.21	20.00	1.199	-	-	-0.15	0.104	0.125
	LTE Band 7 ENDC&UL_CA	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 3	DSI 1	21100	2535	19.22	20.00	1.197	-	-	0.02	0.155	0.185
	LTE Band 7 ENDC&UL_CA	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 3	DSI 1	21100	2535	19.21	20.00	1.199	-	-	0.07	0.113	0.136
	LTE Band 7	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI 1	21100	2535	16.99	18.50	1.416	-	-	-0.15	0.449	0.636
	LTE Band 7	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	DSI 1	21100	2535	16.97	18.50	1.422	-	-	-0.12	0.447	0.636
	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI 1	21100	2535	16.99	18.50	1.416	-	-	0.02	0.568	0.804
	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI 1	20850	2510	16.93	18.50	1.435	-	-	0.06	0.488	0.701
	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI 1	21350	2560	16.90	18.50	1.445	-	-	0.02	0.490	0.708
16	LTE Band 7	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	DSI 1	21100	2535	16.97	18.50	1.422	-	-	0.05	0.574	0.816
	LTE Band 7	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	DSI 1	20850	2510	16.88	18.50	1.452	-	-	0.08	0.484	0.703
	LTE Band 7	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	DSI 1	21350	2560	16.86	18.50	1.459	-	-	0.01	0.488	0.712
	LTE Band 7	20M	QPSK	100	0	-	Right Tilted	0mm	Ant 4	DSI 1	21100	2535	16.91	18.50	1.442	-	-	0.02	0.507	0.731
	LTE Band 7	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	DSI 1	21100	2535	16.99	18.50	1.416	-	-	0.08	0.216	0.306
	LTE Band 7	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 4	DSI 1	21100	2535	16.97	18.50	1.422	-	-	0.01	0.213	0.303
	LTE Band 7	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	DSI 1	21100	2535	16.99	18.50	1.416	-	-	0.02	0.303	0.429
	LTE Band 7	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 4	DSI 1	21100	2535	16.97	18.50	1.422	-	-	-0.11	0.296	0.421
	LTE Band 7C	20M	QPSK	1	99	-	Right Tilted	0mm	Ant 4	DSI 1	21100+21298	2535+2554.8	16.86	18.50	1.459	-	-	-0.05	0.536	0.782
	LTE Band 38	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 1	38000	2595	23.51	24.50	1.256	62.9	1.006	-0.04	0.072	0.091
	LTE Band 38	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI 1	38000	2595	22.49	23.50	1.262	62.9	1.006	-0.01	0.062	0.079
	LTE Band 38	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 1	38000	2595	23.51	24.50	1.256	62.9	1.006	0.09	0.038	0.048
	LTE Band 38	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI 1	38000	2595	22.49	23.50	1.262	62.9	1.006	0.1	0.035	0.044
	LTE Band 38	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI 1	38000	2595	23.51	24.50	1.256	62.9	1.006	-0.04	0.047	0.059
	LTE Band 38	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 1	DSI 1	38000	2595	22.49	23.50	1.262	62.9	1.006	0.15	0.035	0.044
	LTE Band 38	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	DSI 1	38000	2595	23.51	24.50	1.256	62.9	1.006	0.09	0.038	0.048
	LTE Band 38	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 1	DSI 1	38000	2595	22.49	23.50	1.262	62.9	1.006	-0.16	0.020	0.025
	LTE Band 38C	20M	QPSK	1	99	-	Right Cheek	0mm	Ant 1	DSI 1	37901+38099	2585.1+2604.9	23.39	24.50	1.291	62.9	1.006	0.05	0.062	0.081
	LTE Band 38 Other PA	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 2	DSI 1	38000	2595	22.30	23.00	1.175	62.9	1.006	-0.04	0.425	0.502
	LTE Band 38 Other PA	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 2	DSI 1	38000	2595	22.24	23.00	1.191	62.9	1.006	-0.06	0.360	0.431
	LTE Band 38 Other PA	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 2	DSI 1	38000	2595	22.30	23.00	1.175	62.9	1.006	-0.17	0.099	0.117
	LTE Band 38 Other PA	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 2	DSI 1	38000	2595	22.24	23.00	1.191	62.9	1.006	-0.01	0.089	0.107
	LTE Band 38 Other PA	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 2	DSI 1	38000	2595	22.30	23.00	1.175	62.9	1.006	-0.11	0.292	0.345
	LTE Band 38 Other PA	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 2	DSI 1	38000	2595	22.24	23.00	1.191	62.9	1.006	0.14	0.226	0.271
	LTE Band 38 Other PA	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 2	DSI 1	38000	2595	22.30	23.00	1.175	62.9	1.006	0.03	0.066	0.078
	LTE Band 38 Other PA	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 2	DSI 1	38000	2595	22.24	23.00	1.191	62.9	1.006	0.1	0.052	0.062
	LTE Band 38	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI 1	38000	2595	19.19	20.50	1.352	62.9	1.006	-0.08	0.432	0.588
	LTE Band 38	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	DSI 1	38000	2595	19.13	20.50	1.371	62.9	1.006	-0.13	0.431	0.594
17	LTE Band 38	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	DSI 1	38000	2595	19.19	20.50	1.352	62.9	1.006	0.06	0.533	0.725
	LTE Band 38	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	DSI 1	38000	2595	19.13	20.50	1.371	62.9	1.006	-0.13	0.453	0.625
	LTE Band 38	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	DSI 1	38000	2595	19.19	20.50	1.352	62.9	1.006	0.06	0.181	0.246
	LTE Band 38	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 4	DSI 1	38000	2595	19.13	20.50	1.371	62.9	1.006	-0.03	0.160	0.221
	LTE Band 38	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	DSI 1	38000	2595	19.19	20.50	1.352	62.9	1.006	-0.03	0.125	0.170
	LTE Band 38	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 4	DSI 1	38000	2595	19.13	20.50	1.371	62.9	1.006	0.08	0.257	0.354



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Report No. : FA471506

Table with columns: LTE Band, Modulation, Power, Frequency, Location, Antenna, DSI, Power Density, etc. Row 18 is highlighted with a yellow background.



FCC SAR Test Report

Report No. : FA471506

Table with columns for test parameters (FR1 n7, FR1 n38, FR1 n41), modulation (QPSK), power (50M, 40M, 100M), and SAR results. Includes specific values for frequency, time, distance, and SAR metrics.



FCC SAR Test Report

Report No. : FA471506

Table with 20 columns: FR1 n41, 100M, QPSK, 270, 0, DFT-SCS-30KHz, Right Cheek, 0mm, Ant 4, DSI 1, 518598, 2592.99, 17.20, 19.00, 1.514, 1.000, 0.05, 0.511, 0.773. Includes rows for 'FR1 n41 Only ENDC'.

3500MHz

Table with 20 columns: LTE Band 42, 20M, QPSK, 1, 0, -, Right Cheek, 0mm, Ant 2, DSI 1, 42590, 3500, 19.15, 20.00, 1.216, 62.9, 1.006, 0.08, 0.382, 0.467. Includes multiple rows for various antenna positions and power levels.



	LTE Band	Power	Mod	CH	Ref	Ant	Dist	Ant	Mod	Power	Power	Dist	Power	Power	Power	Power	Power	Power		
	LTE Band 42	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 7	DSI 1	42190	3460	22.83	24.00	1.309	62.9	1.006	0.01	0.621	0.818
	LTE Band 42	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 7	DSI 1	42990	3540	22.75	24.00	1.334	62.9	1.006	-0.07	0.617	0.828
	LTE Band 42	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 7	DSI 1	42590	3500	21.86	23.00	1.300	62.9	1.006	-0.15	0.505	0.661
	LTE Band 42	20M	QPSK	100	0	-	Left Cheek	0mm	Ant 7	DSI 1	42590	3500	21.82	23.00	1.312	62.9	1.006	-0.15	0.505	0.667
	LTE Band 42	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 7	DSI 1	42590	3500	22.86	24.00	1.300	62.9	1.006	0.19	0.505	0.661
	LTE Band 42	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 7	DSI 1	42590	3500	21.86	23.00	1.300	62.9	1.006	0.07	0.394	0.515
	LTE Band 48	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 2	DSI 1	55830	3609	19.12	20.00	1.225	62.9	1.006	0.1	0.316	0.389
	LTE Band 48	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 2	DSI 1	55830	3609	18.13	19.00	1.222	62.9	1.006	0.12	0.242	0.297
	LTE Band 48	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 2	DSI 1	55830	3609	19.12	20.00	1.225	62.9	1.006	0.08	0.090	0.111
	LTE Band 48	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 2	DSI 1	55830	3609	18.13	19.00	1.222	62.9	1.006	-0.17	0.069	0.085
	LTE Band 48	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 2	DSI 1	55830	3609	19.12	20.00	1.225	62.9	1.006	-0.03	0.732	0.902
	LTE Band 48	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 2	DSI 1	55340	3560	19.03	20.00	1.250	62.9	1.006	-0.03	0.755	0.950
	LTE Band 48	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 2	DSI 1	56150	3641	19.01	20.00	1.256	62.9	1.006	0.14	0.738	0.933
	LTE Band 48	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 2	DSI 1	56640	3690	19.10	20.00	1.230	62.9	1.006	0.11	0.701	0.868
	LTE Band 48	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 2	DSI 1	55830	3609	18.13	19.00	1.222	62.9	1.006	-0.05	0.572	0.703
	LTE Band 48	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 2	DSI 1	55340	3560	18.08	19.00	1.236	62.9	1.006	-0.05	0.577	0.717
	LTE Band 48	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 2	DSI 1	56150	3641	17.99	19.00	1.262	62.9	1.006	-0.01	0.563	0.715
	LTE Band 48	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 2	DSI 1	56640	3690	18.09	19.00	1.233	62.9	1.006	0.04	0.555	0.688
	LTE Band 48	20M	QPSK	100	0	-	Left Cheek	0mm	Ant 2	DSI 1	55830	3609	18.14	19.00	1.219	62.9	1.006	0.18	0.548	0.672
	LTE Band 48	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 2	DSI 1	55830	3609	19.12	20.00	1.225	62.9	1.006	0.14	0.109	0.134
	LTE Band 48	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 2	DSI 1	55830	3609	18.13	19.00	1.222	62.9	1.006	-0.17	0.086	0.106
	LTE Band 48	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 3	DSI 1	55830	3609	20.46	21.50	1.271	62.9	1.006	-0.05	0.450	0.575
	LTE Band 48	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 3	DSI 1	55830	3609	19.47	20.50	1.268	62.9	1.006	0.17	0.353	0.450
	LTE Band 48	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 3	DSI 1	55830	3609	20.46	21.50	1.271	62.9	1.006	-0.05	0.165	0.211
	LTE Band 48	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 3	DSI 1	55830	3609	19.47	20.50	1.268	62.9	1.006	0.01	0.142	0.181
	LTE Band 48	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 3	DSI 1	55830	3609	20.46	21.50	1.271	62.9	1.006	0.1	0.181	0.231
	LTE Band 48	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 3	DSI 1	55830	3609	19.47	20.50	1.268	62.9	1.006	-0.17	0.145	0.185
	LTE Band 48	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 3	DSI 1	55830	3609	20.46	21.50	1.271	62.9	1.006	0.04	0.088	0.112
	LTE Band 48	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 3	DSI 1	55830	3609	19.47	20.50	1.268	62.9	1.006	-0.01	0.078	0.099
	LTE Band 48	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 5	DSI 1	55830	3609	17.95	19.00	1.274	62.9	1.006	-0.17	0.560	0.717
	LTE Band 48	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 5	DSI 1	55340	3560	17.88	19.00	1.294	62.9	1.006	-0.08	0.499	0.650
	LTE Band 48	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 5	DSI 1	56150	3641	17.87	19.00	1.297	62.9	1.006	-0.04	0.569	0.743
	LTE Band 48	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 5	DSI 1	56640	3690	17.88	19.00	1.294	62.9	1.006	-0.08	0.555	0.723
	LTE Band 48	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 5	DSI 1	55830	3609	17.91	19.00	1.285	62.9	1.006	0.17	0.568	0.734
	LTE Band 48	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 5	DSI 1	55340	3560	17.82	19.00	1.312	62.9	1.006	0.18	0.509	0.672
	LTE Band 48	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 5	DSI 1	56150	3641	17.84	19.00	1.306	62.9	1.006	-0.04	0.573	0.753
	LTE Band 48	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 5	DSI 1	56640	3690	17.77	19.00	1.327	62.9	1.006	-0.08	0.550	0.734
	LTE Band 48	20M	QPSK	100	0	-	Right Cheek	0mm	Ant 5	DSI 1	55830	3609	17.87	19.00	1.297	62.9	1.006	-0.13	0.572	0.746
	LTE Band 48	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 5	DSI 1	55830	3609	17.95	19.00	1.274	62.9	1.006	-0.13	0.585	0.749
	LTE Band 48	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 5	DSI 1	55340	3560	17.88	19.00	1.294	62.9	1.006	0.06	0.514	0.669
	LTE Band 48	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 5	DSI 1	56150	3641	17.87	19.00	1.297	62.9	1.006	-0.03	0.578	0.754
	LTE Band 48	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 5	DSI 1	56640	3690	17.88	19.00	1.294	62.9	1.006	-0.03	0.552	0.719
	LTE Band 48	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 5	DSI 1	55830	3609	17.91	19.00	1.285	62.9	1.006	0.08	0.586	0.758
	LTE Band 48	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 5	DSI 1	55340	3560	17.82	19.00	1.312	62.9	1.006	-0.07	0.535	0.706
	LTE Band 48	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 5	DSI 1	56150	3641	17.84	19.00	1.306	62.9	1.006	0.05	0.580	0.762
	LTE Band 48	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 5	DSI 1	56640	3690	17.77	19.00	1.327	62.9	1.006	-0.11	0.569	0.760
	LTE Band 48	20M	QPSK	100	0	-	Right Tilted	0mm	Ant 5	DSI 1	55830	3609	17.87	19.00	1.297	62.9	1.006	-0.12	0.585	0.763
	LTE Band 48	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 5	DSI 1	55830	3609	17.95	19.00	1.274	62.9	1.006	0.03	0.754	0.966
	LTE Band 48	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 5	DSI 1	55340	3560	17.88	19.00	1.294	62.9	1.006	-0.16	0.685	0.892
	LTE Band 48	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 5	DSI 1	56150	3641	17.87	19.00	1.297	62.9	1.006	-0.16	0.774	1.010
	LTE Band 48	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 5	DSI 1	56640	3690	17.88	19.00	1.294	62.9	1.006	-0.02	0.756	0.984
	LTE Band 48	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 5	DSI 1	55830	3609	17.91	19.00	1.285	62.9	1.006	0.15	0.758	0.980
	LTE Band 48	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 5	DSI 1	55340	3560	17.82	19.00	1.312	62.9	1.006	-0.09	0.703	0.928
	LTE Band 48	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 5	DSI 1	56150	3641	17.84	19.00	1.306	62.9	1.006	0.11	0.732	0.962
	LTE Band 48	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 5	DSI 1	56640	3690	17.77	19.00	1.327	62.9	1.006	-0.05	0.752	1.004
	LTE Band 48	20M	QPSK	100	0	-	Left Cheek	0mm	Ant 5	DSI 1	55830	3609	17.87	19.00	1.297	62.9	1.006	-0.08	0.726	0.947



Table with columns: LTE Band, Power, Modulation, Frequency, Duty Cycle, SAR Type, Position, Antenna, DSI, Frequency 1, Frequency 2, SAR 1, SAR 2, SAR 3, SAR 4, SAR 5, SAR 6, SAR 7, SAR 8, SAR 9, SAR 10.



FCC SAR Test Report

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	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 5	DSI 1	641666	3624.99	15.12	16.50	1.374	-	-	-0.15	0.491	0.675
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Right Cheek	0mm	Ant 5	DSI 1	641666	3624.99	15.05	16.50	1.396	-	-	-0.15	0.517	0.722
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 5	DSI 1	641666	3624.99	15.12	16.50	1.374	-	-	-0.08	0.511	0.702
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Right Tilted	0mm	Ant 5	DSI 1	641666	3624.99	15.05	16.50	1.396	-	-	-0.17	0.535	0.747
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	DSI 1	641666	3624.99	15.12	16.50	1.374	-	-	-0.04	0.679	0.933
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	DSI 1	638000	3570	15.06	16.50	1.393	-	-	0.14	0.666	0.928
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	DSI 1	645332	3679.98	15.05	16.50	1.396	-	-	0.11	0.645	0.901
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	DSI 1	641666	3624.99	15.05	16.50	1.396	-	-	-0.01	0.711	0.993
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	DSI 1	638000	3570	15.04	16.50	1.400	-	-	-0.05	0.703	0.984
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	DSI 1	645332	3679.98	15.03	16.50	1.403	-	-	0.18	0.689	0.967
	FR1 n48	40M	QPSK	100	0	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	DSI 1	641666	3624.99	15.08	16.50	1.387	-	-	-0.08	0.702	0.974
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	DSI 1	641666	3624.99	15.12	16.50	1.374	-	-	0.17	0.682	0.937
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	DSI 1	638000	3570	15.06	16.50	1.393	-	-	0.14	0.659	0.918
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	DSI 1	645332	3679.98	15.05	16.50	1.396	-	-	-0.17	0.664	0.927
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	DSI 1	641666	3624.99	15.05	16.50	1.396	-	-	0.18	0.673	0.940
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	DSI 1	638000	3570	15.04	16.50	1.400	-	-	0.17	0.652	0.913
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	DSI 1	645332	3679.98	15.03	16.50	1.403	-	-	-0.05	0.646	0.906
	FR1 n48	40M	QPSK	270	0	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	DSI 1	641666	3624.99	15.08	16.50	1.387	-	-	-0.04	0.676	0.937
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 7	DSI 1	641666	3624.99	19.48	21.00	1.419	-	-	-0.08	0.238	0.338
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Right Cheek	0mm	Ant 7	DSI 1	641666	3624.99	19.46	21.00	1.426	-	-	-0.13	0.243	0.346
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 7	DSI 1	641666	3624.99	19.48	21.00	1.419	-	-	-0.13	0.207	0.294
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Right Tilted	0mm	Ant 7	DSI 1	641666	3624.99	19.46	21.00	1.426	-	-	0.06	0.215	0.307
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	DSI 1	641666	3624.99	19.48	21.00	1.419	-	-	-0.03	0.737	1.046
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	DSI 1	638000	3570	19.42	21.00	1.439	-	-	0.12	0.722	1.039
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	DSI 1	645332	3679.98	19.41	21.00	1.442	-	-	0.08	0.715	1.031
24	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	DSI 1	641666	3624.99	19.46	21.00	1.426	-	-	-0.17	0.765	1.091
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	DSI 1	638000	3570	19.38	21.00	1.452	-	-	-0.17	0.742	1.077
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	DSI 1	645332	3679.98	19.45	21.00	1.429	-	-	-0.03	0.738	1.055
	FR1 n48	40M	QPSK	100	0	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	DSI 1	641666	3624.99	19.49	21.00	1.416	-	-	-0.03	0.605	0.857
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 1	641666	3624.99	19.48	21.00	1.419	-	-	0.08	0.426	0.605
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 1	641666	3624.99	19.46	21.00	1.426	-	-	-0.07	0.434	0.619
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 2	DSI 1	656000	3840	19.10	20.50	1.380	-	-	-0.17	0.296	0.409
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 2	DSI 1	656000	3840	19.05	20.50	1.396	-	-	0.17	0.346	0.483
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 2	DSI 1	656000	3840	19.10	20.50	1.380	-	-	-0.05	0.132	0.182
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 2	DSI 1	656000	3840	19.05	20.50	1.396	-	-	0.01	0.132	0.184
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 2	DSI 1	656000	3840	19.10	20.50	1.380	-	-	-0.03	0.389	0.537
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 2	DSI 1	656000	3840	19.05	20.50	1.396	-	-	0.1	0.278	0.388
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 2	DSI 1	656000	3840	19.10	20.50	1.380	-	-	-0.17	0.065	0.090
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 2	DSI 1	656000	3840	19.05	20.50	1.396	-	-	0.04	0.068	0.095
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 2	DSI 1	633334	3500.01	19.25	20.50	1.334	-	-	0.12	0.607	0.809
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 2	DSI 1	633334	3500.01	19.24	20.50	1.337	-	-	0.08	0.639	0.854
	FR1 n77 HPUE	100M	QPSK	270	0	DFT-SCS-30KHz	Right Cheek	0mm	Ant 2	DSI 1	633334	3500.01	19.23	20.50	1.340	-	-	-0.17	0.591	0.792
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 2	DSI 1	633334	3500.01	19.25	20.50	1.334	-	-	-0.03	0.129	0.172
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 2	DSI 1	633334	3500.01	19.24	20.50	1.337	-	-	0.14	0.151	0.202
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 2	DSI 1	633334	3500.01	19.25	20.50	1.334	-	-	0.11	0.700	0.933
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 2	DSI 1	633334	3500.01	19.24	20.50	1.337	-	-	0.01	0.739	0.988
	FR1 n77 HPUE	100M	QPSK	270	0	DFT-SCS-30KHz	Left Cheek	0mm	Ant 2	DSI 1	633334	3500.01	19.23	20.50	1.340	-	-	-0.05	0.645	0.864
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 2	DSI 1	633334	3500.01	19.25	20.50	1.334	-	-	0.18	0.105	0.140
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 2	DSI 1	633334	3500.01	19.24	20.50	1.337	-	-	0.14	0.136	0.182
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 3	DSI 1	656000	3840	20.16	21.50	1.361	-	-	0.16	0.715	0.973
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 3	DSI 1	656000	3840	20.07	21.50	1.390	-	-	0.01	0.722	1.004
	FR1 n77 HPUE	100M	QPSK	270	0	DFT-SCS-30KHz	Right Cheek	0mm	Ant 3	DSI 1	656000	3840	20.11	21.50	1.377	-	-	-0.06	0.672	0.925
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 3	DSI 1	656000	3840	20.16	21.50	1.361	-	-	0.02	0.642	0.874
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 3	DSI 1	656000	3840	20.07	21.50	1.390	-	-	-0.16	0.650	0.903
	FR1 n77 HPUE	100M	QPSK	270	0	DFT-SCS-30KHz	Right Tilted	0mm	Ant 3	DSI 1	656000	3840	20.11	21.50	1.377	-	-	0.05	0.591	0.814
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 3	DSI 1	656000	3840	20.16	21.50	1.361	-	-	-0.03	0.357	0.486



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Table with columns for test parameters (FR1 n77 HPUE, 100M, QPSK, 135, 69, DFT-SCS-30KHz, Left Cheek, 0mm, Ant 3, DSI 1, 656000, 3840, 20.07, 21.50, 1.390, etc.) and a highlighted cell with value 1.075.



Table with columns: Device, Power, Modulation, Channels, Frequency, Position, Distance, Antenna, Direction, Power Spectral Density, Power Density, and SAR values.



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FR1 n78 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	DSI 1	650000	3750	17.98	19.50	1.419	-	-	0.02	0.708	1.005
FR1 n78 HPUE	100M	QPSK	270	0	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	DSI 1	650000	3750	18.00	19.50	1.413	-	-	-0.13	0.696	0.983
FR1 n78 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 1	650000	3750	18.03	19.50	1.403	-	-	-0.13	0.343	0.481
FR1 n78 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 1	650000	3750	17.98	19.50	1.419	-	-	0.06	0.360	0.511
FR1 n78 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 7	DSI 1	633334	3500.01	18.42	19.50	1.282	-	-	-0.18	0.160	0.205
FR1 n78 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 7	DSI 1	633334	3500.01	18.40	19.50	1.288	-	-	0.03	0.170	0.219
FR1 n78 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 7	DSI 1	633334	3500.01	18.42	19.50	1.282	-	-	-0.15	0.163	0.209
FR1 n78 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 7	DSI 1	633334	3500.01	18.40	19.50	1.288	-	-	-0.15	0.168	0.216
FR1 n78 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	DSI 1	633334	3500.01	18.42	19.50	1.282	-	-	0.11	0.374	0.480
FR1 n78 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	DSI 1	633334	3500.01	18.40	19.50	1.288	-	-	0.02	0.454	0.585
FR1 n78 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 1	633334	3500.01	18.42	19.50	1.282	-	-	-0.17	0.284	0.364
FR1 n78 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 1	633334	3500.01	18.40	19.50	1.288	-	-	-0.08	0.320	0.412



Table with 17 columns: 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). It contains data for 2450MHz, 5000MHz, and Bluetooth frequencies, with several rows highlighted in yellow (e.g., 1.045, 1.088, 1.090, 1.093).



15.2 Hotspot SAR

Table with columns: 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). Rows include LTE Bands 12, 13 and WCDMA V across 750MHz and 835MHz.



FCC SAR Test Report

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Table with columns for test parameters (Modulation, Bandwidth, Power, etc.) and SAR results (Front, Back, Left Side, etc.). Includes rows for WCDMA V, LTE Band 5, and FR1 n5.



FCC SAR Test Report

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Table with 20 columns: Test ID, Modulation, Power, Constellation, Rate, Bandwidth, Frequency, Location, Distance, Antenna, DSI, Power Spectral Density, EIRP, SAR, etc. Includes rows for FR1 n5 with SAR values ranging from 0.071 to 0.442.

1750MHz

Table with 20 columns: Modulation, Power, Constellation, Rate, Bandwidth, Frequency, Location, Distance, Antenna, DSI, Power Spectral Density, EIRP, SAR, etc. Includes rows for WCDMA IV and LTE Band 4 with SAR values ranging from 0.071 to 1.042.



FCC SAR Test Report

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Table with columns for frequency, power, modulation, bandwidth, duty cycle, location, distance, antenna, DSI, power density, and SAR values. Includes rows for LTE Band 4 and LTE Band 66 with various configurations and SAR results.



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Report No. : FA471506

LTE Band 66	20M	QPSK	1	0	-	Top Side	15mm	Ant 4	DSI 2	132572	1770	22.37	23.50	1.297	-	-	-0.17	0.728	0.944
FR1 n66	40M	QPSK	1	1	DFT-SCS-15KHz	Front	10mm	Ant 1	DSI 3	349000	1745	19.34	21.00	1.466	-	-	-0.13	0.281	0.412
FR1 n66	40M	QPSK	108	54	DFT-SCS-15KHz	Front	10mm	Ant 1	DSI 3	349000	1745	19.27	21.00	1.489	-	-	-0.01	0.317	0.472
FR1 n66	40M	QPSK	1	1	DFT-SCS-15KHz	Back	10mm	Ant 1	DSI 3	349000	1745	19.34	21.00	1.466	-	-	-0.09	0.320	0.469
FR1 n66	40M	QPSK	108	54	DFT-SCS-15KHz	Back	10mm	Ant 1	DSI 3	349000	1745	19.27	21.00	1.489	-	-	-0.01	0.360	0.536
FR1 n66	40M	QPSK	1	1	DFT-SCS-15KHz	Left Side	10mm	Ant 1	DSI 2	349000	1745	22.75	24.50	1.496	-	-	0.05	0.065	0.097
FR1 n66	40M	QPSK	108	54	DFT-SCS-15KHz	Left Side	10mm	Ant 1	DSI 2	349000	1745	22.69	24.50	1.517	-	-	0.02	0.032	0.049
FR1 n66	40M	QPSK	1	1	DFT-SCS-15KHz	Right Side	10mm	Ant 1	DSI 2	349000	1745	22.75	24.50	1.496	-	-	-0.13	0.123	0.184
FR1 n66	40M	QPSK	108	54	DFT-SCS-15KHz	Right Side	10mm	Ant 1	DSI 2	349000	1745	22.69	24.50	1.517	-	-	0.17	0.171	0.259
FR1 n66	40M	QPSK	1	1	DFT-SCS-15KHz	Bottom Side	10mm	Ant 1	DSI 3	349000	1745	19.34	21.00	1.466	-	-	0.06	0.702	1.029
42 FR1 n66	40M	QPSK	108	54	DFT-SCS-15KHz	Bottom Side	10mm	Ant 1	DSI 3	349000	1745	19.27	21.00	1.489	-	-	-0.01	0.731	1.089
FR1 n66 Sample 4	40M	QPSK	108	54	DFT-SCS-15KHz	Bottom Side	10mm	Ant 1	DSI 3	349000	1745	19.27	21.00	1.489	-	-	0.02	0.723	1.077
FR1 n66 Sample 2	40M	QPSK	108	54	DFT-SCS-15KHz	Bottom Side	10mm	Ant 1	DSI 3	349000	1745	19.27	21.00	1.489	-	-	0.06	0.667	0.993
FR1 n66	40M	QPSK	216	0	DFT-SCS-15KHz	Bottom Side	10mm	Ant 1	DSI 3	349000	1745	19.23	21.00	1.503	-	-	0.03	0.714	1.073
FR1 n66	40M	QPSK	1	1	DFT-SCS-15KHz	Front	15mm	Ant 1	DSI 2	349000	1745	22.75	24.50	1.496	-	-	0.17	0.292	0.437
FR1 n66	40M	QPSK	1	1	DFT-SCS-15KHz	Back	15mm	Ant 1	DSI 2	349000	1745	22.75	24.50	1.496	-	-	-0.05	0.367	0.549
FR1 n66	40M	QPSK	1	1	DFT-SCS-15KHz	Bottom Side	15mm	Ant 1	DSI 2	349000	1745	22.75	24.50	1.496	-	-	-0.02	0.688	1.029
FR1 n66 Other PA	40M	QPSK	1	1	DFT-SCS-15KHz	Front	10mm	Ant 2	DSI 2	349000	1745	23.15	24.50	1.365	-	-	-0.18	0.140	0.191
FR1 n66 Other PA	40M	QPSK	108	54	DFT-SCS-15KHz	Front	10mm	Ant 2	DSI 2	349000	1745	23.12	24.50	1.374	-	-	0.1	0.159	0.218
FR1 n66 Other PA	40M	QPSK	1	1	DFT-SCS-15KHz	Back	10mm	Ant 2	DSI 2	349000	1745	23.15	24.50	1.365	-	-	0.12	0.194	0.265
FR1 n66 Other PA	40M	QPSK	108	54	DFT-SCS-15KHz	Back	10mm	Ant 2	DSI 2	349000	1745	23.12	24.50	1.374	-	-	-0.04	0.217	0.298
FR1 n66 Other PA	40M	QPSK	1	1	DFT-SCS-15KHz	Left Side	10mm	Ant 2	DSI 2	349000	1745	23.15	24.50	1.365	-	-	0.08	0.323	0.441
FR1 n66 Other PA	40M	QPSK	108	54	DFT-SCS-15KHz	Left Side	10mm	Ant 2	DSI 2	349000	1745	23.12	24.50	1.374	-	-	-0.06	0.422	0.580
FR1 n66 Other PA	40M	QPSK	1	1	DFT-SCS-15KHz	Top Side	10mm	Ant 2	DSI 2	349000	1745	23.15	24.50	1.365	-	-	-0.17	0.005	0.007
FR1 n66 Other PA	40M	QPSK	108	54	DFT-SCS-15KHz	Top Side	10mm	Ant 2	DSI 2	349000	1745	23.12	24.50	1.374	-	-	-0.03	0.001	0.001
FR1 n66	40M	QPSK	1	1	DFT-SCS-15KHz	Front	10mm	Ant 4	DSI 4	349000	1745	18.57	20.00	1.390	-	-	0.14	0.293	0.407
FR1 n66	40M	QPSK	108	54	DFT-SCS-15KHz	Front	10mm	Ant 4	DSI 4	349000	1745	18.53	20.00	1.403	-	-	0.11	0.320	0.449
FR1 n66	40M	QPSK	1	1	DFT-SCS-15KHz	Back	10mm	Ant 4	DSI 4	349000	1745	18.57	20.00	1.390	-	-	-0.05	0.336	0.467
FR1 n66	40M	QPSK	108	54	DFT-SCS-15KHz	Back	10mm	Ant 4	DSI 4	349000	1745	18.53	20.00	1.403	-	-	-0.09	0.387	0.543
FR1 n66	40M	QPSK	1	1	DFT-SCS-15KHz	Left Side	10mm	Ant 4	DSI 2	349000	1745	23.08	24.50	1.387	-	-	0.18	0.278	0.386
FR1 n66	40M	QPSK	108	54	DFT-SCS-15KHz	Left Side	10mm	Ant 4	DSI 2	349000	1745	23.04	24.50	1.400	-	-	0.14	0.323	0.452
FR1 n66	40M	QPSK	1	1	DFT-SCS-15KHz	Top Side	10mm	Ant 4	DSI 4	349000	1745	18.57	20.00	1.390	-	-	-0.17	0.584	0.812
FR1 n66	40M	QPSK	108	54	DFT-SCS-15KHz	Top Side	10mm	Ant 4	DSI 4	349000	1745	18.53	20.00	1.403	-	-	0.02	0.646	0.906
FR1 n66	40M	QPSK	1	1	DFT-SCS-15KHz	Front	15mm	Ant 4	DSI 2	349000	1745	23.08	24.50	1.387	-	-	0.01	0.429	0.595
FR1 n66	40M	QPSK	1	1	DFT-SCS-15KHz	Back	15mm	Ant 4	DSI 2	349000	1745	23.08	24.50	1.387	-	-	0.1	0.525	0.728
FR1 n66	40M	QPSK	1	1	DFT-SCS-15KHz	Top Side	15mm	Ant 4	DSI 2	349000	1745	23.08	24.50	1.387	-	-	-0.01	0.721	1.000
FR1 n66	40M	QPSK	108	54	DFT-SCS-15KHz	Top Side	15mm	Ant 4	DSI 2	349000	1745	23.04	24.50	1.400	-	-	0.04	0.710	0.994
FR1 n66	40M	QPSK	216	0	DFT-SCS-15KHz	Top Side	15mm	Ant 4	DSI 2	349000	1745	22.62	24.00	1.374	-	-	-0.01	0.688	0.945
1900MHz																			
GSM1900	-	-	-	-	GPRS (4 Tx slots)	Front	10mm	Ant 1	DSI 3	661	1880	23.62	25.00	1.374	-	-	-0.18	0.338	0.464
GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	10mm	Ant 1	DSI 3	661	1880	23.62	25.00	1.374	-	-	-0.07	0.378	0.519
GSM1900	-	-	-	-	GPRS (4 Tx slots)	Left Side	10mm	Ant 1	DSI 2	661	1880	25.61	27.00	1.377	-	-	0.1	0.097	0.134
GSM1900	-	-	-	-	GPRS (4 Tx slots)	Right Side	10mm	Ant 1	DSI 2	661	1880	25.61	27.00	1.377	-	-	0.12	0.100	0.138
GSM1900	-	-	-	-	GPRS (4 Tx slots)	Bottom Side	10mm	Ant 1	DSI 3	661	1880	23.62	25.00	1.374	-	-	0.08	0.672	0.923
GSM1900	-	-	-	-	GPRS (4 Tx slots)	Bottom Side	10mm	Ant 1	DSI 3	512	1850.2	23.55	25.00	1.396	-	-	-0.17	0.679	0.948
GSM1900	-	-	-	-	GPRS (4 Tx slots)	Bottom Side	10mm	Ant 1	DSI 3	810	1909.8	23.54	25.00	1.400	-	-	-0.03	0.675	0.945
GSM1900	-	-	-	-	GPRS (4 Tx slots)	Front	15mm	Ant 1	DSI 2	661	1880	25.61	27.00	1.377	-	-	-0.09	0.254	0.350
GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	15mm	Ant 1	DSI 2	661	1880	25.61	27.00	1.377	-	-	0.18	0.290	0.399
GSM1900	-	-	-	-	GPRS (4 Tx slots)	Bottom Side	15mm	Ant 1	DSI 2	661	1880	25.61	27.00	1.377	-	-	0.14	0.595	0.819
GSM1900	-	-	-	-	GPRS (4 Tx slots)	Front	10mm	Ant 4	DSI 4	661	1880	20.92	22.00	1.282	-	-	0.14	0.268	0.344
GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	10mm	Ant 4	DSI 4	661	1880	20.92	22.00	1.282	-	-	0.04	0.339	0.435
GSM1900	-	-	-	-	GPRS (4 Tx slots)	Left Side	10mm	Ant 4	DSI 2	661	1880	24.89	26.00	1.291	-	-	0.11	0.239	0.309
GSM1900	-	-	-	-	GPRS (4 Tx slots)	Top Side	10mm	Ant 4	DSI 4	661	1880	20.92	22.00	1.282	-	-	-0.05	0.726	0.931
GSM1900	-	-	-	-	GPRS (4 Tx slots)	Top Side	10mm	Ant 4	DSI 4	512	1850.2	20.88	22.00	1.294	-	-	0.18	0.729	0.943



FCC SAR Test Report

Report No. : FA471506

Table with columns for test parameters (e.g., GSM1900, WCDMA II, LTE Band 2), antenna positions (e.g., Top Side, Front, Back), and SAR values. Includes a yellow highlight for 0.961 in the first row.



FCC SAR Test Report

Report No. : FA471506

Table with columns for LTE Band, Power, Modulation, Frequency, Time, Location, Antenna, etc. Includes a highlighted cell with value 1.086.



FCC SAR Test Report

Report No. : FA471506

Table with columns for LTE Band, Modulation, Power, Frequency, Location, Antenna, and SAR values. Row 47 is highlighted in yellow.



FCC SAR Test Report

Report No. : FA471506

	LTE Band 38 Other PA	20M	QPSK	1	0	-	Front	10mm	Ant 2	DSI 2	38000	2595	23.28	24.00	1.180	62.9	1.006	0.18	0.115	0.137
	LTE Band 38 Other PA	20M	QPSK	50	0	-	Front	10mm	Ant 2	DSI 2	38000	2595	22.24	23.00	1.191	62.9	1.006	0.14	0.089	0.107
	LTE Band 38 Other PA	20M	QPSK	1	0	-	Back	10mm	Ant 2	DSI 2	38000	2595	23.28	24.00	1.180	62.9	1.006	-0.08	0.157	0.186
	LTE Band 38 Other PA	20M	QPSK	50	0	-	Back	10mm	Ant 2	DSI 2	38000	2595	22.24	23.00	1.191	62.9	1.006	-0.17	0.122	0.146
48	LTE Band 38 Other PA	20M	QPSK	1	0	-	Left Side	10mm	Ant 2	DSI 2	38000	2595	23.28	24.00	1.180	62.9	1.006	-0.09	0.361	0.429
	LTE Band 38 Other PA	20M	QPSK	50	0	-	Left Side	10mm	Ant 2	DSI 2	38000	2595	22.24	23.00	1.191	62.9	1.006	0.01	0.265	0.318
	LTE Band 38 Other PA	20M	QPSK	1	0	-	Top Side	10mm	Ant 2	DSI 2	38000	2595	23.28	24.00	1.180	62.9	1.006	-0.17	0.053	0.063
	LTE Band 38 Other PA	20M	QPSK	50	0	-	Top Side	10mm	Ant 2	DSI 2	38000	2595	22.24	23.00	1.191	62.9	1.006	0.04	0.042	0.050
	LTE Band 38	20M	QPSK	1	0	-	Front	10mm	Ant 4	DSI 4	38000	2595	19.19	20.50	1.352	62.9	1.006	0.16	0.089	0.121
	LTE Band 38	20M	QPSK	50	0	-	Front	10mm	Ant 4	DSI 4	38000	2595	19.13	20.50	1.371	62.9	1.006	-0.1	0.088	0.121
	LTE Band 38	20M	QPSK	1	0	-	Back	10mm	Ant 4	DSI 4	38000	2595	19.19	20.50	1.352	62.9	1.006	0.07	0.129	0.175
	LTE Band 38	20M	QPSK	50	0	-	Back	10mm	Ant 4	DSI 4	38000	2595	19.13	20.50	1.371	62.9	1.006	0.18	0.135	0.186
	LTE Band 38	20M	QPSK	1	0	-	Left Side	10mm	Ant 4	DSI 2	38000	2595	23.16	24.50	1.361	62.9	1.006	-0.1	0.161	0.221
	LTE Band 38	20M	QPSK	50	0	-	Left Side	10mm	Ant 4	DSI 2	38000	2595	22.20	23.50	1.349	62.9	1.006	0.01	0.120	0.163
	LTE Band 38	20M	QPSK	1	0	-	Top Side	10mm	Ant 4	DSI 4	38000	2595	19.19	20.50	1.352	62.9	1.006	-0.15	0.249	0.339
	LTE Band 38	20M	QPSK	50	0	-	Top Side	10mm	Ant 4	DSI 4	38000	2595	19.13	20.50	1.371	62.9	1.006	0.19	0.245	0.338
	LTE Band 38	20M	QPSK	1	0	-	Front	15mm	Ant 4	DSI 2	38000	2595	23.16	24.50	1.361	62.9	1.006	0.07	0.109	0.149
	LTE Band 38	20M	QPSK	1	0	-	Back	15mm	Ant 4	DSI 2	38000	2595	23.16	24.50	1.361	62.9	1.006	-0.18	0.154	0.211
	LTE Band 38	20M	QPSK	1	0	-	Top Side	15mm	Ant 4	DSI 2	38000	2595	23.16	24.50	1.361	62.9	1.006	0.02	0.272	0.373
	LTE Band 38C	20M	QPSK	1	99	-	Top Side	10mm	Ant 4	DSI 4	37901+ 38099	2585.1+ 2604.9	22.99	24.50	1.416	62.9	1.006	0.18	0.191	0.272
	LTE Band 41	20M	QPSK	1	0	-	Front	10mm	Ant 1	DSI 3	40620	2593	20.64	21.50	1.219	62.9	1.006	-0.15	0.126	0.155
	LTE Band 41	20M	QPSK	50	0	-	Front	10mm	Ant 1	DSI 3	40620	2593	20.59	21.50	1.233	62.9	1.006	-0.06	0.126	0.156
	LTE Band 41	20M	QPSK	1	0	-	Back	10mm	Ant 1	DSI 3	40620	2593	20.64	21.50	1.219	62.9	1.006	-0.05	0.199	0.244
	LTE Band 41	20M	QPSK	50	0	-	Back	10mm	Ant 1	DSI 3	40620	2593	20.59	21.50	1.233	62.9	1.006	-0.14	0.198	0.246
	LTE Band 41	20M	QPSK	1	0	-	Left Side	10mm	Ant 1	DSI 2	40620	2593	23.60	24.50	1.230	62.9	1.006	-0.19	0.081	0.100
	LTE Band 41	20M	QPSK	50	0	-	Left Side	10mm	Ant 1	DSI 2	40620	2593	22.54	23.50	1.247	62.9	1.006	0.01	0.074	0.093
	LTE Band 41	20M	QPSK	1	0	-	Right Side	10mm	Ant 1	DSI 2	40620	2593	23.60	24.50	1.230	62.9	1.006	0.06	0.092	0.114
	LTE Band 41	20M	QPSK	50	0	-	Right Side	10mm	Ant 1	DSI 2	40620	2593	22.54	23.50	1.247	62.9	1.006	0.02	0.059	0.074
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	DSI 3	40620	2593	20.64	21.50	1.219	62.9	1.006	-0.02	0.256	0.314
	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 1	DSI 3	40620	2593	20.59	21.50	1.233	62.9	1.006	0.12	0.244	0.303
	LTE Band 41	20M	QPSK	1	0	-	Front	15mm	Ant 1	DSI 2	40620	2593	23.60	24.50	1.230	62.9	1.006	-0.08	0.164	0.203
	LTE Band 41	20M	QPSK	1	0	-	Back	15mm	Ant 1	DSI 2	40620	2593	23.60	24.50	1.230	62.9	1.006	-0.17	0.243	0.301
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	15mm	Ant 1	DSI 2	40620	2593	23.60	24.50	1.230	62.9	1.006	-0.08	0.285	0.353
	LTE Band 41 Other PA	20M	QPSK	1	0	-	Front	10mm	Ant 2	DSI 2	40620	2593	23.30	24.00	1.175	62.9	1.006	-0.09	0.111	0.131
	LTE Band 41 Other PA	20M	QPSK	50	0	-	Front	10mm	Ant 2	DSI 2	40620	2593	22.31	23.00	1.172	62.9	1.006	0.11	0.088	0.104
	LTE Band 41 Other PA	20M	QPSK	1	0	-	Back	10mm	Ant 2	DSI 2	40620	2593	23.30	24.00	1.175	62.9	1.006	-0.05	0.153	0.181
	LTE Band 41 Other PA	20M	QPSK	50	0	-	Back	10mm	Ant 2	DSI 2	40620	2593	22.31	23.00	1.172	62.9	1.006	-0.05	0.117	0.138
49	LTE Band 41 Other PA	20M	QPSK	1	0	-	Left Side	10mm	Ant 2	DSI 2	40620	2593	23.30	24.00	1.175	62.9	1.006	-0.02	0.356	0.421
	LTE Band 41 Other PA	20M	QPSK	50	0	-	Left Side	10mm	Ant 2	DSI 2	40620	2593	22.31	23.00	1.172	62.9	1.006	-0.08	0.295	0.348
	LTE Band 41 Other PA	20M	QPSK	1	0	-	Top Side	10mm	Ant 2	DSI 2	40620	2593	23.30	24.00	1.175	62.9	1.006	0.16	0.045	0.053
	LTE Band 41 Other PA	20M	QPSK	50	0	-	Top Side	10mm	Ant 2	DSI 2	40620	2593	22.31	23.00	1.172	62.9	1.006	0.05	0.041	0.048
	LTE Band 41	20M	QPSK	1	0	-	Front	10mm	Ant 4	DSI 4	40620	2593	19.24	20.50	1.337	62.9	1.006	0.03	0.092	0.124
	LTE Band 41	20M	QPSK	50	0	-	Front	10mm	Ant 4	DSI 4	40620	2593	19.13	20.50	1.371	62.9	1.006	-0.15	0.091	0.125
	LTE Band 41	20M	QPSK	1	0	-	Back	10mm	Ant 4	DSI 4	40620	2593	19.24	20.50	1.337	62.9	1.006	-0.15	0.132	0.177
	LTE Band 41	20M	QPSK	50	0	-	Back	10mm	Ant 4	DSI 4	40620	2593	19.13	20.50	1.371	62.9	1.006	0.11	0.133	0.183
	LTE Band 41	20M	QPSK	1	0	-	Left Side	10mm	Ant 4	DSI 2	40620	2593	23.27	24.50	1.327	62.9	1.006	-0.08	0.161	0.215
	LTE Band 41	20M	QPSK	50	0	-	Left Side	10mm	Ant 4	DSI 2	40620	2593	22.27	23.50	1.327	62.9	1.006	-0.17	0.130	0.174
	LTE Band 41	20M	QPSK	1	0	-	Top Side	10mm	Ant 4	DSI 4	40620	2593	19.24	20.50	1.337	62.9	1.006	-0.08	0.258	0.347
	LTE Band 41	20M	QPSK	50	0	-	Top Side	10mm	Ant 4	DSI 4	40620	2593	19.13	20.50	1.371	62.9	1.006	-0.04	0.256	0.353
	LTE Band 41	20M	QPSK	1	0	-	Front	15mm	Ant 4	DSI 2	40620	2593	23.27	24.50	1.327	62.9	1.006	-0.08	0.115	0.154
	LTE Band 41	20M	QPSK	1	0	-	Back	15mm	Ant 4	DSI 2	40620	2593	23.27	24.50	1.327	62.9	1.006	0.17	0.154	0.206
	LTE Band 41	20M	QPSK	1	0	-	Top Side	15mm	Ant 4	DSI 2	40620	2593	23.27	24.50	1.327	62.9	1.006	0.04	0.281	0.375



Table with 21 columns: Model, Power, Modulation, Channels, Frequency, Position, Distance, Antenna, DSI, Power Spectral Density, SAR (1g), SAR (0.1g), SAR (0.01g), SAR (0.001g), SAR (0.0001g), SAR (0.00001g), SAR (0.000001g), SAR (0.0000001g), SAR (0.00000001g), SAR (0.000000001g), SAR (0.0000000001g). Rows include models like FR1 n7, FR1 n7 ENDC, FR1 n38, and FR1 n38 ENDC.



Table with columns: FR1 n38, 40M, QPSK, 1, 1, DFT-SCS-30KHz, Back, 10mm, Ant 4, DSI 4, 519000, 2595, 16.09, 17.50, 1.384, -, -, 0.08, 0.123, 0.170. Includes a highlighted row with value 0.763.



FCC SAR Test Report

Report No. : FA471506

Table with columns for test parameters (FR1 n41 ENDC, 100M, QPSK, etc.) and SAR results. Row 53 is highlighted in yellow with a value of 1.055.



FCC SAR Test Report

Report No. : FA471506

	LTE Band 48	20M	QPSK	1	0	-	Top Side	10mm	Ant 2	DSI 2	55830	3609	19.12	20.00	1.225	62.9	1.006	-0.13	0.067	0.083
	LTE Band 48	20M	QPSK	50	0	-	Top Side	10mm	Ant 2	DSI 2	55830	3609	18.13	19.00	1.222	62.9	1.006	0.17	0.051	0.063
	LTE Band 48	20M	QPSK	1	0	-	Front	10mm	Ant 3	DSI 2	55830	3609	20.46	21.50	1.271	62.9	1.006	0.06	0.072	0.092
	LTE Band 48	20M	QPSK	50	0	-	Front	10mm	Ant 3	DSI 2	55830	3609	19.47	20.50	1.268	62.9	1.006	0.06	0.058	0.074
	LTE Band 48	20M	QPSK	1	0	-	Back	10mm	Ant 3	DSI 2	55830	3609	20.46	21.50	1.271	62.9	1.006	-0.05	0.145	0.185
	LTE Band 48	20M	QPSK	50	0	-	Back	10mm	Ant 3	DSI 2	55830	3609	19.47	20.50	1.268	62.9	1.006	-0.04	0.130	0.166
	LTE Band 48	20M	QPSK	1	0	-	Left Side	10mm	Ant 3	DSI 2	55830	3609	20.46	21.50	1.271	62.9	1.006	-0.04	0.229	0.293
	LTE Band 48	20M	QPSK	50	0	-	Left Side	10mm	Ant 3	DSI 2	55830	3609	19.47	20.50	1.268	62.9	1.006	-0.15	0.181	0.231
	LTE Band 48	20M	QPSK	1	0	-	Top Side	10mm	Ant 3	DSI 2	55830	3609	20.46	21.50	1.271	62.9	1.006	0.11	0.035	0.045
	LTE Band 48	20M	QPSK	50	0	-	Top Side	10mm	Ant 3	DSI 2	55830	3609	19.47	20.50	1.268	62.9	1.006	-0.02	0.020	0.026
	LTE Band 48	20M	QPSK	1	0	-	Front	10mm	Ant 5	DSI 4	55830	3609	21.50	22.50	1.259	62.9	1.006	0.1	0.273	0.346
	LTE Band 48	20M	QPSK	50	0	-	Front	10mm	Ant 5	DSI 4	55830	3609	21.48	22.50	1.265	62.9	1.006	0.04	0.258	0.328
	LTE Band 48	20M	QPSK	1	0	-	Back	10mm	Ant 5	DSI 4	55830	3609	21.50	22.50	1.259	62.9	1.006	0.13	0.280	0.355
	LTE Band 48	20M	QPSK	50	0	-	Back	10mm	Ant 5	DSI 4	55830	3609	21.48	22.50	1.265	62.9	1.006	-0.08	0.283	0.360
	LTE Band 48	20M	QPSK	1	0	-	Right Side	10mm	Ant 5	DSI 2	55830	3609	24.48	25.50	1.265	62.9	1.006	-0.18	0.142	0.181
	LTE Band 48	20M	QPSK	50	0	-	Right Side	10mm	Ant 5	DSI 2	55830	3609	23.46	24.50	1.271	62.9	1.006	-0.11	0.116	0.148
	LTE Band 48	20M	QPSK	1	0	-	Top Side	10mm	Ant 5	DSI 4	55830	3609	21.50	22.50	1.259	62.9	1.006	-0.07	0.449	0.569
	LTE Band 48	20M	QPSK	50	0	-	Top Side	10mm	Ant 5	DSI 4	55830	3609	21.48	22.50	1.265	62.9	1.006	-0.16	0.428	0.545
	LTE Band 48	20M	QPSK	1	0	-	Front	15mm	Ant 5	DSI 2	55830	3609	24.48	25.50	1.265	62.9	1.006	0.16	0.416	0.529
	LTE Band 48	20M	QPSK	1	0	-	Back	15mm	Ant 5	DSI 2	55830	3609	24.48	25.50	1.265	62.9	1.006	0.05	0.359	0.457
	LTE Band 48	20M	QPSK	1	0	-	Top Side	15mm	Ant 5	DSI 2	55830	3609	24.48	25.50	1.265	62.9	1.006	0.05	0.464	0.590
	LTE Band 48	20M	QPSK	1	0	-	Front	10mm	Ant 7	DSI 2	55830	3609	22.23	23.50	1.340	62.9	1.006	-0.09	0.138	0.186
	LTE Band 48	20M	QPSK	50	0	-	Front	10mm	Ant 7	DSI 2	55830	3609	21.25	22.50	1.334	62.9	1.006	-0.16	0.109	0.146
	LTE Band 48	20M	QPSK	1	0	-	Back	10mm	Ant 7	DSI 2	55830	3609	22.23	23.50	1.340	62.9	1.006	-0.18	0.538	0.725
54	LTE Band 48	20M	QPSK	1	0	-	Back	10mm	Ant 7	DSI 2	55340	3560	22.15	23.50	1.365	62.9	1.006	-0.09	0.543	0.745
	LTE Band 48	20M	QPSK	1	0	-	Back	10mm	Ant 7	DSI 2	56150	3641	22.20	23.50	1.349	62.9	1.006	-0.07	0.522	0.708
	LTE Band 48	20M	QPSK	1	0	-	Back	10mm	Ant 7	DSI 2	56640	3690	22.16	23.50	1.361	62.9	1.006	0.11	0.535	0.733
	LTE Band 48	20M	QPSK	50	0	-	Back	10mm	Ant 7	DSI 2	55830	3609	21.25	22.50	1.334	62.9	1.006	-0.08	0.369	0.495
	LTE Band 48	20M	QPSK	100	0	-	Back	10mm	Ant 7	DSI 2	55830	3609	21.21	22.50	1.346	62.9	1.006	-0.06	0.335	0.454
	LTE Band 48	20M	QPSK	1	0	-	Right Side	10mm	Ant 7	DSI 2	55830	3609	22.23	23.50	1.340	62.9	1.006	-0.17	0.376	0.507
	LTE Band 48	20M	QPSK	50	0	-	Right Side	10mm	Ant 7	DSI 2	55830	3609	21.25	22.50	1.334	62.9	1.006	-0.01	0.289	0.388
	LTE Band 48	20M	QPSK	1	0	-	Top Side	10mm	Ant 7	DSI 2	55830	3609	22.23	23.50	1.340	62.9	1.006	-0.11	0.140	0.189
	LTE Band 48	20M	QPSK	50	0	-	Top Side	10mm	Ant 7	DSI 2	55830	3609	21.25	22.50	1.334	62.9	1.006	0.14	0.106	0.142
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 2	DSI 2	641666	3624.99	18.28	19.50	1.324	-	-	-0.16	0.203	0.269
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Front	10mm	Ant 2	DSI 2	641666	3624.99	18.24	19.50	1.337	-	-	-0.18	0.198	0.265
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 2	DSI 2	641666	3624.99	18.28	19.50	1.324	-	-	-0.02	0.218	0.289
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Back	10mm	Ant 2	DSI 2	641666	3624.99	18.24	19.50	1.337	-	-	-0.07	0.206	0.275
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Left Side	10mm	Ant 2	DSI 2	641666	3624.99	18.28	19.50	1.324	-	-	0.05	0.753	0.997
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Left Side	10mm	Ant 2	DSI 2	638000	3570	18.19	19.50	1.352	-	-	0.03	0.729	0.986
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Left Side	10mm	Ant 2	DSI 2	645332	3679.98	18.22	19.50	1.343	-	-	0.18	0.718	0.964
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Side	10mm	Ant 2	DSI 2	641666	3624.99	18.24	19.50	1.337	-	-	0.11	0.717	0.958
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Side	10mm	Ant 2	DSI 2	638000	3570	18.16	19.50	1.361	-	-	0.16	0.701	0.954
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Side	10mm	Ant 2	DSI 2	645332	3679.98	18.19	19.50	1.352	-	-	-0.1	0.700	0.946
	FR1 n48	40M	QPSK	100	0	DFT-SCS-30KHz	Left Side	10mm	Ant 2	DSI 2	641666	3624.99	18.27	19.50	1.327	-	-	-0.08	0.674	0.895
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Top Side	10mm	Ant 2	DSI 2	641666	3624.99	18.28	19.50	1.324	-	-	-0.1	0.038	0.050
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Top Side	10mm	Ant 2	DSI 2	641666	3624.99	18.24	19.50	1.337	-	-	-0.01	0.029	0.039
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 3	DSI 2	641666	3624.99	20.55	22.00	1.396	-	-	0.08	0.136	0.190
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Front	10mm	Ant 3	DSI 2	641666	3624.99	20.50	22.00	1.413	-	-	0.01	0.159	0.225
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 3	DSI 2	641666	3624.99	20.55	22.00	1.396	-	-	0.03	0.228	0.318
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Back	10mm	Ant 3	DSI 2	641666	3624.99	20.50	22.00	1.413	-	-	-0.02	0.271	0.383
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Left Side	10mm	Ant 3	DSI 2	641666	3624.99	20.55	22.00	1.396	-	-	-0.11	0.323	0.451
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Side	10mm	Ant 3	DSI 2	641666	3624.99	20.50	22.00	1.413	-	-	-0.08	0.272	0.384
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Top Side	10mm	Ant 3	DSI 2	641666	3624.99	20.55	22.00	1.396	-	-	-0.08	0.057	0.080
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Top Side	10mm	Ant 3	DSI 2	641666	3624.99	20.50	22.00	1.413	-	-	0.1	0.070	0.099
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 5	DSI 4	641666	3624.99	21.07	22.50	1.390	-	-	0.08	0.628	0.873
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 5	DSI 4	638000	3570	21.02	22.50	1.406	-	-	0.07	0.615	0.865
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 5	DSI 4	645332	3679.98	21.06	22.50	1.393	-	-	0.18	0.609	0.848
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Front	10mm	Ant 5	DSI 4	641666	3624.99	21.02	22.50	1.406	-	-	-0.04	0.672	0.945



	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Front	10mm	Ant 5	DSI 4	638000	3570	20.95	22.50	1.429	-	-	-0.1	0.661	0.944
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Front	10mm	Ant 5	DSI 4	645332	3679.98	20.96	22.50	1.426	-	-	0.01	0.649	0.925
	FR1 n48	40M	QPSK	100	0	DFT-SCS-30KHz	Front	10mm	Ant 5	DSI 4	641666	3624.99	20.99	22.50	1.416	-	-	0.02	0.621	0.879
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 5	DSI 4	641666	3624.99	21.07	22.50	1.390	-	-	0.01	0.641	0.891
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 5	DSI 4	638000	3570	21.02	22.50	1.406	-	-	-0.15	0.632	0.889
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 5	DSI 4	645332	3679.98	21.06	22.50	1.393	-	-	0.19	0.619	0.862
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Back	10mm	Ant 5	DSI 4	641666	3624.99	21.02	22.50	1.406	-	-	0.03	0.610	0.858
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Back	10mm	Ant 5	DSI 4	638000	3570	20.95	22.50	1.429	-	-	0.07	0.588	0.840
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Back	10mm	Ant 5	DSI 4	645332	3679.98	20.96	22.50	1.426	-	-	-0.18	0.593	0.845
	FR1 n48	40M	QPSK	100	0	DFT-SCS-30KHz	Back	10mm	Ant 5	DSI 4	641666	3624.99	20.99	22.50	1.416	-	-	-0.08	0.613	0.868
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Right Side	10mm	Ant 5	DSI 2	641666	3624.99	24.57	26.00	1.390	-	-	-0.08	0.263	0.366
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Right Side	10mm	Ant 5	DSI 2	641666	3624.99	24.51	26.00	1.409	-	-	0.1	0.291	0.410
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Top Side	10mm	Ant 5	DSI 4	641666	3624.99	21.07	22.50	1.390	-	-	-0.18	0.713	0.991
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Top Side	10mm	Ant 5	DSI 4	638000	3570	21.02	22.50	1.406	-	-	0.03	0.701	0.986
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Top Side	10mm	Ant 5	DSI 4	645332	3679.98	21.06	22.50	1.393	-	-	-0.15	0.685	0.954
55	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Top Side	10mm	Ant 5	DSI 4	641666	3624.99	21.02	22.50	1.406	-	-	-0.03	0.768	1.080
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Top Side	10mm	Ant 5	DSI 4	638000	3570	20.95	22.50	1.429	-	-	-0.15	0.745	1.065
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Top Side	10mm	Ant 5	DSI 4	645332	3679.98	20.96	22.50	1.426	-	-	0.11	0.726	1.035
	FR1 n48	40M	QPSK	100	0	DFT-SCS-30KHz	Top Side	10mm	Ant 5	DSI 4	641666	3624.99	20.99	22.50	1.416	-	-	0.1	0.760	1.076
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Front	15mm	Ant 5	DSI 2	641666	3624.99	24.57	26.00	1.390	-	-	-0.03	0.656	0.912
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Back	15mm	Ant 5	DSI 2	641666	3624.99	24.57	26.00	1.390	-	-	-0.15	0.588	0.817
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Top Side	15mm	Ant 5	DSI 2	641666	3624.99	24.57	26.00	1.390	-	-	0.02	0.748	1.040
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 7	DSI 2	641666	3624.99	20.95	22.50	1.429	-	-	0.12	0.187	0.267
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Front	10mm	Ant 7	DSI 2	641666	3624.99	20.94	22.50	1.432	-	-	0.08	0.204	0.292
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	641666	3624.99	20.95	22.50	1.429	-	-	-0.08	0.670	0.957
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	638000	3570	20.92	22.50	1.439	-	-	-0.08	0.645	0.928
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	645332	3679.98	20.88	22.50	1.452	-	-	-0.17	0.626	0.909
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	641666	3624.99	20.94	22.50	1.432	-	-	-0.17	0.573	0.821
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	638000	3570	20.91	22.50	1.442	-	-	-0.08	0.566	0.816
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	645332	3679.98	20.90	22.50	1.445	-	-	-0.04	0.548	0.792
	FR1 n48	40M	QPSK	100	0	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	641666	3624.99	20.90	22.50	1.445	-	-	-0.03	0.505	0.730
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Right Side	10mm	Ant 7	DSI 2	641666	3624.99	20.95	22.50	1.429	-	-	0.14	0.498	0.712
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Right Side	10mm	Ant 7	DSI 2	641666	3624.99	20.94	22.50	1.432	-	-	0.11	0.567	0.812
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Right Side	10mm	Ant 7	DSI 2	638000	3570	20.91	22.50	1.442	-	-	-0.08	0.552	0.796
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Right Side	10mm	Ant 7	DSI 2	645332	3679.98	20.90	22.50	1.445	-	-	0.17	0.548	0.792
	FR1 n48	40M	QPSK	100	0	DFT-SCS-30KHz	Right Side	10mm	Ant 7	DSI 2	641666	3624.99	20.90	22.50	1.445	-	-	-0.05	0.412	0.596
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Top Side	10mm	Ant 7	DSI 2	641666	3624.99	20.95	22.50	1.429	-	-	0.18	0.185	0.264
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Top Side	10mm	Ant 7	DSI 2	641666	3624.99	20.94	22.50	1.432	-	-	0.14	0.193	0.276
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 2	DSI 2	656000	3840	17.56	19.00	1.393	-	-	-0.17	0.138	0.192
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 2	DSI 2	656000	3840	17.55	19.00	1.396	-	-	0.04	0.119	0.166
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 2	DSI 2	656000	3840	17.56	19.00	1.393	-	-	-0.05	0.157	0.219
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 2	DSI 2	656000	3840	17.55	19.00	1.396	-	-	-0.01	0.150	0.209
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Left Side	10mm	Ant 2	DSI 2	656000	3840	17.56	19.00	1.393	-	-	-0.05	0.227	0.316
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Side	10mm	Ant 2	DSI 2	656000	3840	17.55	19.00	1.396	-	-	-0.08	0.208	0.290
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	10mm	Ant 2	DSI 2	656000	3840	17.56	19.00	1.393	-	-	0.05	0.038	0.053
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	10mm	Ant 2	DSI 2	656000	3840	17.55	19.00	1.396	-	-	0.06	0.026	0.036
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 2	DSI 2	633334	3500.01	17.74	19.00	1.337	-	-	-0.09	0.320	0.428
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 2	DSI 2	633334	3500.01	17.73	19.00	1.340	-	-	-0.08	0.376	0.504
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 2	DSI 2	633334	3500.01	17.74	19.00	1.337	-	-	0.13	0.393	0.525
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 2	DSI 2	633334	3500.01	17.73	19.00	1.340	-	-	-0.05	0.394	0.528
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Left Side	10mm	Ant 2	DSI 2	633334	3500.01	17.74	19.00	1.337	-	-	-0.03	0.484	0.647
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Side	10mm	Ant 2	DSI 2	633334	3500.01	17.73	19.00	1.340	-	-	0.12	0.461	0.618
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	10mm	Ant 2	DSI 2	633334	3500.01	17.74	19.00	1.337	-	-	0.18	0.016	0.021
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	10mm	Ant 2	DSI 2	633334	3500.01	17.73	19.00	1.340	-	-	0.16	0.013	0.017
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 3	DSI 2	656000	3840	21.62	23.00	1.374	-	-	0.18	0.339	0.466
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 3	DSI 2	656000	3840	21.58	23.00	1.387	-	-	-0.07	0.354	0.491
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 3	DSI 2	656000	3840	21.62	23.00	1.374	-	-	-0.1	0.238	0.327
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 3	DSI 2	656000	3840	21.58	23.00	1.387	-	-	0.01	0.221	0.306



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	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Left Side	10mm	Ant 3	DSI 2	656000	3840	21.62	23.00	1.374	-	-	-0.15	0.418	0.574
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Side	10mm	Ant 3	DSI 2	656000	3840	21.58	23.00	1.387	-	-	-0.05	0.453	0.628
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	10mm	Ant 3	DSI 2	656000	3840	21.62	23.00	1.374	-	-	0.19	0.169	0.232
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	10mm	Ant 3	DSI 2	656000	3840	21.58	23.00	1.387	-	-	0.07	0.202	0.280
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 3	DSI 2	633334	3500.01	21.94	23.00	1.276	-	-	0.08	0.069	0.088
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 3	DSI 2	633334	3500.01	21.81	23.00	1.315	-	-	0.01	0.076	0.100
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 3	DSI 2	633334	3500.01	21.94	23.00	1.276	-	-	0.03	0.110	0.140
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 3	DSI 2	633334	3500.01	21.81	23.00	1.315	-	-	-0.04	0.132	0.174
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Left Side	10mm	Ant 3	DSI 2	633334	3500.01	21.94	23.00	1.276	-	-	-0.08	0.432	0.551
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Side	10mm	Ant 3	DSI 2	633334	3500.01	21.81	23.00	1.315	-	-	-0.02	0.434	0.571
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	10mm	Ant 3	DSI 2	633334	3500.01	21.94	23.00	1.276	-	-	-0.08	0.057	0.073
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	10mm	Ant 3	DSI 2	633334	3500.01	21.81	23.00	1.315	-	-	0.1	0.056	0.074
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 5	DSI 4	656000	3840	20.69	22.00	1.352	-	-	0.05	0.281	0.380
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 5	DSI 4	656000	3840	20.64	22.00	1.368	-	-	0.18	0.252	0.345
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 5	DSI 4	656000	3840	20.69	22.00	1.352	-	-	-0.07	0.291	0.393
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 5	DSI 4	656000	3840	20.64	22.00	1.368	-	-	0.01	0.220	0.301
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Right Side	10mm	Ant 5	DSI 2	656000	3840	24.67	26.00	1.358	-	-	-0.15	0.335	0.455
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Side	10mm	Ant 5	DSI 2	656000	3840	24.65	26.00	1.365	-	-	0.19	0.329	0.449
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	10mm	Ant 5	DSI 4	656000	3840	20.69	22.00	1.352	-	-	-0.05	0.455	0.615
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	10mm	Ant 5	DSI 4	656000	3840	20.64	22.00	1.368	-	-	0.07	0.407	0.557
	FR1 n77 HPUE ENDC	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	10mm	Ant 5	DSI 4	656000	3840	19.47	21.00	1.422	-	-	-0.04	0.354	0.504
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Front	15mm	Ant 5	DSI 2	656000	3840	24.67	26.00	1.358	-	-	0.07	0.501	0.681
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Back	15mm	Ant 5	DSI 2	656000	3840	24.67	26.00	1.358	-	-	0.16	0.411	0.558
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	15mm	Ant 5	DSI 2	656000	3840	24.67	26.00	1.358	-	-	0.13	0.587	0.797
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 5	DSI 4	633334	3500.01	20.68	22.00	1.355	-	-	0.03	0.390	0.529
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 5	DSI 4	633334	3500.01	20.57	22.00	1.390	-	-	-0.15	0.370	0.514
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 5	DSI 4	633334	3500.01	20.68	22.00	1.355	-	-	-0.04	0.431	0.584
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 5	DSI 4	633334	3500.01	20.57	22.00	1.390	-	-	0.11	0.403	0.560
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Right Side	10mm	Ant 5	DSI 2	633334	3500.01	24.63	26.00	1.371	-	-	-0.17	0.275	0.377
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Side	10mm	Ant 5	DSI 2	633334	3500.01	24.48	26.00	1.419	-	-	-0.08	0.268	0.380
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	10mm	Ant 5	DSI 4	633334	3500.01	20.68	22.00	1.355	-	-	-0.04	0.429	0.581
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	10mm	Ant 5	DSI 4	633334	3500.01	20.57	22.00	1.390	-	-	-0.06	0.481	0.669
	FR1 n77 HPUE ENDC	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	10mm	Ant 5	DSI 4	633334	3500.01	19.41	21.00	1.442	-	-	0.07	0.371	0.535
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Front	15mm	Ant 5	DSI 2	633334	3500.01	24.63	26.00	1.371	-	-	-0.18	0.521	0.714
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Back	15mm	Ant 5	DSI 2	633334	3500.01	24.63	26.00	1.371	-	-	0.02	0.577	0.791
56	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	15mm	Ant 5	DSI 2	633334	3500.01	24.63	26.00	1.371	-	-	-0.09	0.582	0.798
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 7	DSI 2	656000	3840	17.18	18.50	1.355	-	-	0.17	0.088	0.119
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 7	DSI 2	656000	3840	17.12	18.50	1.374	-	-	0.18	0.103	0.142
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	656000	3840	17.18	18.50	1.355	-	-	0.02	0.169	0.229
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	656000	3840	17.12	18.50	1.374	-	-	-0.08	0.127	0.175
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Right Side	10mm	Ant 7	DSI 2	656000	3840	17.18	18.50	1.355	-	-	-0.13	0.263	0.356
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Side	10mm	Ant 7	DSI 2	656000	3840	17.12	18.50	1.374	-	-	-0.13	0.365	0.502
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	10mm	Ant 7	DSI 2	656000	3840	17.18	18.50	1.355	-	-	0.06	0.063	0.085
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	10mm	Ant 7	DSI 2	656000	3840	17.12	18.50	1.374	-	-	-0.03	0.064	0.088
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 7	DSI 2	633334	3500.01	17.36	18.50	1.300	-	-	-0.07	0.072	0.094
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 7	DSI 2	633334	3500.01	17.30	18.50	1.318	-	-	0.05	0.075	0.099
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	633334	3500.01	17.36	18.50	1.300	-	-	-0.03	0.293	0.381
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	633334	3500.01	17.30	18.50	1.318	-	-	-0.11	0.269	0.355
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Right Side	10mm	Ant 7	DSI 2	633334	3500.01	17.36	18.50	1.300	-	-	0.03	0.182	0.237
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Side	10mm	Ant 7	DSI 2	633334	3500.01	17.30	18.50	1.318	-	-	-0.16	0.175	0.231
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	10mm	Ant 7	DSI 2	633334	3500.01	17.36	18.50	1.300	-	-	0.15	0.098	0.127
	FR1 n78 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 2	DSI 2	650000	3750	18.69	20.00	1.352	-	-	0.1	0.138	0.187
	FR1 n78 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 2	DSI 2	650000	3750	18.68	20.00	1.355	-	-	0.12	0.087	0.118
	FR1 n78 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 2	DSI 2	650000	3750	18.69	20.00	1.352	-	-	0.08	0.132	0.178
	FR1 n78 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 2	DSI 2	650000	3750	18.68	20.00	1.355	-	-	-0.17	0.106	0.144
	FR1 n78 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Left Side	10mm	Ant 2	DSI 2	650000	3750	18.69	20.00	1.352	-	-	-0.03	0.302	0.408
	FR1 n78 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Side	10mm	Ant 2	DSI 2	650000	3750	18.68	20.00	1.355	-	-	0.14	0.359	0.487



Table with columns: Model, Power, Modulation, Channels, Frequency, Power Spectral Density, Distance, Antenna, Direction, Gain, EIRP, etc. Row 57 is highlighted in yellow.



FCC SAR Test Report

Report No. : FA471506

FR1 n78 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 7	DSI 2	650000	3750	18.03	19.50	1.403	-	-	0.01	0.098	0.137
FR1 n78 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 7	DSI 2	650000	3750	17.98	19.50	1.419	-	-	-0.01	0.107	0.152
FR1 n78 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	650000	3750	18.03	19.50	1.403	-	-	-0.06	0.239	0.335
FR1 n78 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	650000	3750	17.98	19.50	1.419	-	-	-0.04	0.242	0.343
FR1 n78 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Right Side	10mm	Ant 7	DSI 2	650000	3750	18.03	19.50	1.403	-	-	-0.09	0.301	0.422
FR1 n78 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Side	10mm	Ant 7	DSI 2	650000	3750	17.98	19.50	1.419	-	-	-0.05	0.343	0.487
FR1 n78 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	10mm	Ant 7	DSI 2	650000	3750	18.03	19.50	1.403	-	-	-0.1	0.093	0.130
FR1 n78 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	10mm	Ant 7	DSI 2	650000	3750	17.98	19.50	1.419	-	-	0.18	0.093	0.132
FR1 n78 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 7	DSI 2	633334	3500.01	18.42	19.50	1.282	-	-	-0.05	0.190	0.244
FR1 n78 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 7	DSI 2	633334	3500.01	18.40	19.50	1.288	-	-	0.01	0.206	0.265
FR1 n78 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	633334	3500.01	18.42	19.50	1.282	-	-	-0.07	0.461	0.591
FR1 n78 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	633334	3500.01	18.40	19.50	1.288	-	-	-0.01	0.458	0.590
FR1 n78 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Right Side	10mm	Ant 7	DSI 2	633334	3500.01	18.42	19.50	1.282	-	-	-0.09	0.180	0.231
FR1 n78 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Side	10mm	Ant 7	DSI 2	633334	3500.01	18.40	19.50	1.288	-	-	0.05	0.205	0.264
FR1 n78 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	10mm	Ant 7	DSI 2	633334	3500.01	18.42	19.50	1.282	-	-	-0.13	0.056	0.072
FR1 n78 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	10mm	Ant 7	DSI 2	633334	3500.01	18.40	19.50	1.288	-	-	0.17	0.055	0.071

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)
2450MHz																
	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 6	Full power	6	2437	18.06	19.00	1.242	100	1.000	-0.04	0.158	0.196
	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Ant 6	Full power	6	2437	18.06	19.00	1.242	100	1.000	-0.19	0.191	0.237
	WLAN2.4GHz	802.11b 1Mbps	Right Side	10mm	Ant 6	Full power	6	2437	18.06	19.00	1.242	100	1.000	0.02	0.049	0.061
58	WLAN2.4GHz	802.11b 1Mbps	Top Side	10mm	Ant 6	Full power	6	2437	18.06	19.00	1.242	100	1.000	0.02	0.304	0.377
	WLAN2.4GHz	802.11b 1Mbps	Top Side	15mm	Ant 6	Full power	6	2437	18.06	19.00	1.242	100	1.000	0.05	0.158	0.196
	Bluetooth	1Mbps	Front	10mm	Ant 6	Full power	78	2480	10.82	12.00	1.312	76.59	1.088	0.01	0.001	0.001
	Bluetooth	1Mbps	Back	10mm	Ant 6	Full power	78	2480	10.82	12.00	1.312	76.59	1.088	0.09	0.002	0.003
	Bluetooth	1Mbps	Right Side	10mm	Ant 6	Full power	78	2480	10.82	12.00	1.312	76.59	1.088	0.14	0.001	0.001
59	Bluetooth	1Mbps	Top Side	10mm	Ant 6	Full power	78	2480	10.82	12.00	1.312	76.59	1.088	-0.02	0.038	0.054
5000MHz																
	WLAN5.2GHz	802.11a 6Mbps	Front	10mm	Ant 6	Full power	40	5200	17.02	18.00	1.253	96.97	1.031	0.05	0.209	0.270
	WLAN5.2GHz	802.11a 6Mbps	Back	10mm	Ant 6	Full power	40	5200	17.02	18.00	1.253	96.97	1.031	0.06	0.156	0.202
	WLAN5.2GHz	802.11a 6Mbps	Right Side	10mm	Ant 6	Full power	40	5200	17.02	18.00	1.253	96.97	1.031	0.08	0.096	0.124
60	WLAN5.2GHz	802.11a 6Mbps	Top Side	10mm	Ant 6	Full power	40	5200	17.02	18.00	1.253	96.97	1.031	-0.09	0.361	0.466
	WLAN5.2GHz	802.11a 6Mbps	Top Side	15mm	Ant 6	Full power	40	5200	17.02	18.00	1.253	96.97	1.031	0.07	0.192	0.248
61	WLAN5.8GHz	802.11a 6Mbps	Front	10mm	Ant 6	Full power	157	5785	17.29	18.00	1.178	96.97	1.031	0.05	0.482	0.585
	WLAN5.8GHz	802.11a 6Mbps	Back	10mm	Ant 6	Full power	157	5785	17.29	18.00	1.178	96.97	1.031	-0.04	0.171	0.208
	WLAN5.8GHz	802.11a 6Mbps	Right Side	10mm	Ant 6	Full power	157	5785	17.29	18.00	1.178	96.97	1.031	0.11	0.285	0.346
	WLAN5.8GHz	802.11a 6Mbps	Top Side	10mm	Ant 6	Full power	157	5785	17.29	18.00	1.178	96.97	1.031	-0.02	0.342	0.415
	WLAN5.8GHz	802.11a 6Mbps	Top Side	15mm	Ant 6	Full power	157	5785	17.29	18.00	1.178	96.97	1.031	-0.02	0.143	0.174
	WLAN5.8GHz	802.11ac-VHT40 MCS0	Front	10mm	Ant 6	Simultaneous	159	5795	16.24	17.00	1.191	93.75	1.067	-0.06	0.369	0.469
	WLAN5.8GHz	802.11ac-VHT40 MCS0	Back	10mm	Ant 6	Simultaneous	159	5795	16.24	17.00	1.191	93.75	1.067	-0.04	0.154	0.196
	WLAN5.8GHz	802.11ac-VHT40 MCS0	Top Side	10mm	Ant 6	Simultaneous	159	5795	16.24	17.00	1.191	93.75	1.067	-0.09	0.271	0.344



15.3 Body Worn Accessory SAR

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)
750MHz																				
	LTE Band 12	10M	QPSK	1	0	-	Front	10mm	Ant 1	DSI 3	23095	707.5	24.45	25.50	1.274	-	-	-0.15	0.186	0.237
	LTE Band 12	10M	QPSK	25	0	-	Front	10mm	Ant 1	DSI 3	23095	707.5	23.45	24.50	1.274	-	-	0.11	0.148	0.188
62	LTE Band 12	10M	QPSK	1	0	-	Back	10mm	Ant 1	DSI 3	23095	707.5	24.45	25.50	1.274	-	-	0.05	0.232	0.295
	LTE Band 12	10M	QPSK	25	0	-	Back	10mm	Ant 1	DSI 3	23095	707.5	23.45	24.50	1.274	-	-	-0.08	0.186	0.237
	LTE Band 12	10M	QPSK	1	0	-	Front	10mm	Ant 4	DSI 4	23095	707.5	24.55	25.50	1.245	-	-	0.01	0.124	0.154
	LTE Band 12	10M	QPSK	25	0	-	Front	10mm	Ant 4	DSI 4	23095	707.5	23.53	24.50	1.250	-	-	-0.15	0.099	0.124
	LTE Band 12	10M	QPSK	1	0	-	Back	10mm	Ant 4	DSI 4	23095	707.5	24.55	25.50	1.245	-	-	-0.1	0.156	0.194
	LTE Band 12	10M	QPSK	25	0	-	Back	10mm	Ant 4	DSI 4	23095	707.5	23.53	24.50	1.250	-	-	0.19	0.123	0.154
	LTE Band 13	10M	QPSK	1	0	-	Front	10mm	Ant 1	DSI 3	23230	782	24.49	25.50	1.262	-	-	0.08	0.169	0.213
	LTE Band 13	10M	QPSK	25	0	-	Front	10mm	Ant 1	DSI 3	23230	782	23.46	24.50	1.271	-	-	0.01	0.133	0.169
63	LTE Band 13	10M	QPSK	1	0	-	Back	10mm	Ant 1	DSI 3	23230	782	24.49	25.50	1.262	-	-	-0.04	0.208	0.262
	LTE Band 13	10M	QPSK	25	0	-	Back	10mm	Ant 1	DSI 3	23230	782	23.46	24.50	1.271	-	-	0.03	0.165	0.210
	LTE Band 13	10M	QPSK	1	0	-	Front	10mm	Ant 4	DSI 4	23230	782	24.50	25.50	1.259	-	-	0.12	0.146	0.184
	LTE Band 13	10M	QPSK	25	0	-	Front	10mm	Ant 4	DSI 4	23230	782	23.54	24.50	1.247	-	-	0.08	0.114	0.142
	LTE Band 13	10M	QPSK	1	0	-	Back	10mm	Ant 4	DSI 4	23230	782	24.50	25.50	1.259	-	-	0.03	0.175	0.220
	LTE Band 13	10M	QPSK	25	0	-	Back	10mm	Ant 4	DSI 4	23230	782	23.54	24.50	1.247	-	-	-0.17	0.137	0.171
835MHz																				
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Front	10mm	Ant 1	DSI 3	189	836.4	28.87	30.00	1.297	-	-	0.08	0.327	0.424
64	GSM850	-	-	-	-	GPRS (4 Tx slots)	Back	10mm	Ant 1	DSI 3	189	836.4	28.87	30.00	1.297	-	-	-0.13	0.412	0.534
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Front	10mm	Ant 4	DSI 4	189	836.4	28.79	30.00	1.321	-	-	-0.08	0.314	0.415
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Back	10mm	Ant 4	DSI 4	189	836.4	28.79	30.00	1.321	-	-	-0.13	0.369	0.488
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 1	DSI 3	4182	836.4	24.50	25.50	1.259	-	-	-0.05	0.282	0.355
65	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 1	DSI 3	4182	836.4	24.50	25.50	1.259	-	-	0.05	0.343	0.432
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 4	DSI 4	4182	836.4	23.49	24.50	1.262	-	-	-0.17	0.192	0.242
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 4	DSI 4	4182	836.4	23.49	24.50	1.262	-	-	-0.13	0.220	0.278
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 4	DSI 2	4182	836.4	24.48	25.50	1.265	-	-	-0.08	0.130	0.164
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 4	DSI 2	4182	836.4	24.48	25.50	1.265	-	-	-0.08	0.149	0.188
	LTE Band 5	10M	QPSK	1	0	-	Front	10mm	Ant 1	DSI 3	20525	836.5	23.35	24.50	1.303	-	-	-0.05	0.212	0.276
	LTE Band 5	10M	QPSK	25	0	-	Front	10mm	Ant 1	DSI 3	20525	836.5	23.32	24.50	1.312	-	-	0.01	0.200	0.262
66	LTE Band 5	10M	QPSK	1	0	-	Back	10mm	Ant 1	DSI 3	20525	836.5	23.35	24.50	1.303	-	-	-0.14	0.273	0.356
	LTE Band 5	10M	QPSK	25	0	-	Back	10mm	Ant 1	DSI 3	20525	836.5	23.32	24.50	1.312	-	-	0.1	0.269	0.353
	LTE Band 5	10M	QPSK	1	0	-	Front	15mm	Ant 1	DSI 2	20525	836.5	24.34	25.50	1.306	-	-	-0.18	0.180	0.235
	LTE Band 5	10M	QPSK	1	0	-	Back	15mm	Ant 1	DSI 2	20525	836.5	24.34	25.50	1.306	-	-	0.1	0.194	0.253
	LTE Band 5	10M	QPSK	1	0	-	Front	10mm	Ant 4	DSI 4	20525	836.5	23.57	24.50	1.239	-	-	0.06	0.192	0.238
	LTE Band 5	10M	QPSK	25	0	-	Front	10mm	Ant 4	DSI 4	20525	836.5	23.54	24.50	1.247	-	-	-0.09	0.187	0.233
	LTE Band 5	10M	QPSK	1	0	-	Back	10mm	Ant 4	DSI 4	20525	836.5	23.57	24.50	1.239	-	-	-0.18	0.221	0.274
	LTE Band 5	10M	QPSK	25	0	-	Back	10mm	Ant 4	DSI 4	20525	836.5	23.54	24.50	1.247	-	-	-0.08	0.212	0.264
	LTE Band 5	10M	QPSK	1	0	-	Front	15mm	Ant 4	DSI 2	20525	836.5	24.53	25.50	1.250	-	-	0.08	0.180	0.225
	LTE Band 5	10M	QPSK	1	0	-	Back	15mm	Ant 4	DSI 2	20525	836.5	24.53	25.50	1.250	-	-	-0.17	0.194	0.243
	LTE Band 26	15M	QPSK	1	0	-	Front	10mm	Ant 1	DSI 3	26865	831.5	24.41	25.50	1.285	-	-	0.18	0.254	0.326
	LTE Band 26	15M	QPSK	36	0	-	Front	10mm	Ant 1	DSI 3	26865	831.5	23.48	24.50	1.265	-	-	0.16	0.210	0.266
67	LTE Band 26	15M	QPSK	1	0	-	Back	10mm	Ant 1	DSI 3	26865	831.5	24.41	25.50	1.285	-	-	0.03	0.343	0.441
	LTE Band 26	15M	QPSK	36	0	-	Back	10mm	Ant 1	DSI 3	26865	831.5	23.48	24.50	1.265	-	-	-0.1	0.269	0.340
	LTE Band 26	15M	QPSK	1	0	-	Front	10mm	Ant 4	DSI 4	26865	831.5	24.55	25.50	1.245	-	-	0.19	0.232	0.289
	LTE Band 26	15M	QPSK	36	0	-	Front	10mm	Ant 4	DSI 4	26865	831.5	23.48	24.50	1.265	-	-	0.07	0.179	0.226
	LTE Band 26	15M	QPSK	1	0	-	Back	10mm	Ant 4	DSI 4	26865	831.5	24.55	25.50	1.245	-	-	-0.05	0.265	0.330
	LTE Band 26	15M	QPSK	36	0	-	Back	10mm	Ant 4	DSI 4	26865	831.5	23.48	24.50	1.265	-	-	-0.18	0.212	0.268
	FR1 n5	20M	QPSK	1	1	DFT-SCS-15KHz	Front	10mm	Ant 1	DSI 3	167300	836.5	23.59	24.70	1.291	-	-	0.08	0.187	0.241
	FR1 n5	20M	QPSK	50	28	DFT-SCS-15KHz	Front	10mm	Ant 1	DSI 3	167300	836.5	23.52	24.70	1.312	-	-	0.01	0.232	0.304
	FR1 n5	20M	QPSK	1	1	DFT-SCS-15KHz	Back	10mm	Ant 1	DSI 3	167300	836.5	23.59	24.70	1.291	-	-	0.03	0.225	0.291



68	FR1 n5	20M	QPSK	50	28	DFT-SCS-15KHz	Back	10mm	Ant 1	DSI 3	167300	836.5	23.52	24.70	1.312	-	-	-0.15	0.286	0.375
	FR1 n5	20M	QPSK	1	1	DFT-SCS-15KHz	Front	15mm	Ant 1	DSI 2	167300	836.5	24.58	25.70	1.294	-	-	0.14	0.201	0.260
	FR1 n5	20M	QPSK	1	1	DFT-SCS-15KHz	Back	15mm	Ant 1	DSI 2	167300	836.5	24.58	25.70	1.294	-	-	0.11	0.189	0.245
	FR1 n5	20M	QPSK	1	1	DFT-SCS-15KHz	Front	10mm	Ant 4	DSI 4	167300	836.5	23.61	24.70	1.285	-	-	0.12	0.190	0.244
	FR1 n5	20M	QPSK	50	28	DFT-SCS-15KHz	Front	10mm	Ant 4	DSI 4	167300	836.5	23.58	24.70	1.294	-	-	0.08	0.172	0.223
	FR1 n5	20M	QPSK	1	1	DFT-SCS-15KHz	Back	10mm	Ant 4	DSI 4	167300	836.5	23.61	24.70	1.285	-	-	-0.06	0.223	0.287
	FR1 n5	20M	QPSK	50	28	DFT-SCS-15KHz	Back	10mm	Ant 4	DSI 4	167300	836.5	23.58	24.70	1.294	-	-	-0.17	0.201	0.260
	FR1 n5	20M	QPSK	1	1	DFT-SCS-15KHz	Front	15mm	Ant 4	DSI 2	167300	836.5	24.59	25.70	1.291	-	-	0.18	0.118	0.152
	FR1 n5	20M	QPSK	1	1	DFT-SCS-15KHz	Back	15mm	Ant 4	DSI 2	167300	836.5	24.59	25.70	1.291	-	-	0.14	0.136	0.176
1750MHz																				
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 1	DSI 3	1413	1732.6	18.97	20.00	1.268	-	-	0.08	0.297	0.376
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 1	DSI 3	1413	1732.6	18.97	20.00	1.268	-	-	-0.01	0.330	0.418
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 1	DSI 2	1413	1732.6	22.90	24.00	1.288	-	-	0.17	0.340	0.438
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 1	DSI 2	1413	1732.6	22.90	24.00	1.288	-	-	-0.05	0.443	0.571
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 4	DSI 4	1413	1732.6	18.87	19.50	1.156	-	-	-0.08	0.353	0.408
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 4	DSI 4	1413	1732.6	18.87	19.50	1.156	-	-	-0.03	0.406	0.469
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 4	DSI 2	1413	1732.6	22.81	23.50	1.172	-	-	0.04	0.496	0.581
69	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 4	DSI 2	1413	1732.6	22.81	23.50	1.172	-	-	-0.01	0.611	0.716
	LTE Band 4	20M	QPSK	1	0	-	Front	10mm	Ant 1	DSI 3	20175	1732.5	19.39	20.50	1.291	-	-	-0.08	0.297	0.383
	LTE Band 4	20M	QPSK	50	0	-	Front	10mm	Ant 1	DSI 3	20175	1732.5	19.33	20.50	1.309	-	-	0.17	0.299	0.391
	LTE Band 4	20M	QPSK	1	0	-	Back	10mm	Ant 1	DSI 3	20175	1732.5	19.39	20.50	1.291	-	-	0.06	0.358	0.462
	LTE Band 4	20M	QPSK	50	0	-	Back	10mm	Ant 1	DSI 3	20175	1732.5	19.33	20.50	1.309	-	-	0.18	0.356	0.466
	LTE Band 4	20M	QPSK	1	0	-	Front	15mm	Ant 1	DSI 2	20175	1732.5	22.83	24.00	1.309	-	-	0.08	0.326	0.427
	LTE Band 4	20M	QPSK	1	0	-	Back	15mm	Ant 1	DSI 2	20175	1732.5	22.83	24.00	1.309	-	-	0.01	0.398	0.521
	LTE Band 4 Other PA	20M	QPSK	1	0	-	Front	10mm	Ant 2	DSI 2	20175	1732.5	23.30	24.00	1.175	-	-	-0.15	0.140	0.164
	LTE Band 4 Other PA	20M	QPSK	50	0	-	Front	10mm	Ant 2	DSI 2	20175	1732.5	22.25	23.00	1.189	-	-	0.19	0.112	0.133
	LTE Band 4 Other PA	20M	QPSK	1	0	-	Back	10mm	Ant 2	DSI 2	20175	1732.5	23.30	24.00	1.175	-	-	-0.06	0.201	0.236
	LTE Band 4 Other PA	20M	QPSK	50	0	-	Back	10mm	Ant 2	DSI 2	20175	1732.5	22.25	23.00	1.189	-	-	0.07	0.155	0.184
	LTE Band 4	20M	QPSK	1	0	-	Front	10mm	Ant 4	DSI 4	20175	1732.5	18.20	19.00	1.202	-	-	-0.03	0.295	0.355
	LTE Band 4	20M	QPSK	50	0	-	Front	10mm	Ant 4	DSI 4	20175	1732.5	18.15	19.00	1.216	-	-	0.08	0.296	0.360
	LTE Band 4	20M	QPSK	1	0	-	Back	10mm	Ant 4	DSI 4	20175	1732.5	18.20	19.00	1.202	-	-	-0.08	0.369	0.444
	LTE Band 4	20M	QPSK	50	0	-	Back	10mm	Ant 4	DSI 4	20175	1732.5	18.15	19.00	1.216	-	-	-0.07	0.361	0.439
	LTE Band 4	20M	QPSK	1	0	-	Front	15mm	Ant 4	DSI 2	20175	1732.5	23.17	24.00	1.211	-	-	-0.08	0.483	0.585
70	LTE Band 4	20M	QPSK	1	0	-	Back	15mm	Ant 4	DSI 2	20175	1732.5	23.17	24.00	1.211	-	-	-0.08	0.586	0.709
	LTE Band 66	20M	QPSK	1	0	-	Front	10mm	Ant 1	DSI 3	132322	1745	19.96	21.00	1.271	-	-	0.03	0.343	0.436
	LTE Band 66	20M	QPSK	50	0	-	Front	10mm	Ant 1	DSI 3	132322	1745	19.92	21.00	1.282	-	-	-0.16	0.345	0.442
	LTE Band 66	20M	QPSK	1	0	-	Back	10mm	Ant 1	DSI 3	132322	1745	19.96	21.00	1.271	-	-	-0.07	0.405	0.515
	LTE Band 66	20M	QPSK	50	0	-	Back	10mm	Ant 1	DSI 3	132322	1745	19.92	21.00	1.282	-	-	-0.02	0.404	0.518
	LTE Band 66	20M	QPSK	1	0	-	Front	15mm	Ant 1	DSI 2	132322	1745	22.91	24.00	1.285	-	-	-0.17	0.350	0.450
	LTE Band 66	20M	QPSK	1	0	-	Back	15mm	Ant 1	DSI 2	132322	1745	22.91	24.00	1.285	-	-	-0.03	0.423	0.544
	LTE Band 66 Other PA	20M	QPSK	1	0	-	Front	10mm	Ant 2	DSI 2	132322	1745	23.37	24.00	1.156	-	-	0.11	0.141	0.163
	LTE Band 66 Other PA	20M	QPSK	50	0	-	Front	10mm	Ant 2	DSI 2	132322	1745	22.38	23.00	1.153	-	-	-0.08	0.115	0.133
	LTE Band 66 Other PA	20M	QPSK	1	0	-	Back	10mm	Ant 2	DSI 2	132322	1745	23.37	24.00	1.156	-	-	0.09	0.211	0.244
	LTE Band 66 Other PA	20M	QPSK	50	0	-	Back	10mm	Ant 2	DSI 2	132322	1745	22.38	23.00	1.153	-	-	-0.17	0.175	0.202
	LTE Band 66	20M	QPSK	1	0	-	Front	10mm	Ant 4	DSI 4	132322	1745	18.17	19.00	1.211	-	-	0.02	0.330	0.399
	LTE Band 66	20M	QPSK	50	0	-	Front	10mm	Ant 4	DSI 4	132322	1745	18.12	19.00	1.225	-	-	0.07	0.329	0.403
	LTE Band 66	20M	QPSK	1	0	-	Back	10mm	Ant 4	DSI 4	132322	1745	18.17	19.00	1.211	-	-	-0.12	0.404	0.489
	LTE Band 66	20M	QPSK	50	0	-	Back	10mm	Ant 4	DSI 4	132322	1745	18.12	19.00	1.225	-	-	0.16	0.400	0.490
	LTE Band 66	20M	QPSK	1	0	-	Front	15mm	Ant 4	DSI 2	132322	1745	22.69	23.50	1.205	-	-	0.11	0.431	0.519
71	LTE Band 66	20M	QPSK	1	0	-	Back	15mm	Ant 4	DSI 2	132322	1745	22.69	23.50	1.205	-	-	-0.05	0.533	0.642
	FR1 n66	40M	QPSK	1	1	DFT-SCS-15KHz	Front	10mm	Ant 1	DSI 3	349000	1745	19.34	21.00	1.466	-	-	-0.13	0.281	0.412
	FR1 n66	40M	QPSK	108	54	DFT-SCS-15KHz	Front	10mm	Ant 1	DSI 3	349000	1745	19.27	21.00	1.489	-	-	-0.01	0.317	0.472
	FR1 n66	40M	QPSK	1	1	DFT-SCS-15KHz	Back	10mm	Ant 1	DSI 3	349000	1745	19.34	21.00	1.466	-	-	-0.09	0.320	0.469



	FR1 n66	40M	QPSK	108	54	DFT-SCS-15KHz	Back	10mm	Ant 1	DSI 3	349000	1745	19.27	21.00	1.489	-	-	-0.01	0.360	0.536
	FR1 n66	40M	QPSK	1	1	DFT-SCS-15KHz	Front	15mm	Ant 1	DSI 2	349000	1745	22.75	24.50	1.496	-	-	0.17	0.292	0.437
	FR1 n66	40M	QPSK	1	1	DFT-SCS-15KHz	Back	15mm	Ant 1	DSI 2	349000	1745	22.75	24.50	1.496	-	-	-0.05	0.367	0.549
	FR1 n66 Other PA	40M	QPSK	1	1	DFT-SCS-15KHz	Front	10mm	Ant 2	DSI 2	349000	1745	23.15	24.50	1.365	-	-	-0.18	0.140	0.191
	FR1 n66 Other PA	40M	QPSK	108	54	DFT-SCS-15KHz	Front	10mm	Ant 2	DSI 2	349000	1745	23.12	24.50	1.374	-	-	0.1	0.159	0.218
	FR1 n66 Other PA	40M	QPSK	1	1	DFT-SCS-15KHz	Back	10mm	Ant 2	DSI 2	349000	1745	23.15	24.50	1.365	-	-	0.12	0.194	0.265
	FR1 n66 Other PA	40M	QPSK	108	54	DFT-SCS-15KHz	Back	10mm	Ant 2	DSI 2	349000	1745	23.12	24.50	1.374	-	-	-0.04	0.217	0.298
	FR1 n66	40M	QPSK	1	1	DFT-SCS-15KHz	Front	10mm	Ant 4	DSI 4	349000	1745	18.57	20.00	1.390	-	-	0.14	0.293	0.407
	FR1 n66	40M	QPSK	108	54	DFT-SCS-15KHz	Front	10mm	Ant 4	DSI 4	349000	1745	18.53	20.00	1.403	-	-	0.11	0.320	0.449
	FR1 n66	40M	QPSK	1	1	DFT-SCS-15KHz	Back	10mm	Ant 4	DSI 4	349000	1745	18.57	20.00	1.390	-	-	-0.05	0.336	0.467
	FR1 n66	40M	QPSK	108	54	DFT-SCS-15KHz	Back	10mm	Ant 4	DSI 4	349000	1745	18.53	20.00	1.403	-	-	-0.09	0.387	0.543
	FR1 n66	40M	QPSK	1	1	DFT-SCS-15KHz	Front	15mm	Ant 4	DSI 2	349000	1745	23.08	24.50	1.387	-	-	0.01	0.429	0.595
72	FR1 n66	40M	QPSK	1	1	DFT-SCS-15KHz	Back	15mm	Ant 4	DSI 2	349000	1745	23.08	24.50	1.387	-	-	0.1	0.525	0.728
1900MHz																				
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Front	10mm	Ant 1	DSI 3	661	1880	23.62	25.00	1.374	-	-	-0.18	0.338	0.464
73	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	10mm	Ant 1	DSI 3	661	1880	23.62	25.00	1.374	-	-	-0.07	0.378	0.519
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Front	15mm	Ant 1	DSI 2	661	1880	25.61	27.00	1.377	-	-	-0.09	0.254	0.350
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	15mm	Ant 1	DSI 2	661	1880	25.61	27.00	1.377	-	-	0.18	0.290	0.399
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Front	10mm	Ant 4	DSI 4	661	1880	20.92	22.00	1.282	-	-	0.14	0.268	0.344
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	10mm	Ant 4	DSI 4	661	1880	20.92	22.00	1.282	-	-	0.04	0.339	0.435
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Front	15mm	Ant 4	DSI 2	661	1880	24.89	26.00	1.291	-	-	-0.08	0.352	0.455
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	15mm	Ant 4	DSI 2	661	1880	24.89	26.00	1.291	-	-	0.05	0.267	0.345
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 1	DSI 3	9400	1880	19.01	20.00	1.256	-	-	0.16	0.214	0.269
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 1	DSI 3	9400	1880	19.01	20.00	1.256	-	-	0.01	0.251	0.315
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 1	DSI 2	9400	1880	22.98	24.00	1.265	-	-	-0.05	0.242	0.306
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 1	DSI 2	9400	1880	22.98	24.00	1.265	-	-	0.18	0.287	0.363
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 4	DSI 4	9400	1880	17.62	18.50	1.225	-	-	0.01	0.209	0.256
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 4	DSI 4	9400	1880	17.62	18.50	1.225	-	-	-0.02	0.248	0.304
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	15mm	Ant 4	DSI 2	9400	1880	22.66	23.50	1.213	-	-	-0.09	0.308	0.374
74	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	15mm	Ant 4	DSI 2	9400	1880	22.66	23.50	1.213	-	-	-0.08	0.388	0.471
	LTE Band 2	20M	QPSK	1	0	-	Front	10mm	Ant 1	DSI 3	18900	1880	19.03	20.00	1.250	-	-	-0.01	0.225	0.281
	LTE Band 2	20M	QPSK	50	0	-	Front	10mm	Ant 1	DSI 3	18900	1880	19.01	20.00	1.256	-	-	-0.06	0.222	0.279
	LTE Band 2	20M	QPSK	1	0	-	Back	10mm	Ant 1	DSI 3	18900	1880	19.03	20.00	1.250	-	-	-0.17	0.244	0.305
	LTE Band 2	20M	QPSK	50	0	-	Back	10mm	Ant 1	DSI 3	18900	1880	19.01	20.00	1.256	-	-	-0.04	0.242	0.304
	LTE Band 2	20M	QPSK	1	0	-	Front	15mm	Ant 1	DSI 2	18900	1880	22.98	24.00	1.265	-	-	-0.01	0.237	0.300
	LTE Band 2	20M	QPSK	1	0	-	Back	15mm	Ant 1	DSI 2	18900	1880	22.98	24.00	1.265	-	-	-0.09	0.274	0.347
	LTE Band 2 Other PA	20M	QPSK	1	0	-	Front	10mm	Ant 2	DSI 2	18900	1880	19.06	20.00	1.242	-	-	0.15	0.223	0.277
	LTE Band 2 Other PA	20M	QPSK	50	0	-	Front	10mm	Ant 2	DSI 2	18900	1880	19.00	20.00	1.259	-	-	-0.09	0.195	0.245
	LTE Band 2 Other PA	20M	QPSK	1	0	-	Back	10mm	Ant 2	DSI 2	18900	1880	19.06	20.00	1.242	-	-	0.11	0.320	0.397
	LTE Band 2 Other PA	20M	QPSK	50	0	-	Back	10mm	Ant 2	DSI 2	18900	1880	19.00	20.00	1.259	-	-	-0.08	0.265	0.334
	LTE Band 2	20M	QPSK	1	0	-	Front	10mm	Ant 4	DSI 4	18900	1880	17.18	18.00	1.208	-	-	-0.04	0.184	0.222
	LTE Band 2	20M	QPSK	50	0	-	Front	10mm	Ant 4	DSI 4	18900	1880	17.15	18.00	1.216	-	-	-0.05	0.185	0.225
	LTE Band 2	20M	QPSK	1	0	-	Back	10mm	Ant 4	DSI 4	18900	1880	17.18	18.00	1.208	-	-	0.01	0.232	0.280
	LTE Band 2	20M	QPSK	50	0	-	Back	10mm	Ant 4	DSI 4	18900	1880	17.15	18.00	1.216	-	-	0.05	0.230	0.280
	LTE Band 2	20M	QPSK	1	0	-	Front	15mm	Ant 4	DSI 2	18900	1880	22.13	23.00	1.222	-	-	0.18	0.259	0.316
75	LTE Band 2	20M	QPSK	1	0	-	Back	15mm	Ant 4	DSI 2	18900	1880	22.13	23.00	1.222	-	-	0.16	0.327	0.400
	FR1 n2	20M	QPSK	1	1	DFT-SCS-15KHz	Front	10mm	Ant 1	DSI 3	376000	1880	19.09	20.50	1.384	-	-	-0.05	0.216	0.299
	FR1 n2	20M	QPSK	50	28	DFT-SCS-15KHz	Front	10mm	Ant 1	DSI 3	376000	1880	19.06	20.50	1.393	-	-	0.01	0.237	0.330
	FR1 n2	20M	QPSK	1	1	DFT-SCS-15KHz	Back	10mm	Ant 1	DSI 3	376000	1880	19.09	20.50	1.384	-	-	0.1	0.246	0.340
	FR1 n2	20M	QPSK	50	28	DFT-SCS-15KHz	Back	10mm	Ant 1	DSI 3	376000	1880	19.06	20.50	1.393	-	-	-0.02	0.255	0.355
	FR1 n2	20M	QPSK	1	1	DFT-SCS-15KHz	Front	15mm	Ant 1	DSI 2	376000	1880	23.07	24.50	1.390	-	-	-0.15	0.258	0.359
	FR1 n2	20M	QPSK	1	1	DFT-SCS-15KHz	Back	15mm	Ant 1	DSI 2	376000	1880	23.07	24.50	1.390	-	-	-0.19	0.314	0.436
	FR1 n2 Other PA	20M	QPSK	1	1	DFT-SCS-15KHz	Front	10mm	Ant 2	DSI 2	376000	1880	18.64	20.00	1.368	-	-	-0.04	0.250	0.342



FCC SAR Test Report

Report No. : FA471506

Table with columns for antenna configuration, frequency, power, and SAR values. Includes rows for FR1 n2 and LTE Band 7/38 with various configurations and SAR results.



FCC SAR Test Report

Report No. : FA471506

Table with columns for LTE Band, Power, Modulation, Frequency, etc., containing SAR test results for various configurations.



	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 1	DSI 3	518598	2592.99	19.54	21.00	1.400	-	-	-0.07	0.249	0.348
	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Front	15mm	Ant 1	DSI 2	518598	2592.99	23.53	25.00	1.403	-	-	-0.12	0.305	0.428
82	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Back	15mm	Ant 1	DSI 2	518598	2592.99	23.53	25.00	1.403	-	-	0.03	0.411	0.577
	FR1 n41 ENDC	100M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 3	DSI 2	518598	2592.99	23.86	24.50	1.159	-	-	-0.03	0.194	0.225
	FR1 n41 ENDC	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 3	DSI 2	518598	2592.99	23.83	24.50	1.167	-	-	0.17	0.203	0.237
	FR1 n41 ENDC	100M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 3	DSI 2	518598	2592.99	23.86	24.50	1.159	-	-	-0.15	0.335	0.388
	FR1 n41 ENDC	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 3	DSI 2	518598	2592.99	23.83	24.50	1.167	-	-	-0.03	0.362	0.422
	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 4	DSI 4	518598	2592.99	17.22	19.00	1.507		1.000	-0.17	0.116	0.175
	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 4	DSI 4	518598	2592.99	17.19	19.00	1.517		1.000	0.17	0.115	0.174
	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 4	DSI 4	518598	2592.99	17.22	19.00	1.507		1.000	-0.05	0.172	0.259
	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 4	DSI 4	518598	2592.99	17.19	19.00	1.517		1.000	0.01	0.184	0.279
	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Front	15mm	Ant 4	DSI 2	518598	2592.99	22.21	24.00	1.510		1.000	0.1	0.239	0.361
	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Back	15mm	Ant 4	DSI 2	518598	2592.99	22.21	24.00	1.510		1.000	0.06	0.349	0.527
	FR1 n41 ENDC	100M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 7	DSI 2	518598	2592.99	15.53	17.00	1.403	-	-	0.19	0.034	0.048
	FR1 n41 ENDC	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 7	DSI 2	518598	2592.99	15.51	17.00	1.409	-	-	-0.06	0.037	0.052
	FR1 n41 ENDC	100M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	518598	2592.99	15.53	17.00	1.403	-	-	0.03	0.061	0.086
	FR1 n41 ENDC	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	518598	2592.99	15.51	17.00	1.409	-	-	0.06	0.071	0.100
3500MHz																				
	LTE Band 42	20M	QPSK	1	0	-	Front	10mm	Ant 2	DSI 2	42590	3500	19.15	20.00	1.216	62.9	1.006	0.13	0.132	0.161
	LTE Band 42	20M	QPSK	50	0	-	Front	10mm	Ant 2	DSI 2	42590	3500	18.18	19.00	1.208	62.9	1.006	-0.18	0.104	0.126
	LTE Band 42	20M	QPSK	1	0	-	Back	10mm	Ant 2	DSI 2	42590	3500	19.15	20.00	1.216	62.9	1.006	-0.02	0.156	0.191
	LTE Band 42	20M	QPSK	50	0	-	Back	10mm	Ant 2	DSI 2	42590	3500	18.18	19.00	1.208	62.9	1.006	0.02	0.122	0.148
	LTE Band 42	20M	QPSK	1	0	-	Front	10mm	Ant 3	DSI 2	42590	3500	20.47	21.50	1.268	62.9	1.006	-0.03	0.072	0.092
	LTE Band 42	20M	QPSK	50	0	-	Front	10mm	Ant 3	DSI 2	42590	3500	19.47	20.50	1.268	62.9	1.006	0.02	0.063	0.080
	LTE Band 42	20M	QPSK	1	0	-	Back	10mm	Ant 3	DSI 2	42590	3500	20.47	21.50	1.268	62.9	1.006	-0.05	0.094	0.120
	LTE Band 42	20M	QPSK	50	0	-	Back	10mm	Ant 3	DSI 2	42590	3500	19.47	20.50	1.268	62.9	1.006	0.12	0.080	0.102
	LTE Band 42	20M	QPSK	1	0	-	Front	10mm	Ant 5	DSI 4	42590	3500	21.61	22.50	1.227	62.9	1.006	-0.1	0.215	0.265
	LTE Band 42	20M	QPSK	50	0	-	Front	10mm	Ant 5	DSI 4	42590	3500	21.57	22.50	1.239	62.9	1.006	0.18	0.217	0.270
	LTE Band 42	20M	QPSK	1	0	-	Back	10mm	Ant 5	DSI 4	42590	3500	21.61	22.50	1.227	62.9	1.006	-0.17	0.238	0.294
	LTE Band 42	20M	QPSK	50	0	-	Back	10mm	Ant 5	DSI 4	42590	3500	21.57	22.50	1.239	62.9	1.006	-0.01	0.246	0.307
	LTE Band 42	20M	QPSK	1	0	-	Front	15mm	Ant 5	DSI 2	42590	3500	24.59	25.50	1.233	62.9	1.006	0.11	0.287	0.356
	LTE Band 42	20M	QPSK	1	0	-	Back	15mm	Ant 5	DSI 2	42590	3500	24.59	25.50	1.233	62.9	1.006	-0.05	0.301	0.373
	LTE Band 42	20M	QPSK	1	0	-	Front	10mm	Ant 7	DSI 2	42590	3500	20.81	22.00	1.315	62.9	1.006	-0.15	0.173	0.229
	LTE Band 42	20M	QPSK	50	0	-	Front	10mm	Ant 7	DSI 2	42590	3500	20.78	22.00	1.324	62.9	1.006	0.03	0.145	0.193
	LTE Band 42	20M	QPSK	1	0	-	Back	10mm	Ant 7	DSI 2	42590	3500	20.81	22.00	1.315	62.9	1.006	-0.13	0.737	0.975
83	LTE Band 42	20M	QPSK	1	0	-	Back	10mm	Ant 7	DSI 2	42190	3460	20.79	22.00	1.321	62.9	1.006	-0.03	0.794	1.055
	LTE Band 42 Sample 4	20M	QPSK	1	0	-	Back	10mm	Ant 7	DSI 2	42190	3460	20.79	22.00	1.321	62.9	1.006	-0.08	0.678	0.901
	LTE Band 42 Sample 2	20M	QPSK	1	0	-	Back	10mm	Ant 7	DSI 2	42190	3460	20.79	22.00	1.321	62.9	1.006	-0.13	0.714	0.949
	LTE Band 42	20M	QPSK	1	0	-	Back	10mm	Ant 7	DSI 2	42990	3540	20.75	22.00	1.334	62.9	1.006	0.16	0.736	0.987
	LTE Band 42	20M	QPSK	50	0	-	Back	10mm	Ant 7	DSI 2	42590	3500	20.78	22.00	1.324	62.9	1.006	-0.15	0.575	0.766
	LTE Band 42	20M	QPSK	100	0	-	Back	10mm	Ant 7	DSI 2	42590	3500	20.75	22.00	1.334	62.9	1.006	0.14	0.608	0.816
	LTE Band 48	20M	QPSK	1	0	-	Front	10mm	Ant 2	DSI 2	55830	3609	19.12	20.00	1.225	62.9	1.006	-0.01	0.173	0.213
	LTE Band 48	20M	QPSK	50	0	-	Front	10mm	Ant 2	DSI 2	55830	3609	18.13	19.00	1.222	62.9	1.006	-0.09	0.133	0.163
	LTE Band 48	20M	QPSK	1	0	-	Back	10mm	Ant 2	DSI 2	55830	3609	19.12	20.00	1.225	62.9	1.006	-0.07	0.176	0.217
	LTE Band 48	20M	QPSK	50	0	-	Back	10mm	Ant 2	DSI 2	55830	3609	18.13	19.00	1.222	62.9	1.006	0.05	0.134	0.165
	LTE Band 48	20M	QPSK	1	0	-	Front	10mm	Ant 3	DSI 2	55830	3609	20.46	21.50	1.271	62.9	1.006	0.06	0.072	0.092
	LTE Band 48	20M	QPSK	50	0	-	Front	10mm	Ant 3	DSI 2	55830	3609	19.47	20.50	1.268	62.9	1.006	0.06	0.058	0.074
	LTE Band 48	20M	QPSK	1	0	-	Back	10mm	Ant 3	DSI 2	55830	3609	20.46	21.50	1.271	62.9	1.006	-0.05	0.145	0.185
	LTE Band 48	20M	QPSK	50	0	-	Back	10mm	Ant 3	DSI 2	55830	3609	19.47	20.50	1.268	62.9	1.006	-0.04	0.130	0.166
	LTE Band 48	20M	QPSK	1	0	-	Front	10mm	Ant 5	DSI 4	55830	3609	21.50	22.50	1.259	62.9	1.006	0.1	0.273	0.346
	LTE Band 48	20M	QPSK	50	0	-	Front	10mm	Ant 5	DSI 4	55830	3609	21.48	22.50	1.265	62.9	1.006	0.04	0.258	0.328
	LTE Band 48	20M	QPSK	1	0	-	Back	10mm	Ant 5	DSI 4	55830	3609	21.50	22.50	1.259	62.9	1.006	0.13	0.280	0.355
	LTE Band 48	20M	QPSK	50	0	-	Back	10mm	Ant 5	DSI 4	55830	3609	21.48	22.50	1.265	62.9	1.006	-0.08	0.283	0.360
	LTE Band 48	20M	QPSK	1	0	-	Front	15mm	Ant 5	DSI 2	55830	3609	24.48	25.50	1.265	62.9	1.006	0.16	0.416	0.529
	LTE Band 48	20M	QPSK	1	0	-	Back	15mm	Ant 5	DSI 2	55830	3609	24.48	25.50	1.265	62.9	1.006	0.05	0.359	0.457



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	LTE Band 48	20M	QPSK	1	0	-	Front	10mm	Ant 7	DSI 2	55830	3609	22.23	23.50	1.340	62.9	1.006	-0.09	0.138	0.186
	LTE Band 48	20M	QPSK	50	0	-	Front	10mm	Ant 7	DSI 2	55830	3609	21.25	22.50	1.334	62.9	1.006	-0.16	0.109	0.146
	LTE Band 48	20M	QPSK	1	0	-	Back	10mm	Ant 7	DSI 2	55830	3609	22.23	23.50	1.340	62.9	1.006	-0.18	0.538	0.725
84	LTE Band 48	20M	QPSK	1	0	-	Back	10mm	Ant 7	DSI 2	55340	3560	22.15	23.50	1.365	62.9	1.006	-0.09	0.543	0.745
	LTE Band 48	20M	QPSK	1	0	-	Back	10mm	Ant 7	DSI 2	56150	3641	22.20	23.50	1.349	62.9	1.006	-0.07	0.522	0.708
	LTE Band 48	20M	QPSK	1	0	-	Back	10mm	Ant 7	DSI 2	56640	3690	22.16	23.50	1.361	62.9	1.006	0.11	0.535	0.733
	LTE Band 48	20M	QPSK	50	0	-	Back	10mm	Ant 7	DSI 2	55830	3609	21.25	22.50	1.334	62.9	1.006	-0.08	0.369	0.495
	LTE Band 48	20M	QPSK	100	0	-	Back	10mm	Ant 7	DSI 2	55830	3609	21.21	22.50	1.346	62.9	1.006	-0.06	0.335	0.454
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 2	DSI 2	641666	3624.99	18.28	19.50	1.324		1.000	-0.16	0.203	0.269
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Front	10mm	Ant 2	DSI 2	641666	3624.99	18.24	19.50	1.337		1.000	-0.18	0.198	0.265
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 2	DSI 2	641666	3624.99	18.28	19.50	1.324		1.000	-0.02	0.218	0.289
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Back	10mm	Ant 2	DSI 2	641666	3624.99	18.24	19.50	1.337		1.000	-0.07	0.206	0.275
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 3	DSI 2	641666	3624.99	20.55	22.00	1.396		1.000	0.08	0.136	0.190
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Front	10mm	Ant 3	DSI 2	641666	3624.99	20.50	22.00	1.413		1.000	0.01	0.159	0.225
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 3	DSI 2	641666	3624.99	20.55	22.00	1.396		1.000	0.03	0.228	0.318
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Back	10mm	Ant 3	DSI 2	641666	3624.99	20.50	22.00	1.413		1.000	-0.02	0.271	0.383
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 5	DSI 4	641666	3624.99	21.07	22.50	1.390		1.000	0.08	0.628	0.873
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 5	DSI 4	638000	3570	21.02	22.50	1.406		1.000	0.07	0.615	0.865
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 5	DSI 4	645332	3679.98	21.06	22.50	1.393		1.000	0.18	0.609	0.848
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Front	10mm	Ant 5	DSI 4	641666	3624.99	21.02	22.50	1.406		1.000	-0.04	0.672	0.945
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Front	10mm	Ant 5	DSI 4	638000	3570	20.95	22.50	1.429		1.000	-0.1	0.661	0.944
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Front	10mm	Ant 5	DSI 4	645332	3679.98	20.96	22.50	1.426		1.000	0.01	0.649	0.925
	FR1 n48	40M	QPSK	100	0	DFT-SCS-30KHz	Front	10mm	Ant 5	DSI 4	641666	3624.99	20.99	22.50	1.416		1.000	0.02	0.621	0.879
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 5	DSI 4	641666	3624.99	21.07	22.50	1.390		1.000	0.01	0.641	0.891
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 5	DSI 4	638000	3570	21.02	22.50	1.406		1.000	-0.15	0.632	0.889
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 5	DSI 4	645332	3679.98	21.06	22.50	1.393		1.000	0.19	0.619	0.862
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Back	10mm	Ant 5	DSI 4	641666	3624.99	21.02	22.50	1.406		1.000	0.03	0.610	0.858
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Back	10mm	Ant 5	DSI 4	638000	3570	20.95	22.50	1.429		1.000	0.07	0.588	0.840
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Back	10mm	Ant 5	DSI 4	645332	3679.98	20.96	22.50	1.426		1.000	-0.18	0.593	0.845
	FR1 n48	40M	QPSK	100	0	DFT-SCS-30KHz	Back	10mm	Ant 5	DSI 4	641666	3624.99	20.99	22.50	1.416		1.000	-0.08	0.613	0.868
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Front	15mm	Ant 5	DSI 2	641666	3624.99	24.57	26.00	1.390		1.000	-0.03	0.656	0.912
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Back	15mm	Ant 5	DSI 2	641666	3624.99	24.57	26.00	1.390		1.000	-0.15	0.588	0.817
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 7	DSI 2	641666	3624.99	20.95	22.50	1.429		1.000	0.12	0.187	0.267
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Front	10mm	Ant 7	DSI 2	641666	3624.99	20.94	22.50	1.432		1.000	0.08	0.204	0.292
85	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	641666	3624.99	20.95	22.50	1.429		1.000	-0.08	0.670	0.957
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	638000	3570	20.92	22.50	1.439		1.000	-0.08	0.645	0.928
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	645332	3679.98	20.88	22.50	1.452		1.000	-0.17	0.626	0.909
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	641666	3624.99	20.94	22.50	1.432		1.000	-0.17	0.573	0.821
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	638000	3570	20.91	22.50	1.442		1.000	-0.08	0.566	0.816
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	645332	3679.98	20.90	22.50	1.445		1.000	-0.04	0.548	0.792
	FR1 n48	40M	QPSK	100	0	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	641666	3624.99	20.90	22.50	1.445		1.000	-0.03	0.505	0.730
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 2	DSI 2	656000	3840	17.56	19.00	1.393	-	-	-0.17	0.138	0.192
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 2	DSI 2	656000	3840	17.55	19.00	1.396	-	-	0.04	0.119	0.166
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 2	DSI 2	656000	3840	17.56	19.00	1.393	-	-	-0.05	0.157	0.219
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 2	DSI 2	656000	3840	17.55	19.00	1.396	-	-	-0.01	0.150	0.209
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 2	DSI 2	633334	3500.01	17.74	19.00	1.337	-	-	-0.09	0.320	0.428
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 2	DSI 2	633334	3500.01	17.73	19.00	1.340	-	-	-0.08	0.376	0.504
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 2	DSI 2	633334	3500.01	17.74	19.00	1.337	-	-	0.13	0.393	0.525
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 2	DSI 2	633334	3500.01	17.73	19.00	1.340	-	-	-0.05	0.394	0.528
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 3	DSI 2	656000	3840	21.62	23.00	1.374	-	-	0.18	0.339	0.466
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 3	DSI 2	656000	3840	21.58	23.00	1.387	-	-	-0.07	0.354	0.491
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 3	DSI 2	656000	3840	21.62	23.00	1.374	-	-	-0.1	0.238	0.327
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 3	DSI 2	656000	3840	21.58	23.00	1.387	-	-	0.01	0.221	0.306
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 3	DSI 2	633334	3500.01	21.94	23.00	1.276	-	-	0.08	0.069	0.088
	FR1 n77 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 3	DSI 2	633334	3500.01	21.81	23.00	1.315	-	-	0.01	0.076	0.100
	FR1 n77 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 3	DSI 2	633334	3500.01	21.94	23.00	1.276	-	-	0.03	0.110	0.140



FCC SAR Test Report

Report No. : FA471506

Table with columns for device ID, power, modulation, frequency, antenna, distance, etc. Includes rows for FR1 n77 HPUE and FR1 n78 HPUE with various test configurations and results.



FCC SAR Test Report

Report No. : FA471506

FR1 n78 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 7	DSI 2	633334	3500.01	18.40	19.50	1.288	-	-	0.01	0.206	0.265
FR1 n78 HPUE	100M	QPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	633334	3500.01	18.42	19.50	1.282	-	-	-0.07	0.461	0.591
FR1 n78 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 7	DSI 2	633334	3500.01	18.40	19.50	1.288	-	-	-0.01	0.458	0.590

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)
2450MHz																
	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 6	Full power	6	2437	18.06	19.00	1.242	100	1.000	-0.04	0.158	0.196
88	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Ant 6	Full power	6	2437	18.06	19.00	1.242	100	1.000	-0.19	0.191	0.237
	Bluetooth	1Mbps	Front	10mm	Ant 6	Full power	78	2480	10.82	12.00	1.312	76.59	1.088	0.01	0.001	0.001
89	Bluetooth	1Mbps	Back	10mm	Ant 6	Full power	78	2480	10.82	12.00	1.312	76.59	1.088	0.09	0.002	0.003
5000MHz																
90	WLAN5.3GHz	802.11a 6Mbps	Front	10mm	Ant 6	Full power	60	5300	16.96	18.00	1.271	96.97	1.031	0.09	0.206	0.270
	WLAN5.3GHz	802.11a 6Mbps	Back	10mm	Ant 6	Full power	60	5300	16.96	18.00	1.271	96.97	1.031	0.12	0.147	0.193
91	WLAN5.5GHz	802.11a 6Mbps	Front	10mm	Ant 6	Full power	144	5720	17.22	18.00	1.197	96.97	1.031	-0.03	0.407	0.502
	WLAN5.5GHz	802.11a 6Mbps	Back	10mm	Ant 6	Full power	144	5720	17.22	18.00	1.197	96.97	1.031	-0.18	0.151	0.186
92	WLAN5.8GHz	802.11a 6Mbps	Front	10mm	Ant 6	Full power	157	5785	17.29	18.00	1.178	96.97	1.031	0.05	0.482	0.585
	WLAN5.8GHz	802.11a 6Mbps	Back	10mm	Ant 6	Full power	157	5785	17.29	18.00	1.178	96.97	1.031	-0.04	0.171	0.208
	WLAN5.8GHz	802.11ac-VHT40 MCS0	Front	10mm	Ant 6	Simultaneous	159	5795	16.24	17.00	1.191	93.75	1.067	-0.06	0.369	0.469
	WLAN5.8GHz	802.11ac-VHT40 MCS0	Back	10mm	Ant 6	Simultaneous	159	5795	16.24	17.00	1.191	93.75	1.067	-0.04	0.154	0.196



15.4 Product specific 10g SAR

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 10g SAR (W/kg)	Reported 10g SAR (W/kg)
5000MHz																
	WLAN5.3GHz	802.11a 6Mbps	Front	0mm	Ant 6	Full power	60	5300	16.96	18.00	1.271	96.97	1.031	0.08	0.640	0.838
	WLAN5.3GHz	802.11a 6Mbps	Back	0mm	Ant 6	Full power	60	5300	16.96	18.00	1.271	96.97	1.031	0.01	0.193	0.253
	WLAN5.3GHz	802.11a 6Mbps	Right Side	0mm	Ant 6	Full power	60	5300	16.96	18.00	1.271	96.97	1.031	-0.08	0.125	0.164
93	WLAN5.3GHz	802.11a 6Mbps	Top Side	0mm	Ant 6	Full power	60	5300	16.96	18.00	1.271	96.97	1.031	-0.12	1.07	1.402
94	WLAN5.5GHz	802.11a 6Mbps	Front	0mm	Ant 6	Full power	144	5720	17.22	18.00	1.197	96.97	1.031	-0.08	1.36	1.678
	WLAN5.5GHz Sample 4	802.11a 6Mbps	Front	0mm	Ant 6	Full power	144	5720	17.22	18.00	1.197	96.97	1.031	-0.13	1.13	1.394
	WLAN5.5GHz Sample 2	802.11a 6Mbps	Front	0mm	Ant 6	Full power	144	5720	17.22	18.00	1.197	96.97	1.031	0.06	1.22	1.505
	WLAN5.5GHz	802.11a 6Mbps	Back	0mm	Ant 6	Full power	144	5720	17.22	18.00	1.197	96.97	1.031	0.1	0.200	0.247
	WLAN5.5GHz	802.11a 6Mbps	Right Side	0mm	Ant 6	Full power	144	5720	17.22	18.00	1.197	96.97	1.031	0.1	0.557	0.687
	WLAN5.5GHz	802.11a 6Mbps	Top Side	0mm	Ant 6	Full power	144	5720	17.22	18.00	1.197	96.97	1.031	-0.1	0.738	0.911

15.5 Repeated SAR Measurement

<1g>

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)	Ratio	Reported 1g SAR (W/kg)
1st	LTE Band 13	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI 1	23230	782	24.50	25.50	1.259	-	-	0.04	0.804	1	1.012
2nd	LTE Band 13	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI 1	23230	782	24.50	25.50	1.259	-	-	0.06	0.798	1.008	1.005
1st	FR1 n5	20M	QPSK	50	28	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	DSI 1	167300	836.5	23.26	24.20	1.242	-	-	0.08	0.860	1	1.068
2nd	FR1 n5	20M	QPSK	50	28	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	DSI 1	167300	836.5	23.26	24.20	1.242	-	-	0.02	0.843	1.020	1.047
1st	LTE Band 48	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 7	DSI 1	55830	3609	22.23	23.50	1.340	62.9	1.006	-0.14	0.810	1	1.092
2nd	LTE Band 48	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 7	DSI 1	55830	3609	22.23	23.50	1.340	62.9	1.006	0.05	0.803	1.009	1.082
1st	LTE Band 4	20M	QPSK	1	0	-	Top Side	15mm	Ant 4	DSI 2	20175	1732.5	23.17	24.00	1.211	-	-	0.1	0.874	1	1.058
2nd	LTE Band 4	20M	QPSK	1	0	-	Top Side	15mm	Ant 4	DSI 2	20175	1732.5	23.17	24.00	1.211	-	-	0.06	0.866	1.009	1.048
1st	LTE Band 7	20M	QPSK	1	0	-	Left Side	10mm	Ant 3	DSI 2	20850	2510	23.68	24.50	1.208	-	-	-0.07	0.805	1	0.972
2nd	LTE Band 7	20M	QPSK	1	0	-	Left Side	10mm	Ant 3	DSI 2	20850	2510	23.68	24.50	1.208	-	-	0.02	0.799	1.008	0.965
1st	WLAN2.4GHz	-	-	-	-	802.11b 1Mbps	Left Cheek	0mm	Ant 6	Standalone	6	2437	16.62	17.50	1.225	100	1.000	0.09	0.853	1	1.045
2nd	WLAN2.4GHz	-	-	-	-	802.11b 1Mbps	Left Cheek	0mm	Ant 6	Standalone	6	2437	16.62	17.50	1.225	100	1.000	0.01	0.848	1.006	1.038
1st	WLAN5.3GHz	-	-	-	-	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 6	Standalone	62	5310	14.13	15.00	1.222	93.67	1.068	-0.12	0.834	1	1.088
2nd	WLAN5.3GHz	-	-	-	-	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 6	Standalone	62	5310	14.13	15.00	1.222	93.67	1.068	0.02	0.818	1.020	1.067
1st	WLAN5.5GHz	-	-	-	-	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6	Standalone	122	5610	13.28	14.00	1.180	88.19	1.134	-0.04	0.814	1	1.090
2nd	WLAN5.5GHz	-	-	-	-	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6	Standalone	122	5610	13.28	14.00	1.180	88.19	1.134	0.03	0.803	1.014	1.075
1st	WLAN5.8GHz	-	-	-	-	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6	Standalone	155	5775	13.25	14.00	1.189	88.19	1.134	-0.04	0.811	1	1.093
2nd	WLAN5.8GHz	-	-	-	-	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6	Standalone	155	5775	13.25	14.00	1.189	88.19	1.134	0.03	0.803	1.010	1.082

General Note:

- Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is $\geq 0.8W/kg$.
- Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR $< 1.45W/kg$, only one repeated measurement is required.
- 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.

16. Simultaneous Transmission Analysis

No.	Simultaneous Transmission Configurations	Portable Handset			
		Head	Body-worn	Hotspot	Product specific 10g SAR
1.	WWAN + WLAN 2.4GHz	Yes	Yes	Yes	Yes
2.	WWAN + WLAN 5GHz	Yes	Yes	Yes	Yes
3.	WWAN + Bluetooth	Yes	Yes	Yes	Yes
4.	WWAN + WLAN 5GHz + Bluetooth	Yes	Yes	Yes	Yes
5.	WWAN + WLAN 2.4GHz + NFC				Yes
6.	WWAN + WLAN 5GHz + NFC				Yes
7.	WWAN + Bluetooth + NFC				Yes
8.	WWAN + WLAN 5GHz + Bluetooth + NFC				Yes

General Note:

- This device supports VoIP in GPRS, EGPRS, WCDMA and LTE (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).
- According to the EUT characteristic, WLAN5GHz and Bluetooth can transmit simultaneously.
- According to the EUT characteristic, WLAN2.4GHz and Bluetooth share the same antenna so can't transmit simultaneously.
- According to the EUT characteristic, WLAN2.4GHz and WLAN5GHz cannot transmit simultaneously.
- NFC can transmit simultaneously with other Radios in extremity exposure condition.
- The worst case 5 GHz WLAN SAR for each configuration was used for SAR summation.
- For simultaneously analysis, since the SAR summation of 3 transmitters can cover others combination of 2 transmitters, therefore in this section did not additional to evaluate 2TX combination of simultaneously transmission.
- When stand-alone SAR is not required for a transmitter or antenna, its SAR is considered zero in the SAR summing process to assess Multi-band transmission SAR compliance.
- For standalone WWAN, always choose the highest SAR among all WWAN bands within all antennas for each exposure position to perform simultaneous transmission analysis with WLAN/BT. This is the worst co-located analysis and can represent each band.
- For EN-DC/DSDA SAR co-located with WLAN/Bluetooth, chose the worst SAR among all LTE Bands within the selected antenna per each test position and also the worst SAR of all 5GNR Bands within the selected antenna to do co-located with WLAN/Bluetooth. This is the worst co-located analysis and can represent each LTE bands and each 5GNR bands.
- For inter-band UL CA SAR co-located with WLAN/Bluetooth, chose the worst SAR among all LTE Bands within the selected antenna per each test position to do co-located with WLAN/Bluetooth at Head/Limbs exposure condition; chose the worst SAR among the selected LTE Bands within the selected antenna per each test position to do co-located with WLAN/Bluetooth at Body-worn exposure condition. This is the worst co-located analysis and can represent each LTE bands.
- For DSDA bands mode co-located SAR analysis is performed using standalone SAR summed together and they are more conservatively for DSDA bands mode.
- The maximum SAR summation is calculated based on the same configuration and test position.
- 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.
 - $SPLSR = (SAR1 + SAR2)^{1.5} / (\text{min. separation distance, mm})$, and the peak separation distance is determined from the square root of $[(x1-x2)^2 + (y1-y2)^2 + (z1-z2)^2]$, where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
 - 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.

16.1 Head Exposure Conditions

WWAN Band	Exposure Position	1	2	3	4	1+2 Summed 1g SAR (W/kg)	1+3+4 Summed 1g SAR (W/kg)
		WWAN	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6		
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
WWAN All Bands	Right Cheek	1.083	0.306	0.168	0.117	1.39	1.37
	Right Tilted	1.068	0.313	0.186	0.133	1.38	1.39
	Left Cheek	1.093	0.491	0.323	0.173	1.58	1.59
	Left Tilted	1.029	0.420	0.230	0.154	1.45	1.41

<Inter-band ULCA>

WWAN Band	WWAN Band	Exposure Position	1	2	3	4	5	1+2+3 Summed 1g SAR (W/kg)	1+2+4+5 Summed 1g SAR (W/kg)
			WWAN	WWAN	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6		
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
LTE Band 2 Ant 2	LTE Band 4 Ant 1	Right Cheek	0.509	0.082	0.306	0.168	0.117	0.90	0.88
		Right Tilted	0.088	0.013	0.313	0.186	0.133	0.41	0.42
		Left Cheek	0.280	0.081	0.491	0.323	0.173	0.85	0.86
		Left Tilted	0.073	0.004	0.420	0.230	0.154	0.50	0.46
LTE Band 4 Ant 1	LTE Band 5 Ant 4	Right Cheek	0.082	0.958	0.306	0.168	0.117	1.35	1.33
		Right Tilted	0.013	0.745	0.313	0.186	0.133	1.07	1.08
		Left Cheek	0.081	0.676	0.491	0.323	0.173	1.25	1.25
		Left Tilted	0.004	0.601	0.420	0.230	0.154	1.03	0.99
LTE Band 4 Ant 2	LTE Band 7 Ant 3	Right Cheek	0.504	0.516	0.306	0.168	0.117	1.33	1.31
		Right Tilted	0.104	0.258	0.313	0.186	0.133	0.68	0.68
		Left Cheek	0.320	0.171	0.491	0.323	0.173	0.98	0.99
		Left Tilted	0.070	0.185	0.420	0.230	0.154	0.68	0.64

<ENDC Mode>

WWAN Band	FR1 Band	Exposure Position	1	2	3	4	5	1+2+3 Summed 1g SAR (W/kg)	1+2+4+5 Summed 1g SAR (W/kg)
			WWAN	FR1	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6		
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
LTE All band(B2/5/7/26) Ant1	FR1 All band(n77/78) Ant5	Right Cheek	0.314	0.534	0.306	0.168	0.117	1.15	1.13
		Right Tilted	0.145	0.534	0.313	0.186	0.133	0.99	1.00
		Left Cheek	0.248	0.534	0.491	0.323	0.173	1.27	1.28
		Left Tilted	0.148	0.534	0.420	0.230	0.154	1.10	1.07
LTE All band(B2/5/7/26) Ant1	FR1 All band(n5) Ant4	Right Cheek	0.314	0.523	0.306	0.168	0.117	1.14	1.12
		Right Tilted	0.145	0.523	0.313	0.186	0.133	0.98	0.99
		Left Cheek	0.248	0.523	0.491	0.323	0.173	1.26	1.27
		Left Tilted	0.148	0.523	0.420	0.230	0.154	1.09	1.06
LTE All band(B2/4/7/66/38/41) Ant2	FR1 All band(n77/78) Ant5	Right Cheek	0.515	0.534	0.306	0.168	0.117	1.36	1.33
		Right Tilted	0.117	0.534	0.313	0.186	0.133	0.96	0.97
		Left Cheek	0.353	0.534	0.491	0.323	0.173	1.38	1.38
		Left Tilted	0.079	0.534	0.420	0.230	0.154	1.03	1.00
LTE All band(B2/7/66/38/41) Ant2	FR1 All band(n7/66/41) Ant1	Right Cheek	0.515	0.227	0.306	0.168	0.117	1.05	1.03
		Right Tilted	0.117	0.202	0.313	0.186	0.133	0.63	0.64
		Left Cheek	0.353	0.172	0.491	0.323	0.173	1.02	1.02
		Left Tilted	0.079	0.154	0.420	0.230	0.154	0.65	0.62
LTE All band(B5) Ant4	FR1 All band(n7/66/41) Ant1	Right Cheek	0.525	0.227	0.306	0.168	0.117	1.06	1.04
		Right Tilted	0.525	0.202	0.313	0.186	0.133	1.04	1.05
		Left Cheek	0.525	0.172	0.491	0.323	0.173	1.19	1.19
		Left Tilted	0.525	0.154	0.420	0.230	0.154	1.10	1.06
LTE All	FR1 All	Right Cheek	0.515	0.508	0.306	0.168	0.117	1.33	1.31



band(B4/7/66/38/41) Ant2	band(n7/38/41) Ant3	Right Tilted	0.117	0.244	0.313	0.186	0.133	0.67	0.68
		Left Cheek	0.353	0.157	0.491	0.323	0.173	1.00	1.01
		Left Tilted	0.079	0.169	0.420	0.230	0.154	0.67	0.63
LTE All band(B7) Ant3	FR1 All band(n66) Ant2	Right Cheek	0.516	0.534	0.306	0.168	0.117	1.36	1.34
		Right Tilted	0.258	0.105	0.313	0.186	0.133	0.68	0.68
		Left Cheek	0.171	0.344	0.491	0.323	0.173	1.01	1.01
		Left Tilted	0.185	0.075	0.420	0.230	0.154	0.68	0.64

<DSDA Mode>

WWAN Band	FR1 Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4+5
			WWAN	FR1	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	Summed	Summed
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
LTE Band 5 Ant 4	FR1 n41 Ant1	Right Cheek	0.958	0.227	0.306	0.168	0.117	1.49	1.47
		Right Tilted	0.745	0.202	0.313	0.186	0.133	1.26	1.27
		Left Cheek	0.676	0.172	0.491	0.323	0.173	1.34	1.34
		Left Tilted	0.601	0.153	0.420	0.230	0.154	1.17	1.14
LTE Band 5 Ant 1	FR1 n77 Ant5	Right Cheek	0.311	0.534	0.306	0.168	0.117	1.15	1.13
		Right Tilted	0.145	0.534	0.313	0.186	0.133	0.99	1.00
		Left Cheek	0.244	0.534	0.491	0.323	0.173	1.27	1.27
		Left Tilted	0.146	0.534	0.420	0.230	0.154	1.10	1.06
LTE Band 7 Ant 2	FR1 n77 Ant5	Right Cheek	0.515	0.534	0.306	0.168	0.117	1.36	1.33
		Right Tilted	0.106	0.534	0.313	0.186	0.133	0.95	0.96
		Left Cheek	0.333	0.534	0.491	0.323	0.173	1.36	1.36
		Left Tilted	0.079	0.534	0.420	0.230	0.154	1.03	1.00
LTE Band 41 Ant 2	FR1 n77 Ant5	Right Cheek	0.579	0.534	0.306	0.168	0.117	1.42	1.40
		Right Tilted	0.132	0.534	0.313	0.186	0.133	0.98	0.99
		Left Cheek	0.402	0.534	0.491	0.323	0.173	1.43	1.43
		Left Tilted	0.078	0.534	0.420	0.230	0.154	1.03	1.00

16.2 Hotspot Exposure Conditions

WWAN Band	Exposure Position	1	2	3	4	1+2	1+3+4
		WWAN	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	Summed	Summed
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
WWAN All Bands	Front	0.945	0.196	0.469	0.001	1.14	1.42
	Back	1.055	0.237	0.202	0.003	1.29	1.26
	Left side	1.086				1.09	1.09
	Right side	0.812	0.061	0.346	0.001	0.87	1.16
	Top side	1.080	0.377	0.466	0.048	1.46	1.59
	Bottom side	1.089				1.09	1.09

<Inter-band ULCA>

WWAN Band	WWAN Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4+5
			WWAN	WWAN	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	Summed	Summed
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
LTE Band 2 Ant 2	LTE Band 4 Ant 1	Front	0.277	0.391	0.196	0.469	0.001	0.86	1.14
		Back	0.397	0.466	0.237	0.202	0.003	1.10	1.07
		Left side	0.993	0.013				1.01	1.01
		Right side		0.240	0.061	0.346	0.001	0.30	0.59
		Top side	0.099		0.377	0.466	0.048	0.48	0.61
		Bottom side		0.917				0.92	0.92
LTE Band 4 Ant 1	LTE Band 5 Ant 4	Front	0.391	0.238	0.196	0.469	0.001	0.83	1.10
		Back	0.466	0.274	0.237	0.202	0.003	0.98	0.95
		Left side	0.013	0.078				0.09	0.09
		Right side	0.240		0.061	0.346	0.001	0.30	0.59
		Top side		0.186	0.377	0.466	0.048	0.56	0.70
		Bottom side	0.917					0.92	0.92
LTE Band 4 Ant 2	LTE Band 7 Ant 3	Front	0.164	0.200	0.196	0.469	0.001	0.56	0.83
		Back	0.236	0.412	0.237	0.202	0.003	0.89	0.85
		Left side	0.337	0.972				1.31	1.31
		Right side			0.061	0.346	0.001	0.06	0.35
		Top side	0.035	0.630	0.377	0.466	0.048	1.04	1.18
		Bottom side						0.00	0.00



<ENDC Mode>

WWAN Band	FR1 Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4+5
			WWAN	FR1	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	Summed	Summed
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
LTE All band(B2/5/7/26) Ant1	FR1 All band(n77/78) Ant5	Front	0.352	0.529	0.196	0.469	0.001	1.08	1.35
		Back	0.441	0.584	0.237	0.202	0.003	1.26	1.23
		Left side	0.178					0.18	0.18
		Right side	0.347	0.455	0.061	0.346	0.001	0.86	1.15
		Top side		0.669	0.377	0.466	0.048	1.05	1.18
		Bottom side	0.630					0.63	0.63
LTE All band(B2/5/7/26) Ant1	FR1 All band(n5) Ant4	Front	0.352	0.244	0.196	0.469	0.001	0.79	1.07
		Back	0.441	0.287	0.237	0.202	0.003	0.97	0.93
		Left side	0.178	0.101				0.28	0.28
		Right side	0.347		0.061	0.346	0.001	0.41	0.69
		Top side		0.248	0.377	0.466	0.048	0.63	0.76
		Bottom side	0.630					0.63	0.63
LTE All band(B2/4/7/66/38/41) Ant2	FR1 All band(n77/78) Ant5	Front	0.277	0.529	0.196	0.469	0.001	1.00	1.28
		Back	0.397	0.584	0.237	0.202	0.003	1.22	1.19
		Left side	0.993					0.99	0.99
		Right side		0.455	0.061	0.346	0.001	0.52	0.80
		Top side	0.099	0.669	0.377	0.466	0.048	1.15	1.28
		Bottom side						0.00	0.00
LTE All band(B2/7/66/38/41) Ant2	FR1 All band(n7/66/41) Ant1	Front	0.277	0.472	0.196	0.469	0.001	0.95	1.22
		Back	0.397	0.536	0.237	0.202	0.003	1.17	1.14
		Left side	0.993	0.207				1.20	1.20
		Right side		0.259	0.061	0.346	0.001	0.32	0.61
		Top side	0.099		0.377	0.466	0.048	0.48	0.61
		Bottom side		1.089				1.09	1.09
LTE All band(B5) Ant4	FR1 All band(n7/66/41) Ant1	Front	0.238	0.472	0.196	0.469	0.001	0.91	1.18
		Back	0.274	0.536	0.237	0.202	0.003	1.05	1.02
		Left side	0.070	0.207				0.28	0.28
		Right side		0.259	0.061	0.346	0.001	0.32	0.61
		Top side	0.185		0.377	0.466	0.048	0.56	0.70
		Bottom side		1.089				1.09	1.09
LTE All band(B4/7/66/38/41) Ant2	FR1 All band(n7/38/41) Ant3	Front	0.189	0.237	0.196	0.469	0.001	0.62	0.90
		Back	0.259	0.422	0.237	0.202	0.003	0.92	0.89
		Left side	0.567	0.655				1.22	1.22
		Right side			0.061	0.346	0.001	0.06	0.35
		Top side	0.094	0.358	0.377	0.466	0.048	0.83	0.97
		Bottom side						0.00	0.00
LTE All band(B7) Ant3	FR1 All band(n66) Ant2	Front	0.200	0.218	0.196	0.469	0.001	0.61	0.89
		Back	0.412	0.298	0.237	0.202	0.003	0.95	0.92
		Left side	0.972	0.580				1.55	1.55
		Right side			0.061	0.346	0.001	0.06	0.35
		Top side	0.630	0.007	0.377	0.466	0.048	1.01	1.15
		Bottom side						0.00	0.00

<DSDA Mode>

WWAN Band	FR1 Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4+5
			WWAN	FR1	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	Summed	Summed
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
LTE Band 5 Ant 4	FR1 n41 Ant1	Front	0.238	0.227	0.196	0.469	0.001	0.66	0.94
		Back	0.274	0.348	0.237	0.202	0.003	0.86	0.83
		Left side	0.070	0.207				0.28	0.28
		Right side		0.193	0.061	0.346	0.001	0.25	0.54
		Top side	0.185		0.377	0.466	0.048	0.56	0.70
		Bottom side		0.538				0.54	0.54
LTE Band 5 Ant 1	FR1 n77 Ant5	Front	0.276	0.529	0.196	0.469	0.001	1.00	1.28
		Back	0.356	0.584	0.237	0.202	0.003	1.18	1.15
		Left side	0.150					0.15	0.15
		Right side	0.333	0.455	0.061	0.346	0.001	0.85	1.14
		Top side		0.669	0.377	0.466	0.048	1.05	1.18
		Bottom side	0.353					0.35	0.35
LTE Band 7 Ant 2	FR1 n77 Ant5	Front	0.189	0.529	0.196	0.469	0.001	0.91	1.19
		Back	0.259	0.584	0.237	0.202	0.003	1.08	1.05
		Left side	0.567					0.57	0.57
		Right side		0.455	0.061	0.346	0.001	0.52	0.80
		Top side	0.094	0.669	0.377	0.466	0.048	1.14	1.28
		Bottom side						0.00	0.00
LTE Band 41 Ant 2	FR1 n77 Ant5	Front	0.131	0.529	0.196	0.469	0.001	0.86	1.13
		Back	0.181	0.584	0.237	0.202	0.003	1.00	0.97
		Left side	0.421					0.42	0.42
		Right side		0.455	0.061	0.346	0.001	0.52	0.80
		Top side	0.053	0.669	0.377	0.466	0.048	1.10	1.24
		Bottom side						0.00	0.00

Sensor off

WWAN Band	Exposure Position	1	2	3	4	1+2	1+3+4
		WWAN	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	Summed	Summed
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
WWAN All Bands	Front	0.912	0.196	0.469	0.001	1.11	1.38
	Back	0.858	0.237	0.202	0.003	1.10	1.06
	Left side					0.00	0.00
	Right side		0.061	0.346	0.001	0.06	0.35
	Top side	1.064	0.377	0.466	0.048	1.44	1.58
	Bottom side	1.042				1.04	1.04



<Inter-band ULCA>

WWAN Band	WWAN Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4+5
			WWAN	WWAN	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	Summed	Summed
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
LTE Band 2 Ant 2	LTE Band 4 Ant 1	Front	0.277	0.427	0.196	0.469	0.001	0.90	1.17
		Back	0.397	0.521	0.237	0.202	0.003	1.16	1.12
		Left side	0.993	0.013				1.01	1.01
		Right side		0.240	0.061	0.346	0.001	0.30	0.59
		Top side	0.099		0.377	0.466	0.048	0.48	0.61
		Bottom side		0.937				0.94	0.94
LTE Band 4 Ant 1	LTE Band 5 Ant 4	Front	0.427	0.225	0.196	0.469	0.001	0.85	1.12
		Back	0.521	0.243	0.237	0.202	0.003	1.00	0.97
		Left side	0.013	0.070				0.08	0.08
		Right side	0.240		0.061	0.346	0.001	0.30	0.59
		Top side		0.198	0.377	0.466	0.048	0.58	0.71
		Bottom side	0.937					0.94	0.94
LTE Band 4 Ant 2	LTE Band 7 Ant 3	Front	0.164	0.200	0.196	0.469	0.001	0.56	0.83
		Back	0.236	0.412	0.237	0.202	0.003	0.89	0.85
		Left side	0.337	0.972				1.31	1.31
		Right side			0.061	0.346	0.001	0.06	0.35
		Top side	0.035	0.630	0.377	0.466	0.048	1.04	1.18
		Bottom side						0.00	0.00

<ENDC Mode>

WWAN Band	FR1 Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4+5
			WWAN	FR1	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	Summed	Summed
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
LTE All band(B2/5/7/26) Ant1	FR1 All band(n77/78) Ant5	Front	0.342	0.743	0.196	0.469	0.001	1.28	1.56
		Back	0.477	0.858	0.237	0.202	0.003	1.57	1.54
		Left side	0.178					0.18	0.18
		Right side	0.347	0.455	0.061	0.346	0.001	0.86	1.15
		Top side		1.064	0.196	0.248	0.048	1.26	1.36
		Bottom side	0.686					0.69	0.69
LTE All band(B2/5/7/26) Ant1	FR1 All band(n5) Ant4	Front	0.380	0.152	0.196	0.469	0.001	0.73	1.00
		Back	0.477	0.176	0.237	0.202	0.003	0.89	0.86
		Left side	0.178	0.101				0.28	0.28
		Right side	0.347		0.061	0.346	0.001	0.41	0.69
		Top side		0.092	0.377	0.466	0.048	0.47	0.61
		Bottom side	0.686					0.69	0.69
LTE All band(B2/4/7/66/38/41) Ant2	FR1 All band(n77/78) Ant5	Front	0.277	0.743	0.196	0.469	0.001	1.22	1.49
		Back	0.397	0.858	0.237	0.202	0.003	1.49	1.46
		Left side	0.993					0.99	0.99
		Right side		0.455	0.061	0.346	0.001	0.52	0.80
		Top side	0.099	1.064	0.196	0.248	0.048	1.36	1.46
		Bottom side						0.00	0.00
LTE All band(B2/7/66/38/41) Ant2	FR1 All band(n7/66/41) Ant1	Front	0.277	0.437	0.196	0.469	0.001	0.91	1.18
		Back	0.397	0.577	0.237	0.202	0.003	1.21	1.18
		Left side	0.993	0.207				1.20	1.20
		Right side		0.259	0.061	0.346	0.001	0.32	0.61
		Top side	0.099		0.377	0.466	0.048	0.48	0.61
		Bottom side		1.029				1.03	1.03
LTE All band(B5) Ant4	FR1 All band(n7/66/41)	Front	0.225	0.437	0.196	0.469	0.001	0.86	1.13
		Back	0.243	0.577	0.237	0.202	0.003	1.06	1.03



	Ant1	Left side	0.070	0.207				0.28	0.28
		Right side		0.259	0.061	0.346	0.001	0.32	0.61
		Top side	0.198		0.377	0.466	0.048	0.58	0.71
		Bottom side		1.029				1.03	1.03
LTE All band(B4/7/66/38/41) Ant2	FR1 All band(n7/38/41) Ant3	Front	0.189	0.237	0.196	0.469	0.001	0.62	0.90
		Back	0.259	0.422	0.237	0.202	0.003	0.92	0.89
		Left side	0.567	0.655				1.22	1.22
		Right side			0.061	0.346	0.001	0.06	0.35
		Top side	0.094	0.358	0.377	0.466	0.048	0.83	0.97
		Bottom side						0.00	0.00
LTE All band(B7) Ant3	FR1 All band(n66) Ant2	Front	0.200	0.218	0.196	0.469	0.001	0.61	0.89
		Back	0.412	0.298	0.237	0.202	0.003	0.95	0.92
		Left side	0.972	0.580				1.55	1.55
		Right side			0.061	0.346	0.001	0.06	0.35
		Top side	0.630	0.007	0.377	0.466	0.048	1.01	1.15
		Bottom side						0.00	0.00

<DSDA Mode>

WWAN Band	FR1 Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4+5
			WWAN	FR1	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	Summed	Summed
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
LTE Band 5 Ant 4	FR1 n41 Ant1	Front	0.225	0.428	0.196	0.469	0.001	0.85	1.12
		Back	0.243	0.577	0.237	0.202	0.003	1.06	1.03
		Left side	0.070	0.207				0.28	0.28
		Right side		0.193	0.061	0.346	0.001	0.25	0.54
		Top side	0.198		0.377	0.466	0.048	0.58	0.71
		Bottom side		0.739				0.74	0.74
LTE Band 5 Ant 1	FR1 n77 Ant5	Front	0.235	0.714	0.196	0.469	0.001	1.15	1.42
		Back	0.253	0.791	0.237	0.202	0.003	1.28	1.25
		Left side	0.150					0.15	0.15
		Right side	0.333	0.455	0.061	0.346	0.001	0.85	1.14
		Top side		0.798	0.377	0.466	0.048	1.18	1.31
		Bottom side	0.206					0.21	0.21
LTE Band 7 Ant 2	FR1 n77 Ant5	Front	0.189	0.714	0.196	0.469	0.001	1.10	1.37
		Back	0.259	0.791	0.237	0.202	0.003	1.29	1.26
		Left side	0.567					0.57	0.57
		Right side		0.455	0.061	0.346	0.001	0.52	0.80
		Top side	0.094	0.798	0.377	0.466	0.048	1.27	1.41
		Bottom side						0.00	0.00
LTE Band 41 Ant 2	FR1 n77 Ant5	Front	0.131	0.714	0.196	0.469	0.001	1.04	1.32
		Back	0.181	0.791	0.237	0.202	0.003	1.21	1.18
		Left side	0.421					0.42	0.42
		Right side		0.455	0.061	0.346	0.001	0.52	0.80
		Top side	0.053	0.798	0.377	0.466	0.048	1.23	1.37
		Bottom side						0.00	0.00

16.3 Body-Worn Accessory Exposure Conditions

WWAN Band	Exposure Position	1	2	3	4	1+2	1+3+4
		WWAN	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	Summed	Summed
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
WWAN All Bands	Front	0.945	0.196	0.502	0.001	1.14	1.45
	Back	1.055	0.237	0.196	0.003	1.29	1.25

<Inter-band ULCA>

WWAN Band	WWAN Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4+5
			WWAN	WWAN	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	Summed	Summed
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
LTE Band 2 Ant 2	LTE Band 4 Ant 1	Front	0.277	0.391	0.196	0.502	0.001	0.86	1.17
		Back	0.397	0.466	0.237	0.196	0.003	1.10	1.06
LTE Band 4 Ant 1	LTE Band 5 Ant 4	Front	0.391	0.238	0.196	0.502	0.001	0.83	1.13
		Back	0.466	0.274	0.237	0.196	0.003	0.98	0.94
LTE Band 4 Ant 2	LTE Band 7 Ant 3	Front	0.164	0.200	0.196	0.502	0.001	0.56	0.87
		Back	0.236	0.412	0.237	0.196	0.003	0.89	0.85

<ENDC Mode>

WWAN Band	FR1 Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4+5
			WWAN	FR1	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	Summed	Summed
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
LTE All band(B2/5/7/26) Ant1	FR1 All band(n77/78) Ant5	Front	0.352	0.529	0.196	0.502	0.001	1.08	1.38
		Back	0.441	0.584	0.237	0.196	0.003	1.26	1.22
LTE All band(B2/5/7/26) Ant1	FR1 All band(n5) Ant4	Front	0.352	0.244	0.196	0.502	0.001	0.79	1.10
		Back	0.441	0.287	0.237	0.196	0.003	0.97	0.93
LTE All band(B2/4/7/66/38/41) Ant2	FR1 All band(n77/78) Ant5	Front	0.277	0.529	0.196	0.502	0.001	1.00	1.31
		Back	0.397	0.584	0.237	0.196	0.003	1.22	1.18
LTE All band(B2/7/66/38/41) Ant2	FR1 All band(n7/66/41) Ant1	Front	0.277	0.472	0.196	0.502	0.001	0.95	1.25
		Back	0.397	0.536	0.237	0.196	0.003	1.17	1.13
LTE All band(B5) Ant4	FR1 All band(n7/66/41) Ant1	Front	0.238	0.472	0.196	0.502	0.001	0.91	1.21
		Back	0.274	0.536	0.237	0.196	0.003	1.05	1.01
LTE All band(B4/7/66/38/41) Ant2	FR1 All band(n7/38/41) Ant3	Front	0.189	0.237	0.196	0.502	0.001	0.62	0.93
		Back	0.259	0.422	0.237	0.196	0.003	0.92	0.88
LTE All band(B7) Ant3	FR1 All band(n66) Ant2	Front	0.200	0.218	0.196	0.502	0.001	0.61	0.92
		Back	0.412	0.298	0.237	0.196	0.003	0.95	0.91

<DSDA Mode>

WWAN Band	FR1 Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4+5
			WWAN	FR1	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	Summed	Summed
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
LTE Band 5 Ant 4	FR1 n41 Ant1	Front	0.238	0.227	0.196	0.502	0.001	0.66	0.97
		Back	0.274	0.348	0.237	0.196	0.003	0.86	0.82
LTE Band 5 Ant 1	FR1 n77 Ant5	Front	0.276	0.529	0.196	0.502	0.001	1.00	1.31
		Back	0.356	0.584	0.237	0.196	0.003	1.18	1.14
LTE Band 7 Ant 2	FR1 n77 Ant5	Front	0.189	0.529	0.196	0.502	0.001	0.91	1.22
		Back	0.259	0.584	0.237	0.196	0.003	1.08	1.04
LTE Band 41 Ant 2	FR1 n77 Ant5	Front	0.131	0.529	0.196	0.502	0.001	0.86	1.16
		Back	0.181	0.584	0.237	0.196	0.003	1.00	0.96



Sensor off

WWAN Band	Exposure Position	1	2	3	4	1+2	1+3+4
		WWAN	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	Summed	Summed
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
WWAN All Bands	Front	0.912	0.196	0.502	0.001	1.11	1.42
	Back	0.858	0.237	0.196	0.003	1.10	1.06

<Inter-band ULCA>

WWAN Band	WWAN Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4+5
			WWAN	WWAN	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	Summed	Summed
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
LTE Band 2 Ant 2	LTE Band 4 Ant 1	Front	0.277	0.427	0.196	0.502	0.001	0.90	1.21
		Back	0.397	0.521	0.237	0.196	0.003	1.16	1.12
LTE Band 4 Ant 1	LTE Band 5 Ant 4	Front	0.427	0.225	0.196	0.502	0.001	0.85	1.16
		Back	0.521	0.243	0.237	0.196	0.003	1.00	0.96
LTE Band 4 Ant 2	LTE Band 7 Ant 3	Front	0.164	0.200	0.196	0.502	0.001	0.56	0.87
		Back	0.236	0.412	0.237	0.196	0.003	0.89	0.85

<ENDC Mode>

WWAN Band	FR1 Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4+5
			WWAN	FR1	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	Summed	Summed
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
LTE All band(B2/5/7/26) Ant1	FR1 All band(n77/78) Ant5	Front	0.342	0.743	0.196	0.502	0.001	1.28	1.59
		Back	0.477	0.858	0.237	0.196	0.003	1.57	1.53
LTE All band(B2/5/7/26) Ant1	FR1 All band(n5) Ant4	Front	0.380	0.152	0.196	0.502	0.001	0.73	1.04
		Back	0.477	0.176	0.237	0.196	0.003	0.89	0.85
LTE All band(B2/4/7/66/38/41) Ant2	FR1 All band(n77/78) Ant5	Front	0.277	0.743	0.196	0.502	0.001	1.22	1.52
		Back	0.397	0.858	0.237	0.196	0.003	1.49	1.45
LTE All band(B2/7/66/38/41) Ant2	FR1 All band(n7/66/41) Ant1	Front	0.277	0.437	0.196	0.502	0.001	0.91	1.22
		Back	0.397	0.577	0.237	0.196	0.003	1.21	1.17
LTE All band(B5) Ant4	FR1 All band(n7/66/41) Ant1	Front	0.225	0.437	0.196	0.502	0.001	0.86	1.17
		Back	0.243	0.577	0.237	0.196	0.003	1.06	1.02
LTE All band(B4/7/66/38/41) Ant2	FR1 All band(n7/38/41) Ant3	Front	0.189	0.237	0.196	0.502	0.001	0.62	0.93
		Back	0.259	0.422	0.237	0.196	0.003	0.92	0.88
LTE All band(B7) Ant3	FR1 All band(n66) Ant2	Front	0.200	0.218	0.196	0.502	0.001	0.61	0.92
		Back	0.412	0.298	0.237	0.196	0.003	0.95	0.91

<DSDA Mode>

WWAN Band	FR1 Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4+5
			WWAN	FR1	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	Summed	Summed
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
LTE Band 5 Ant 4	FR1 n41 Ant1	Front	0.225	0.428	0.196	0.502	0.001	0.85	1.16
		Back	0.243	0.577	0.237	0.196	0.003	1.06	1.02
LTE Band 5 Ant 1	FR1 n77 Ant5	Front	0.235	0.714	0.196	0.502	0.001	1.15	1.45
		Back	0.253	0.791	0.237	0.196	0.003	1.28	1.24
LTE Band 7 Ant 2	FR1 n77 Ant5	Front	0.189	0.714	0.196	0.502	0.001	1.10	1.41
		Back	0.259	0.791	0.237	0.196	0.003	1.29	1.25
LTE Band 41 Ant 2	FR1 n77 Ant5	Front	0.131	0.714	0.196	0.502	0.001	1.04	1.35
		Back	0.181	0.791	0.237	0.196	0.003	1.21	1.17

16.4 Product specific 10g SAR Exposure Conditions

Remark:

- For WLAN2.4GHz/ Bluetooth Product specific 10g stand-alone SAR is not required for a transmitter or antenna, due to 1g hotspot SAR is <1.2W/kg.

Exposure Position	1	2	1+2 Summed 10g SAR (W/kg)
	WLAN5GHz Ant 6	NFC	
	10g SAR (W/kg)	10g SAR (W/kg)	
Front	1.678	0.001	1.68
Back	0.253	0.012	0.27
Left side		0.001	0.00
Right side	0.687	0.001	0.69
Top side	1.402	0.001	1.40
Bottom side		0.001	0.00

Test Engineer : Martin Li, Varus Wang, Light Wang, Ricky Gu



17. Uncertainty Assessment

Per KDB 865664 D01 SAR measurement 100MHz to 6GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be $\leq 30\%$, 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.

18. References

- [1] FCC 47 CFR Part 2 “Frequency Allocations and Radio Treaty Matters; General Rules and Regulations”
- [2] ANSI/IEEE Std. C95.1-1992, “IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz”, September 1992
- [3] IEEE Std. 1528-2013, “IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques”, Sep 2013
- [4] SPEAG DASY System Handbook
- [5] FCC KDB 865664 D01 v01r04, “SAR Measurement Requirements for 100 MHz to 6 GHz”, Aug 2015.
- [6] FCC KDB 865664 D02 v01r02, “RF Exposure Compliance Reporting and Documentation Considerations” Oct 2015.
- [7] FCC KDB 648474 D04 v01r03, “SAR Evaluation Considerations for Wireless Handsets”, Oct 2015.
- [8] FCC KDB 248227 D01 v02r02, “SAR Guidance for IEEE 802.11 (WiFi) Transmitters”, Oct 2015.
- [9] FCC KDB 616217 D04 v01r02, “SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers”, Oct 2015
- [10] FCC KDB 941225 D01 v03r01, “3G SAR MEAUREMENT PROCEDURES”, Oct 2015
- [11] FCC KDB 941225 D05 v02r05, “SAR Evaluation Considerations for LTE Devices”, Dec 2015
- [12] FCC KDB 941225 D05A v01r02, “Rel. 10 LTE SAR Test Guidance and KDB Inquiries”, Oct 2015
- [13] FCC KDB 941225 D06 v02r01, “SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities”, Oct 2015.
- [14] FCC KDB 447498 D01 v06, “Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies”, Oct 2015

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