

# FCC SAR Test Report

APPLICANT : Motorola Mobility LLC  
EQUIPMENT : Mobile Cellular Phone  
BRAND NAME : Motorola  
MODEL NAME : XT2415-1, XT2415-3, XT2415-5, XT2415V  
FCC ID : IHDT56AN5  
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

**Sporton International Inc. (Kunshan)**

No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300  
People's Republic of China



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### 1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Motorola Mobility LLC, Mobile Cellular Phone, XT2415-1, XT2415-3, XT2415-5, XT2415V**, are as follows.

Highest 1g SAR Summary						
Equipment Class	Frequency Band		Head (Separation 0mm)	Hotspot (Separation 5mm)	Body-worn (Separation 5mm)	Highest Simultaneous Transmission 1g SAR (W/kg)
			1g SAR (W/kg)			
	GSM	GSM850	0.61	1.30	1.40	1.59
		GSM1900	0.13	1.26	1.33	
	WCDMA	WCDMA II	0.13	1.42	1.42	
		WCDMA IV	0.22	1.40	1.38	
		WCDMA V	0.45	1.23	1.34	
Licensed	LTE	LTE Band 7	0.41	1.33	1.33	
		LTE Band 12/17	0.91	0.84	0.99	
		LTE Band 13	0.94	1.33	1.39	
		LTE Band 14	0.78	1.31	1.39	
		LTE Band 25/2	1.04	1.32	<b>1.43</b>	
		LTE Band 26/5	1.01	1.30	1.37	
		LTE Band 30	0.40	1.34	1.42	
		LTE Band 66/4	0.95	<b>1.44</b>	1.39	
		LTE Band 71	0.90	0.65	1.02	
		LTE Band 41/38	1.04	1.37	1.39	
	LTE Band 48	1.05	0.69	1.02		
	5G NR	FR1 n5	0.99	1.20	1.40	
		FR1 n7	0.42	1.14	1.14	
		FR1 n12	0.86	0.67	0.67	
		FR1 n14	0.99	1.06	0.97	
		FR1 n25/n2	1.04	1.18	1.20	
		FR1 n26	1.02	1.17	1.27	
		FR1 n30	0.20	1.06	1.20	
		FR1 n66	0.96	1.21	1.24	
		FR1 n70	1.04	1.11	1.30	
FR1 n71		0.75	0.47	0.47		
		FR1 n41	1.02	1.34	1.34	
		FR1 n48	0.99	0.71	1.01	
		FR1 n77/n78	1.02	0.63	1.01	
DTS	WLAN	2.4GHz WLAN	<b>1.19</b>	0.69	1.22	1.59
NII		5GHz WLAN	1.14	0.68	1.15	1.59
DSS	Bluetooth	2.4GHz Bluetooth	0.14	0.11	0.11	1.59



Highest 10g SAR Summary				
Equipment Class	Frequency Band		Product Specific 10g SAR (W/kg) (Separation 0mm)	Highest Simultaneous Transmission 10g SAR (W/kg)
Licensed	GSM	GSM850	3.31	3.90
		GSM1900	3.21	
	WCDMA	WCDMA II	3.49	
		WCDMA IV	3.54	
		WCDMA V	<b>3.59</b>	
	LTE	LTE Band 7	3.45	
		LTE Band 13	2.16	
		LTE Band 14	2.34	
		LTE Band 25/2	3.49	
		LTE Band 26/5	3.18	
		LTE Band 30	3.39	
		LTE Band 66/4	3.47	
		LTE Band 41/38	3.50	
	5G NR	LTE Band 48	2.77	
		FR1 n5	2.43	
		FR1 n7	3.05	
		FR1 n25/n2	3.10	
		FR1 n26	3.41	
		FR1 n30	2.81	
		FR1 n66	3.20	
FR1 n70		3.00		
DTS	WLAN	FR1 n41	3.01	
		FR1 n48	2.63	
NII	WLAN	FR1 n77/n78	2.50	
		2.4GHz WLAN	2.27	
		5GHz WLAN	3.15	

Date of Testing: 2023/9/22 ~ 2023/11/8

**Remark:**

1. This device supports LTE B2 / B4 / B5 / B17 / B38 and B25 / B66 / B26 / B12 / B41. Since the supported frequency span for LTE B2 / B4 / B5 / B17 / B38 falls completely within the supports frequency span for LTE B25 / B66 / B26 / B12 / B41, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE B25 / B66 / B26 / B12 / B41.
2. This device supports 5GNR n78 /n2 and n77 /n25. Since the supported frequency span for 5GNR n78 /n2 falls completely within the supports frequency span for n77/ n25, both 5GNR bands have the same target power, and both 5GNR bands share the same transmission path; therefore, SAR was only assessed for n77/ n25.

**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 5145.02.

Testing Laboratory			
Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	SAR06-KS	CN1257	314309

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

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

### 3. Guidance Applied

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

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

## **4. Equipment Under Test (EUT) Information**

### **4.1 General Information**

<b>Product Feature &amp; Specification</b>	
<b>Equipment Name</b>	Mobile Cellular Phone
<b>Brand Name</b>	Motorola
<b>Model Name</b>	XT2415-1, XT2415-3, XT2415-5, XT2415V
<b>FCC ID</b>	IHDT56AN5
<b>IMEI Code</b>	IMEI 1: 357534480029831 IMEI 2: 357534480029849
<b>Wireless Technology and Frequency Range</b>	GSM850: 824 MHz ~ 849 MHz GSM1900: 1850 MHz ~ 1910 MHz WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 14: 788 MHz ~ 798 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 30: 2305 MHz ~ 2315 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz LTE Band 71: 663 MHz ~ 698 MHz 5G NR n2: 1850 MHz ~ 1910 MHz 5G NR n5: 824 MHz ~ 849 MHz 5G NR n7: 2500 MHz ~ 2570 MHz 5G NR n12: 699 MHz ~ 716 MHz 5G NR n14: 788 MHz ~ 798 MHz 5G NR n25: 1850 MHz ~ 1915 MHz 5G NR n26: 814 MHz ~ 849 MHz 5G NR n30: 2305 MHz ~ 2315 MHz 5G NR n66: 1710 MHz ~ 1780 MHz 5G NR n70: 1695 MHz ~ 1710 MHz 5G NR n71: 663 MHz ~ 698 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
<b>Mode</b>	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+(16QAM uplink is supported) LTE: QPSK, 16QAM, 64QAM



	5G NR : CP-OFDM / DFT-s-OFDM, PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM WLAN 2.4GHz 802.11b/g/n HT20 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE NFC: ASK
HW Version	DVT2
SW Version	UUD34.38
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
<b>Remark:</b>	
<ol style="list-style-type: none"> <li>1. This device supports VoIP in GPRS, EGPRS, WCDMA and LTE (e.g. for 3rd-party VoIP), LTE supports VoLTE operation.</li> <li>2. This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications.</li> <li>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).</li> <li>4. This device does not support DTM operation and supports GPRS/EGPRS mode up to multi-slot class 12.</li> <li>5. For dual SIM card mobile has single SIM slots + eSIM (electronic SIM) and supports dual SIM dual standby. The WWAN radio transmission will be enabled by either one SIM at a time (single active).</li> <li>6. The device implements Proximity sensors/receiver detect mechanism/hotspot trigger reduced power for the power management for SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity). The device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to appendix E. power table.</li> <li>7. For WLAN transmitter, while the device WLAN is transmitting simultaneously with the WWAN/BT antenna, the device power will be reduced power at head conditions. For WLAN transmitter, while the device WLAN is transmitting simultaneously with the WWAN/BT antenna and Proximity sensors trigger, the device power will be reduced power at body-worn, hotspot and extremity exposure conditions.</li> <li>8. For some WWAN bands, sensor on power level is higher than hotspot power level, so front/back sensor on SAR can represent hotspot conservatively.</li> <li>9. This device supports HPUE for LTE Band 41 with class 2 level, HPUE power has been measured separately. For HPUE power is higher than power class 3 but with lower duty cycle, the maximum average power for class 2 and class 3 is almost the same, so we chose power class 3 full SAR testing and power class 2 verify the worst case of power class 3 SAR.</li> <li>10. 5G NR n77/n78/n41 supports HPUE, HPUE power and SAR testing performed separately.</li> <li>11. 5G NR n77/n78/n41 HUPE with higher power, 5G NR n77/n78/n41 HUPE SAR can represent power class 3 level SAR.</li> <li>12. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.</li> <li>13. 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.</li> <li>14. The four model names are only for different market purpose, and all the others are the same.</li> <li>15. This device has NFC function and the NFC SAR report will be separately submitted.</li> <li>16. This device supports 5G NR FR1 bands as following table, including NSA mode and SA mode. NSA and SA mode performed SAR separately.</li> </ol>	



**<5G NR>**

Mode	Band	Duplex	SCS(KHz)	Bandwidths(BW)
NSA	n2	FDD	15	5, 10, 15, 20, 25, 30
	n5	FDD	15	5, 10, 15, 20, 25
	n7	FDD	15	5, 10, 15, 20, 25, 30, 40, 50
	n12	FDD	15	5, 10, 15
	n25	FDD	15	5, 10, 15, 20, 25,30, 35, 40, 45
	n30	FDD	15	5, 10
	n66	FDD	15	5, 10, 15, 20, 25, 30, 35, 40, 45
	n71	FDD	15	5, 10, 15, 20
	n41	TDD	30	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100
	n48	TDD	30	10, 15, 20, 40
	n77	TDD	30	10, 15, 20, 30, 40, 50, 60, 70, 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, 25, 30
	n5	FDD	15	5, 10, 15, 20, 25
	n7	FDD	15	5, 10, 15, 20, 25, 30, 40, 50
	n12	FDD	15	5, 10, 15
	n14	FDD	15	5, 10
	n25	FDD	15	5, 10, 15, 20, 25,30, 35, 40, 45
	n26	FDD	15	5, 10, 15, 20
	n30	FDD	15	5, 10
	n66	FDD	15	5, 10, 15, 20, 25, 30, 35, 40, 45
	n70	FDD	15	5, 10, 15
	n71	FDD	15	5, 10, 15, 20
	n41	TDD	30	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100
	n48	TDD	30	10, 15, 20, 40
	n77	TDD	30	10, 15, 20, 30, 40, 50, 60, 70, 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	IHDT56AN5																																																														
Equipment Name	Mobile Cellular Phone																																																														
Operating Frequency Range of each LTE transmission band	LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 14: 788 MHz ~ 798 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 30: 2305 MHz ~ 2315 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz LTE Band 71: 663 MHz ~ 698 MHz																																																														
Channel Bandwidth	LTE Band 2: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 4: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 5: 1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 12: 1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 13: 5MHz, 10MHz LTE Band 14: 5MHz, 10MHz LTE Band 17: 5MHz, 10MHz LTE Band 25: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 26: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz LTE Band 30: 5MHz, 10MHz LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 48: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 66: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 71: 5MHz, 10MHz, 15MHz, 20MHz																																																														
uplink modulations used	QPSK / 16QAM / 64QAM																																																														
LTE Voice / Data requirements	Voice and Data																																																														
LTE Release Version	R15, Cat13																																																														
CA Support	Supported, Uplink and Downlink																																																														
LTE MPR permanently built-in by design	<p><b>Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3</b></p> <table border="1"> <thead> <tr> <th rowspan="2">Modulation</th> <th colspan="6">Channel bandwidth / Transmission bandwidth (N<sub>RB</sub>)</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>&gt; 5</td> <td>&gt; 4</td> <td>&gt; 8</td> <td>&gt; 12</td> <td>&gt; 16</td> <td>&gt; 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>&gt; 5</td> <td>&gt; 4</td> <td>&gt; 8</td> <td>&gt; 12</td> <td>&gt; 16</td> <td>&gt; 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>&gt; 5</td> <td>&gt; 4</td> <td>&gt; 8</td> <td>&gt; 12</td> <td>&gt; 16</td> <td>&gt; 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 <sub>RB</sub> )						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
Modulation	Channel bandwidth / Transmission bandwidth (N <sub>RB</sub> )						MPR (dB)																																																								
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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/hotspot detect mechanism, head/body-worn /hotspot/extremity will trigger reduced power for some bands applied to satisfy SAR compliance, the detail please referred to section 13.																																																														
LTE Carrier Aggregation Combinations	Inter-Band and Intra-Band possible combinations and the detail power verification please referred to section 13.																																																														
LTE Carrier Aggregation Additional Information	1. This device supports LTE Carrier Aggregation (CA) in the uplink for intra-band and inter-band with two component carriers in the uplink. SAR Measurements and conducted powers were evaluated per FCC Guidance. 2. This device supports maximum of 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		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	20407	824.7	20415	825.5	20425	826.5	20450	829	20450	829	20450	829	
M	20525	836.5	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	20600	844	20600	844	
LTE Band 7													
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510	20850	2510	20850	2510	
M	21100	2535	21100	2535	21100	2535	21100	2535	21100	2535	21100	2535	
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560	21350	2560	21350	2560	
LTE Band 12													
	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	23017	699.7	23025	700.5	23035	701.5	23060	704	23060	704	23060	704	
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5	23095	707.5	23095	707.5	
H	23173	715.3	23165	714.5	23155	713.5	23130	711	23130	711	23130	711	
LTE Band 13													
	Bandwidth 5 MHz				Bandwidth 10 MHz				Bandwidth 15 MHz				Bandwidth 20 MHz
	Channel #	Freq.(MHz)			Channel #	Freq.(MHz)			Channel #	Freq.(MHz)			Channel #
L	23205	779.5			23230	782			23230	782			782
M	23230	782				782				782			
H	23255	784.5				784.5				784.5			
LTE Band 14													
	Bandwidth 5 MHz				Bandwidth 10 MHz				Bandwidth 15 MHz				Bandwidth 20 MHz
	Channel #	Channel #			Channel #	Channel #			Channel #	Channel #			Channel #
L	23305	790.5			23330	793			23330	793			793
M	23330	793				793				793			
H	23355	795.5				795.5				795.5			
LTE Band 17													
	Bandwidth 5 MHz				Bandwidth 10 MHz				Bandwidth 15 MHz				Bandwidth 20 MHz
	Channel #	Freq.(MHz)			Channel #	Freq.(MHz)			Channel #	Freq.(MHz)			Channel #
L	23755	706.5			23780	709			23780	709			709
M	23790	710				710				710			
H	23825	713.5				713.5				713.5			
LTE Band 25													
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	26047	1850.7	26055	1851.5	26065	1852.5	26090	1855	26115	1857.5	26140	1860	
M	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880	
H	26683	1914.3	26675	1913.5	26665	1912.5	26640	1910	26615	1907.5	26590	1905	
LTE Band 26													
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	26697	814.7	26705	815.5	26715	816.5	26740	819	26765	821.5	26790	824.5	
M	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5	



H	27033	848.3	27025	847.5	27015	846.5	26990	844	26965	841.5		
LTE Band 30												
Bandwidth 5 MHz					Bandwidth 10 MHz							
	Channel #			Freq.(MHz)		Channel #			Freq.(MHz)			
L	27685			2307.5		27710			2310			
M	27710			2310								
H	27735			2312.5								
LTE Band 38												
Bandwidth 5 MHz			Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)		
L	37775	2572.5	37800	2575	37825	2577.5	37850	2580	37850	2580		
M	38000	2595	38000	2595	38000	2595	38000	2595	38000	2595		
H	38225	2617.5	38200	2615	38175	2612.5	38150	2610	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)	Ch. #	Freq. (MHz)		
L	39675	2498.5	39700	2501	39725	2503.5	39750	2506	39750	2506		
LM	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5	40185	2549.5		
M	40620	2593	40620	2593	40620	2593	40620	2593	40620	2593		
HM	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5	41055	2636.5		
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680	41490	2680		
LTE Band 66												
Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	131979	1710.7	131987	1711.5	131997	1712.5	132022	1715	132047	1717.5	132072	1720
M	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745
H	132665	1779.3	132657	1778.5	132647	1777.5	132622	1775	132597	1772.5	132572	1770
LTE Band 71												
Bandwidth 5 MHz			Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)		
L	133147	665.5	133172	668	133197	670.5	133222	673	133222	673		
M	133247	675.5	133272	678	133297	680.5	133322	683	133322	683		
H	133447	695.5	133422	693	133397	690.5	133372	688	133372	688		
LTE Band 48												
Bandwidth 5 MHz			Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)		
L	55265	3552.5	55290	3555	55315	3557.5	55340	3560	55340	3560		
LM	55810	3607	55815	3607.5	55820	3608	55830	3609	55830	3609		
MH	56170	3643	56165	3642.5	56160	3642	56150	3641	56150	3641		
H	56715	3697.5	56690	3695	56665	3692.5	56640	3690	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 2	YES	YES	YES	YES	YES	YES
LTE Band 25	YES	YES	YES	YES	YES	YES
LTE Band 4	YES	YES	YES	YES	YES	YES
LTE Band 66	YES	YES	YES	YES	YES	YES
LTE Band 12	YES	YES	YES	YES		
LTE Band 17			YES	YES		
LTE Band 5	YES	YES	YES	YES		
LTE Band 26	YES	YES	YES	YES	YES	
LTE Band 38			YES	YES	YES	YES
LTE Band 41			YES	YES	YES	YES

2) LTE Bands tune up:

Band	Antenna	Head ECI 2 Receiver on Tune-up Limit	Body Worn ECI 3 Sensor on Tune-up Limit	Hotspot ECI 7 Tune-up Limit	Extremity ECI 6 Handheld Tune-up Limit	Sensor Off ECI 4 Tune-up Limit	Default Tune-up Limit
LTE Band 2	Ant 0	24	15	14.5	18.5	24	24
LTE Band 25	Ant 0	24	15	14.5	18.5	24	24
LTE Band 4	Ant 0	24	18	16.5	21	24	24
LTE Band 66	Ant 0	24	18	16.5	21	24	24
LTE Band 12	Ant 0	24	24	24	24	24	24
LTE Band 17	Ant 0	24	24	24	24	24	24
LTE Band 5	Ant 0	24	22.5	22	23	24	24
LTE Band 26	Ant 0	24	22.5	22	23	24	24

Band	Antenna	Head ECI 2 Receiver on Tune-up Limit	Body Worn ECI 3 Sensor on Tune-up Limit	Hotspot ECI 7 Tune-up Limit	Extremity ECI 6 Handheld Tune-up Limit	Sensor Off ECI 4 Tune-up Limit	Default Tune-up Limit
LTE Band 38	Ant 1	24	21	20	22.5	24	24
LTE Band 41	Ant 1	24	21	20	22.5	24	24

Band	Antenna	Head ECI 2 Receiver on Tune-up Limit	Body Worn ECI 3 Sensor on Tune-up Limit	Hotspot ECI 7 Tune-up Limit	Extremity ECI 6 Handheld Tune-up Limit	Sensor Off ECI 4 Tune-up Limit	Default Tune-up Limit
LTE Band 4	Ant 4	17	17.5	15.5	20	22	22
LTE Band 66	Ant 4	17	17.5	15.5	20	22	22
LTE Band 4 other PA	Ant 4	17	17.5	15.5	20	24	24
LTE Band 66 other PA	Ant 4	17	17.5	15.5	20	24	24
LTE Band 12	Ant 4	23	23	20.5	23	23	23
LTE Band 17	Ant 4	23	23	20.5	23	23	23
LTE Band 5	Ant 4	21	22	20.5	23	23	23
LTE Band 26	Ant 4	21	22	20.5	23	23	23
LTE Band 2	Ant 4	16.5	17	14.5	19	22	22
LTE Band 25	Ant 4	16.5	17	14.5	19	22	22
LTE Band 2 other PA	Ant 4	16.5	17	14.5	19	24	24
LTE Band 25 other PA	Ant 4	16.5	17	14.5	19	24	24

Note: For some bands/antennas at some exposure conditions which cannot be covered were fully tested for RF exposure compliance.



### 4.3 General 5G NR SAR Test and Reporting Considerations

5G NR Information	
Operating Frequency Range of each 5G NR transmission band	5G NR n2: 1850 MHz ~ 1910 MHz 5G NR n5: 824 MHz ~ 849 MHz 5G NR n7: 2500 MHz ~ 2570 MHz 5G NR n12: 699 MHz ~ 716 MHz 5G NR n14: 788 MHz ~ 798 MHz 5G NR n25: 1850 MHz ~ 1915 MHz 5G NR n26: 814 MHz ~ 849 MHz 5G NR n30: 2305 MHz ~ 2315 MHz 5G NR n66: 1710 MHz ~ 1780 MHz 5G NR n70: 1695 MHz ~ 1710 MHz 5G NR n71: 663 MHz ~ 698 MHz 5G NR n41: 2496 MHz ~ 2690 MHz 5G NR n48: 3550 MHz ~ 3700 MHz 5G NR n77: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3980 MHz 5G NR n78: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3800 MHz
Channel Bandwidth	The detail please refers to section 4.1 5GNR FR1 bands table.
SCS	FDD: SCS15KHz, TDD: SCS30KHz
uplink modulations used	DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM
A-MPR (Additional MPR) disabled for SAR Testing?	Yes
LTE Anchor Bands for n2	LTE B5/7/12/13/14/30/48/66/71
LTE Anchor Bands for n5	LTE B2/4/7/30/48/66
LTE Anchor Bands for n7	LTE B2/4/5/12/66
LTE Anchor Bands for n12	LTE B2/66
LTE Anchor Bands for n25	LTE B7/12/26/66
LTE Anchor Bands for n30	LTE B2/5/12/14/66
LTE Anchor Bands for n41	LTE B2/4/12/25/26/66/71
LTE Anchor Bands for n48	LTE B71
LTE Anchor Bands for n66	LTE B2/5/7/12/13/14/30/48/71
LTE Anchor Bands for n71	LTE B2/7/48/66
LTE Anchor Bands for n77	LTE B2/5/7/12/13/14/25/26/30/66
LTE Anchor Bands for n78	LTE B2/4/5/7/12/13/25/66/71

Transmission (H, M, L) channel numbers and frequencies in each 5G NR band												
NR Band 2												
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	370500	1852.5	371000	1855	371500	1857.5	372000	1860	372500	1862.5	373000	1865
M	376000	1880	376000	1880	376000	1880	376000	1880	376000	1880	376000	1880
H	381500	1907.5	381000	1905	380500	1902.5	380000	1900	379500	1897.5	379000	1895

NR Band 5										
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz	
	Ch. #	Freq. (MHz)	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	167300	836.5
H	169300	846.5	168800	844	168300	841.5	167800	839		

NR Band 7																
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz		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 12						
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	140300	701.5	140800	704	141300	706.5
M	141500	707.5	141500	707.5	141500	707.5
H	142700	713.5	142200	711	141700	708.5



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

NR Band 25																		
Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 35MHz		Bandwidth 40MHz		Bandwidth 45MHz		
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	370500	1852.5	371000	1855	371500	1857.5	372000	1860	372500	1862.5	373000	1865	373500	1867.5	374000	1870	374500	1872.5
M	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5
H	382500	1912.5	382000	1910	381500	1907.5	381000	1905	380500	1902.5	380000	1900	379500	1897.5	379000	1895	3785000	1892.5

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

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

NR Band 66																		
Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 35MHz		Bandwidth 40MHz		Bandwidth 45MHz		
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	342500	1712.5	343000	1715	343500	1717.5	344000	1720	344500	1722.5	345000	1725	345500	1727.5	346000	1730	346500	1732.5
M	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745
H	355500	1777.5	355000	1775	354500	1772.5	354000	1770	353500	1767.5	353000	1765	352500	1762.5	352000	1760	351500	1757.5

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

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

NR Band 41																						
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	500202	2501.01	500700	2503.5	501204	2506.02	502200	2511	503202	2516.01	504204	2521.02	505200	2526	500202	2501.01	507204	2536.02	508200	2541	509202	2546.01
M	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99
H	537000	2685	536496	2682.48	535998	2679.99	534996	2674.98	534000	2670	532998	2664.99	531996	2659.98	537000	2685	529998	2649.99	528996	2644.98	528000	2640

NR Band 48								
Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 40MHz		
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	637000	3555	637168	3557.52	637334	3560.01	638000	3570
M	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99
H	646332	3694.98	646166	3692.49	646000	3690	645332	3679.98



NR Band 77																						
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	650000	3750
M	656000	3840	656000	3840	656000	3840	656000	3840.00	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840
H	665000	3975	664834	3972.51	664668	3970.02	664334	3965.01	664000	3960	663668	3955.02	663334	3950.01	663000	3945	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	3750.00	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 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		

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		

<For NR Overlap Bands Description>

1) NR Bands BW

Mode	Band	Duplex	SCS(KHz)	Bandwidths(BW)
SA	n2	FDD	15	5, 10, 15, 20, 25, 30
	n25	FDD	15	5, 10, 15, 20, 25, 30, 35, 40, 45
	n77	TDD	30	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100
	n78	TDD	30	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100
NSA	n2	FDD	15	5, 10, 15, 20, 25, 30
	n25	FDD	15	5, 10, 15, 20, 25, 30, 35, 40, 45
	n77	TDD	30	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100
	n78	TDD	30	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100

2) NR Bands Tune up:

Band	Antenna	Head ECI 2 Receiver on Tune-up Limit	Body Worn ECI 3 Sensor on Tune-up Limit	Hotspot ECI 7 Tune-up Limit	Extremity ECI 6 Handheld Tune-up Limit	Sensor Off ECI 4 Tune-up Limit	Default Tune-up Limit
5G NR n2	Ant 0	24	17	16	20.5	24	24
5G NR n25	Ant 0	24	17	16	20.5	24	24





Band	Antenna	Head ECI 2 Receiver on Tune-up Limit	Body Worn ECI 3 Sensor on Tune-up Limit	Hotspot ECI 7 Tune-up Limit	Extremity ECI 6 Handheld Tune-up Limit	Sensor Off ECI 4 Tune-up Limit	Default Tune-up Limit
5G NR n77	Ant 1	21	21	21	21	21	21
5G NR n77-HPUE	Ant 1	21	21	21	21	21	21
5G NR n78	Ant 1	21	21	21	21	21	21
5G NR n78-HPUE	Ant 1	21	21	21	21	21	21

Band	Antenna	Head ECI 2 Receiver on Tune-up Limit	Body Worn ECI 3 Sensor on Tune-up Limit	Hotspot ECI 7 Tune-up Limit	Extremity ECI 6 Handheld Tune-up Limit	Sensor Off ECI 4 Tune-up Limit	Default Tune-up Limit
5G NR n77	Ant 2	21	14.5	12	16.5	16.5	21
5G NR n77-HPUE	Ant 2	21	14.5	12	16.5	16.5	21
5G NR n78	Ant 2	21	14.5	12	16.5	16.5	21
5G NR n78-HPUE	Ant 2	21	14.5	12	16.5	16.5	21

Band	Antenna	Head ECI 2 Receiver on Tune-up Limit	Body Worn ECI 3 Sensor on Tune-up Limit	Hotspot ECI 7 Tune-up Limit	Extremity ECI 6 Handheld Tune-up Limit	Sensor Off ECI 4 Tune-up Limit	Default Tune-up Limit
5G NR n2	Ant 4	19.5	20	16.5	22	23	23
5G NR n25	Ant 4	19.5	20	16.5	22	23	23
5G NR n2 other PA	Ant 4	19.5	20	16.5	22	24	24
5G NR n25 other PA	Ant 4	19.5	20	16.5	22	24	24

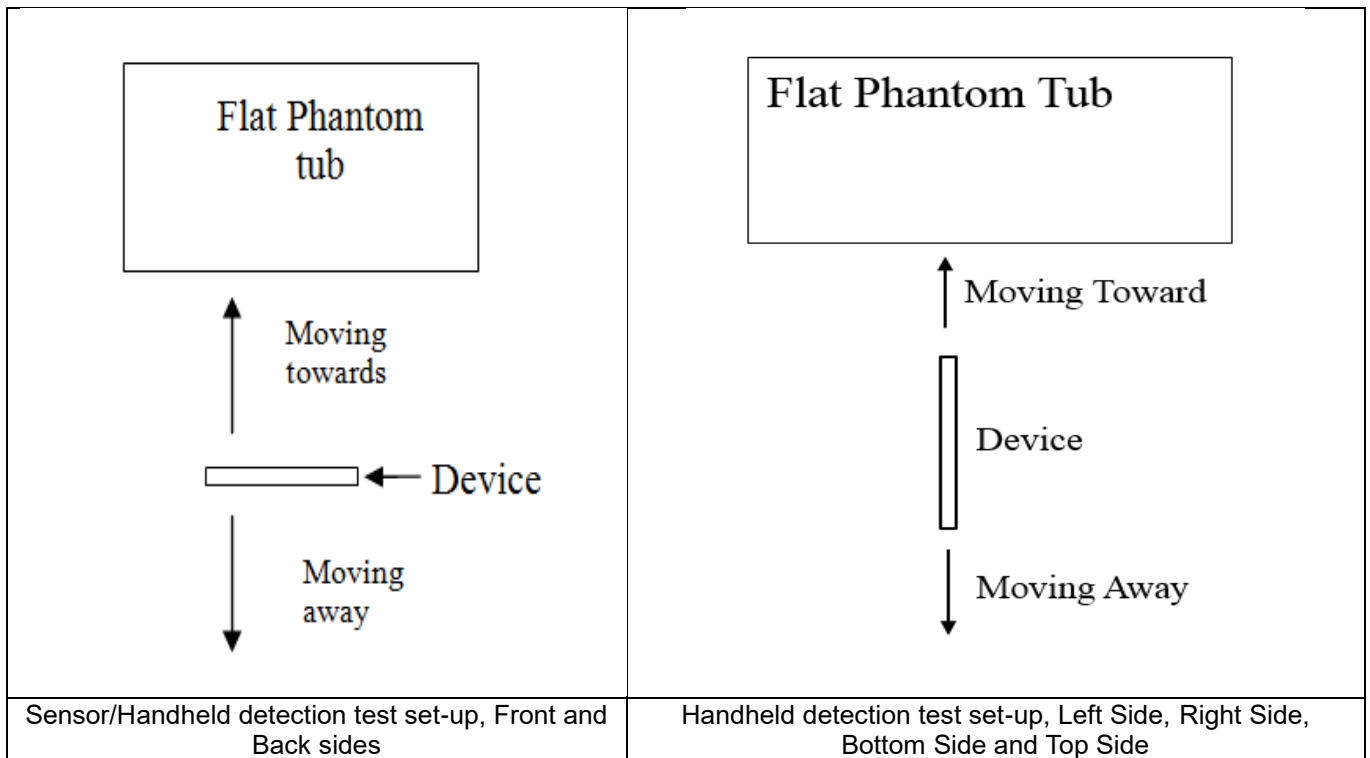
Band	Antenna	Head ECI 2 Receiver on Tune-up Limit	Body Worn ECI 3 Sensor on Tune-up Limit	Hotspot ECI 7 Tune-up Limit	Extremity ECI 6 Handheld Tune-up Limit	Sensor Off ECI 4 Tune-up Limit	Default Tune-up Limit
5G NR n77	Ant 5	17.5	18	15	21.5	24	24
5G NR n77-HPUE	Ant 5	17.5	18	15	21.5	27	27
5G NR n78	Ant 5	17.5	18	15	21.5	24	24
5G NR n78-HPUE	Ant 5	17.5	18	15	21.5	27	27
5G NR n77 ENDC	Ant 5	15	15	12	18.5	24	24
5G NR n77-HPUE ENDC	Ant 5	15	15	12	18.5	27	27
5G NR n78 ENDC	Ant 5	15	15	12	18.5	24	24
5G NR n78-HPUE ENDC	Ant 5	15	15	12	18.5	27	27

Band	Antenna	Head ECI 2 Receiver on Tune-up Limit	Body Worn ECI 3 Sensor on Tune-up Limit	Hotspot ECI 7 Tune-up Limit	Extremity ECI 6 Handheld Tune-up Limit	Sensor Off ECI 4 Tune-up Limit	Default Tune-up Limit
5G NR n77	Ant 8	23	16.5	15.5	20	20	23
5G NR n77-HPUE	Ant 8	24.5	16.5	15.5	20	20	24.5
5G NR n78	Ant 8	23	16.5	15.5	20	20	23
5G NR n78-HPUE	Ant 8	24.5	16.5	15.5	20	20	24.5

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



**<P-Sensor>**

Proximity Sensor Triggering Distance (mm)				
Position	Front		Back	
	Moving towards	Moving away	Moving towards	Moving away
Minimum	13	18	23	28

**<Handheld for ANT 0>**

Proximity Sensor Triggering Distance (mm)								
Position	Front		Back		Right Side		Bottom Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	10	15	17	22	3	8	18	23

**<Handheld for ANT1>**

Proximity Sensor Triggering Distance (mm)								
Position	Front		Back		Left Side		Bottom Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	5	10	15	20	10	15	11	15

**<Handheld for ANT4>**

Proximity Sensor Triggering Distance (mm)								
Position	Front		Back		Left Side		Top Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	7	12	15	21	6	11	15	20

**<Handheld for ANT 5>**

Proximity Sensor Triggering Distance (mm)						
Position	Front		Back		Top Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	2	7	10	16	10	16

**<Handheld for ANT 6>**

Proximity Sensor Triggering Distance (mm)								
Position	Front		Back		Right Side		Top Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	6	11	13	18	9	15	12	16

## **6. RF Exposure Limits**

### **6.1 Uncontrolled Environment**

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

### **6.2 Controlled Environment**

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

**Limits for Occupational/Controlled Exposure (W/kg)**

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

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

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

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

## 7. Specific Absorption Rate (SAR)

### 7.1 Introduction

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

### 7.2 SAR Definition

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

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

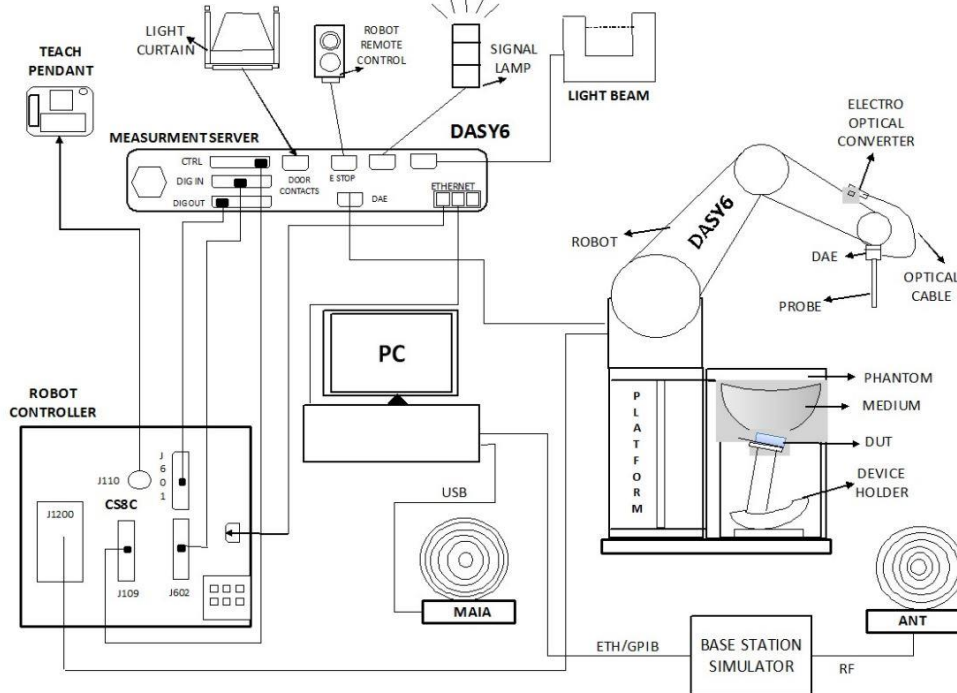
SAR is expressed in units of Watts per kilogram (W/kg)

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

Where:  $\sigma$  is the conductivity of the tissue,  $\rho$  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 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.

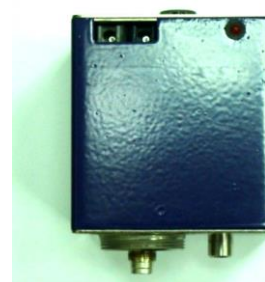
**<EX3DV4 Probe>**

<b>Construction</b>	Symmetric design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
<b>Frequency</b>	10 MHz – >6 GHz Linearity: ±0.2 dB (30 MHz – 6 GHz)	
<b>Directivity</b>	±0.3 dB in TSL (rotation around probe axis) ±0.5 dB in TSL (rotation normal to probe axis)	
<b>Dynamic Range</b>	10 µW/g – >100 mW/g Linearity: ±0.2 dB (noise: typically <1 µW/g)	
<b>Dimensions</b>	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**

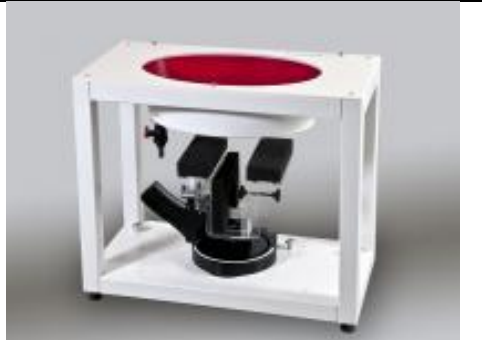
### 8.3 Phantom

#### <SAM Twin Phantom>

<b>Shell Thickness</b>	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm	
<b>Filling Volume</b>	Approx. 25 liters	
<b>Dimensions</b>	Length: 1000 mm; Width: 500 mm; Height: adjustable feet	
<b>Measurement Areas</b>	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>

<b>Shell Thickness</b>	2 ± 0.2 mm (sagging: <1%)	
<b>Filling Volume</b>	Approx. 30 liters	
<b>Dimensions</b>	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 dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.

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

	$\leq 3$ GHz	$> 3$ GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	$5 \pm 1$ 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: $\Delta x_{Area}$ , $\Delta y_{Area}$	$\leq 2$ GHz: $\leq 15$ mm $2 - 3$ GHz: $\leq 12$ mm	$3 - 4$ GHz: $\leq 12$ mm $4 - 6$ GHz: $\leq 10$ 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: $\Delta x_{Zoom}, \Delta y_{Zoom}$			$\leq 2$ GHz: $\leq 8$ mm $2 - 3$ GHz: $\leq 5$ mm*	$3 - 4$ GHz: $\leq 5$ mm* $4 - 6$ GHz: $\leq 4$ mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		$\leq 5$ mm	$3 - 4$ GHz: $\leq 4$ mm $4 - 5$ GHz: $\leq 3$ mm $5 - 6$ GHz: $\leq 2$ mm
	graded grid	$\Delta z_{Zoom}(1)$ : between 1 <sup>st</sup> two points closest to phantom surface	$\leq 4$ mm	$3 - 4$ GHz: $\leq 3$ mm $4 - 5$ GHz: $\leq 2.5$ mm $5 - 6$ GHz: $\leq 2$ 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		$\geq 30$ mm	$3 - 4$ GHz: $\geq 28$ mm $4 - 5$ GHz: $\geq 25$ mm $5 - 6$ GHz: $\geq 22$ mm
Note: $\delta$ 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 $\leq 1.4$ W/kg, $\leq 8$ mm, $\leq 7$ mm and $\leq 5$ 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	2025/2/23
SPEAG	835MHz System Validation Kit	D835V2	4d091	2022/8/19	2025/8/18
SPEAG	1750MHz System Validation Kit	D1750V2	1090	2022/2/24	2025/2/23
SPEAG	1900MHz System Validation Kit	D1900V2	5d118	2022/3/30	2025/3/29
SPEAG	2300MHz System Validation Kit	D2300V2	1055	2023/8/21	2024/8/20
SPEAG	2450MHz System Validation Kit	D2450V2	1040	2023/4/25	2024/4/24
SPEAG	2600MHz System Validation Kit	D2600V2	1061	2020/11/26	2023/11/24
SPEAG	3500MHz System Validation Kit	D3500V2	1037	2020/11/25	2023/11/23
SPEAG	3700MHz System Validation Kit	D3700V2	1008	2020/11/25	2023/11/23
SPEAG	3900MHz System Validation Kit	D3900V2	1048	2023/3/9	2024/3/8
SPEAG	5000MHz System Validation Kit	D5GHzV2	1113	2022/9/23	2025/9/22
SPEAG	Data Acquisition Electronics	DAE4	1358	2023/2/21	2024/2/20
SPEAG	Dosimetric E-Field Probe	EX3DV4	7729	2023/6/7	2024/6/6
SPEAG	SAM Twin Phantom	SAM Twin	TP-1754	NCR	NCR
SPEAG	SAM Twin Phantom	SAM Twin	TP-2022	NCR	NCR
CHIGO	Thermo-Hygrometer	HTC-1	55012	2023/1/8	2024/1/7
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Anritsu	Radio Communication Analyzer	MT8821C	6262306175	2023/7/5	2024/7/4
Agilent	ENA Series Network Analyzer	E5071C	MY46111157	2023/7/5	2024/7/4
SPEAG	Dielectric Probe Kit	DAK-3.5	1071	2023/2/20	2024/2/19
Anritsu	Vector Signal Generator	MG3710A	6201682672	2023/1/5	2024/1/4
Rohde & Schwarz	Power Meter	NRVD	102081	2023/7/5	2024/7/4
Rohde & Schwarz	Power Sensor	NRV-Z5	100538	2023/7/5	2024/7/4
Rohde & Schwarz	Power Sensor	NRV-Z5	100539	2023/7/5	2024/7/4
R&S	BLUETOOTH TESTER	CBT	101246	2023/5/15	2024/5/14
Rohde & Schwarz	Spectrum Analyzer	FSV7	101631	2022/10/12	2023/10/11
Rohde & Schwarz	Spectrum Analyzer	FSV7	101631	2023/10/11	2024/10/10
TES	DIGITAC THERMOMETER	1310	220305411	2023/1/8	2024/1/7
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:**

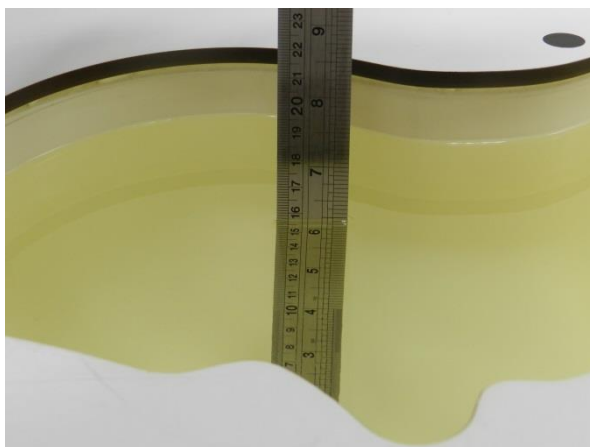
1. Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path 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.

- The justification data of dipole can be found in appendix C. The return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration.

## 11. System Verification

### 11.1 Tissue Simulating Liquids

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



**Fig 11.1 Photo of Liquid Height for Head SAR**



**Fig 11.2 Photo of Liquid Height for Body SAR**

### 11.2 Tissue Verification

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

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (εr)
<b>For Head</b>								
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)	Head	Liquid Temp. (°C)	Conductivity (σ)	Permittivity (ε <sub>r</sub> )	Conductivity Target (σ)	Permittivity Target (ε <sub>r</sub> )	Delta (σ) (%)	Delta (ε <sub>r</sub> ) (%)	Limit (%)	Date
750	Head	22.7	0.900	41.2	0.89	41.90	1.12	-1.67	±5	2023/9/22
835	Head	22.7	0.902	41.2	0.90	41.50	0.22	-0.72	±5	2023/9/23
1750	Head	22.8	1.41	40.7	1.37	40.10	2.92	1.50	±5	2023/9/24
1900	Head	22.7	1.40	39.0	1.40	40.00	0.00	-2.50	±5	2023/9/25
2300	Head	22.7	1.67	39.6	1.67	39.50	0.00	0.25	±5	2023/9/26
2450	Head	22.6	1.83	37.5	1.80	39.20	1.67	-4.34	±5	2023/9/27
2600	Head	22.8	1.93	38.2	1.96	39.00	-1.53	-2.05	±5	2023/9/28
3500	Head	22.7	2.78	38.9	2.91	37.90	-4.47	2.64	±5	2023/9/29
3700	Head	22.7	2.99	38.7	3.12	37.70	-4.17	2.65	±5	2023/9/30
3900	Head	22.8	3.19	38.4	3.32	37.50	-3.92	2.40	±5	2023/10/1
5250	Head	22.9	4.60	35.9	4.71	35.90	-2.34	0.00	±5	2023/10/2
5600	Head	22.9	5.00	35.3	5.07	35.50	-1.38	-0.56	±5	2023/10/3
5750	Head	22.9	5.17	35.1	5.22	35.40	-0.96	-0.85	±5	2023/10/4
750	Head	22.6	0.872	41.2	0.89	41.90	-2.02	-1.67	±5	2023/10/5
835	Head	22.8	0.911	42.7	0.90	41.50	1.22	2.89	±5	2023/10/6
1750	Head	22.7	1.34	38.5	1.37	40.10	-2.19	-3.99	±5	2023/10/7
1900	Head	22.7	1.40	41.4	1.40	40.00	0.00	3.50	±5	2023/10/8
2300	Head	22.6	1.67	39.6	1.67	39.50	0.00	0.25	±5	2023/10/9
2450	Head	22.7	1.83	37.5	1.80	39.20	1.67	-4.34	±5	2023/10/10
2600	Head	22.7	1.93	38.3	1.96	39.00	-1.53	-1.79	±5	2023/10/11
3500	Head	22.8	2.85	38.6	2.91	37.90	-2.06	1.85	±5	2023/10/12
3700	Head	22.8	3.08	38.0	3.12	37.70	-1.28	0.80	±5	2023/10/13
3900	Head	22.7	3.28	37.6	3.32	37.50	-1.20	0.27	±5	2023/10/14
5250	Head	22.9	4.58	35.7	4.71	35.90	-2.76	-0.56	±5	2023/10/15
5600	Head	22.9	4.95	35.1	5.07	35.50	-2.37	-1.13	±5	2023/10/16
5750	Head	22.9	5.11	34.9	5.22	35.40	-2.11	-1.41	±5	2023/10/17
3500	Head	22.7	2.80	39.0	2.91	37.90	-3.78	2.90	±5	2023/11/8
3700	Head	22.7	2.98	38.6	3.12	37.70	-4.49	2.39	±5	2023/11/8
3900	Head	22.9	3.25	37.8	3.32	37.50	-2.11	0.80	±5	2023/11/8

**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.

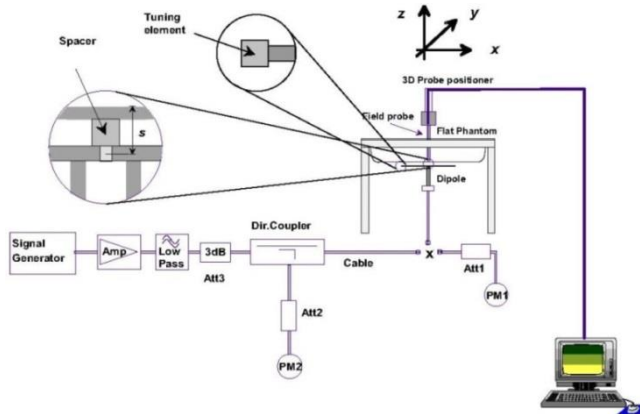
**<1g SAR>**

Date	Frequency (MHz)	Head	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 (%)
2023/9/22	750	Head	50	1087	7729	1358	0.423	8.58	8.46	-1.40
2023/9/23	835	Head	50	4d091	7729	1358	0.476	9.45	9.52	0.74
2023/9/24	1750	Head	50	1090	7729	1358	1.870	37.00	37.4	1.08
2023/9/25	1900	Head	50	5d118	7729	1358	2.000	39.30	40	1.78
2023/9/26	2300	Head	50	1055	7729	1358	2.450	48.40	49	1.24
2023/9/27	2450	Head	50	1040	7729	1358	2.680	52.70	53.6	1.71
2023/9/28	2600	Head	50	1061	7729	1358	2.720	56.60	54.4	-3.89
2023/9/29	3500	Head	50	1037	7729	1358	3.150	68.00	63	-7.35
2023/9/30	3700	Head	50	1008	7729	1358	3.290	67.60	65.8	-2.66
2023/10/1	3900	Head	50	1048	7729	1358	3.390	69.10	67.8	-1.88
2023/10/2	5250	Head	50	1113	7729	1358	3.880	81.50	77.6	-4.79
2023/10/3	5600	Head	50	1113	7729	1358	4.020	82.60	80.4	-2.66
2023/10/4	5750	Head	50	1113	7729	1358	3.760	80.80	75.2	-6.93
2023/10/5	750	Head	50	1087	7729	1358	0.414	8.58	8.28	-3.50
2023/10/6	835	Head	50	4d091	7729	1358	0.483	9.45	9.66	2.22
2023/10/7	1750	Head	50	1090	7729	1358	1.790	37.00	35.8	-3.24
2023/10/8	1900	Head	50	5d118	7729	1358	2.000	39.30	40	1.78
2023/10/9	2300	Head	50	1055	7729	1358	2.430	48.40	48.6	0.41
2023/10/10	2450	Head	50	1040	7729	1358	2.630	52.70	52.6	-0.19
2023/10/11	2600	Head	50	1061	7729	1358	2.640	56.60	52.8	-6.71
2023/10/12	3500	Head	50	1037	7729	1358	3.160	68.00	63.2	-7.06
2023/10/13	3700	Head	50	1008	7729	1358	3.400	67.60	68	0.59
2023/10/14	3900	Head	50	1048	7729	1358	3.500	69.10	70	1.30
2023/10/15	5250	Head	50	1113	7729	1358	3.850	81.50	77	-5.52
2023/10/16	5600	Head	50	1113	7729	1358	4.030	82.60	80.6	-2.42
2023/10/17	5750	Head	50	1113	7729	1358	3.790	80.80	75.8	-6.19
2023/11/8	3500	Head	50	1037	7729	1358	3.190	68.00	63.8	-6.18
2023/11/8	3700	Head	50	1008	7729	1358	3.220	67.60	64.4	-4.73
2023/11/8	3900	Head	50	1048	7729	1358	3.310	69.10	66.2	-4.20



**<10g SAR>**

Date	Frequency (MHz)	Head	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 (%)
2023/9/22	750	Head	50	1087	7729	1358	0.281	5.65	5.62	-0.53
2023/9/23	835	Head	50	4d091	7729	1358	0.314	6.22	6.28	0.96
2023/9/24	1750	Head	50	1090	7729	1358	1.010	19.50	20.2	3.59
2023/9/25	1900	Head	50	5d118	7729	1358	1.050	20.40	21	2.94
2023/9/26	2300	Head	50	1055	7729	1358	1.180	23.70	23.6	-0.42
2023/9/27	2450	Head	50	1040	7729	1358	1.260	24.60	25.2	2.44
2023/9/28	2600	Head	50	1061	7729	1358	1.220	25.10	24.4	-2.79
2023/9/29	3500	Head	50	1037	7729	1358	1.190	25.40	23.8	-6.30
2023/9/30	3700	Head	50	1008	7729	1358	1.230	24.40	24.6	0.82
2023/10/1	3900	Head	50	1048	7729	1358	1.210	24.10	24.2	0.41
2023/10/2	5250	Head	50	1113	7729	1358	1.110	23.30	22.2	-4.72
2023/10/3	5600	Head	50	1113	7729	1358	1.140	23.70	22.8	-3.80
2023/10/4	5750	Head	50	1113	7729	1358	1.070	23.00	21.4	-6.96
2023/10/5	750	Head	50	1087	7729	1358	0.275	5.65	5.5	-2.65
2023/10/6	835	Head	50	4d091	7729	1358	0.319	6.22	6.38	2.57
2023/10/7	1750	Head	50	1090	7729	1358	0.959	19.50	19.18	-1.64
2023/10/8	1900	Head	50	5d118	7729	1358	1.050	20.40	21	2.94
2023/10/9	2300	Head	50	1055	7729	1358	1.170	23.70	23.4	-1.27
2023/10/10	2450	Head	50	1040	7729	1358	1.230	24.60	24.6	0.00
2023/10/11	2600	Head	50	1061	7729	1358	1.190	25.10	23.8	-5.18
2023/10/12	3500	Head	50	1037	7729	1358	1.220	25.40	24.4	-3.94
2023/10/13	3700	Head	50	1008	7729	1358	1.270	24.40	25.4	4.10
2023/10/14	3900	Head	50	1048	7729	1358	1.240	24.10	24.8	2.90
2023/10/15	5250	Head	50	1113	7729	1358	1.090	23.30	21.8	-6.44
2023/10/16	5600	Head	50	1113	7729	1358	1.130	23.70	22.6	-4.64
2023/10/17	5750	Head	50	1113	7729	1358	1.080	23.00	21.6	-6.09
2023/11/8	3500	Head	50	1037	7729	1358	1.200	25.40	24	-5.51
2023/11/8	3700	Head	50	1008	7729	1358	1.190	24.40	23.8	-2.46
2023/11/8	3900	Head	50	1048	7729	1358	1.170	24.10	23.4	-2.90



**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.

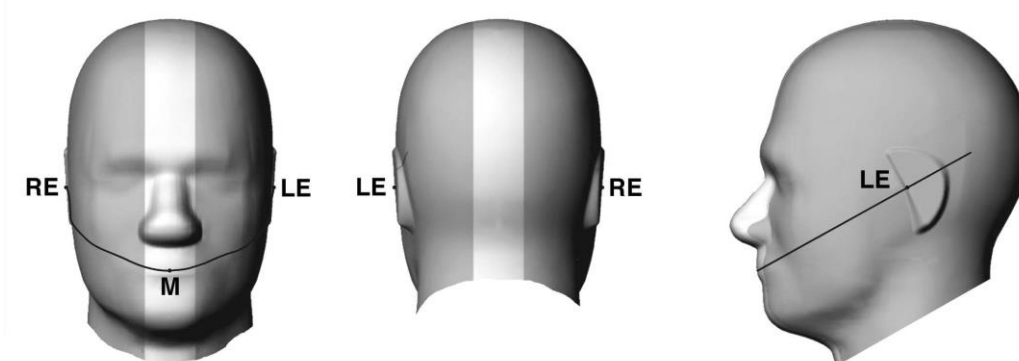


Fig 12.1.1 Front, back, and side views of SAM twin phantom

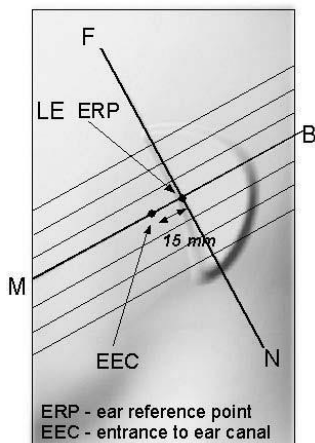


Fig 12.1.2 Close-up side view of phantom showing the ear region.

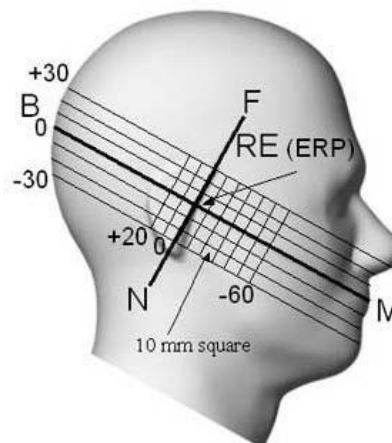


Fig 12.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

### 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.

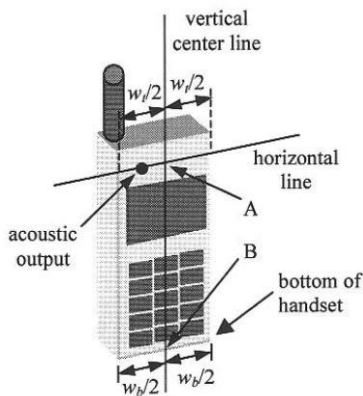


Fig 12.2.1 Handset vertical and horizontal reference lines—“fixed case”

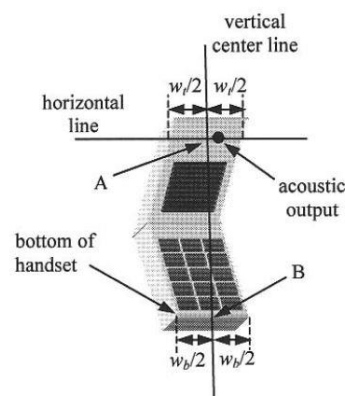


Fig 12.2.2 Handset vertical and horizontal reference lines—“clam-shell case”

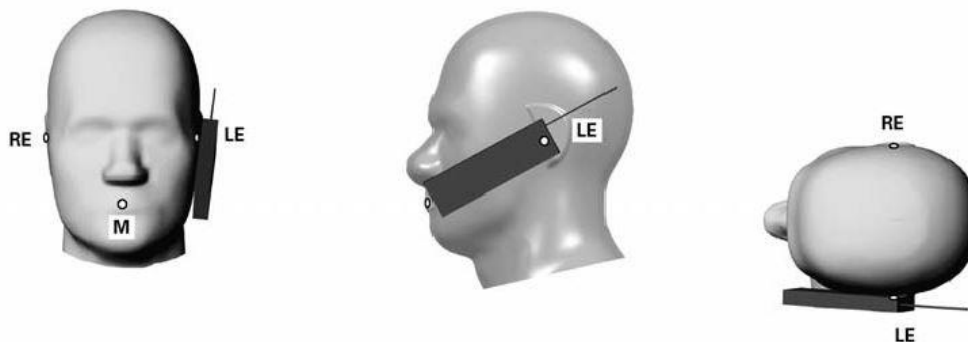
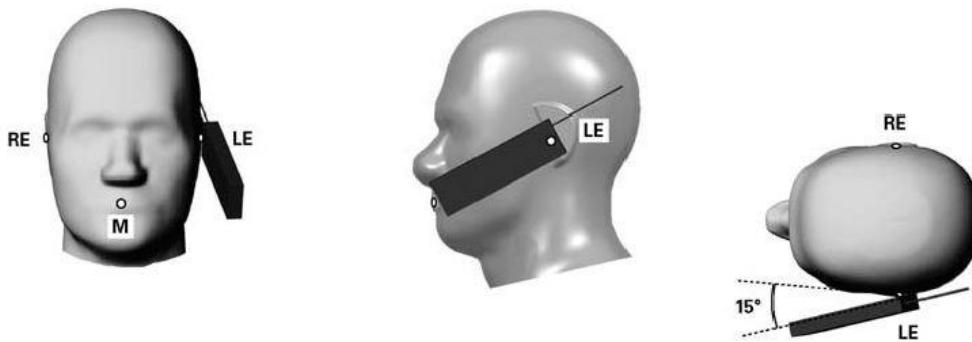


Fig 12.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

**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.

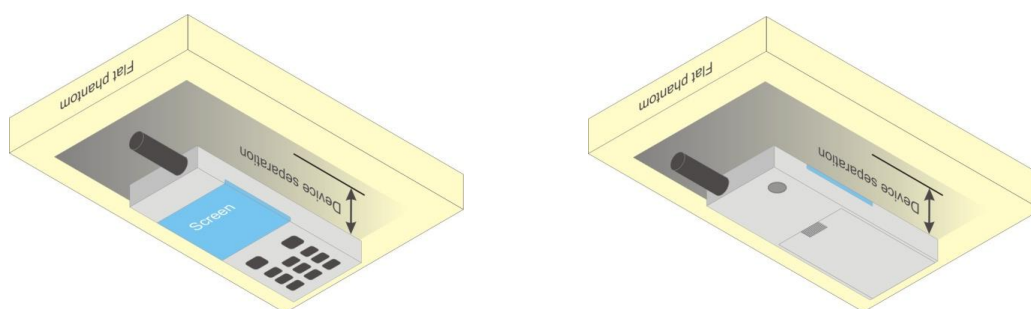


Fig 12.4 Body Worn Position

### 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  $\leq 25$  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  $\leq \frac{1}{4}$  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 ( $\beta_c$  and  $\beta_d$ ) 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:  $\beta$  values for transmitter characteristics tests with HS-DPCCH**

Sub-test	$\beta_c$	$\beta_d$	$\beta_d$ (SF)	$\beta_o/\beta_d$	$\beta_{HS}$ (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:  $\Delta_{ACK}, \Delta_{NACK}$  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,  $\Delta_{ACK}$  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  $\beta_o/\beta_d$  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 ( $\beta_c$  and  $\beta_d$ ) 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:  $\beta$  values for transmitter characteristics tests with HS-DPCCH and E-DCH**

Sub-test	$\beta_c$	$\beta_d$	$\beta_d$ (SF)	$\beta_c/\beta_d$	$\beta_{HS}$ (Note1)	$\beta_{ec}$	$\beta_{ed}$ (Note 4) (Note 5)	$\beta_{ed}$ (SF)	$\beta_{ed}$ (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	$\beta_{ed1}$ : 47/15 $\beta_{ed2}$ : 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,  $\Delta_{ACK}$ ,  $\Delta_{NACK}$  and  $\Delta_{CQI} = 30/15$  with  $\beta_{hs} = 30/15 * \beta_c$ . For sub-test 5,  $\Delta_{ACK}$ ,  $\Delta_{NACK}$  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  $\beta_c/\beta_d$  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:  $\beta_{ed}$  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:**

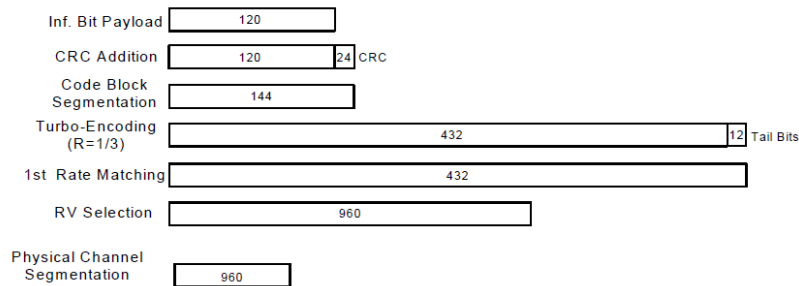
- a. The EUT was connected to Base Station referred to the Setup Configuration below
- b. The RF path losses were compensated into the measurements.
- c. A call was established between EUT and Base Station with following setting:
  - i. Set RMC 12.2Kbps + HSDPA mode.
  - ii. Set Cell Power = -25 dBm
  - iii. Set HS-DSCH Configuration Type to FRC (H-set 12, QPSK)
  - iv. Select HSDPA Uplink Parameters
  - v. Set Gain Factors ( $\beta_c$  and  $\beta_d$ ) 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 ( $\beta_c$  and  $\beta_d$ ) 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 Parmns
  - iv. Set Cell Power = -86 dBm
  - v. Set Channel Type = HSPA
  - vi. Set UE Target Power =21 dBm
  - vii. Power Ctrl Mode= All Up Bits
  - viii. Set Manual Uplink DPCH Bc/Bd = Manual
  - ix. Set Manual Uplink DPCH Bc and Bd=15,15(for 34.121-1 v8.10.0 table C11.1.4 sub-test 1)
  - x. Set HSPA Conn DL Channel Levels
  - xi. Set HS-SCCH Configs
  - xii. Set RB Test Mode Setup
  - xiii. Set Common HSUPA Parameters
  - xiv. Set Serving Grant
  - xv. Confirm that E-TFCI is equal to the target E-TFCI of 105 for sub-test 1, and other subtest's E-TFCI
4. The transmitted maximum output power was recorded.

**Table C.11.1.4:  $\beta$  values for transmitter characteristics tests with HS-DPCCH and E-DCH with 16QAM**

Sub-test	$\beta_c$ (Note3)	$\beta_d$	$\beta_{HS}$ (Note1)	$\beta_{ec}$	$\beta_{ed}$ (2xSF2) (Note 4)	$\beta_{ed}$ (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	$\beta_{ed1}$ : 30/15 $\beta_{ed2}$ : 30/15	$\beta_{ed3}$ : 24/15 $\beta_{ed4}$ : 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  $\beta_c$  is set to 1 and  $\beta_d = 0$  by default.

Note 4:  $\beta_{ed}$  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>**

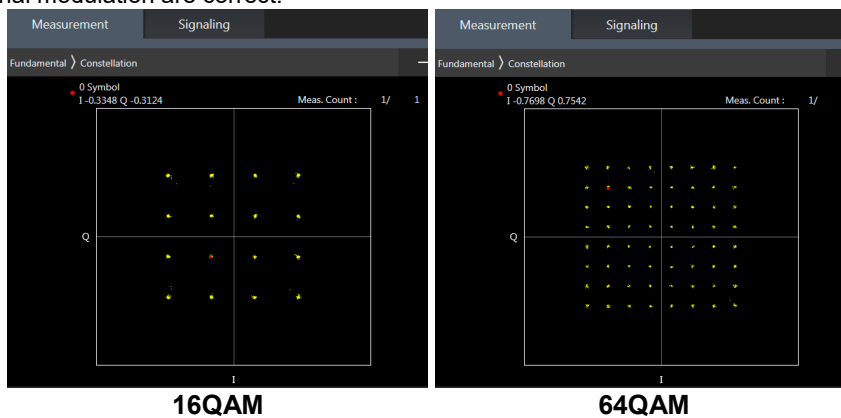
**General Note:**

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  $\leq \frac{1}{4}$  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  $\leq 1.2$  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  $\frac{1}{4}$  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  $\leq 0.8$  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.
6. Per KDB 941225 D05v02r05, 16QAM/64QAM 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  $\leq 1.45$  W/kg; Per KDB 941225 D05v02r05, 16QAM/64QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is  $>$  not  $\frac{1}{2}$  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.
8. For LTE B4 / B5 / B12 / B17 / B26 / B38 / B71 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 B2 /B4 /B5 / B17 / B38 SAR test was covered by B25 / B66 / B26 / B12 / B41; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
  - a. the maximum output power, including tolerance, for the smaller band is  $\leq$  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 should be verified by checking the signal constellation with a call box to avoid incorrect maximum power levels due to MPR and other requirements associated with signal modulation, and the following figure is taken from the "Fundamental Measurement >> Modulation Analysis >> constellation" mode of the device connect to the MT8821C base station, therefore, the device 64QAM and 16QAM signal modulation are correct.



<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.

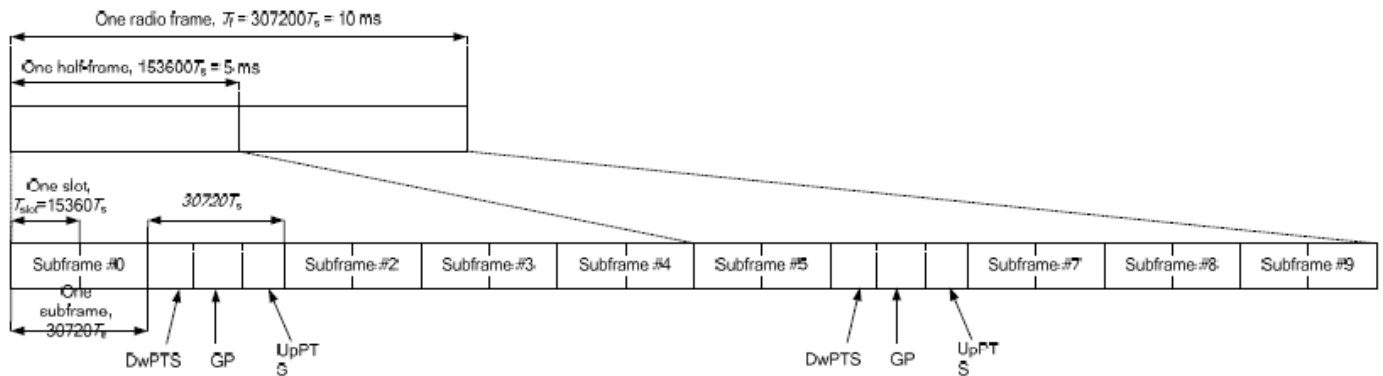


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

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 <sub>s</sub> ): 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 <sub>s</sub> ): Extended cyclic prefix in downlink (UpPTS)			
	Special subframe configuration	Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
Uplink duty factor in one special subframe	0~3	7.13%	8.33%
	4~7	14.3%	16.7%

The highest duty factor is resulted from:

For LTE TDD Power class 2

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

For LTE TDD Power class 3

- i. Uplink-downlink configuration: 0. In a half-frame consisted of 5 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.

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

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



**<LTE Carrier Aggregation>**

**General Note:**

1. This device supports Carrier Aggregation on downlink for inter and intra band. For the device supports bands and bandwidths and configurations are provided as follow table was according to 3GPP.
2. In applying the existing power measurement procedures of KDB 941225 D05A for DL CA SAR test exclusion, only the subset with the largest number of combinations of frequency bands and CCs in each row need combination, and for this device that all the configurations were choose to power measurement.
3. The gray color table is covered by other combinations and no need to verify power.
4. All permutations exist, no restrictions on Pcell & Scell combinations but Only LTE Band 29A is limited to Scell.

2CC Downlink Carrier Aggregation			3CC Downlink Carrier Aggregation		
Number	Combination	Covered by Measurement Superset	Number	Combination	Covered by Measurement Superset
1	CA_12A-30A	3CC-1	1	CA_12A-30A-66A	
2	CA_12A-48A		2	CA_12A-48C	
3	CA_12A-66A	3CC-1	3	CA_12A-66A-66A	
4	CA_12B	3CC-5	4	CA_12A-66C	
5	CA_13A-48A	3CC-6	5	CA_12B-66A	
6	CA_13A-66A	3CC-7	6	CA_13A-48A-48A	
7	CA_14A-30A	3CC-12	7	CA_13A-48A-66A	
8	CA_14A-66A	3CC-14	8	CA_13A-48C	
9	CA_25A-25A	3CC-16	9	CA_13A-66A-66A	
10	CA_25A-26A	3CC-16	10	CA_13A-66B	
11	CA_25A-41A		11	CA_13A-66C	
12	CA_25A-66A	3CC-17	12	CA_14A-30A-66A	
13	CA_26A-41A		14	CA_14A-66A-66A	
14	CA_29A-30A	3CC-20	15	CA_13A-48B	
15	CA_29A-66A	3CC-21	16	CA_25A-25A-26A	
16	CA_2A-12A	3CC-22	17	CA_25A-25A-66A	
17	CA_2A-13A	3CC-25	18	CA_25A-41C	
18	CA_2A-14A	3CC-27	19	CA_26A-41C	
19	CA_2A-29A	3CC-29	20	CA_29A-30A-66A	
20	CA_2A-2A	3CC-31	21	CA_29A-66A-66A	
21	CA_2A-30A	3CC-22	22	CA_2A-12A-30A	
22	CA_2A-48A	3CC-25	23	CA_2A-12A-66A	
23	CA_2A-4A	3CC-36	24	CA_2A-12B	
24	CA_2A-5A	3CC-37	25	CA_2A-13A-48A	
25	CA_2A-66A	3CC-38	26	CA_2A-13A-66A	
26	CA_2A-71A	3CC-39	27	CA_2A-14A-30A	
27	CA_2A-7A	3CC-40	28	CA_2A-14A-66A	
28	CA_2C	3CC-67	29	CA_2A-29A-30A	
29	CA_30A-66A	3CC-69	30	CA_2A-29A-66A	
30	CA_41A-41A		31	CA_2A-2A-12A	
31	CA_41A-48A		32	CA_2A-2A-13A	
32	CA_41C	3CC-71	33	CA_2A-2A-14A	
33	CA_48A-48A	3CC-42	34	CA_2A-2A-29A	
34	CA_48A-66A	3CC-43	35	CA_2A-2A-30A	
35	CA_48B		36	CA_2A-2A-4A	
36	CA_48C	3CC-44	37	CA_2A-2A-5A	
37	CA_4A-12A	3CC-80	38	CA_2A-2A-66A	
38	CA_4A-13A	3CC-46	39	CA_2A-2A-71A	
39	CA_4A-17A		40	CA_2A-2A-7A	
40	CA_4A-29A	3CC-47	41	CA_2A-30A-66A	
41	CA_4A-30A	3CC-48	42	CA_2A-48A-48A	
42	CA_4A-48A		43	CA_2A-48A-66A	
43	CA_4A-4A	3CC-49	44	CA_2A-48C	
44	CA_4A-5A	3CC-50	45	CA_2A-4A-12A	





45	CA_4A-66A		46	CA_2A-4A-13A	
46	CA_4A-71A	3CC-87	47	CA_2A-4A-29A	
47	CA_4A-7A	3CC-52	48	CA_2A-4A-30A	
48	CA_5A-30A	3CC-53	49	CA_2A-4A-4A	
49	CA_5A-41A		50	CA_2A-4A-5A	
50	CA_5A-48A	3CC-54	51	CA_2A-4A-71A	
51	CA_5A-5A	3CC-96	52	CA_2A-4A-7A	
52	CA_5A-66A	3CC-55	53	CA_2A-5A-30A	
53	CA_5A-7A	3CC-56	54	CA_2A-5A-48A	
54	CA_5B	3CC-57	55	CA_2A-5A-66A	
55	CA_66A-66A	3CC-58	56	CA_2A-5A-7A	
56	CA_66A-71A	3CC-59	57	CA_2A-5B	
57	CA_66B	3CC-60	58	CA_2A-66A-66A	
58	CA_66C	3CC-61	59	CA_2A-66A-71A	
59	CA_7A-12A		60	CA_2A-66B	
60	CA_7A-13A	3CC-115	61	CA_2A-66C	
61	CA_7A-25A	3CC-116	62	CA_2A-7A-13A	
62	CA_7A-29A	3CC-113	63	CA_2A-7A-29A	
63	CA_7A-66A	3CC-118	64	CA_2A-7A-66A	
64	CA_7A-71A		65	CA_2A-7A-7A	
65	CA_7A-7A	3CC-65	66	CA_2A-7C	
66	CA_7B		67	CA_2C-12A	
67	CA_7C	3CC-66	68	CA_2C-66A	
			69	CA_30A-66A-66A	
			70	CA_7C-66A	
			71	CA_41A-41C	
			72	CA_41D	
			73	CA_48A-48A-66A	
			74	CA_48A-48C	
			75	CA_48A-66A-66A	
			76	CA_48A-66B	
			77	CA_48A-66C	
			78	CA_48C-66A	
			79	CA_48D	
			80	CA_4A-12A-30A	
			81	CA_4A-12B	
			82	CA_4A-29A-30A	
			83	CA_4A-48C	
			84	CA_4A-4A-12A	
			85	CA_4A-4A-13A	
			86	CA_4A-4A-5A	
			87	CA_4A-4A-71A	
			88	CA_4A-5A-30A	
			89	CA_4A-5B	
			90	CA_4A-7A-7A	
			91	CA_4A-7C	
			92	CA_5A-30A-66A	
			93	CA_5A-48A-48A	
			94	CA_5A-48A-66A	
			95	CA_5A-48C	
			96	CA_5A-5A-66A	
			97	CA_5A-66A-66A	
			98	CA_5A-66B	
			99	CA_5A-66C	
			100	CA_5A-7A-66A	
			101	CA_5A-7A-7A	



			102	CA_5A-7C	
			103	CA_5B-30A	
			104	CA_5B-66A	
			105	CA_66A-66A-66A	
			106	CA_66A-66A-71A	
			107	CA_66A-66B	
			108	CA_66A-66C	
			109	CA_66C-71A	
			110	CA_7A-13A-66A	
			111	CA_7A-25A-25A	
			112	CA_7A-25A-66A	
			113	CA_7A-29A-66A	
			114	CA_7A-66A-66A	
			115	CA_7A-7A-13A	
			116	CA_7A-7A-25A	
			117	CA_7A-7A-29A	
			118	CA_7A-7A-66A	
			119	CA_7C-13A	
			120	CA_7C-29A	

**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 2/4/7/25/30/41/48/66 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 2/4/7/25/30/41/48/66

**LTE Carrier Aggregation Conducted Power (Uplink)**

LTE Uplink CA	2CC Uplink Carrier Aggregation
Intra-band	Antenna Tx
CA_41C	Ant 1
CA_48B	Ant 5
CA_48C	Ant 5
CA_5B	Ant 0
CA_66B	Ant 0
CA_66C	Ant 0

**<Intra-band>**

**General Note:**

- i. The device supports intra-band uplink carrier aggregation for LTE B7/38/41/66 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.
- v. LTE CA\_66B / CA\_48B, test was covered by CA\_66C / CA\_48C, therefore, SAR was only assessed for CA\_66C / CA\_48C.

**<Inter-band uplink carrier aggregation consideration>**

LTE Uplink CA	2CC Uplink Carrier Aggregation
Inter-band	Antenna Tx
CA_12A-66A	Ant 0+ANT4
CA_13A-66A	Ant 0 + Ant 4
CA_14A-66A	Ant 0 + Ant 4
CA_2A-12A	Ant 0+Ant 4
CA_2A-13A	Ant 0+Ant 4
CA_2A-14A	Ant 0+Ant 4
CA_2A-48A	Ant 0+Ant 5
CA_2A-4A	Ant 0+Ant 4
CA_2A-5A	Ant 0+Ant 4
CA_2A-66A	Ant 0+Ant 4
CA_4A-12A	Ant 0+Ant 4
CA_4A-13A	Ant 0+Ant 4
CA_4A-5A	Ant 0+Ant 4
CA_5A-66A	Ant 0+Ant 4
CA_13A-48A-66A*	Ant 5+Ant 0 for CA_48A-66A
	Ant 0 + Ant 4 for CA_13A-66A

Remark: \* For inter-band CA\_13A-48A-66A combination with uplink assigned to LTE B66 and one band of LTE B13 or B48 only.

**General Note:**

1. 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 n2/n5/n7/ n12/n25/n30/n66/n71/n41/n48/n77/n78 is NSA mode.
2. 5G NR n2/n5/n7/n12/n14/n25/n26/n30/n66/n70/n71 /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  $\leq 1.45$  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  $\leq 0.8$  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
  - 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  $\leq 1.45$  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 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.
6. 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.
7. 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.
8. 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.
9. 5G NR n77/n78/n41 supports HPUE, HPUE power and SAR testing performed separately.
10. 5G NR n77/n78/n41 HUPE with higher power, 5G NR n77/n78/n41 HUPE SAR can represent power class 3 level SAR.
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.

<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 <sup>2</sup>
	QPSK		$\leq 1$	0
	16 QAM		$\leq 2$	$\leq 1$
	64 QAM		$\leq 2.5$	
CP-OFDM	256 QAM		$\leq 4.5$	
	QPSK	$\leq 3$		$\leq 1.5$
	16 QAM	$\leq 3$		$\leq 2$
	64 QAM		$\leq 3.5$	
	256 QAM		$\leq 6.5$	

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	$\leq 3.5$	$\leq 0.5$	0
	QPSK	$\leq 3.5$	$\leq 1$	0
	16 QAM	$\leq 3.5$	$\leq 2$	$\leq 1$
	64 QAM	$\leq 3.5$		$\leq 2.5$
	256 QAM		$\leq 4.5$	
CP-OFDM	QPSK	$\leq 3.5$	$\leq 3$	$\leq 1.5$
	16 QAM	$\leq 3.5$	$\leq 3$	$\leq 2$
	64 QAM		$\leq 3.5$	
	256 QAM		$\leq 6.5$	

<EN-DC combination>

ENDC	Main Antenna Tx		ASDdiv-1 Tx	
	LTE TX	NR TX	LTE TX	NR TX
DC_12A_n25A	ANT4	ANT0	\	\
DC_12A_n2A	ANT4	ANT0	\	\
DC_12A_n66A	ANT4	ANT0	\	\
DC_12A_n30A	ANT4	ANT1	\	\
DC_12A_n41A	ANT4	ANT1	\	\
DC_12A_n7A	ANT4	ANT1	\	\
DC_12A_n77A	ANT0	ANT5	\	\
DC_12A_n78A	ANT0	ANT5	\	\
DC_13A_n2A	Ant 4	Ant 0	Ant 0	Ant 4
DC_13A_n66A	Ant 4	Ant 0	Ant 0	Ant 4
DC_13A_n77A	ANT0	ANT5	\	\
DC_13A_n78A	ANT0	ANT5	\	\
DC_14A_n2A	ANT4	ANT0	ANT0	ANT4
DC_14A_n30A	ANT4	ANT1	\	\
DC_14A_n66A	ANT4	ANT0	ANT0	ANT4
DC_14A_n77A	ANT0	ANT5	\	\
DC_25A_n41A	ANT4	ANT1	\	\
DC_25A_n77A	ANT0	ANT5	\	\
DC_25A_n78A	ANT0	ANT5	\	\
DC_26A_n25A	ANT4	ANT0	ANT0	ANT4
DC_26A_n41A	ANT4	ANT1	\	\
DC_26A_n77A	ANT0	ANT5	\	\
DC_2A_n12A	ANT0	ANT4	\	\
DC_2A_n5A	Ant 0	Ant 4	\	\
DC_2A_n66A	Ant 0	Ant 4	\	\
DC_2A_n77A	ANT0	ANT5	\	\
DC_2A_n78A	ANT0	ANT5	\	\



DC_2A_n30A	ANT4	ANT1	\	\
DC_2A_n41A	ANT4	ANT1	\	\
DC_2A_n7A	ANT4	ANT1	\	\
DC_2A_n71A	ANT4	ANT0	\	\
DC_30A_n2A	ANT1	ANT4	\	\
DC_30A_n5A	ANT1	ANT4	\	\
DC_30A_n66A	ANT1	ANT4	\	\
DC_30A_n77A	ANT4	ANT5	\	\
DC_48A_n2A	ANT5	ANT0	\	\
DC_48A_n5A	ANT5	ANT0	\	\
DC_48A_n66A	ANT 5	ANT 0	\	\
DC_48A_n71A	ANT 5	ANT 0	\	\
DC_4A_n41A	ANT4	ANT1	\	\
DC_4A_n5A	ANT0	ANT4	\	\
DC_4A_n78A	ANT0	ANT5	\	\
DC_4A_n7A	ANT4	ANT1	\	\
DC_5A_n2A	Ant 4	Ant 0	Ant 0	Ant 4
DC_5A_n30A	ANT4	ANT1	\	\
DC_5A_n66A	Ant 4	Ant 0	Ant 0	Ant 4
DC_5A_n77A	ANT0	ANT5	\	\
DC_5A_n78A	ANT0	ANT5	\	\
DC_5A_n7A	ANT4	ANT1	\	\
DC_66A_n12A	ANT0	ANT4	\	\
DC_66A_n25A	ANT0	ANT4	ANT4	ANT0
DC_66A_n2A	ANT0	ANT4	ANT4	ANT0
DC_66A_n5A	Ant 0	ANT4	\	\
DC_66A_n30A	ANT4	ANT1	\	\
DC_66A_n41A	ANT4	ANT1	\	\
DC_66A_n7A	ANT4	ANT1	ANT0	ANT4
DC_66A_n77A	ANT0	ANT5	\	\
DC_66A_n78A	ANT0	ANT5	\	\
DC_66A_n71A	ANT4	ANT0	\	\
DC_71A_n2A	ANT4	ANT0	\	\
DC_71A_n66A	ANT4	ANT0	\	\
DC_71A_n41A	ANT4	ANT1	\	\
DC_71A_n48A	ANT0	ANT5	\	\
DC_71A_n78A	ANT0	ANT5	\	\
DC_7A_n77A	ANT4	ANT5	\	\
DC_7A_n78A	ANT4	ANT5	\	\
DC_7A_n25A	ANT1	ANT4	\	\
DC_7A_n2A	ANT1	ANT4	\	\
DC_7A_n5A	ANT1	ANT4	\	\
DC_7A_n66A	ANT1	ANT4	\	\
DC_7A_n71A	ANT1	ANT0	\	\



**<WLAN Conducted Power>**

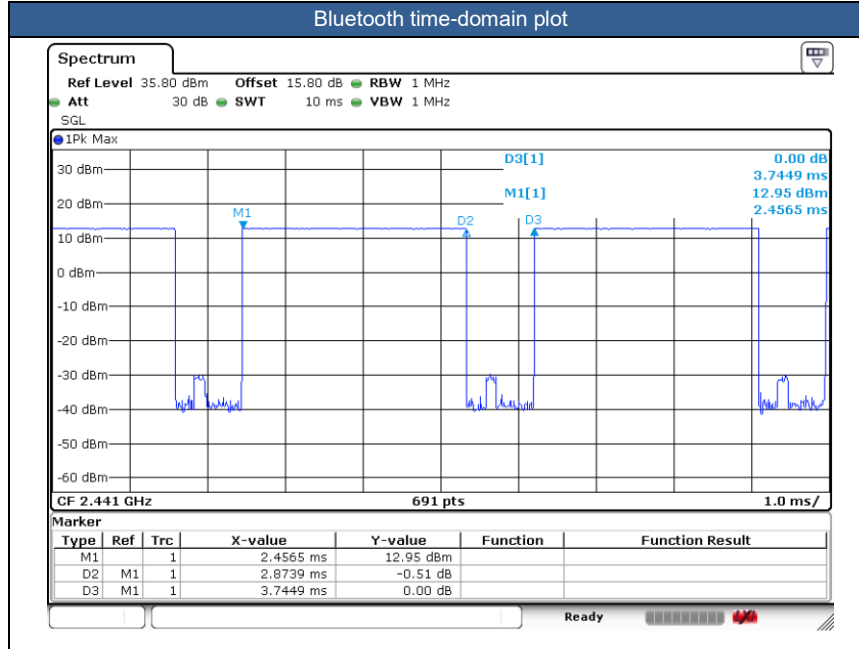
**General Note:**

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  $\leq 0.4$  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  $\leq 0.8$  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  $\leq 1.2$  W/kg or all required channels are tested.

**<2.4GHz Bluetooth>**

**General Note:**

1. For 2.4GHz Bluetooth SAR testing was selected 1Mbps, due to its highest average power.
2. The Bluetooth duty cycle are 76.74% as following figure, Bluetooth SAR scaling need further consideration and the theoretical duty cycle is 83.3%, therefore the actual duty cycle will be scaled up to the theoretical value of 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.
  - g. For TDD LTE SAR measurement of power class 2, the duty cycle 1:2.33 (42.9 %) was used perform testing and considering the theoretical duty cycle of 43.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 42.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 43.3%/42.9% = 1.009 is applied to scale-up the measured SAR result. The reported TDD LTE SAR (W/kg) = measured SAR (W/kg)\* Tune-up Scaling Factor\* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
  - $\leq 0.8$  W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is  $\leq 100$  MHz
  - $\leq 0.6$  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
  - $\leq 0.4$  W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is  $\geq 200$  MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required when the measured SAR is  $\geq 0.8$ W/kg. Per KDB 865664 D01v01r04, if the extremity repeated SAR is necessary, the same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.
4. The device implements Proximity sensors/receiver detect mechanism/hotspot trigger reduced power for the power management for SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity). The device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to appendix E. power table.
5. For WLAN transmitter, while the device WLAN is transmitting simultaneously with the WWAN/BT antenna, the device power will be reduced power at head conditions. For WLAN transmitter, while the device WLAN is transmitting simultaneously with the WWAN/BT antenna and Proximity sensors trigger, the device power will be reduced power at body-worn, hotspot and extremity exposure conditions.
6. For some WWAN bands, sensor on power level is higher than hotspot power level, so front/back sensor on SAR can represent hotspot conservatively.
7. This device supports HPUE for LTE Band 41 with class 2 level, HPUE power has been measured separately. For HPUE power is higher than power class 3 but with lower duty cycle, the maximum average power for class 2 and class 3 is almost the same, so we chose power class 3 full SAR testing and power class 2 verify the worst case of power class 3 SAR.
8. 5G NR n77/n78/n41 supports HPUE, HPUE power and SAR testing performed separately.
9. 5G NR n77/n78/n41 HUPE with higher power, 5G NR n77/n78/n41 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. Per KDB648474 D04v01r03, for smart phones with a display diagonal dimension  $> 15.0$  cm or an overall diagonal dimension  $> 16.0$  cm, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR  $> 1.2$  W/kg, however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power (for handheld on state, the maximum full power means reduced power), including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.

- a. For this device SAR for WWAN/WLAN transmitter scaled to maximum output power mode for product specific 10g SAR is higher than 1.2W/kg of GSM850/1900, WCDMA Band II/IV/V, LTE Band 2/4/5/7/13/14/25/26/30/66/38/41/48, 5GNR n2/ n5/ n7/ n25/ n26/ n30/ n66/ n70/ n41/ n48/ n77/ n78, WLAN2.4/5.2/5.8GHz, therefore product specific 10g SAR is necessary.
  - b. WLAN 5.3/5.5GHz tested the product specific 10g SAR since it has no hotspot mode.
  - c. When 10-g product specific 10g SAR is considered, SAR thresholds is specified in the procedures for SAR test reduction and exclusion should be multiplied by 2.5.
13. Although the headset SAR is greater than 0.8 W/kg, the headset SAR verified the worst of the non-headset SAR and less than non-headset SAR, so there is no need to be tested other channels.
  14. Although the distance 1gSAR is greater than 0.8 W/kg at body-worn exposure conditions, the distance SAR verified the worst of the non-distance SAR and less than non-distance SAR, so there is no need to be tested other channels.
  15. According to Nov. 2017 TCB workshop, when the reported SAR for UL CA configuration 1g SAR is <1.2 W/kg, UL CA SAR is not required for all required test channels (PCC based).
  16. LTE B2/4/25/66 ant4 and 5GNR n2/25/66 ant4 support different PAs for some antennas, and LTE/NR bands support Other PA only under ENDC & UL CA. Some LTE/NR bands support different PAs for some antennas, whether it is the maximum power of Main PA is higher than and very close to the other PA, for RF exposure, after verification all PAs in a same position, so the worst-case PA was chosen to perform full SAR testing to ensure the RF exposure is compliance and another PA verified the worst case.

**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  $\leq \frac{1}{4}$  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  $\leq \frac{1}{4}$  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  $\leq 1.2$  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  $\frac{1}{4}$  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 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  $\leq 1.45$  W/kg; Per KDB 941225 D05v02r05, 16QAM/64QAM SAR testing is not required.
5. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is  $>$  not  $\frac{1}{2}$  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 / B71 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 B2/B4/B5/B17/B38 SAR test was covered by B25 / B66 / B26 / B12 / B41; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
  - a. the maximum output power, including tolerance, for the smaller band is  $\leq$  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  $\leq 0.8$  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.
  - 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  $\leq 1.45$  W/kg, smaller bandwidth SAR testing is not required for this device
  - f. For 5G FR1 n2/n7/n12/n26/n41/n48/n66/n71/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  $\leq 1.2$  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  $\leq 1.2$  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  $\leq 0.8$  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  $\leq 1.2$  W/kg or all required channels are tested.
5. During SAR testing the WLAN transmission was verified using a spectrum analyzer.

**ECI status description:**

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

Exposure Condition	ECI	Trigger Conditions
Head SAR	ECI 2	Receiver on
Body worn Mode SAR	ECI 3	Receiver off/Sensor On
Hotspot Mode SAR	ECI 7	Hotspot On
Extremity(Handheld) SAR	ECI 6	Receiver off/Sensor On
Sensor Off SAR	ECI 4	Sensor 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 LTE Band 71, 12, and 13 with various test configurations and SAR values.





# FCC SAR Test Report

Report No. : FA391202

	LTE Band 13	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	ECI 2	23230	782	20.29	21.00	1.178	-	-	0.04	0.537	0.632
	LTE Band 13	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 4	ECI 2	23230	782	20.14	21.00	1.219	-	-	-0.01	0.397	0.484
	LTE Band 14	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	ECI 2	23330	793	22.77	24.00	1.327	-	-	-0.12	0.314	0.417
	LTE Band 14	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 0	ECI 2	23330	793	21.80	23.00	1.318	-	-	0.03	0.250	0.330
	LTE Band 14	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	ECI 2	23330	793	22.77	24.00	1.327	-	-	-0.16	0.194	0.258
	LTE Band 14	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 0	ECI 2	23330	793	21.80	23.00	1.318	-	-	-0.02	0.153	0.202
	LTE Band 14	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI 2	23330	793	22.77	24.00	1.327	-	-	0.15	0.286	0.380
	LTE Band 14	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 0	ECI 2	23330	793	21.80	23.00	1.318	-	-	-0.09	0.223	0.294
	LTE Band 14	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	ECI 2	23330	793	22.77	24.00	1.327	-	-	0.11	0.184	0.244
	LTE Band 14	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 0	ECI 2	23330	793	21.80	23.00	1.318	-	-	-0.05	0.143	0.189
04	LTE Band 14	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	ECI 2	23330	793	22.29	23.00	1.178	-	-	0.03	0.658	0.775
	LTE Band 14	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 4	ECI 2	23330	793	21.18	22.00	1.208	-	-	0.12	0.521	0.629
	LTE Band 14	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI 2	23330	793	22.29	23.00	1.178	-	-	0.08	0.632	0.744
	LTE Band 14	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 4	ECI 2	23330	793	21.18	22.00	1.208	-	-	-0.17	0.511	0.617
	LTE Band 14	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	ECI 2	23330	793	22.29	23.00	1.178	-	-	-0.03	0.489	0.576
	LTE Band 14	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 4	ECI 2	23330	793	21.18	22.00	1.208	-	-	0.14	0.387	0.467
	LTE Band 14	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	ECI 2	23330	793	22.29	23.00	1.178	-	-	0.11	0.425	0.500
	LTE Band 14	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 4	ECI 2	23330	793	21.18	22.00	1.208	-	-	-0.05	0.382	0.461
	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	ECI 2	136100	680.5	23.11	24.00	1.227	-	-	-0.08	0.116	0.142
	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	ECI 2	136100	680.5	23.07	24.00	1.239	-	-	0.16	0.115	0.142
	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 0	ECI 2	136100	680.5	23.11	24.00	1.227	-	-	0.05	0.058	0.071
	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Right Tilted	0mm	Ant 0	ECI 2	136100	680.5	23.07	24.00	1.239	-	-	0.05	0.060	0.074
	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	ECI 2	136100	680.5	23.11	24.00	1.227	-	-	-0.03	0.121	0.149
	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	ECI 2	136100	680.5	23.07	24.00	1.239	-	-	-0.15	0.117	0.145
	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Left Tilted	0mm	Ant 0	ECI 2	136100	680.5	23.11	24.00	1.227	-	-	0.02	0.059	0.072
	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Left Tilted	0mm	Ant 0	ECI 2	136100	680.5	23.07	24.00	1.239	-	-	0.07	0.055	0.068
05	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	ECI 2	136100	680.5	23.26	24.00	1.186	-	-	0.04	0.630	0.747
	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	ECI 2	136100	680.5	23.22	24.00	1.197	-	-	0.18	0.603	0.722
	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	ECI 2	136100	680.5	23.26	24.00	1.186	-	-	0.14	0.564	0.669
	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	ECI 2	136100	680.5	23.22	24.00	1.197	-	-	-0.17	0.605	0.724
	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 4	ECI 2	136100	680.5	23.26	24.00	1.186	-	-	0.17	0.333	0.395
	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Left Cheek	0mm	Ant 4	ECI 2	136100	680.5	23.22	24.00	1.197	-	-	-0.05	0.381	0.456
	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Left Tilted	0mm	Ant 4	ECI 2	136100	680.5	23.26	24.00	1.186	-	-	0.01	0.360	0.427
	FR1 n71	20M	QPSK	50	28	DFT-SCS-15KHz	Left Tilted	0mm	Ant 4	ECI 2	136100	680.5	23.22	24.00	1.197	-	-	0.1	0.400	0.479
	FR1 n12	15M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	ECI 2	141500	707.5	22.92	24.00	1.282	-	-	0.16	0.139	0.178
	FR1 n12	15M	QPSK	36	22	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	ECI 2	141500	707.5	22.85	24.00	1.303	-	-	0.13	0.158	0.206
	FR1 n12	15M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 0	ECI 2	141500	707.5	22.92	24.00	1.282	-	-	-0.18	0.079	0.101
	FR1 n12	15M	QPSK	36	22	DFT-SCS-15KHz	Right Tilted	0mm	Ant 0	ECI 2	141500	707.5	22.85	24.00	1.303	-	-	0.02	0.084	0.109
	FR1 n12	15M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	ECI 2	141500	707.5	22.92	24.00	1.282	-	-	0.16	0.145	0.186
	FR1 n12	15M	QPSK	36	22	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	ECI 2	141500	707.5	22.85	24.00	1.303	-	-	-0.03	0.147	0.192
	FR1 n12	15M	QPSK	1	1	DFT-SCS-15KHz	Left Tilted	0mm	Ant 0	ECI 2	141500	707.5	22.92	24.00	1.282	-	-	0.07	0.074	0.095
	FR1 n12	15M	QPSK	36	22	DFT-SCS-15KHz	Left Tilted	0mm	Ant 0	ECI 2	141500	707.5	22.85	24.00	1.303	-	-	0	0.078	0.102
06	FR1 n12	15M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	ECI 2	141500	707.5	22.97	24.00	1.268	-	-	0.1	0.681	0.863
	FR1 n12	15M	QPSK	36	22	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	ECI 2	141500	707.5	22.92	24.00	1.282	-	-	0.12	0.641	0.822
	FR1 n12	15M	QPSK	75	0	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	ECI 2	141500	707.5	22.19	23.00	1.205	-	-	0.12	0.633	0.763
	FR1 n12	15M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	ECI 2	141500	707.5	22.97	24.00	1.268	-	-	0.08	0.571	0.724
	FR1 n12	15M	QPSK	36	22	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	ECI 2	141500	707.5	22.92	24.00	1.282	-	-	-0.17	0.647	0.830
	FR1 n12	15M	QPSK	75	0	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	ECI 2	141500	707.5	22.19	23.00	1.205	-	-	-0.17	0.631	0.760
	FR1 n12	15M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 4	ECI 2	141500	707.5	22.97	24.00	1.268	-	-	-0.03	0.378	0.479
	FR1 n12	15M	QPSK	36	22	DFT-SCS-15KHz	Left Cheek	0mm	Ant 4	ECI 2	141500	707.5	22.92	24.00	1.282	-	-	0.14	0.433	0.555
	FR1 n12	15M	QPSK	1	1	DFT-SCS-15KHz	Left Tilted	0mm	Ant 4	ECI 2	141500	707.5	22.97	24.00	1.268	-	-	0.11	0.394	0.499
	FR1 n12	15M	QPSK	36	22	DFT-SCS-15KHz	Left Tilted	0mm	Ant 4	ECI 2	141500	707.5	22.92	24.00	1.282	-	-	-0.05	0.447	0.573
	FR1 n14	10M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	ECI 2	158600	793	22.64	24.00	1.368	-	-	-0.13	0.270	0.369
	FR1 n14	10M	QPSK	25	14	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	ECI 2	158600	793	22.60	24.00	1.380	-	-	0.01	0.278	0.384
	FR1 n14	10M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 0	ECI 2	158600	793	22.64	24.00	1.368	-	-	-0.01	0.169	0.231
	FR1 n14	10M	QPSK	25	14	DFT-SCS-15KHz	Right Tilted	0mm	Ant 0	ECI 2	158600	793	22.60	24.00	1.380	-	-	-0.06	0.174	0.240



# FCC SAR Test Report

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	FR1 n14	10M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	EI 2	158600	793	22.64	24.00	1.368	-	-	-0.04	0.243	0.332
	FR1 n14	10M	QPSK	25	14	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	EI 2	158600	793	22.60	24.00	1.380	-	-	-0.09	0.245	0.338
	FR1 n14	10M	QPSK	1	1	DFT-SCS-15KHz	Left Tilted	0mm	Ant 0	EI 2	158600	793	22.64	24.00	1.368	-	-	-0.17	0.153	0.209
	FR1 n14	10M	QPSK	25	14	DFT-SCS-15KHz	Left Tilted	0mm	Ant 0	EI 2	158600	793	22.60	24.00	1.380	-	-	-0.1	0.159	0.219
07	FR1 n14	10M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	EI 2	158600	793	22.61	24.00	1.377	-	-	-0.03	0.721	0.993
	FR1 n14	10M	QPSK	25	14	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	EI 2	158600	793	22.57	24.00	1.390	-	-	0.17	0.709	0.985
	FR1 n14	10M	QPSK	50	0	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	EI 2	158600	793	21.68	23.00	1.355	-	-	0.18	0.543	0.736
	FR1 n14	10M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	EI 2	158600	793	22.61	24.00	1.377	-	-	-0.17	0.607	0.836
	FR1 n14	10M	QPSK	25	14	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	EI 2	158600	793	22.57	24.00	1.390	-	-	-0.04	0.598	0.831
	FR1 n14	10M	QPSK	50	0	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	EI 2	158600	793	21.68	23.00	1.355	-	-	-0.05	0.449	0.608
	FR1 n14	10M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 4	EI 2	158600	793	22.61	24.00	1.377	-	-	0	0.553	0.762
	FR1 n14	10M	QPSK	25	14	DFT-SCS-15KHz	Left Cheek	0mm	Ant 4	EI 2	158600	793	22.57	24.00	1.390	-	-	-0.13	0.519	0.721
	FR1 n14	10M	QPSK	1	1	DFT-SCS-15KHz	Left Tilted	0mm	Ant 4	EI 2	158600	793	22.61	24.00	1.377	-	-	-0.09	0.500	0.689
	FR1 n14	10M	QPSK	25	14	DFT-SCS-15KHz	Left Tilted	0mm	Ant 4	EI 2	158600	793	22.57	24.00	1.390	-	-	0.05	0.476	0.662
<b>835MHz</b>																				
08	GSM850	-	-	-	-	GPRS (4 Tx slots)	Right Cheek	0mm	Ant 0	EI 2	189	836.4	28.32	29.50	1.312	-	-	-0.02	0.464	0.609
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Right Tilted	0mm	Ant 0	EI 2	189	836.4	28.32	29.50	1.312	-	-	0.16	0.211	0.277
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Left Cheek	0mm	Ant 0	EI 2	189	836.4	28.32	29.50	1.312	-	-	0.13	0.363	0.476
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Left Tilted	0mm	Ant 0	EI 2	189	836.4	28.32	29.50	1.312	-	-	-0.18	0.203	0.266
09	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	EI 2	4182	836.4	22.72	24.00	1.343	-	-	0.06	0.332	0.446
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 0	EI 2	4182	836.4	22.72	24.00	1.343	-	-	0.1	0.182	0.244
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	EI 2	4182	836.4	22.72	24.00	1.343	-	-	0.04	0.277	0.372
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 0	EI 2	4182	836.4	22.72	24.00	1.343	-	-	0.13	0.154	0.207
	LTE Band 26	15M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	EI 2	26865	831.5	22.65	24.00	1.365	-	-	0.04	0.316	0.431
	LTE Band 5B	10M	QPSK	1	49	-	Right Cheek	0mm	Ant 0	EI 2	20476+831.6+20525	836.5	22.59	24.00	1.384	-	-	0.04	0.286	0.396
	LTE Band 26	15M	QPSK	36	0	-	Right Cheek	0mm	Ant 0	EI 2	26865	831.5	21.64	23.00	1.368	-	-	0.13	0.249	0.341
	LTE Band 26	15M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	EI 2	26865	831.5	22.65	24.00	1.365	-	-	-0.18	0.173	0.236
	LTE Band 26	15M	QPSK	36	0	-	Right Tilted	0mm	Ant 0	EI 2	26865	831.5	21.64	23.00	1.368	-	-	-0.11	0.134	0.183
	LTE Band 26	15M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	EI 2	26865	831.5	22.65	24.00	1.365	-	-	-0.16	0.273	0.373
	LTE Band 26	15M	QPSK	36	0	-	Left Cheek	0mm	Ant 0	EI 2	26865	831.5	21.64	23.00	1.368	-	-	-0.15	0.210	0.287
	LTE Band 26	15M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	EI 2	26865	831.5	22.65	24.00	1.365	-	-	-0.06	0.151	0.206
	LTE Band 26	15M	QPSK	36	0	-	Left Tilted	0mm	Ant 0	EI 2	26865	831.5	21.64	23.00	1.368	-	-	-0.14	0.117	0.160
10	LTE Band 26	15M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	EI 2	26865	831.5	20.40	21.00	1.148	-	-	0.04	0.878	1.008
	LTE Band 26	15M	QPSK	36	0	-	Right Cheek	0mm	Ant 4	EI 2	26865	831.5	20.28	21.00	1.180	-	-	-0.19	0.607	0.716
	LTE Band 26	15M	QPSK	75	0	-	Right Cheek	0mm	Ant 4	EI 2	26865	831.5	20.34	21.00	1.164	-	-	0.01	0.609	0.709
	LTE Band 26	15M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	EI 2	26865	831.5	20.40	21.00	1.148	-	-	0.06	0.661	0.759
	LTE Band 26	15M	QPSK	36	0	-	Right Tilted	0mm	Ant 4	EI 2	26865	831.5	20.28	21.00	1.180	-	-	0.02	0.511	0.603
	LTE Band 26	15M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	EI 2	26865	831.5	20.40	21.00	1.148	-	-	-0.16	0.353	0.405
	LTE Band 26	15M	QPSK	36	0	-	Left Cheek	0mm	Ant 4	EI 2	26865	831.5	20.28	21.00	1.180	-	-	-0.12	0.280	0.330
	LTE Band 26	15M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	EI 2	26865	831.5	20.40	21.00	1.148	-	-	-0.02	0.529	0.607
	LTE Band 26	15M	QPSK	36	0	-	Left Tilted	0mm	Ant 4	EI 2	26865	831.5	20.28	21.00	1.180	-	-	-0.05	0.412	0.486
	FR1 n5	25M	QPSK	1	67	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	EI 2	167300	836.5	22.92	24.00	1.282	-	-	0.08	0.233	0.299
	FR1 n5	25M	QPSK	64	35	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	EI 2	167300	836.5	22.86	24.00	1.300	-	-	0.16	0.185	0.241
	FR1 n5	25M	QPSK	1	67	DFT-SCS-15KHz	Right Tilted	0mm	Ant 0	EI 2	167300	836.5	22.92	24.00	1.282	-	-	0.01	0.131	0.168
	FR1 n5	25M	QPSK	64	35	DFT-SCS-15KHz	Right Tilted	0mm	Ant 0	EI 2	167300	836.5	22.86	24.00	1.300	-	-	-0.16	0.097	0.126
	FR1 n5	25M	QPSK	1	67	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	EI 2	167300	836.5	22.92	24.00	1.282	-	-	0.1	0.199	0.255
	FR1 n5	25M	QPSK	64	35	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	EI 2	167300	836.5	22.86	24.00	1.300	-	-	-0.04	0.152	0.198
	FR1 n5	25M	QPSK	1	67	DFT-SCS-15KHz	Left Tilted	0mm	Ant 0	EI 2	167300	836.5	22.92	24.00	1.282	-	-	-0.01	0.116	0.149
	FR1 n5	25M	QPSK	64	35	DFT-SCS-15KHz	Left Tilted	0mm	Ant 0	EI 2	167300	836.5	22.86	24.00	1.300	-	-	0	0.081	0.105
11	FR1 n5	25M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	EI 2	167300	836.5	21.97	23.00	1.268	-	-	0.02	0.777	0.985
	FR1 n5	25M	QPSK	64	35	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	EI 2	167300	836.5	21.92	23.00	1.282	-	-	-0.18	0.611	0.784
	FR1 n5	25M	QPSK	128	0	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	EI 2	167300	836.5	21.79	23.00	1.321	-	-	-0.07	0.627	0.828
	FR1 n5	25M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	EI 2	167300	836.5	21.97	23.00	1.268	-	-	0.11	0.740	0.938
	FR1 n5	25M	QPSK	64	35	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	EI 2	167300	836.5	21.92	23.00	1.282	-	-	-0.08	0.583	0.748
	FR1 n5	25M	QPSK	128	0	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	EI 2	167300	836.5	21.79	23.00	1.321	-	-	-0.1	0.605	0.799



	FR1 n5	25M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 4	ECI 2	167300	836.5	21.97	23.00	1.268	-	-	-0.01	0.594	0.753
	FR1 n5	25M	QPSK	64	35	DFT-SCS-15KHz	Left Cheek	0mm	Ant 4	ECI 2	167300	836.5	21.92	23.00	1.282	-	-	-0.09	0.475	0.609
	FR1 n5	25M	QPSK	1	1	DFT-SCS-15KHz	Left Tilted	0mm	Ant 4	ECI 2	167300	836.5	21.97	23.00	1.268	-	-	-0.06	0.565	0.716
	FR1 n5	25M	QPSK	64	35	DFT-SCS-15KHz	Left Tilted	0mm	Ant 4	ECI 2	167300	836.5	21.92	23.00	1.282	-	-	-0.17	0.496	0.636
	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	ECI 2	166300	831.5	22.91	24.00	1.285	-	-	-0.11	0.303	0.389
	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	ECI 2	166300	831.5	22.87	24.00	1.297	-	-	-0.06	0.297	0.385
	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 0	ECI 2	166300	831.5	22.91	24.00	1.285	-	-	-0.15	0.186	0.239
	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Right Tilted	0mm	Ant 0	ECI 2	166300	831.5	22.87	24.00	1.297	-	-	0.03	0.175	0.227
	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	ECI 2	166300	831.5	22.91	24.00	1.285	-	-	-0.13	0.278	0.357
	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	ECI 2	166300	831.5	22.87	24.00	1.297	-	-	0.16	0.263	0.341
	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Left Tilted	0mm	Ant 0	ECI 2	166300	831.5	22.91	24.00	1.285	-	-	-0.15	0.162	0.208
	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Left Tilted	0mm	Ant 0	ECI 2	166300	831.5	22.87	24.00	1.297	-	-	-0.02	0.149	0.193
	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	ECI 2	166300	831.5	22.88	23.50	1.153	-	-	-0.01	0.765	0.882
12	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	ECI 2	166300	831.5	22.84	23.50	1.164	-	-	0.06	0.873	1.016
	FR1 n26	20M	QPSK	100	0	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	ECI 2	166300	831.5	21.89	23.00	1.291	-	-	-0.11	0.628	0.811
	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	ECI 2	166300	831.5	22.88	23.50	1.153	-	-	0.14	0.656	0.757
	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	ECI 2	166300	831.5	22.84	23.50	1.164	-	-	0.03	0.680	0.792
	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 4	ECI 2	166300	831.5	22.88	23.50	1.153	-	-	0.16	0.584	0.674
	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Left Cheek	0mm	Ant 4	ECI 2	166300	831.5	22.84	23.50	1.164	-	-	-0.06	0.578	0.673
	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Left Tilted	0mm	Ant 4	ECI 2	166300	831.5	22.88	23.50	1.153	-	-	-0.16	0.518	0.597
	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Left Tilted	0mm	Ant 4	ECI 2	166300	831.5	22.84	23.50	1.164	-	-	0.05	0.536	0.624
1750MHz																				
13	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	ECI 2	1413	1732.6	22.51	24.00	1.409	-	-	0.06	0.155	0.218
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 0	ECI 2	1413	1732.6	22.51	24.00	1.409	-	-	-0.13	0.079	0.111
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	ECI 2	1413	1732.6	22.51	24.00	1.409	-	-	0.06	0.114	0.161
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 0	ECI 2	1413	1732.6	22.51	24.00	1.409	-	-	-0.03	0.083	0.117
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	ECI 2	132322	1745	22.49	24.00	1.416	-	-	0.17	0.140	0.198
	LTE Band 66C	20M	QPSK	1	99	-	Right Cheek	0mm	Ant 0	ECI 2	132322+132520	1745+1764.8	22.45	24.00	1.429	-	-	0.17	0.134	0.191
	LTE Band 66	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 0	ECI 2	132322	1745	21.72	23.00	1.343	-	-	0.16	0.113	0.152
	LTE Band 66	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	ECI 2	132322	1745	22.49	24.00	1.416	-	-	0.05	0.079	0.112
	LTE Band 66	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 0	ECI 2	132322	1745	21.72	23.00	1.343	-	-	-0.06	0.064	0.086
	LTE Band 66	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI 2	132322	1745	22.49	24.00	1.416	-	-	-0.13	0.116	0.164
	LTE Band 66	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 0	ECI 2	132322	1745	21.72	23.00	1.343	-	-	-0.01	0.099	0.133
	LTE Band 66	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	ECI 2	132322	1745	22.49	24.00	1.416	-	-	-0.11	0.091	0.129
	LTE Band 66	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 0	ECI 2	132322	1745	21.72	23.00	1.343	-	-	0.19	0.074	0.099
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	ECI 2	132322	1745	16.11	17.00	1.227	-	-	-0.18	0.717	0.880
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	ECI 2	132072	1720	16.02	17.00	1.253	-	-	-0.03	0.680	0.852
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	ECI 2	132572	1770	16.00	17.00	1.259	-	-	-0.04	0.720	0.906
	LTE Band 66	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	ECI 2	132322	1745	16.06	17.00	1.242	-	-	-0.09	0.568	0.705
	LTE Band 66	20M	QPSK	100	0	-	Right Cheek	0mm	Ant 4	ECI 2	132322	1745	16.08	17.00	1.236	-	-	0.07	0.565	0.698
	LTE Band 66	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI 2	132322	1745	16.11	17.00	1.227	-	-	-0.03	0.747	0.917
	LTE Band 66	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI 2	132072	1720	16.02	17.00	1.253	-	-	0.09	0.710	0.890
14	LTE Band 66	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI 2	132572	1770	16.00	17.00	1.259	-	-	0.03	0.754	0.949
	LTE Band 66 Other PA	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI 2	132572	1770	15.59	17.00	1.384	-	-	0.06	0.655	0.906
	LTE Band 66	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	ECI 2	132322	1745	16.06	17.00	1.242	-	-	-0.05	0.602	0.747
	LTE Band 66	20M	QPSK	100	0	-	Right Tilted	0mm	Ant 4	ECI 2	132322	1745	16.08	17.00	1.236	-	-	-0.14	0.592	0.732
	LTE Band 66	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	ECI 2	132322	1745	16.11	17.00	1.227	-	-	0.06	0.511	0.627
	LTE Band 66	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 4	ECI 2	132322	1745	16.06	17.00	1.242	-	-	-0.12	0.413	0.513
	LTE Band 66	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	ECI 2	132322	1745	16.11	17.00	1.227	-	-	0.02	0.592	0.727
	LTE Band 66	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 4	ECI 2	132322	1745	16.06	17.00	1.242	-	-	-0.11	0.467	0.580
	FR1 n70	15M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	ECI 2	340500	1702.5	22.98	24.00	1.265	-	-	-0.14	0.176	0.223
	FR1 n70	15M	QPSK	36	22	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	ECI 2	340500	1702.5	22.92	24.00	1.282	-	-	-0.18	0.180	0.231
	FR1 n70	15M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 0	ECI 2	340500	1702.5	22.98	24.00	1.265	-	-	-0.06	0.074	0.094
	FR1 n70	15M	QPSK	36	22	DFT-SCS-15KHz	Right Tilted	0mm	Ant 0	ECI 2	340500	1702.5	22.92	24.00	1.282	-	-	0.02	0.083	0.106
	FR1 n70	15M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	ECI 2	340500	1702.5	22.98	24.00	1.265	-	-	0.16	0.126	0.159
	FR1 n70	15M	QPSK	36	22	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	ECI 2	340500	1702.5	22.92	24.00	1.282	-	-	0.01	0.131	0.168



FCC SAR Test Report

Report No. : FA391202

Table with columns for test parameters (FR1 n70, FR1 n66, GSM1900, WCDMA II, LTE Band 25) and SAR values. Includes a 1900MHz section. Values range from 0.081 to 1.043.



	LTE Band 25 Other PA	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECl 2	26340	1880	15.62	16.50	1.225	-	-	0.14	0.742	0.909
	LTE Band 25	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECl 2	26140	1860	15.58	16.50	1.236	-	-	0.03	0.695	0.859
	LTE Band 25	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECl 2	26590	1905	15.75	16.50	1.189	-	-	0.1	0.772	0.918
	LTE Band 25	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	ECl 2	26340	1880	15.73	16.50	1.194	-	-	0.16	0.634	0.757
	LTE Band 25	20M	QPSK	100	0	-	Right Tilted	0mm	Ant 4	ECl 2	26340	1880	15.76	16.50	1.186	-	-	-0.16	0.616	0.730
	LTE Band 25	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	ECl 2	26340	1880	15.80	16.50	1.175	-	-	0.05	0.515	0.605
	LTE Band 25	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 4	ECl 2	26340	1880	15.73	16.50	1.194	-	-	-0.15	0.410	0.490
	LTE Band 25	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	ECl 2	26340	1880	15.80	16.50	1.175	-	-	-0.13	0.619	0.727
	LTE Band 25	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 4	ECl 2	26340	1880	15.73	16.50	1.194	-	-	0.19	0.497	0.593
	FR1 n25	45M	QPSK	1	61	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	ECl 2	376500	1882.5	23.17	24.00	1.211	-	-	-0.08	0.052	0.063
	FR1 n25	45M	QPSK	121	61	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	ECl 2	376500	1882.5	23.11	24.00	1.227	-	-	-0.08	0.056	0.069
	FR1 n25	45M	QPSK	1	61	DFT-SCS-15KHz	Right Tilted	0mm	Ant 0	ECl 2	376500	1882.5	23.17	24.00	1.211	-	-	-0.13	0.043	0.052
	FR1 n25	45M	QPSK	121	61	DFT-SCS-15KHz	Right Tilted	0mm	Ant 0	ECl 2	376500	1882.5	23.11	24.00	1.227	-	-	0.01	0.000	0.000
	FR1 n25	45M	QPSK	1	61	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	ECl 2	376500	1882.5	23.17	24.00	1.211	-	-	-0.11	0.079	0.096
	FR1 n25	45M	QPSK	121	61	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	ECl 2	376500	1882.5	23.11	24.00	1.227	-	-	0.03	0.089	0.109
	FR1 n25	45M	QPSK	1	61	DFT-SCS-15KHz	Left Tilted	0mm	Ant 0	ECl 2	376500	1882.5	23.17	24.00	1.211	-	-	0.14	0.001	0.001
	FR1 n25	45M	QPSK	121	61	DFT-SCS-15KHz	Left Tilted	0mm	Ant 0	ECl 2	376500	1882.5	23.11	24.00	1.227	-	-	-0.01	0.001	0.001
	FR1 n25	45M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	ECl 2	376500	1882.5	18.56	19.50	1.242	-	-	0.05	0.657	0.816
	FR1 n25	45M	QPSK	121	61	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	ECl 2	376500	1882.5	18.42	19.50	1.282	-	-	-0.11	0.744	0.954
	FR1 n25	45M	QPSK	242	0	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	ECl 2	376500	1882.5	17.59	19.50	1.552	-	-	-0.12	0.599	0.930
	FR1 n25	45M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	ECl 2	376500	1882.5	18.56	19.50	1.242	-	-	0.03	0.682	0.847
20	FR1 n25	45M	QPSK	121	61	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	ECl 2	376500	1882.5	18.42	19.50	1.282	-	-	0.12	0.812	1.041
	FR1 n25 Other PA	45M	QPSK	121	61	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	ECl 2	376500	1882.5	18.65	19.50	1.216	-	-	-0.02	0.802	0.975
	FR1 n25	45M	QPSK	242	0	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	ECl 2	376500	1882.5	17.74	19.50	1.500	-	-	0.15	0.609	0.913
	FR1 n25	45M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 4	ECl 2	376500	1882.5	18.56	19.50	1.242	-	-	-0.09	0.438	0.544
	FR1 n25	45M	QPSK	121	61	DFT-SCS-15KHz	Left Cheek	0mm	Ant 4	ECl 2	376500	1882.5	18.42	19.50	1.282	-	-	0.11	0.508	0.651
	FR1 n25	45M	QPSK	1	1	DFT-SCS-15KHz	Left Tilted	0mm	Ant 4	ECl 2	376500	1882.5	18.56	19.50	1.242	-	-	-0.08	0.522	0.648
	FR1 n25	45M	QPSK	121	61	DFT-SCS-15KHz	Left Tilted	0mm	Ant 4	ECl 2	376500	1882.5	18.42	19.50	1.282	-	-	0.16	0.609	0.781
<b>2300MHz</b>																				
	LTE Band 30	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	ECl 2	27710	2310	22.34	24.00	1.466	-	-	-0.11	0.156	0.229
	LTE Band 30	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 1	ECl 2	27710	2310	21.52	23.00	1.406	-	-	0.17	0.127	0.179
	LTE Band 30	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	ECl 2	27710	2310	22.34	24.00	1.466	-	-	-0.16	0.140	0.205
	LTE Band 30	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 1	ECl 2	27710	2310	21.52	23.00	1.406	-	-	-0.17	0.107	0.150
	LTE Band 30	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	ECl 2	27710	2310	22.34	24.00	1.466	-	-	-0.18	0.250	0.366
	LTE Band 30	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 1	ECl 2	27710	2310	21.52	23.00	1.406	-	-	0.11	0.200	0.281
	LTE Band 30	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	ECl 2	27710	2310	22.34	24.00	1.466	-	-	-0.05	0.080	0.117
	LTE Band 30	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 1	ECl 2	27710	2310	21.52	23.00	1.406	-	-	-0.01	0.063	0.089
	LTE Band 30 ENDC	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	ECl 2	27710	2310	13.98	14.50	1.127	-	-	0.05	0.303	0.342
	LTE Band 30 ENDC	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 4	ECl 2	27710	2310	13.97	14.50	1.130	-	-	-0.03	0.250	0.282
21	LTE Band 30 ENDC	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECl 2	27710	2310	13.98	14.50	1.127	-	-	-0.01	0.351	0.396
	LTE Band 30 ENDC	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 4	ECl 2	27710	2310	13.97	14.50	1.130	-	-	0.02	0.284	0.321
	LTE Band 30 ENDC	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	ECl 2	27710	2310	13.98	14.50	1.127	-	-	0.16	0.176	0.198
	LTE Band 30 ENDC	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 4	ECl 2	27710	2310	13.97	14.50	1.130	-	-	0.13	0.138	0.156
	LTE Band 30 ENDC	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	ECl 2	27710	2310	13.98	14.50	1.127	-	-	0.02	0.205	0.231
	LTE Band 30 ENDC	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 4	ECl 2	27710	2310	13.97	14.50	1.130	-	-	0.16	0.164	0.185
	FR1 n30	10M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 1	ECl 2	462000	2310	23.28	24.00	1.180	-	-	-0.12	0.104	0.123
	FR1 n30	10M	QPSK	25	14	DFT-SCS-15KHz	Right Cheek	0mm	Ant 1	ECl 2	462000	2310	23.21	24.00	1.199	-	-	0.07	0.103	0.124
	FR1 n30	10M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 1	ECl 2	462000	2310	23.28	24.00	1.180	-	-	0.09	0.094	0.111
	FR1 n30	10M	QPSK	25	14	DFT-SCS-15KHz	Right Tilted	0mm	Ant 1	ECl 2	462000	2310	23.21	24.00	1.199	-	-	0.04	0.093	0.112
	FR1 n30	10M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 1	ECl 2	462000	2310	23.28	24.00	1.180	-	-	0.11	0.164	0.194
22	FR1 n30	10M	QPSK	25	14	DFT-SCS-15KHz	Left Cheek	0mm	Ant 1	ECl 2	462000	2310	23.21	24.00	1.199	-	-	-0.17	0.170	0.204
	FR1 n30	10M	QPSK	1	1	DFT-SCS-15KHz	Left Tilted	0mm	Ant 1	ECl 2	462000	2310	23.28	24.00	1.180	-	-	-0.13	0.059	0.070
	FR1 n30	10M	QPSK	25	14	DFT-SCS-15KHz	Left Tilted	0mm	Ant 1	ECl 2	462000	2310	23.21	24.00	1.199	-	-	0.12	0.062	0.074
<b>2600MHz</b>																				
	LTE Band 7	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	ECl 2	21100	2535	21.66	22.50	1.213	-	-	-0.14	0.118	0.143
	LTE Band 7	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	ECl 2	21100	2535	21.64	22.50	1.219	-	-	-0.15	0.099	0.121



FCC SAR Test Report

Report No. : FA391202

Table with columns for Band, Modulation, Power, Frequency, Location, etc. Includes a highlighted row with value 0.410.



FCC SAR Test Report

Report No. : FA391202

Table with columns for Band, Power, Modulation, etc. Includes rows for LTE Band 41 and FR1 n7/FR1 n41 HPUE with various antenna configurations and SAR values. A yellow highlight is present on row 24 (FR1 n7) and row 25 (FR1 n7).



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Report No. : FA391202

26	FR1 n41 HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	EI 2	518598	2592.99	19.43	20.50	1.279	-	-	0.01	0.795	1.017
	FR1 n41 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	EI 2	518598	2592.99	19.35	20.50	1.303	-	-	-0.06	0.739	0.963
	FR1 n41 HPUE	100M	QPSK	270	0	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	EI 2	518598	2592.99	19.28	20.50	1.324	-	-	-0.04	0.760	1.006
	FR1 n41 HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	EI 2	518598	2592.99	19.43	20.50	1.279	-	-	-0.09	0.470	0.601
	FR1 n41 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	EI 2	518598	2592.99	19.35	20.50	1.303	-	-	-0.17	0.445	0.580
<b>3600MHz</b>																				
	LTE Band 48	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 5	EI 2	55830	3609	16.08	17.50	1.387	62.9	1.006	-0.18	0.395	0.551
	LTE Band 48	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 5	EI 2	55830	3609	16.02	17.50	1.406	62.9	1.006	-0.14	0.322	0.455
	LTE Band 48	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 5	EI 2	55830	3609	16.08	17.50	1.387	62.9	1.006	-0.16	0.424	0.592
	LTE Band 48	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 5	EI 2	55830	3609	16.02	17.50	1.406	62.9	1.006	-0.13	0.339	0.480
	LTE Band 48	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 5	EI 2	55830	3609	16.08	17.50	1.387	62.9	1.006	-0.04	0.643	0.897
	LTE Band 48	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 5	EI 2	55340	3560	15.82	17.50	1.472	62.9	1.006	-0.01	0.629	0.932
	LTE Band 48	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 5	EI 2	56150	3641	15.98	17.50	1.419	62.9	1.006	0	0.626	0.894
	LTE Band 48	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 5	EI 2	56640	3690	15.97	17.50	1.422	62.9	1.006	-0.06	0.609	0.871
	LTE Band 48	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 5	EI 2	55830	3609	16.02	17.50	1.406	62.9	1.006	-0.15	0.521	0.737
	LTE Band 48	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 5	EI 2	55340	3560	15.90	17.50	1.445	62.9	1.006	0.06	0.512	0.745
	LTE Band 48	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 5	EI 2	56150	3641	15.97	17.50	1.422	62.9	1.006	0.05	0.508	0.727
	LTE Band 48	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 5	EI 2	56640	3690	15.90	17.50	1.445	62.9	1.006	0.04	0.511	0.743
	LTE Band 48	20M	QPSK	100	0	-	Left Cheek	0mm	Ant 5	EI 2	55830	3609	15.92	17.50	1.439	62.9	1.006	-0.02	0.521	0.754
	LTE Band 48	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 5	EI 2	55830	3609	16.08	17.50	1.387	62.9	1.006	-0.09	0.691	0.964
	LTE Band 48	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 5	EI 2	55340	3560	15.82	17.50	1.472	62.9	1.006	0.14	0.703	1.041
27	LTE Band 48	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 5	EI 2	56150	3641	15.98	17.50	1.419	62.9	1.006	0.1	0.734	1.048
	LTE Band 48C	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 5	EI 2	56150+ 56348	3641+ 3660.8	15.69	17.50	1.517	62.9	1.006	0.09	0.680	1.038
	LTE Band 48	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 5	EI 2	56640	3690	15.97	17.50	1.422	62.9	1.006	0.07	0.723	1.035
	LTE Band 48	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 5	EI 2	55830	3609	16.02	17.50	1.406	62.9	1.006	-0.09	0.572	0.809
	LTE Band 48	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 5	EI 2	55340	3560	15.90	17.50	1.445	62.9	1.006	-0.16	0.598	0.870
	LTE Band 48	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 5	EI 2	56150	3641	15.97	17.50	1.422	62.9	1.006	-0.18	0.606	0.867
	LTE Band 48	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 5	EI 2	56640	3690	15.90	17.50	1.445	62.9	1.006	0.11	0.589	0.856
	LTE Band 48	20M	QPSK	100	0	-	Left Tilted	0mm	Ant 5	EI 2	55830	3609	15.92	17.50	1.439	62.9	1.006	-0.08	0.561	0.812
	FR1 n48	40M	QPSK	1	53	DFT-SCS-30KHz	Right Cheek	0mm	Ant 5	EI 2	641666	3624.99	15.35	16.50	1.303	-	-	0.08	0.388	0.506
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Right Cheek	0mm	Ant 5	EI 2	641666	3624.99	15.19	16.50	1.352	-	-	0.01	0.474	0.641
	FR1 n48	40M	QPSK	1	53	DFT-SCS-30KHz	Right Tilted	0mm	Ant 5	EI 2	641666	3624.99	15.35	16.50	1.303	-	-	-0.08	0.356	0.464
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Right Tilted	0mm	Ant 5	EI 2	641666	3624.99	15.19	16.50	1.352	-	-	-0.08	0.489	0.661
	FR1 n48	40M	QPSK	1	53	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	EI 2	641666	3624.99	15.35	16.50	1.303	-	-	-0.18	0.620	0.808
	FR1 n48	40M	QPSK	1	53	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	EI 2	638000	3570	15.04	16.50	1.400	-	-	0.05	0.544	0.761
	FR1 n48	40M	QPSK	1	53	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	EI 2	645332	3679.98	15.00	16.50	1.413	-	-	0.09	0.601	0.849
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	EI 2	641666	3624.99	15.19	16.50	1.352	-	-	0.1	0.688	0.930
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	EI 2	638000	3570	14.93	16.50	1.435	-	-	0.08	0.632	0.907
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	EI 2	645332	3679.98	14.96	16.50	1.426	-	-	0.03	0.618	0.881
	FR1 n48	40M	QPSK	100	0	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	EI 2	641666	3624.99	15.15	16.50	1.365	-	-	0.12	0.553	0.755
	FR1 n48	40M	QPSK	1	53	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	EI 2	641666	3624.99	15.35	16.50	1.303	-	-	0.08	0.720	0.938
	FR1 n48	40M	QPSK	1	53	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	EI 2	638000	3570	15.04	16.50	1.400	-	-	0.08	0.684	0.957
	FR1 n48	40M	QPSK	1	53	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	EI 2	645332	3679.98	15.00	16.50	1.413	-	-	0.01	0.677	0.956
28	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	EI 2	641666	3624.99	15.19	16.50	1.352	-	-	0.03	0.731	0.988
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	EI 2	638000	3570	14.93	16.50	1.435	-	-	0.03	0.649	0.932
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	EI 2	645332	3679.98	14.96	16.50	1.426	-	-	-0.08	0.642	0.915
	FR1 n48	40M	QPSK	100	0	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	EI 2	641666	3624.99	15.15	16.50	1.365	-	-	-0.17	0.549	0.749
	FR1 n77(78) Part 270 HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Cheek	0mm	Ant 5	EI 2	656000	3840	16.05	17.50	1.396	-	-	0.18	0.338	0.472
	FR1 n77(78) Part 270 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 5	EI 2	656000	3840	15.94	17.50	1.432	-	-	-0.17	0.497	0.712
	FR1 n77(78) Part 270 HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Tilted	0mm	Ant 5	EI 2	656000	3840	16.05	17.50	1.396	-	-	-0.05	0.380	0.531
	FR1 n77(78) Part 270 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 5	EI 2	656000	3840	15.94	17.50	1.432	-	-	0	0.541	0.775
	FR1 n77(78) Part 270 HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	EI 2	656000	3840	16.05	17.50	1.396	-	-	-0.01	0.394	0.550
	FR1 n77(78) Part 270 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	EI 2	656000	3840	15.94	17.50	1.432	-	-	-0.09	0.619	0.887
	FR1 n77(78) Part 270 HPUE	100M	QPSK	270	0	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	EI 2	656000	3840	15.86	17.50	1.459	-	-	0.17	0.626	0.913
	FR1 n77(78) Part 270 HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	EI 2	656000	3840	16.05	17.50	1.396	-	-	0.02	0.413	0.577
29	FR1 n77(78) Part 270 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	EI 2	656000	3840	15.94	17.50	1.432	-	-	-0.13	0.711	1.018





# FCC SAR Test Report

Report No. : FA391202

FR1 n77(78) Part 270 HPUE ENDC	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	EI 2	656000	3840	13.94	15.00	1.276	-	-	0.05	0.389	0.497
FR1 n77(78) Part 270 HPUE	100M	QPSK	270	0	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	EI 2	656000	3840	15.86	17.50	1.459	-	-	0.17	0.666	0.972
FR1 n77(78) Part 27Q HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Cheek	0mm	Ant 5	EI 2	633334	3500.01	15.98	17.50	1.419	-	-	0.06	0.236	0.335
FR1 n77(78) Part 27Q HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 5	EI 2	633334	3500.01	15.91	17.50	1.442	-	-	0	0.323	0.466
FR1 n77(78) Part 27Q HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Tilted	0mm	Ant 5	EI 2	633334	3500.01	15.98	17.50	1.419	-	-	-0.15	0.245	0.348
FR1 n77(78) Part 27Q HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 5	EI 2	633334	3500.01	15.91	17.50	1.442	-	-	0.11	0.332	0.479
FR1 n77(78) Part 27Q HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	EI 2	633334	3500.01	15.98	17.50	1.419	-	-	0.1	0.316	0.448
FR1 n77(78) Part 27Q HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 5	EI 2	633334	3500.01	15.91	17.50	1.442	-	-	0.04	0.403	0.581
FR1 n77(78) Part 27Q HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	EI 2	633334	3500.01	15.98	17.50	1.419	-	-	-0.18	0.332	0.471
FR1 n77(78) Part 27Q HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	EI 2	633334	3500.01	15.91	17.50	1.442	-	-	-0.11	0.451	0.650
FR1 n77(78) Part 27Q HPUE ENDC	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	EI 2	633334	3500.01	13.91	15.00	1.285	-	-	0.09	0.255	0.328
FR1 n77(78) Part 270 HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Cheek	0mm	Ant 1	EI 2	656000	3840	20.78	21.00	1.052	-	-	0.07	0.000	0.000
FR1 n77(78) Part 270 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 1	EI 2	656000	3840	20.74	21.00	1.062	-	-	-0.04	0.042	0.045
FR1 n77(78) Part 270 HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Tilted	0mm	Ant 1	EI 2	656000	3840	20.78	21.00	1.052	-	-	-0.18	0.000	0.000
FR1 n77(78) Part 270 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 1	EI 2	656000	3840	20.74	21.00	1.062	-	-	-0.13	0.000	0.000
FR1 n77(78) Part 270 HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Cheek	0mm	Ant 1	EI 2	656000	3840	20.78	21.00	1.052	-	-	-0.13	0.048	0.050
FR1 n77(78) Part 270 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 1	EI 2	656000	3840	20.74	21.00	1.062	-	-	0	0.073	0.078
FR1 n77(78) Part 270 HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Tilted	0mm	Ant 1	EI 2	656000	3840	20.78	21.00	1.052	-	-	-0.04	0.000	0.000
FR1 n77(78) Part 270 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 1	EI 2	656000	3840	20.74	21.00	1.062	-	-	-0.15	0.000	0.000
FR1 n77(78) Part 27Q HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Cheek	0mm	Ant 1	EI 2	633334	3500.01	20.89	21.00	1.026	-	-	-0.09	0.045	0.046
FR1 n77(78) Part 27Q HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 1	EI 2	633334	3500.01	20.82	21.00	1.042	-	-	0.05	0.048	0.050
FR1 n77(78) Part 27Q HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Tilted	0mm	Ant 1	EI 2	633334	3500.01	20.89	21.00	1.026	-	-	0.13	0.000	0.000
FR1 n77(78) Part 27Q HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 1	EI 2	633334	3500.01	20.82	21.00	1.042	-	-	0	0.000	0.000
FR1 n77(78) Part 27Q HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Cheek	0mm	Ant 1	EI 2	633334	3500.01	20.89	21.00	1.026	-	-	-0.12	0.082	0.084
FR1 n77(78) Part 27Q HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 1	EI 2	633334	3500.01	20.82	21.00	1.042	-	-	0.15	0.102	0.106
FR1 n77(78) Part 27Q HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Tilted	0mm	Ant 1	EI 2	633334	3500.01	20.89	21.00	1.026	-	-	-0.05	0.000	0.000
FR1 n77(78) Part 27Q HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 1	EI 2	633334	3500.01	20.82	21.00	1.042	-	-	-0.07	0.000	0.000
FR1 n77(78) Part 270 HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Cheek	0mm	Ant 8	EI 2	656000	3840	24.03	24.50	1.114	-	-	-0.06	0.361	0.402
FR1 n77(78) Part 270 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 8	EI 2	656000	3840	23.97	24.50	1.130	-	-	0.14	0.395	0.446
FR1 n77(78) Part 270 HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Tilted	0mm	Ant 8	EI 2	656000	3840	24.03	24.50	1.114	-	-	-0.09	0.120	0.134
FR1 n77(78) Part 270 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 8	EI 2	656000	3840	23.97	24.50	1.130	-	-	-0.09	0.120	0.136
FR1 n77(78) Part 270 HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Cheek	0mm	Ant 8	EI 2	656000	3840	24.03	24.50	1.114	-	-	-0.12	0.533	0.594
FR1 n77(78) Part 270 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 8	EI 2	656000	3840	23.97	24.50	1.130	-	-	-0.06	0.523	0.591
FR1 n77(78) Part 270 HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Tilted	0mm	Ant 8	EI 2	656000	3840	24.03	24.50	1.114	-	-	-0.19	0.250	0.279
FR1 n77(78) Part 270 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 8	EI 2	656000	3840	23.97	24.50	1.130	-	-	0.09	0.257	0.290
FR1 n77(78) Part 27Q HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Cheek	0mm	Ant 8	EI 2	633334	3500.01	24.19	24.50	1.074	-	-	0.13	0.105	0.113
FR1 n77(78) Part 27Q HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 8	EI 2	633334	3500.01	24.13	24.50	1.089	-	-	-0.08	0.153	0.167
FR1 n77(78) Part 27Q HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Tilted	0mm	Ant 8	EI 2	633334	3500.01	24.19	24.50	1.074	-	-	0.08	0.059	0.063
FR1 n77(78) Part 27Q HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 8	EI 2	633334	3500.01	24.13	24.50	1.089	-	-	-0.04	0.092	0.100
FR1 n77(78) Part 27Q HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Cheek	0mm	Ant 8	EI 2	633334	3500.01	24.19	24.50	1.074	-	-	0.12	0.129	0.139
FR1 n77(78) Part 27Q HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 8	EI 2	633334	3500.01	24.13	24.50	1.089	-	-	0.09	0.236	0.257
FR1 n77(78) Part 27Q HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Tilted	0mm	Ant 8	EI 2	633334	3500.01	24.19	24.50	1.074	-	-	-0.02	0.090	0.097
FR1 n77(78) Part 27Q HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 8	EI 2	633334	3500.01	24.13	24.50	1.089	-	-	-0.16	0.146	0.159
FR1 n77(78) Part 270 HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Cheek	0mm	Ant 2	EI 2	656000	3840	20.87	21.00	1.030	-	-	0.05	0.236	0.243
FR1 n77(78) Part 270 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 2	EI 2	656000	3840	20.82	21.00	1.042	-	-	0.04	0.286	0.298
FR1 n77(78) Part 270 HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Tilted	0mm	Ant 2	EI 2	656000	3840	20.87	21.00	1.030	-	-	0.15	0.108	0.111
FR1 n77(78) Part 270 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 2	EI 2	656000	3840	20.82	21.00	1.042	-	-	0.03	0.138	0.144
FR1 n77(78) Part 270 HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Cheek	0mm	Ant 2	EI 2	656000	3840	20.87	21.00	1.030	-	-	-0.1	0.093	0.096
FR1 n77(78) Part 270 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 2	EI 2	656000	3840	20.82	21.00	1.042	-	-	0.14	0.080	0.083
FR1 n77(78) Part 270 HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Tilted	0mm	Ant 2	EI 2	656000	3840	20.87	21.00	1.030	-	-	-0.16	0.045	0.046
FR1 n77(78) Part 270 HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 2	EI 2	656000	3840	20.82	21.00	1.042	-	-	-0.02	0.046	0.048
FR1 n77(78) Part 27Q HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Cheek	0mm	Ant 2	EI 2	633334	3500.01	20.68	21.00	1.076	-	-	0.1	0.116	0.125
FR1 n77(78) Part 27Q HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 2	EI 2	633334	3500.01	20.60	21.00	1.096	-	-	-0.1	0.194	0.213
FR1 n77(78) Part 27Q HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Right Tilted	0mm	Ant 2	EI 2	633334	3500.01	20.68	21.00	1.076	-	-	-0.05	0.079	0.085
FR1 n77(78) Part 27Q HPUE	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 2	EI 2	633334	3500.01	20.60	21.00	1.096	-	-	-0.04	0.111	0.122
FR1 n77(78) Part 27Q HPUE	100M	QPSK	1	137	DFT-SCS-30KHz	Left Cheek	0mm	Ant 2	EI 2	633334	3500.01	20.68	21.00	1.076	-	-	0.01	0.097	0.104



FCC SAR Test Report

Report No. : FA391202

Summary table with columns for Plot No., Band, Mode, Test Position, Gap, Antenna, Power State, Ch., Freq., Average Power, Tune-Up Limit, Tune-up Scaling Factor, Duty Cycle %, Duty Cycle Scaling Factor, Power Drift, Measured 1g SAR, Reported 1g SAR.

Main test results table with columns for Plot No., Band, Mode, Test Position, Gap, Antenna, Power State, Ch., Freq., Average Power, Tune-Up Limit, Tune-up Scaling Factor, Duty Cycle %, Duty Cycle Scaling Factor, Power Drift, Measured 1g SAR, Reported 1g SAR. Includes sub-sections for BT/WLAN and various frequency bands like 802.11b, 802.11a, 802.11ac, 802.11n, 802.11ax.



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). Includes rows for 750MHz, 35, 36, and 37.



FCC SAR Test Report

Report No. : FA391202

Table with columns for frequency bands (LTE, FR1), modulation (QPSK), power (10M, 20M, 15M), and SAR values (0.533, 0.619, etc.). Includes rows 38, 39, and 40 with highlighted values like 1.314, 0.474, and 0.669.



# FCC SAR Test Report

Report No. : FA391202

	FR1 n12	15M	QPSK	36	22	DFT-SCS-15KHz	Top Side	5mm	Ant 4	ECl 7	141500	707.5	22.92	24.00	1.282	-	-	-0.05	0.458	0.587
	FR1 n14	10M	QPSK	1	1	DFT-SCS-15KHz	Front	5mm	Ant 0	ECl 7	158600	793	22.64	24.00	1.368	-	-	0.13	0.446	0.610
	FR1 n14	10M	QPSK	25	14	DFT-SCS-15KHz	Front	5mm	Ant 0	ECl 7	158600	793	22.60	24.00	1.380	-	-	-0.18	0.426	0.588
	FR1 n14	10M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 0	ECl 7	158600	793	22.64	24.00	1.368	-	-	0.02	0.660	0.903
	FR1 n14	10M	QPSK	25	14	DFT-SCS-15KHz	Back	5mm	Ant 0	ECl 7	158600	793	22.60	24.00	1.380	-	-	0.06	0.670	0.925
	FR1 n14	10M	QPSK	50	0	DFT-SCS-15KHz	Back	5mm	Ant 0	ECl 7	158600	793	21.78	23.00	1.324	-	-	0.16	0.585	0.775
	FR1 n14	10M	QPSK	1	1	DFT-SCS-15KHz	Right Side	5mm	Ant 0	ECl 7	158600	793	22.64	24.00	1.368	-	-	-0.03	0.539	0.737
	FR1 n14	10M	QPSK	25	14	DFT-SCS-15KHz	Right Side	5mm	Ant 0	ECl 7	158600	793	22.60	24.00	1.380	-	-	0.07	0.524	0.723
	FR1 n14	10M	QPSK	1	1	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECl 7	158600	793	22.64	24.00	1.368	-	-	0	0.677	0.926
41	FR1 n14	10M	QPSK	25	14	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECl 7	158600	793	22.60	24.00	1.380	-	-	0.06	0.767	<b>1.059</b>
	FR1 n14	10M	QPSK	50	0	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECl 7	158600	793	21.78	23.00	1.324	-	-	0.01	0.547	0.724
	FR1 n14	10M	QPSK	1	1	DFT-SCS-15KHz	Front	5mm	Ant 4	ECl 7	158600	793	21.69	23.00	1.352	-	-	-0.01	0.289	0.391
	FR1 n14	10M	QPSK	25	14	DFT-SCS-15KHz	Front	5mm	Ant 4	ECl 7	158600	793	21.67	23.00	1.358	-	-	-0.06	0.277	0.376
	FR1 n14	10M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 4	ECl 7	158600	793	21.69	23.00	1.352	-	-	-0.04	0.477	0.645
	FR1 n14	10M	QPSK	25	14	DFT-SCS-15KHz	Back	5mm	Ant 4	ECl 7	158600	793	21.67	23.00	1.358	-	-	0.06	0.500	0.679
	FR1 n14	10M	QPSK	1	1	DFT-SCS-15KHz	Left Side	5mm	Ant 4	ECl 7	158600	793	21.69	23.00	1.352	-	-	-0.17	0.137	0.185
	FR1 n14	10M	QPSK	25	14	DFT-SCS-15KHz	Left Side	5mm	Ant 4	ECl 7	158600	793	21.67	23.00	1.358	-	-	-0.1	0.129	0.175
	FR1 n14	10M	QPSK	1	1	DFT-SCS-15KHz	Top Side	5mm	Ant 4	ECl 7	158600	793	21.69	23.00	1.352	-	-	0.18	0.343	0.464
	FR1 n14	10M	QPSK	25	14	DFT-SCS-15KHz	Top Side	5mm	Ant 4	ECl 7	158600	793	21.67	23.00	1.358	-	-	-0.17	0.308	0.418
<b>835MHz</b>																				
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Front	5mm	Ant 0	ECl 7	189	836.4	23.81	25.00	1.315	-	-	-0.04	0.368	0.484
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 0	ECl 7	189	836.4	23.81	25.00	1.315	-	-	-0.02	0.824	1.084
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 0	ECl 7	128	824.2	23.70	25.00	1.349	-	-	-0.16	0.721	0.973
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 0	ECl 7	251	848.8	23.74	25.00	1.337	-	-	0.06	0.735	0.982
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Right Side	5mm	Ant 0	ECl 7	189	836.4	23.81	25.00	1.315	-	-	-0.03	0.212	0.279
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Bottom Side	5mm	Ant 0	ECl 7	189	836.4	23.81	25.00	1.315	-	-	-0.06	0.663	0.872
42	GSM850	-	-	-	-	GPRS (4 Tx slots)	Bottom Side	5mm	Ant 0	ECl 7	128	824.2	23.70	25.00	1.349	-	-	0.08	0.961	<b>1.296</b>
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Bottom Side	5mm	Ant 0	ECl 7	251	848.8	23.74	25.00	1.337	-	-	-0.07	0.833	1.113
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	ECl 7	4182	836.4	20.21	21.50	1.346	-	-	0.13	0.351	0.472
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECl 7	4182	836.4	20.21	21.50	1.346	-	-	0.03	0.787	1.059
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECl 7	4132	826.4	20.12	21.50	1.374	-	-	0.18	0.653	0.897
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECl 7	4233	846.6	20.07	21.50	1.390	-	-	0.16	0.797	1.108
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Side	5mm	Ant 0	ECl 7	4182	836.4	20.21	21.50	1.346	-	-	-0.1	0.265	0.357
43	WCDMA V	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECl 7	4182	836.4	20.21	21.50	1.346	-	-	0.07	0.917	<b>1.234</b>
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECl 7	4132	826.4	20.12	21.50	1.374	-	-	0.18	0.625	0.859
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECl 7	4233	846.6	20.07	21.50	1.390	-	-	-0.1	0.806	1.120
	LTE Band 26	15M	QPSK	1	0	-	Front	5mm	Ant 0	ECl 7	26865	831.5	20.90	22.00	1.288	-	-	-0.1	0.463	0.596
	LTE Band 26	15M	QPSK	36	0	-	Front	5mm	Ant 0	ECl 7	26865	831.5	20.87	22.00	1.297	-	-	0.06	0.452	0.586
	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 0	ECl 7	26865	831.5	20.90	22.00	1.288	-	-	0.03	0.651	0.839
	LTE Band 26	15M	QPSK	36	0	-	Back	5mm	Ant 0	ECl 7	26865	831.5	20.87	22.00	1.297	-	-	-0.02	0.648	0.841
	LTE Band 26	15M	QPSK	75	0	-	Back	5mm	Ant 0	ECl 7	26865	831.5	20.82	22.00	1.312	-	-	0.1	0.643	0.844
	LTE Band 26	15M	QPSK	1	0	-	Right Side	5mm	Ant 0	ECl 7	26865	831.5	20.90	22.00	1.288	-	-	-0.1	0.369	0.475
44	LTE Band 26	15M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECl 7	26865	831.5	20.90	22.00	1.288	-	-	0.01	1.010	<b>1.301</b>
	LTE Band 5B	10M	QPSK	1	49	-	Bottom Side	5mm	Ant 0	ECl 7	20476+20575	831.6+836.5	20.41	22.00	1.442	-	-	0.03	0.885	1.276
	LTE Band 5B	10M	QPSK	1	49	-	Bottom Side	5mm	Ant 0	ECl 7	20450+20549	829+838.9	20.35	22.00	1.462	-	-	0.06	0.864	1.263
	LTE Band 5B	10M	QPSK	1	49	-	Bottom Side	5mm	Ant 0	ECl 7	20600+20501	844+834.1	20.38	22.00	1.452	-	-	-0.05	0.871	1.265
	LTE Band 26	15M	QPSK	36	0	-	Bottom Side	5mm	Ant 0	ECl 7	26865	831.5	20.87	22.00	1.297	-	-	-0.09	0.805	1.044
	LTE Band 26	15M	QPSK	75	0	-	Bottom Side	5mm	Ant 0	ECl 7	26865	831.5	20.82	22.00	1.312	-	-	0.03	0.789	1.035
	LTE Band 26	15M	QPSK	1	0	-	Front	5mm	Ant 4	ECl 7	26865	831.5	19.95	20.50	1.135	-	-	-0.01	0.315	0.358
	LTE Band 26	15M	QPSK	36	0	-	Front	5mm	Ant 4	ECl 7	26865	831.5	19.92	20.50	1.143	-	-	-0.09	0.246	0.281
	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 4	ECl 7	26865	831.5	19.95	20.50	1.135	-	-	0.05	0.543	0.616
	LTE Band 26	15M	QPSK	36	0	-	Back	5mm	Ant 4	ECl 7	26865	831.5	19.92	20.50	1.143	-	-	0.02	0.437	0.499
	LTE Band 26	15M	QPSK	1	0	-	Left Side	5mm	Ant 4	ECl 7	26865	831.5	19.95	20.50	1.135	-	-	0.17	0.132	0.150
	LTE Band 26	15M	QPSK	36	0	-	Left Side	5mm	Ant 4	ECl 7	26865	831.5	19.92	20.50	1.143	-	-	0.06	0.098	0.112



**FCC SAR Test Report**

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	LTE Band 26	15M	QPSK	1	0	-	Top Side	5mm	Ant 4	ECI 7	26865	831.5	19.95	20.50	1.135	-	-	0	0.513	0.582
	LTE Band 26	15M	QPSK	36	0	-	Top Side	5mm	Ant 4	ECI 7	26865	831.5	19.92	20.50	1.143	-	-	-0.04	0.402	0.459
	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Front	5mm	Ant 0	ECI 7	166300	831.5	21.48	22.50	1.265	-	-	-0.13	0.378	0.478
	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Front	5mm	Ant 0	ECI 7	166300	831.5	21.42	22.50	1.282	-	-	0.17	0.378	0.485
	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 0	ECI 7	166300	831.5	21.48	22.50	1.265	-	-	0.06	0.833	1.054
	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Back	5mm	Ant 0	ECI 7	166300	831.5	21.42	22.50	1.282	-	-	0	0.708	0.908
	FR1 n26	20M	QPSK	100	0	DFT-SCS-15KHz	Back	5mm	Ant 0	ECI 7	166300	831.5	21.36	22.50	1.300	-	-	-0.04	0.543	0.706
	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Right Side	5mm	Ant 0	ECI 7	166300	831.5	21.48	22.50	1.265	-	-	-0.15	0.305	0.386
	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Right Side	5mm	Ant 0	ECI 7	166300	831.5	21.42	22.50	1.282	-	-	0.11	0.288	0.369
45	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECI 7	166300	831.5	21.48	22.50	1.265	-	-	0.03	0.928	<b>1.174</b>
	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECI 7	166300	831.5	21.42	22.50	1.282	-	-	-0.02	0.767	0.984
	FR1 n26	20M	QPSK	100	0	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECI 7	166300	831.5	21.36	22.50	1.300	-	-	0.1	0.631	0.820
	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Front	5mm	Ant 4	ECI 7	166300	831.5	20.45	22.00	1.429	-	-	0.04	0.275	0.393
	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Front	5mm	Ant 4	ECI 7	166300	831.5	20.40	22.00	1.445	-	-	0.13	0.276	0.399
	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 4	ECI 7	166300	831.5	20.45	22.00	1.429	-	-	0.03	0.489	0.699
	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Back	5mm	Ant 4	ECI 7	166300	831.5	20.40	22.00	1.445	-	-	-0.18	0.474	0.685
	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Left Side	5mm	Ant 4	ECI 7	166300	831.5	20.45	22.00	1.429	-	-	-0.16	0.089	0.127
	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Left Side	5mm	Ant 4	ECI 7	166300	831.5	20.40	22.00	1.445	-	-	-0.15	0.099	0.143
	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Top Side	5mm	Ant 4	ECI 7	166300	831.5	20.45	22.00	1.429	-	-	-0.06	0.371	0.530
	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Top Side	5mm	Ant 4	ECI 7	166300	831.5	20.40	22.00	1.445	-	-	-0.14	0.400	0.578
	FR1 n5	25M	QPSK	1	67	DFT-SCS-15KHz	Front	5mm	Ant 0	ECI 7	167300	836.5	21.97	23.00	1.268	-	-	0.01	0.309	0.392
	FR1 n5	25M	QPSK	64	35	DFT-SCS-15KHz	Front	5mm	Ant 0	ECI 7	167300	836.5	21.92	23.00	1.282	-	-	0.06	0.334	0.428
	FR1 n5	25M	QPSK	1	67	DFT-SCS-15KHz	Back	5mm	Ant 0	ECI 7	167300	836.5	21.97	23.00	1.268	-	-	0.02	0.687	0.871
	FR1 n5	25M	QPSK	64	35	DFT-SCS-15KHz	Back	5mm	Ant 0	ECI 7	167300	836.5	21.92	23.00	1.282	-	-	0.12	0.732	0.939
	FR1 n5	25M	QPSK	128	0	DFT-SCS-15KHz	Back	5mm	Ant 0	ECI 7	167300	836.5	21.83	23.00	1.309	-	-	-0.16	0.505	0.661
	FR1 n5	25M	QPSK	1	67	DFT-SCS-15KHz	Right Side	5mm	Ant 0	ECI 7	167300	836.5	21.97	23.00	1.268	-	-	-0.12	0.247	0.313
	FR1 n5	25M	QPSK	64	35	DFT-SCS-15KHz	Right Side	5mm	Ant 0	ECI 7	167300	836.5	21.92	23.00	1.282	-	-	0.07	0.266	0.341
	FR1 n5	25M	QPSK	1	67	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECI 7	167300	836.5	21.97	23.00	1.268	-	-	-0.02	0.660	0.837
46	FR1 n5	25M	QPSK	64	35	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECI 7	167300	836.5	21.92	23.00	1.282	-	-	-0.02	0.939	<b>1.204</b>
	FR1 n5	25M	QPSK	128	0	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECI 7	167300	836.5	21.83	23.00	1.309	-	-	-0.05	0.589	0.771
	FR1 n5	25M	QPSK	1	1	DFT-SCS-15KHz	Front	5mm	Ant 4	ECI 7	167300	836.5	21.97	23.00	1.268	-	-	-0.13	0.282	0.357
	FR1 n5	25M	QPSK	64	35	DFT-SCS-15KHz	Front	5mm	Ant 4	ECI 7	167300	836.5	21.92	23.00	1.282	-	-	0.08	0.257	0.330
	FR1 n5	25M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 4	ECI 7	167300	836.5	21.97	23.00	1.268	-	-	0.16	0.506	0.641
	FR1 n5	25M	QPSK	64	35	DFT-SCS-15KHz	Back	5mm	Ant 4	ECI 7	167300	836.5	21.92	23.00	1.282	-	-	0.01	0.459	0.589
	FR1 n5	25M	QPSK	1	1	DFT-SCS-15KHz	Left Side	5mm	Ant 4	ECI 7	167300	836.5	21.97	23.00	1.268	-	-	0.1	0.106	0.134
	FR1 n5	25M	QPSK	64	35	DFT-SCS-15KHz	Left Side	5mm	Ant 4	ECI 7	167300	836.5	21.92	23.00	1.282	-	-	-0.04	0.102	0.131
	FR1 n5	25M	QPSK	1	1	DFT-SCS-15KHz	Top Side	5mm	Ant 4	ECI 7	167300	836.5	21.97	23.00	1.268	-	-	0.01	0.530	0.672
	FR1 n5	25M	QPSK	64	35	DFT-SCS-15KHz	Top Side	5mm	Ant 4	ECI 7	167300	836.5	21.92	23.00	1.282	-	-	-0.01	0.411	0.527
<b>1750MHz</b>																				
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	ECI 7	1413	1732.6	14.52	16.00	1.406	-	-	-0.11	0.505	0.710
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI 7	1413	1732.6	14.52	16.00	1.406	-	-	-0.15	0.569	0.800
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI 7	1312	1712.4	14.50	16.00	1.413	-	-	0.06	0.519	0.733
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI 7	1513	1752.6	14.35	16.00	1.462	-	-	0.15	0.588	0.860
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Side	5mm	Ant 0	ECI 7	1413	1732.6	14.52	16.00	1.406	-	-	-0.1	0.056	0.079
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECI 7	1413	1732.6	14.52	16.00	1.406	-	-	0.17	0.851	1.197
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECI 7	1312	1712.4	14.50	16.00	1.413	-	-	0.13	0.799	1.129
47	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECI 7	1513	1752.6	14.35	16.00	1.462	-	-	-0.02	0.954	<b>1.395</b>
	LTE Band 66	20M	QPSK	1	0	-	Front	5mm	Ant 0	ECI 7	132322	1745	15.07	16.50	1.390	-	-	0	0.560	0.778
	LTE Band 66	20M	QPSK	50	0	-	Front	5mm	Ant 0	ECI 7	132322	1745	15.03	16.50	1.403	-	-	-0.04	0.445	0.624
	LTE Band 66	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	132322	1745	15.07	16.50	1.390	-	-	-0.13	0.671	0.933
	LTE Band 66	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	132072	1720	14.90	16.50	1.445	-	-	0.05	0.593	0.857
	LTE Band 66	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI 7	132572	1770	15.04	16.50	1.400	-	-	-0.15	0.710	0.994
	LTE Band 66	20M	QPSK	50	0	-	Back	5mm	Ant 0	ECI 7	132322	1745	15.03	16.50	1.403	-	-	-0.11	0.536	0.752
	LTE Band 66	20M	QPSK	100	0	-	Back	5mm	Ant 0	ECI 7	132322	1745	15.00	16.50	1.413	-	-	-0.12	0.527	0.744
	LTE Band 66	20M	QPSK	1	0	-	Right Side	5mm	Ant 0	ECI 7	132322	1745	15.07	16.50	1.390	-	-	0.19	0.057	0.079
	LTE Band 66	20M	QPSK	50	0	-	Right Side	5mm	Ant 0	ECI 7	132322	1745	15.03	16.50	1.403	-	-	-0.01	0.046	0.065



FCC SAR Test Report

Report No. : FA391202

Table with columns for Band, Power, Modulation, etc. Rows include LTE Band 66, FR1 n70, and FR1 n66 with various test parameters and SAR values.

1900MHz



# FCC SAR Test Report

Report No. : FA391202

	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Front	5mm	Ant 0	ECI 7	661	1880	17.32	18.00	1.169	-	-	0.08	0.506	0.592
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Back	5mm	Ant 0	ECI 7	661	1880	17.32	18.00	1.169	-	-	-0.08	0.854	0.999
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Back	5mm	Ant 0	ECI 7	512	1850.2	17.23	18.00	1.194	-	-	-0.08	0.752	0.898
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Back	5mm	Ant 0	ECI 7	810	1909.8	16.95	18.00	1.274	-	-	0.1	0.886	1.128
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Right Side	5mm	Ant 0	ECI 7	661	1880	17.32	18.00	1.169	-	-	-0.18	0.045	0.053
51	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Bottom Side	5mm	Ant 0	ECI 7	661	1880	17.32	18.00	1.169	-	-	0.1	1.080	1.263
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Bottom Side	5mm	Ant 0	ECI 7	512	1850.2	17.23	18.00	1.194	-	-	0.12	0.829	0.990
	GSM1900	-	-	-	-	GPRS (3 Tx slots)	Bottom Side	5mm	Ant 0	ECI 7	810	1909.8	16.95	18.00	1.274	-	-	0.08	0.873	1.112
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	ECI 7	9400	1880	12.99	14.50	1.416	-	-	-0.05	0.471	0.667
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI 7	9400	1880	12.99	14.50	1.416	-	-	-0.17	0.770	1.090
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI 7	9262	1852.4	12.87	14.50	1.455	-	-	0.04	0.621	0.904
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI 7	9538	1907.6	12.96	14.50	1.426	-	-	-0.01	0.763	1.088
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Side	5mm	Ant 0	ECI 7	9400	1880	12.99	14.50	1.416	-	-	-0.08	0.058	0.082
52	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECI 7	9400	1880	12.99	14.50	1.416	-	-	0.05	1.000	1.416
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECI 7	9262	1852.4	12.87	14.50	1.455	-	-	0.06	0.932	1.356
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECI 7	9538	1907.6	12.96	14.50	1.426	-	-	-0.09	0.970	1.383
	LTE Band 25	20M	QPSK	1	0		Front	5mm	Ant 0	ECI 7	26340	1880	13.35	14.50	1.303	-	-	-0.08	0.510	0.665
	LTE Band 25	20M	QPSK	50	0		Front	5mm	Ant 0	ECI 7	26340	1880	13.31	14.50	1.315	-	-	0.03	0.451	0.593
	LTE Band 25	20M	QPSK	1	0		Back	5mm	Ant 0	ECI 7	26340	1880	13.35	14.50	1.303	-	-	0.07	0.761	0.992
	LTE Band 25	20M	QPSK	1	0		Back	5mm	Ant 0	ECI 7	26140	1860	13.30	14.50	1.318	-	-	0.18	0.686	0.904
	LTE Band 25	20M	QPSK	1	0		Back	5mm	Ant 0	ECI 7	26590	1905	13.32	14.50	1.312	-	-	-0.1	0.577	0.757
	LTE Band 25	20M	QPSK	50	0		Back	5mm	Ant 0	ECI 7	26340	1880	13.31	14.50	1.315	-	-	0.01	0.622	0.818
	LTE Band 25	20M	QPSK	50	0		Back	5mm	Ant 0	ECI 7	26140	1860	13.22	14.50	1.343	-	-	-0.15	0.576	0.773
	LTE Band 25	20M	QPSK	50	0		Back	5mm	Ant 0	ECI 7	26590	1905	13.15	14.50	1.365	-	-	0.19	0.455	0.621
	LTE Band 25	20M	QPSK	100	0		Back	5mm	Ant 0	ECI 7	26340	1880	13.29	14.50	1.321	-	-	0.07	0.618	0.817
	LTE Band 25	20M	QPSK	1	0		Right Side	5mm	Ant 0	ECI 7	26340	1880	13.35	14.50	1.303	-	-	-0.18	0.053	0.069
	LTE Band 25	20M	QPSK	50	0		Right Side	5mm	Ant 0	ECI 7	26340	1880	13.31	14.50	1.315	-	-	0.03	0.048	0.063
53	LTE Band 25	20M	QPSK	1	0		Bottom Side	5mm	Ant 0	ECI 7	26340	1880	13.35	14.50	1.303	-	-	-0.15	1.010	1.316
	LTE Band 25	20M	QPSK	1	0		Bottom Side	5mm	Ant 0	ECI 7	26140	1860	13.30	14.50	1.318	-	-	-0.15	0.984	1.297
	LTE Band 25	20M	QPSK	1	0		Bottom Side	5mm	Ant 0	ECI 7	26590	1905	13.32	14.50	1.312	-	-	0.11	0.723	0.949
	LTE Band 25	20M	QPSK	50	0		Bottom Side	5mm	Ant 0	ECI 7	26340	1880	13.31	14.50	1.315	-	-	-0.08	0.840	1.105
	LTE Band 25	20M	QPSK	50	0		Bottom Side	5mm	Ant 0	ECI 7	26140	1860	13.22	14.50	1.343	-	-	-0.17	0.865	1.161
	LTE Band 25	20M	QPSK	50	0		Bottom Side	5mm	Ant 0	ECI 7	26590	1905	13.15	14.50	1.365	-	-	-0.08	0.589	0.804
	LTE Band 25	20M	QPSK	100	0		Bottom Side	5mm	Ant 0	ECI 7	26340	1880	13.29	14.50	1.321	-	-	-0.04	0.825	1.090
	LTE Band 25	20M	QPSK	1	0		Front	5mm	Ant 4	ECI 7	26340	1880	13.81	14.50	1.172	-	-	0.11	0.223	0.261
	LTE Band 25	20M	QPSK	50	0		Front	5mm	Ant 4	ECI 7	26340	1880	13.78	14.50	1.180	-	-	-0.01	0.177	0.209
	LTE Band 25	20M	QPSK	1	0		Back	5mm	Ant 4	ECI 7	26340	1880	13.81	14.50	1.172	-	-	-0.01	0.388	0.455
	LTE Band 25	20M	QPSK	50	0		Back	5mm	Ant 4	ECI 7	26340	1880	13.78	14.50	1.180	-	-	0.03	0.307	0.362
	LTE Band 25	20M	QPSK	1	0		Left Side	5mm	Ant 4	ECI 7	26340	1880	13.81	14.50	1.172	-	-	0.02	0.085	0.100
	LTE Band 25	20M	QPSK	50	0		Left Side	5mm	Ant 4	ECI 7	26340	1880	13.78	14.50	1.180	-	-	-0.16	0.067	0.079
	LTE Band 25	20M	QPSK	1	0		Top Side	5mm	Ant 4	ECI 7	26340	1880	13.81	14.50	1.172	-	-	0.05	0.561	0.658
	LTE Band 25	20M	QPSK	50	0		Top Side	5mm	Ant 4	ECI 7	26340	1880	13.78	14.50	1.180	-	-	-0.15	0.371	0.438
	LTE Band 25 Other PA	20M	QPSK	1	0		Top Side	5mm	Ant 4	ECI 7	26340	1880	13.73	14.50	1.194	-	-	-0.13	0.442	0.528
	FR1 n25	45M	QPSK	1	61	DFT-SCS-15KHz	Front	5mm	Ant 0	ECI 7	376500	1882.5	15.33	16.00	1.167	-	-	0.08	0.399	0.466
	FR1 n25	45M	QPSK	121	61	DFT-SCS-15KHz	Front	5mm	Ant 0	ECI 7	376500	1882.5	15.13	16.00	1.222	-	-	0.01	0.476	0.582
	FR1 n25	45M	QPSK	1	61	DFT-SCS-15KHz	Back	5mm	Ant 0	ECI 7	376500	1882.5	15.33	16.00	1.167	-	-	-0.08	0.614	0.716
	FR1 n25	45M	QPSK	121	61	DFT-SCS-15KHz	Back	5mm	Ant 0	ECI 7	376500	1882.5	15.13	16.00	1.222	-	-	0.11	0.760	0.929
	FR1 n25	45M	QPSK	242	0	DFT-SCS-15KHz	Back	5mm	Ant 0	ECI 7	376500	1882.5	14.99	16.00	1.262	-	-	-0.08	0.578	0.729
	FR1 n25	45M	QPSK	1	61	DFT-SCS-15KHz	Right Side	5mm	Ant 0	ECI 7	376500	1882.5	15.33	16.00	1.167	-	-	0.1	0.048	0.056
	FR1 n25	45M	QPSK	121	61	DFT-SCS-15KHz	Right Side	5mm	Ant 0	ECI 7	376500	1882.5	15.13	16.00	1.222	-	-	-0.18	0.056	0.068
	FR1 n25	45M	QPSK	1	61	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECI 7	376500	1882.5	15.33	16.00	1.167	-	-	0.1	0.845	0.986
54	FR1 n25	45M	QPSK	121	61	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECI 7	376500	1882.5	15.13	16.00	1.222	-	-	-0.03	0.962	1.175
	FR1 n25	45M	QPSK	242	0	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECI 7	376500	1882.5	14.99	16.00	1.262	-	-	0.12	0.812	1.025
	FR1 n25	45M	QPSK	1	61	DFT-SCS-15KHz	Front	5mm	Ant 4	ECI 7	376500	1882.5	15.62	16.50	1.225	-	-	0.14	0.234	0.287





FCC SAR Test Report

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	FR1 n25	45M	QPSK	121	61	DFT-SCS-15KHz	Front	5mm	Ant 4	ECI 7	376500	1882.5	15.58	16.50	1.236	-	-	-0.17	0.258	0.319
	FR1 n25	45M	QPSK	1	61	DFT-SCS-15KHz	Back	5mm	Ant 4	ECI 7	376500	1882.5	15.62	16.50	1.225	-	-	-0.05	0.334	0.409
	FR1 n25	45M	QPSK	121	61	DFT-SCS-15KHz	Back	5mm	Ant 4	ECI 7	376500	1882.5	15.58	16.50	1.236	-	-	0.09	0.389	0.481
	FR1 n25	45M	QPSK	1	61	DFT-SCS-15KHz	Left Side	5mm	Ant 4	ECI 7	376500	1882.5	15.62	16.50	1.225	-	-	0.1	0.078	0.096
	FR1 n25	45M	QPSK	121	61	DFT-SCS-15KHz	Left Side	5mm	Ant 4	ECI 7	376500	1882.5	15.58	16.50	1.236	-	-	-0.17	0.078	0.096
	FR1 n25	45M	QPSK	1	61	DFT-SCS-15KHz	Top Side	5mm	Ant 4	ECI 7	376500	1882.5	15.62	16.50	1.225	-	-	0.04	0.403	0.494
	FR1 n25	45M	QPSK	121	61	DFT-SCS-15KHz	Top Side	5mm	Ant 4	ECI 7	376500	1882.5	15.58	16.50	1.236	-	-	-0.08	0.493	0.609
	FR1 n25 Other PA	45M	QPSK	121	61	DFT-SCS-15KHz	Top Side	5mm	Ant 4	ECI 7	376500	1882.5	15.65	16.50	1.216	-	-	0.15	0.411	0.500
<b>2300MHz</b>																				
	LTE Band 30	10M	QPSK	1	0	-	Front	5mm	Ant 1	ECI 7	27710	2310	18.64	20.00	1.368	-	-	-0.03	0.593	0.811
	LTE Band 30	10M	QPSK	25	0	-	Front	5mm	Ant 1	ECI 7	27710	2310	18.52	20.00	1.406	-	-	-0.15	0.466	0.655
	LTE Band 30	10M	QPSK	50	0	-	Front	5mm	Ant 1	ECI 7	27710	2310	18.43	20.00	1.435	-	-	0.02	0.466	0.669
55	LTE Band 30	10M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 7	27710	2310	18.64	20.00	1.368	-	-	0.07	0.980	<b>1.340</b>
	LTE Band 30	10M	QPSK	25	0	-	Back	5mm	Ant 1	ECI 7	27710	2310	18.52	20.00	1.406	-	-	0.16	0.857	1.205
	LTE Band 30	10M	QPSK	50	0	-	Back	5mm	Ant 1	ECI 7	27710	2310	18.43	20.00	1.435	-	-	0.13	0.857	1.230
	LTE Band 30	10M	QPSK	1	0	-	Left Side	5mm	Ant 1	ECI 7	27710	2310	18.64	20.00	1.368	-	-	-0.18	0.576	0.788
	LTE Band 30	10M	QPSK	25	0	-	Left Side	5mm	Ant 1	ECI 7	27710	2310	18.52	20.00	1.406	-	-	0.02	0.449	0.631
	LTE Band 30	10M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	ECI 7	27710	2310	18.64	20.00	1.368	-	-	-0.03	0.563	0.770
	LTE Band 30	10M	QPSK	25	0	-	Bottom Side	5mm	Ant 1	ECI 7	27710	2310	18.52	20.00	1.406	-	-	0.07	0.449	0.631
	LTE Band 30 ENDC	10M	QPSK	1	0	-	Front	5mm	Ant 4	ECI 7	27710	2310	10.49	11.50	1.262	-	-	-0.05	0.105	0.132
	LTE Band 30 ENDC	10M	QPSK	25	0	-	Front	5mm	Ant 4	ECI 7	27710	2310	10.45	11.50	1.274	-	-	0.14	0.075	0.096
	LTE Band 30 ENDC	10M	QPSK	1	0	-	Back	5mm	Ant 4	ECI 7	27710	2310	10.49	11.50	1.262	-	-	-0.12	0.150	0.189
	LTE Band 30 ENDC	10M	QPSK	25	0	-	Back	5mm	Ant 4	ECI 7	27710	2310	10.45	11.50	1.274	-	-	0.07	0.144	0.183
	LTE Band 30 ENDC	10M	QPSK	1	0	-	Left Side	5mm	Ant 4	ECI 7	27710	2310	10.49	11.50	1.262	-	-	0.04	0.025	0.032
	LTE Band 30 ENDC	10M	QPSK	25	0	-	Left Side	5mm	Ant 4	ECI 7	27710	2310	10.45	11.50	1.274	-	-	0.11	0.020	0.025
	LTE Band 30 ENDC	10M	QPSK	1	0	-	Top Side	5mm	Ant 4	ECI 7	27710	2310	10.49	11.50	1.262	-	-	-0.13	0.256	0.323
	LTE Band 30 ENDC	10M	QPSK	25	0	-	Top Side	5mm	Ant 4	ECI 7	27710	2310	10.45	11.50	1.274	-	-	0.12	0.197	0.251
	FR1 n30	10M	QPSK	1	1	DFT-SCS-15KHz	Front	5mm	Ant 1	ECI 7	462000	2310	20.86	21.50	1.159	-	-	0.18	0.544	0.630
	FR1 n30	10M	QPSK	25	14	DFT-SCS-15KHz	Front	5mm	Ant 1	ECI 7	462000	2310	20.81	21.50	1.172	-	-	0.16	0.560	0.656
	FR1 n30	10M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 1	ECI 7	462000	2310	20.86	21.50	1.159	-	-	0.07	0.897	1.039
56	FR1 n30	10M	QPSK	25	14	DFT-SCS-15KHz	Back	5mm	Ant 1	ECI 7	462000	2310	20.81	21.50	1.172	-	-	0.02	0.902	<b>1.057</b>
	FR1 n30	10M	QPSK	50	0	DFT-SCS-15KHz	Back	5mm	Ant 1	ECI 7	462000	2310	20.75	21.50	1.189	-	-	0.18	0.752	0.894
	FR1 n30	10M	QPSK	1	1	DFT-SCS-15KHz	Left Side	5mm	Ant 1	ECI 7	462000	2310	20.86	21.50	1.159	-	-	-0.1	0.501	0.581
	FR1 n30	10M	QPSK	25	14	DFT-SCS-15KHz	Left Side	5mm	Ant 1	ECI 7	462000	2310	20.81	21.50	1.172	-	-	0.01	0.496	0.581
	FR1 n30	10M	QPSK	1	1	DFT-SCS-15KHz	Bottom Side	5mm	Ant 1	ECI 7	462000	2310	20.86	21.50	1.159	-	-	0.19	0.345	0.400
	FR1 n30	10M	QPSK	25	14	DFT-SCS-15KHz	Bottom Side	5mm	Ant 1	ECI 7	462000	2310	20.81	21.50	1.172	-	-	0.07	0.325	0.381
<b>2600MHz</b>																				
	LTE Band 7	20M	QPSK	1	0	-	Front	5mm	Ant 1	ECI 3	21100	2535	16.60	18.00	1.380	-	-	-0.12	0.559	0.772
	LTE Band 7	20M	QPSK	1	0	-	Front	5mm	Ant 1	ECI 3	20850	2510	16.37	18.00	1.455	-	-	-0.16	0.602	0.876
	LTE Band 7	20M	QPSK	1	0	-	Front	5mm	Ant 1	ECI 3	21350	2560	16.16	18.00	1.528	-	-	-0.03	0.556	0.849
	LTE Band 7	20M	QPSK	50	0	-	Front	5mm	Ant 1	ECI 3	21100	2535	16.59	18.00	1.384	-	-	0.17	0.444	0.614
	LTE Band 7	20M	QPSK	50	0	-	Front	5mm	Ant 1	ECI 3	20850	2510	16.36	18.00	1.459	-	-	0.02	0.472	0.689
	LTE Band 7	20M	QPSK	50	0	-	Front	5mm	Ant 1	ECI 3	21350	2560	16.10	18.00	1.549	-	-	0	0.436	0.675
	LTE Band 7	20M	QPSK	100	0	-	Front	5mm	Ant 1	ECI 3	21100	2535	16.56	18.00	1.393	-	-	0.18	0.439	0.612
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 3	21100	2535	16.60	18.00	1.380	-	-	-0.11	0.836	1.154
57	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 3	20850	2510	16.37	18.00	1.455	-	-	0.06	0.913	<b>1.329</b>
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 3	20850	2510	16.37	18.00	1.455	-	-	-0.03	0.819	1.192
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 3	21350	2560	16.16	18.00	1.528	-	-	-0.05	0.859	1.312
	LTE Band 7	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI 3	21100	2535	16.59	18.00	1.384	-	-	-0.04	0.661	0.915
	LTE Band 7	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI 3	20850	2510	16.36	18.00	1.459	-	-	-0.08	0.714	1.042
	LTE Band 7	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI 3	21350	2560	16.10	18.00	1.549	-	-	0	0.671	1.039
	LTE Band 7	20M	QPSK	100	0	-	Back	5mm	Ant 1	ECI 3	21100	2535	16.56	18.00	1.393	-	-	-0.14	0.661	0.921
	LTE Band 7	20M	QPSK	1	0	-	Left Side	5mm	Ant 1	ECI 7	21100	2535	16.60	18.00	1.380	-	-	-0.16	0.584	0.806
	LTE Band 7	20M	QPSK	50	0	-	Left Side	5mm	Ant 1	ECI 7	21100	2535	16.59	18.00	1.384	-	-	-0.14	0.460	0.636
	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	ECI 7	21100	2535	16.60	18.00	1.380	-	-	0.02	0.631	0.871
	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	ECI 7	20850	2510	16.37	18.00	1.455	-	-	0.12	0.672	0.978



	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	ECI 7	21350	2560	16.16	18.00	1.528	-	-	-0.16	0.654	0.999
	LTE Band 7	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 1	ECI 7	21100	2535	16.59	18.00	1.384	-	-	-0.12	0.511	0.707
	LTE Band 7	20M	QPSK	100	0	-	Bottom Side	5mm	Ant 1	ECI 7	21100	2535	16.56	18.00	1.393	-	-	-0.05	0.505	0.704
	LTE Band 7 ENDC	20M	QPSK	1	0	-	Front	5mm	Ant 4	ECI 7	21100	2535	7.67	8.00	1.079	-	-	0.02	0.064	0.069
	LTE Band 7 ENDC	20M	QPSK	50	0	-	Front	5mm	Ant 4	ECI 7	21100	2535	7.61	8.00	1.094	-	-	0.09	0.053	0.058
	LTE Band 7 ENDC	20M	QPSK	1	0	-	Back	5mm	Ant 4	ECI 7	21100	2535	7.67	8.00	1.079	-	-	0.09	0.118	0.127
	LTE Band 7 ENDC	20M	QPSK	50	0	-	Back	5mm	Ant 4	ECI 7	21100	2535	7.61	8.00	1.094	-	-	0.08	0.093	0.102
	LTE Band 7 ENDC	20M	QPSK	1	0	-	Left Side	5mm	Ant 4	ECI 7	21100	2535	7.67	8.00	1.079	-	-	-0.09	0.019	0.020
	LTE Band 7 ENDC	20M	QPSK	50	0	-	Left Side	5mm	Ant 4	ECI 7	21100	2535	7.61	8.00	1.094	-	-	0.07	0.017	0.019
	LTE Band 7 ENDC	20M	QPSK	1	0	-	Top Side	5mm	Ant 4	ECI 7	21100	2535	7.67	8.00	1.079	-	-	-0.05	0.295	0.318
	LTE Band 7 ENDC	20M	QPSK	50	0	-	Top Side	5mm	Ant 4	ECI 7	21100	2535	7.61	8.00	1.094	-	-	-0.14	0.153	0.167
	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 1	ECI 7	40620	2593	18.61	20.00	1.377	62.9	1.006	0.08	0.509	0.705
	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 1	ECI 7	39750	2506	18.37	20.00	1.455	62.9	1.006	0.03	0.521	0.763
	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 1	ECI 7	40185	2549.5	18.45	20.00	1.429	62.9	1.006	-0.08	0.535	0.769
	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 1	ECI 7	41055	2636.5	18.60	20.00	1.380	62.9	1.006	-0.08	0.456	0.633
	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 1	ECI 7	41490	2680	18.38	20.00	1.452	62.9	1.006	0.1	0.464	0.678
	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 1	ECI 7	40620	2593	18.59	20.00	1.384	62.9	1.006	-0.18	0.436	0.607
	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 1	ECI 7	39750	2506	18.36	20.00	1.459	62.9	1.006	0.12	0.410	0.602
	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 1	ECI 7	40185	2549.5	18.47	20.00	1.422	62.9	1.006	0.08	0.419	0.600
	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 1	ECI 7	41055	2636.5	18.51	20.00	1.409	62.9	1.006	-0.17	0.364	0.516
	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 1	ECI 7	41490	2680	18.42	20.00	1.439	62.9	1.006	-0.03	0.367	0.531
	LTE Band 41	20M	QPSK	100	0	-	Front	5mm	Ant 1	ECI 7	40620	2593	18.60	20.00	1.380	62.9	1.006	0.14	0.396	0.550
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 7	40620	2593	18.61	20.00	1.377	62.9	1.006	0.11	0.750	1.039
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 7	39750	2506	18.37	20.00	1.455	62.9	1.006	0.18	0.719	1.053
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 7	40185	2549.5	18.45	20.00	1.429	62.9	1.006	0.14	0.745	1.071
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 7	41055	2636.5	18.60	20.00	1.380	62.9	1.006	-0.17	0.701	0.973
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 7	41490	2680	18.38	20.00	1.452	62.9	1.006	0.17	0.710	1.037
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI 7	40620	2593	18.59	20.00	1.384	62.9	1.006	-0.05	0.636	0.885
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI 7	39750	2506	18.36	20.00	1.459	62.9	1.006	0.1	0.622	0.913
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI 7	40185	2549.5	18.47	20.00	1.422	62.9	1.006	-0.17	0.636	0.910
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI 7	41055	2636.5	18.51	20.00	1.409	62.9	1.006	0.04	0.614	0.870
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI 7	41490	2680	18.42	20.00	1.439	62.9	1.006	-0.01	0.618	0.895
	LTE Band 41	20M	QPSK	100	0	-	Back	5mm	Ant 1	ECI 7	40620	2593	18.60	20.00	1.380	62.9	1.006	-0.08	0.636	0.883
	LTE Band 41	20M	QPSK	1	0	-	Left Side	5mm	Ant 1	ECI 7	40620	2593	18.61	20.00	1.377	62.9	1.006	0.05	0.473	0.655
	LTE Band 41	20M	QPSK	1	0	-	Left Side	5mm	Ant 1	ECI 7	39750	2506	18.37	20.00	1.455	62.9	1.006	-0.09	0.490	0.717
	LTE Band 41	20M	QPSK	1	0	-	Left Side	5mm	Ant 1	ECI 7	40185	2549.5	18.45	20.00	1.429	62.9	1.006	-0.08	0.509	0.732
	LTE Band 41	20M	QPSK	1	0	-	Left Side	5mm	Ant 1	ECI 7	41055	2636.5	18.60	20.00	1.380	62.9	1.006	0.13	0.429	0.596
	LTE Band 41	20M	QPSK	1	0	-	Left Side	5mm	Ant 1	ECI 7	41490	2680	18.38	20.00	1.452	62.9	1.006	0.12	0.413	0.603
	LTE Band 41	20M	QPSK	50	0	-	Left Side	5mm	Ant 1	ECI 7	40620	2593	18.59	20.00	1.384	62.9	1.006	0.03	0.375	0.522
	LTE Band 41	20M	QPSK	100	0	-	Left Side	5mm	Ant 1	ECI 7	40620	2593	18.60	20.00	1.380	62.9	1.006	-0.1	0.376	0.522
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	ECI 7	40620	2593	18.61	20.00	1.377	62.9	1.006	0.01	0.543	0.752
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	ECI 7	39750	2506	18.37	20.00	1.455	62.9	1.006	0.19	0.513	0.751
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	ECI 7	40185	2549.5	18.45	20.00	1.429	62.9	1.006	0.07	0.526	0.756
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	ECI 7	41055	2636.5	18.60	20.00	1.380	62.9	1.006	-0.18	0.495	0.687
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	ECI 7	41490	2680	18.38	20.00	1.452	62.9	1.006	0.03	0.521	0.761
	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 1	ECI 7	40620	2593	18.59	20.00	1.384	62.9	1.006	-0.15	0.425	0.592
	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 1	ECI 7	39750	2506	18.36	20.00	1.459	62.9	1.006	0.11	0.406	0.596
	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 1	ECI 7	40185	2549.5	18.47	20.00	1.422	62.9	1.006	-0.08	0.417	0.597
	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 1	ECI 7	41055	2636.5	18.51	20.00	1.409	62.9	1.006	-0.17	0.393	0.557
	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 1	ECI 7	41490	2680	18.42	20.00	1.439	62.9	1.006	-0.08	0.415	0.601
	LTE Band 41	20M	QPSK	100	0	-	Bottom Side	5mm	Ant 1	ECI 7	40620	2593	18.60	20.00	1.380	62.9	1.006	-0.04	0.423	0.587
58	LTE Band 41 PC2	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI 7	40185	2549.5	21.49	23.00	1.416	42.9	1.009	-0.08	0.961	1.373
	LTE Band 41C	20M	QPSK	1	99	-	Back	5mm	Ant 1	ECI 7	40185+40383	2549.5+2569.3	18.30	20.00	1.479	62.9	1.006	-0.04	0.786	1.170
	LTE Band 41C PC2	20M	QPSK	1	99	-	Back	5mm	Ant 1	ECI 7	40185+40383	2549.5+2569.3	21.26	23.00	1.493	42.9	1.009	-0.06	0.902	1.359
	LTE Band 41C PC2	20M	QPSK	1	99	-	Back	5mm	Ant 1	ECI 7	39750+39948	2506+2525.8	21.06	23.00	1.563	42.9	1.009	0.01	0.842	1.328



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Table with columns for Band, Power, Modulation, Repetition, Duty Cycle, Frequency, Direction, Antenna, EIRP, SAR, etc. Includes rows for LTE Band 41C PC2 and FR1 n7/FR1 n41 HPUE.