

FCC SAR TEST REPORT

FCC ID : A4RGZPF0
Equipment : Phone
Model Name : GZPF0
Applicant : Google LLC
1600 Amphitheatre Parkway,
Mountain View, California, 94043 USA
Standard : FCC 47 CFR Part 2 (2.1093)

The product was received on Apr. 13, 2023 and testing was started from Apr. 22, 2023 and completed on Jul. 07, 2023. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample provide by manufacturer and the test data has been evaluated in accordance with the test procedures given in 47 CFR Part 2.1093 and FCC KDB and has been pass the FCC requirement.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Laboratory, the test report shall not be reproduced except in full.



Approved by: Cona Huang / Deputy Manager



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1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) for Google LLC, Phone, GZPF0, are as follows.

Equipment Class	Frequency Band	Highest SAR Summary				Highest Simultaneous Transmission 1g SAR (W/kg)	Highest Simultaneous Transmission 10g SAR (W/kg)
		Head (Separation 0mm)	Body-worn (Separation 10mm)	Hotspot (Separation 10mm)	Product Specific (Separation 0mm)		
		1g SAR (W/kg)			10g SAR (W/kg)		
Licensed	GSM850	0.94	0.95	0.77		1.59	2.47
	GSM1900	0.67	0.73	0.76	2.47		
	WCDMA II	0.93	0.77	0.79			
	WCDMA IV	0.73	0.52	0.82			
	WCDMA V	0.67	0.76	0.76			
	LTE B2	0.99	0.57	0.79			
	LTE B7	0.80	0.94	0.82	1.82		
	LTE B12/B17	0.98	0.49	0.54			
	LTE B13	0.83	0.54	0.70			
	LTE B14	0.82	0.53	0.64			
	LTE B25/B2	0.92	0.61	0.84	2.44		
	LTE B26/B5	0.82	0.63	0.72			
	LTE B30	0.65	0.99	0.83	1.85		
	LTE B41/B38	0.91	0.68	0.69	1.67		
	LTE B48	0.61	0.49	0.84			
	LTE B66/B4	0.99	0.92	0.68	1.13		
	LTE B71	0.98	0.50	0.48			
	FR1 n2	0.96	0.54	0.66			
	FR1 n5	0.78	0.74	0.79			
	FR1 n7	0.92	0.99	0.81	1.57		
	FR1 n12	0.93	0.50	0.55			
FR1 n25/n2	0.81	0.74	0.85				
FR1 n30	0.68	0.98	0.83	1.51			
FR1 38 / n41	0.85	0.78	0.82	1.41			
FR1 n66	1.00	0.97	0.81	0.95			
FR1 n71	0.94	0.53	0.62				
FR1 n77/n78	0.92	0.78	0.65				
DTS	2.4GHz WLAN	1.10	0.95	0.70		1.59	
NII	5GHz WLAN	0.95	0.79	0.46	2.19	1.59	2.47
6CD	6GHz WLAN	0.43	0.12		0.39	1.59	2.47
DSS	Bluetooth	0.44	0.64	0.47		1.59	
DXX	13.56 MHz				0.13		2.47
Equipment Class	Frequency Band	Head Reported APD (mW/cm ²)	Body-worn Reported APD (mW/cm ²)	Product Specific Reported APD (mW/cm ²)	Reported PD (mW/cm ²)		
6CD	6GHz WLAN	0.28	0.07	0.91	0.65		
Date of Testing:		2023/04/22 ~ 2023/07/07					

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation and the FCC designation No. TW3786 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC test. 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), Human Exposure to RF Radiation Limits (1.0 mW/cm²=10 W/m²) specified in FCC 47 CFR part 1.1310 and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications.

Reviewed by: Jason Wang
Report Producer: Carlie Tsai



2. Data Reuse Approach

FCC ID: A4RGKWS6 and A4RG9BQD (reference model) and FCC ID: A4RGZPF0 (variant model)

- **PCB:** The PCB layout is identical with parent model.
- **Component Positions:** The position of the components on the PCB is not changed
- **Enclosure, Materials, and From Factor:** the Enclosure, Materials, and From Factor are exactly the same

Due to the same design are identical between parent model and variant model, SAR data reuse is requested and spot check data in this report is used to justify the SAR data reuse.

For variant model 1g SAR and 10g spot check SAR result does not exceed 30% and 1g SAR < 1.2W/kg, 10g SAR < 3.0W/kg of the reference model, the WWAN max SAR summary are identical with parent model.

The applicant should take full responsibility that the test data as referenced in this report represent compliance for this FCC ID: A4RGZPF0

3. Model Difference Information

A4RGKWS6, A4RG9BQD and A4RGZPF0 use the identical internal printed circuit board layout, and the major differences which may relate to RF are listed below:

- Depopulated the FR2 radio and FR2 antenna Module
- Depopulated module and populated transceiver for n77

The details of similarity and difference can be found in the confidential documents.



4. Reference detail Section

Rule Part	Equipment Class	Wireless Technology	Frequency Band (MHz)	FCC ID (Reference)	Type Grant/ Permissive Change	Reference Title	FCC ID Filling (Variant)	Test on the variant
Part 2.1093 SAR	DXX	WPT	110.1KHz~148.5KHz	A4RGKWS6	Original Grant	FA2D0208-01B	A4RGZPF0	Full test
	DXX	NFC	13.56	A4RGKWS6	Original Grant	FA2D0208-01F	A4RGZPF0	Spot check
	DSS	Bluetooth	2400~2483.5	A4RG9BQD	Original Grant	FA2D0208-07D	A4RGZPF0	Spot check
	DTS	BLE WiFi	2400~2483.5	A4RG9BQD	Original Grant	FA2D0208-07D	A4RGZPF0	Spot check
	NII	Wi-Fi	5150 ~ 5250 5250 ~ 5350 5470 ~ 5725 5725 ~ 5850 5850 ~ 5895	A4RG9BQD	Original Grant	FA2D0208-07D	A4RGZPF0	Spot check
	6CD	Wi-Fi	5925 ~ 6425 6425 ~ 6525 6525 ~ 6875 6875 ~ 7125	A4RG9BQD	Original Grant	FA2D0208-07D	A4RGZPF0	Spot check
	PCB CBE	GSM	850/1900	A4RGKWS6	Original Grant	FA2D0208-01F	A4RGZPF0	Spot check
		WCDMA	B2/4/5	A4RGKWS6	Original Grant	FA2D0208-01F	A4RGZPF0	Spot check
		LTE	B2/4/5/7/12/13/ 14/17/25/26/30/ 38/41/48/66/71	A4RGKWS6	Original Grant	FA2D0208-01F	A4RGZPF0	Spot check
		5G FR1	n2/5/7/12/25//30 38/41/66/71/77/78	A4RGKWS6	Original Grant	FA2D0208-01F	A4RGZPF0	Spot check



5. Equipment Under Test (EUT) Information

5.1 General Information

Product Feature & Specification	
Equipment Name	Phone
Model Name	GZPF0
FCC ID	A4RGZPF0
S / N	33301FDJH00023 / 33301FDJH00020 / 33301FDJH00024 / 33301FDJH0001Z / 33301FDJH00025 / 33301FDJH00022 / 33301FDJH00021 / 33241FDJH00048 / 33241FDJH0008L / 35101FDJH000P7 / 357481890012504
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 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 n25 : 1850 MHz ~ 1915 MHz 5G NR n30 : 2305 MHz ~ 2315 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n71 : 663 MHz ~ 698 MHz 5G NR n77: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3980 MHz 5G NR n78: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3800 MHz WLAN 2.4 GHz Band: 2400 MHz ~ 2483.5 MHz WLAN 5.2 GHz Band: 5150 MHz ~ 5250 MHz WLAN 5.3 GHz Band: 5250 MHz ~ 5350 MHz WLAN 5.6 GHz Band: 5470 MHz ~ 5725 MHz WLAN 5.8 GHz Band: 5725 MHz ~ 5850 MHz WLAN 5.8G UNII4 Band: 5850 MHz ~ 5895 MHz WLAN 6E: 5925 MHz ~ 6425 MHz, 6425 MHz ~ 6525 MHz, 6525 MHz ~ 6875 MHz, 6875 MHz ~ 7125 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz NFC: 13.56 MHz WPT: 110.1 KHz ~ 148.5 KHz
Mode	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA HSUPA LTE: QPSK, 16QAM, 64QAM, 256QAM 5G NR: DFT-s-OFDM/CP-OFDM, Pi/2 BPSK/QPSK/16QAM/64QAM/256QAM WLAN: 802.11a/b/g/n/ac/ax/be HT20/HT40/VHT20/VHT40/VHT80/VHT160/HE20/HE40/HE80/HE160/EHT20/EHT40/EHT80/EHT160 Bluetooth BR/EDR/LE/HR NFC: ASK WPT: ASK
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.



5.2 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05																																																															
FCC ID	A4RGZPF0																																																														
Equipment Name	Phone																																																														
Operating Frequency Range of each LTE transmission band	LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 14: 788 MHz ~ 798 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 30: 2305 MHz ~ 2315 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz LTE Band 71: 663 MHz ~ 698 MHz																																																														
Channel Bandwidth	LTE Band 2: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 4: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 5: 1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 12: 1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 13: 5MHz, 10MHz LTE Band 14: 5MHz, 10MHz LTE Band 17: 5MHz, 10MHz LTE Band 25: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 26: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz LTE Band 30: 5MHz, 10MHz LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 48: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 66: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 71: 5MHz, 10MHz, 15MHz, 20MHz																																																														
uplink modulations used	QPSK / 16QAM / 64QAM / 256QAM																																																														
LTE Voice / Data requirements	Voice and Data																																																														
LTE MPR permanently built-in by design	<p>Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3</p> <table border="1"> <thead> <tr> <th rowspan="2">Modulation</th> <th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th> <th rowspan="2">MPR (dB)</th> </tr> <tr> <th>1.4 MHz</th> <th>3.0 MHz</th> <th>5 MHz</th> <th>10 MHz</th> <th>15 MHz</th> <th>20 MHz</th> </tr> </thead> <tbody> <tr> <td>QPSK</td> <td>> 5</td> <td>> 4</td> <td>> 8</td> <td>> 12</td> <td>> 16</td> <td>> 18</td> <td>≤ 1</td> </tr> <tr> <td>16 QAM</td> <td>≤ 5</td> <td>≤ 4</td> <td>≤ 8</td> <td>≤ 12</td> <td>≤ 16</td> <td>≤ 18</td> <td>≤ 1</td> </tr> <tr> <td>16 QAM</td> <td>> 5</td> <td>> 4</td> <td>> 8</td> <td>> 12</td> <td>> 16</td> <td>> 18</td> <td>≤ 2</td> </tr> <tr> <td>64 QAM</td> <td>≤ 5</td> <td>≤ 4</td> <td>≤ 8</td> <td>≤ 12</td> <td>≤ 16</td> <td>≤ 18</td> <td>≤ 2</td> </tr> <tr> <td>64 QAM</td> <td>> 5</td> <td>> 4</td> <td>> 8</td> <td>> 12</td> <td>> 16</td> <td>> 18</td> <td>≤ 3</td> </tr> <tr> <td>256 QAM</td> <td colspan="6">≥ 1</td> <td>≤ 5</td> </tr> </tbody> </table>	Modulation	Channel bandwidth / Transmission bandwidth (N _{RB})						MPR (dB)	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1	16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1	16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2	64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2	64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3	256 QAM	≥ 1						≤ 5
Modulation	Channel bandwidth / Transmission bandwidth (N _{RB})						MPR (dB)																																																								
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QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1																																																								
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64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2																																																								
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3																																																								
256 QAM	≥ 1						≤ 5																																																								
LTE A-MPR	In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)																																																														
Spectrum plots for RB configuration	A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.																																																														
Power reduction applied to satisfy SAR compliance	The device has several different power modes for each exposure conditions SAR compliance; power selection is determined by the device's positioning and usage scenarios. Detail refer to operational description.																																																														
LTE Carrier Aggregation Combinations	Inter-Band and Intra-Band possible combinations and the detail power measurement please referred to FCC ID: A4RGKWS6, Sporton Repost No. FA2D0208-01F section 13.																																																														
LTE Carrier Aggregation Additional Information	This device supports maximum of 7 carriers in the downlink and 2 carriers in the uplink. Additional following LTE Release features are not supported: Relay, HetNet, Enhanced MIMO, eICI, WiFi Offloading, MDH, eMBMA, Cross-Carrier Scheduling, Enhanced SC-FDMA.																																																														



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 #		Freq.(MHz)	
L	23205		779.5		23230		782		23255		784.5		23280		787	
M	23230		782		23255		784.5		23280		787		23305		789.5	
H	23255		784.5		23280		787		23305		789.5		23330		792	
LTE Band 14																
	Bandwidth 5 MHz				Bandwidth 10 MHz				Bandwidth 15 MHz				Bandwidth 20 MHz			
	Channel #		Channel #		Channel #		Freq.(MHz)		Channel #		Freq.(MHz)		Channel #		Freq.(MHz)	
L	23305		790.5		23330		793		23355		795.5		23380		798	
M	23330		793		23355		795.5		23380		798		23405		800.5	
H	23355		795.5		23380		798		23405		800.5		23430		803	
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 #		Freq. (MHz)	
L	23755		706.5		23780		709		23805		711.5		23830		714	
M	23790		710		23815		713		23840		716		23865		719	
H	23825		713.5		23850		716.5		23875		719.5		23900		722	



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	26765	821.5
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	26990	844	26965	841.5
LTE Band 30												
	Bandwidth 5 MHz				Bandwidth 10 MHz							
	Channel #		Freq.(MHz)		Channel #		Freq.(MHz)					
L	27685		2307.5		27710		2310					
M	27710		2310									
H	27735		2312.5									
LTE Band 38												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)				
L	37775	2572.5	37800	2575	37825	2577.5	37850	2580				
M	38000	2595	38000	2595	38000	2595	38000	2595				
H	38225	2617.5	38200	2615	38175	2612.5	38150	2610				
LTE Band 41												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)				
L	39675	2498.5	39700	2501	39725	2503.5	39750	2506				
L	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5				
M	40620	2593	40620	2593	40620	2593	40620	2593				
H	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5				
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680				
LTE Band 48												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)				
L	55265	3552.5	55290	3555	55315	3557.5	55340	3560				
L	55810	3607	55815	3607.5	55820	3608	55830	3609				
M	56170	3643	56165	3642.5	56160	3642	56150	3641				
H	56715	3697.5	56690	3695	56665	3692.5	56640	3690				
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)				
L	133147	665.5	133172	668	133197	670.5	133222	673				
M	133297	680.5	133297	680.5	133297	680.5	133297	680.5				
H	133447	695.5	133422	693	133397	690.5	133372	688				



5.3 General 5G NR SAR Test and Reporting Considerations

5G NR Information																
FCC ID	A4RGZPF0															
Equipment Name	Phone															
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 n25: 1850 MHz ~ 1915 MHz 5G NR n30 : 2305 MHz ~ 2315 MHz 5G NR n38: 2570 MHz ~ 2620 MHz 5G NR n41: 2496 MHz ~ 2690 MHz 5G NR n66: 1710 MHz ~ 1780 MHz 5G NR n71: 663 MHz ~ 698 MHz 5G NR n77: 3700 MHz ~ 3980 MHz, 3450MHz ~ 3550MHz 5G NR n78: 3700 MHz ~ 3800 MHz, 3450MHz ~ 3550MHz															
Channel Bandwidth	5G NR n2: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n5: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n7: 5MHz, 10MHz, 15MHz, 20MHz, 25 MHz, 30MHz, 40MHz, 50MHz 5G NR n12: 5MHz, 10MHz, 15MHz 5G NR n25: 5MHz, 10MHz, 15MHz, 20MHz, 25 MHz, 30MHz, 40MHz 5G NR n30: 5MHz, 10MHz 5G NR n38: 10MHz, 15MHz, 20MHz 5G NR n41: 10MHz, 15MHz, 20MHz, 30MHz, 40MHz, 50MHz, 60MHz, 70MHz, 80MHz, 90MHz, 100MHz 5G NR n66: 5MHz, 10MHz, 15MHz, 20MHz, 25 MHz, 30MHz, 40MHz 5G NR n71: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n77/78: 10MHz, 15MHz, 20MHz, 25 MHz, 30MHz, 40MHz, 50MHz, 60MHz, 70MHz, 80MHz, 90MHz, 100MHz															
SCS	FDD: SCS15KHz, TDD: SCS30KHz															
uplink modulations used	DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM CP-OFDM QPSK / 16QAM / 64QAM / 256QAM															
A-MPR (Additional MPR) disabled for SAR Testing?	Yes															
LTE Anchor Bands for n2	LTE B2/4/5/7/12/13/14/30/48/66/71															
LTE Anchor Bands for n5	LTE B2/7/30/48/66															
LTE Anchor Bands for n7	LTE B2/5/12/13/66/71															
LTE Anchor Bands for n12	LTE B2/7/66															
LTE Anchor Bands for n25	LTE B2/12/13/26/48/66															
LTE Anchor Bands for n30	LTE B2/5/12/14/66															
LTE Anchor Bands for n38	LTE B2/4/5/12/66/71															
LTE Anchor Bands for n41	LTE B2/4/5/12/25/26/66/71															
LTE Anchor Bands for n66	LTE B2/5/7/12/13/14/25/30/48/66/71															
LTE Anchor Bands for n71	LTE B2/7/66															
LTE Anchor Bands for n77	LTE B2/5/7/12/13/14/25/26/30/41/66															
LTE Anchor Bands for n78	LTE B2/4/5/7/12/13/25/38/41/66/71															
NR Band 2																
Bandwidth 5MHz			Bandwidth 10MHz			Bandwidth 15MHz			Bandwidth 20MHz							
Ch. #	Freq. (MHz)		Ch. #	Freq. (MHz)		Ch. #	Freq. (MHz)		Ch. #	Freq. (MHz)						
L	370500	1852.5	371000	1855	371500	1857.5	372000	1860								
M	376000	1880	376000	1880	376000	1880	376000	1880								
H	381500	1907.5	381000	1905	380500	1902.5	380000	1900								
NR Band 5																
Bandwidth 5MHz			Bandwidth 10MHz			Bandwidth 15MHz			Bandwidth 20MHz							
Ch. #	Freq. (MHz)		Ch. #	Freq. (MHz)		Ch. #	Freq. (MHz)		Ch. #	Freq. (MHz)						
L	165300	826.5	165800	829	166300	831.5	166800	834								
M	167300	836.5	167300	836.5	167300	836.5	167300	836.5								
H	169300	846.5	168800	844	168300	841.5	167800	839								
NR Band 7																
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 25																								
Bandwidth 5MHz			Bandwidth 10MHz			Bandwidth 15MHz			Bandwidth 20MHz			Bandwidth 25MHz			Bandwidth 30MHz			Bandwidth 40MHz						
Ch. #	Freq. (MHz)		Ch. #	Freq. (MHz)		Ch. #	Freq. (MHz)		Ch. #	Freq. (MHz)		Ch. #	Freq. (MHz)		Ch. #	Freq. (MHz)		Ch. #	Freq. (MHz)					
L	370500	1852.5	371000	1855	371500	1857.5	372000	1860	372500	1862.5	373000	1865	374000	1870										
M	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	379000	1895										
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 38																								
Bandwidth 10MHz				Bandwidth 15MHz				Bandwidth 20MHz																
Ch. #	Freq. (MHz)			Ch. #	Freq. (MHz)			Ch. #	Freq. (MHz)															
L	515004	2575.02			515502	2577.51			516000	2580														
M	519000	2595			519000	2595			519000	2595														
H	522996	2614.98			522498	2612.49			522000	2610														
NR Band 41																								
Bandwidth10MHz		Bandwidth15MHz		Bandwidth20MHz		Bandwidth30MHz		Bandwidth40MHz		Bandwidth50MHz		Bandwidth60MHz		Bandwidth70MHz		Bandwidth80MHz		Bandwidth90MHz		Bandwidth100MHz				
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	506202	2531.01	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	531000	2655	529998	2649.99	528996	2644.98	528000	2640		
NR Band 66																								
Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz												
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)											
L	342500	1712.5	343000	1715	343500	1717.5	344000	1720	344500	1722.5	345000	1725	346000	1730										
M	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745										
H	355500	1777.5	355000	1775	354500	1772.5	354000	1770	353500	1767.5	353000	1765	352000	1760										
NR Band 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			13410	670.5			134600	673										
M	136100	680.5			136100	680.5			136100	680.5			136100	680.5										
H	139100	695.5			138600	693			13810	690.5			137600	688										
NR Band 77																								
Bandwidth10MHz		Bandwidth15MHz		Bandwidth20MHz		Bandwidth25MHz		Bandwidth30MHz		Bandwidth40MHz		Bandwidth50MHz		Bandwidth60MHz		Bandwidth70MHz		Bandwidth80MHz		Bandwidth90MHz		Bandwidth100MHz		
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	647000	3705	647168	3707.52	647334	3710.01	647500	3712.5	647668	3715.02	648000	3720	648334	3725.01	648668	3730.02	649000	3735	649334	3740.01	649668	3745.02	650000	3750
M	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840
H	665000	3975	664832	3972.48	664666	3969.99	664500	3967.50	664332	3964.98	664000	3960	663666	3954.99	663332	3949.98	663000	3945	662666	3939.99	662332	3934.98	662000	3930
NR Band 78																								
Bandwidth10MHz		Bandwidth15MHz		Bandwidth20MHz		Bandwidth25MHz		Bandwidth30MHz		Bandwidth40MHz		Bandwidth50MHz		Bandwidth60MHz		Bandwidth70MHz		Bandwidth80MHz		Bandwidth90MHz		Bandwidth100MHz		
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	647000	3705	647168	3707.52	647334	3710.01	647500	3712.5	647668	3715.02	648000	3720	648334	3725.01	648668	3730.02	649000	3735	649334	3740.01	649668	3745.02	650000	3750
M	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750
H	653000	3795	652832	3792.48	652666	3789.99	652500	3787.50	652332	3784.98	652000	3780	651666	3774.99	651332	3769.98	651000	3765	650666	3759.99	650332	3754.98	650000	3750
NR Band 77/78(3450MHz ~ 3550MHz)																								
Bandwidth10MHz		Bandwidth15MHz		Bandwidth20MHz		Bandwidth25MHz		Bandwidth30MHz		Bandwidth40MHz		Bandwidth50MHz		Bandwidth60MHz		Bandwidth70MHz		Bandwidth80MHz		Bandwidth90MHz		Bandwidth100MHz		
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	630334	3455.01	630500	3457.5	630668	3460.02	630834	3462.51	631000	3465	631334	3470.01	631668	3475.02	632000	3480	632334	3485.01	632668	3490.02	633000	3495	633332	3499.98
M	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98		
H	636332	3544.98	636166	3542.49	636000	3540	635832	3537.48	635666	3534.99	635332	3529.98	635000	3525	634666	3519.99	634332	3514.98	634000	3510	633666	3504.99		



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

1. 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.

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

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

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

7. Guidance Applied

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards, the below KDB standard may not including in the TAF code without accreditation.

- 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 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
- FCC KDB 941225 D07 UMPC Mini Tablet v01r02
- IEC/IEEE 62209-1528:2020
- SPEAG DASY6 System Handbook
- SPEAG DASY6 Application Note (Interim Procedure for Device Operation at 6GHz-10GHz)

8. Specific Absorption Rate (SAR)

8.1 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.

8.2 SAR Definition

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

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

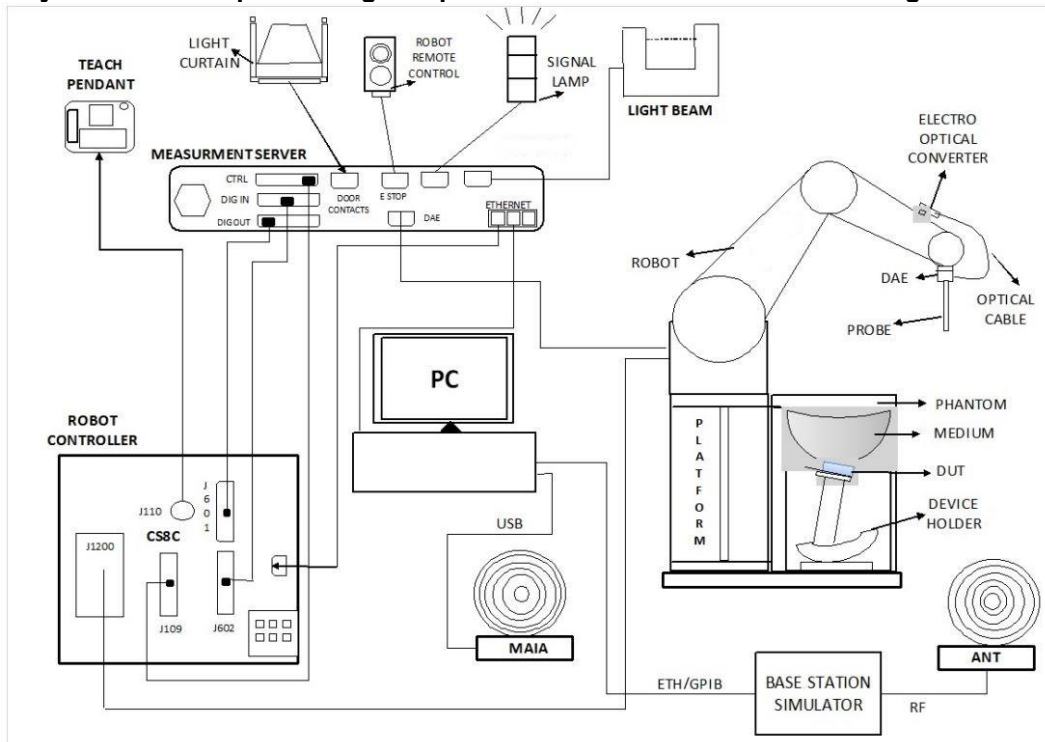
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

9. System Description and Setup

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



- The DASY system in SAR Configuration is shown above
- 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 windows software and the DASY 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.

9.1 Test Site Location


The SAR measurement facilities used to collect data are within both Sporton Lab list below test site location are accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190 and 3786) and the FCC designation No. TW1190 and TW3786 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC test.

Test Site	EMC & Wireless Communications Laboratory		Wensan Laboratory		
Test Site Location	TW1190 No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan		TW3786 No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan		
Test Site No.	SAR01-HY	SAR03-HY	SAR08-HY	SAR09-HY	SAR15-HY
	SAR04-HY	SAR05-HY	SAR11-HY	SAR12-HY	SAR16-HY
	SAR06-HY	SAR10-HY	SAR13-HY	SAR14-HY	SAR17-HY


9.2 E-Field Probe

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

<ES3DV3 Probe>

Construction	Symmetric design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	10 MHz – 4 GHz; Linearity: ±0.2 dB (30 MHz – 4 GHz)	
Directivity	±0.2 dB in TSL (rotation around probe axis) ±0.3 dB in TSL (rotation normal to probe axis)	
Dynamic Range	5 µW/g – >100 mW/g; Linearity: ±0.2 dB	
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 3.9 mm (body: 12 mm) Distance from probe tip to dipole centers: 3.0 mm	

<EX3DV4 Probe>

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

9.3 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.



Fig 5.1 Photo of DAE


9.4 Phantom

<SAM Twin Phantom>

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

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

<ELI Phantom>

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

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

9.5 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

10. Measurement Procedures

The measurement procedures are as follows:

- (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

10.1 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

10.2 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.

10.3 Area Scan

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

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

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

10.4 Zoom Scan

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

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

		≤ 3 GHz	> 3 GHz	
Maximum zoom scan spatial resolution: $\Delta x_{Zoom}, \Delta y_{Zoom}$		≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*	
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$	≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm	
	graded grid	$\Delta z_{Zoom}(1)$: between 1 st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z	≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm	
Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details. * When zoom scan is required and the <i>reported</i> SAR from the <i>area scan based 1-g SAR estimation</i> procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.				

10.5 Volume Scan Procedures

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

10.6 Power Drift Monitoring

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



11. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1107	Jun. 22, 2022	Jun. 21, 2023
SPEAG	835MHz System Validation Kit	D835V2	4d167	Nov. 24, 2022	Nov. 23, 2023
SPEAG	1750MHz System Validation Kit	D1750V2	1112	Jun. 22, 2022	Jun. 21, 2023
SPEAG	1900MHz System Validation Kit	D1900V2	5d185	Jun. 17, 2022	Jun. 16, 2023
SPEAG	2300MHz System Validation Kit ⁽²⁾	D2300V2	1006	Jan. 18, 2022	Jan. 16, 2024
SPEAG	2450MHz System Validation Kit	D2450V2	929	Nov. 21, 2022	Nov. 20, 2023
SPEAG	2600MHz System Validation Kit	D2600V2	1078	Jun. 23, 2022	Jun. 22, 2023
SPEAG	3300MHz System Validation Kit	D3300V2	1034	Sep. 05, 2022	Sep. 04, 2023
SPEAG	3500MHz System Validation Kit ⁽²⁾	D3500V2	1014	Jan. 17, 2022	Jan. 15, 2024
SPEAG	3700MHz System Validation Kit	D3700V2	1006	Jun. 20, 2022	Jun. 19, 2023
SPEAG	3700MHz System Validation Kit ⁽²⁾	D3700V2	1022	Jul. 14, 2021	Jul. 12, 2023
SPEAG	3900MHz System Validation Kit ⁽²⁾	D3900V2	1017	Apr. 22, 2022	Apr. 20, 2024
SPEAG	5GHz System Validation Kit	D5GHzV2	1128	Nov. 23, 2022	Nov. 22, 2023
SPEAG	5GHz System Validation Kit ⁽²⁾	D5GHzV2	1171	Apr. 20, 2021	Apr. 17, 2024
SPEAG	6500MHz System Validation Kit	D6.5GHzV2	1003	Mar. 15, 2023	Mar. 14, 2024
SPEAG	13MHz System Validation Kit	CLA13	1022	Sep. 01, 2022	Aug. 31, 2023
SPEAG	Data Acquisition Electronics	DAE4	316	Jan. 23, 2023	Jan. 22, 2024
SPEAG	Data Acquisition Electronics	DAE4	656	Jan. 23, 2023	Jan. 22, 2024
SPEAG	Data Acquisition Electronics	DAE4	661	May. 23, 2023	May. 22, 2024
SPEAG	Data Acquisition Electronics	DAE4	699	Feb. 22, 2023	Feb. 21, 2024
SPEAG	Data Acquisition Electronics	DAE4	1647	Nov. 18, 2022	Nov. 17, 2023
SPEAG	Data Acquisition Electronics	DAE4	1694	Nov. 18, 2022	Nov. 17, 2023
SPEAG	Data Acquisition Electronics	DAE4	1696	Nov. 09, 2022	Nov. 08, 2023
SPEAG	Data Acquisition Electronics	DAE4	1697	Dec. 15, 2022	Dec. 14, 2023
SPEAG	Data Acquisition Electronics	DAE4	1707	Dec. 15, 2022	Dec. 14, 2023
SPEAG	Dosimetric E-Field Probe	EX3DV4	3931	Oct. 31, 2022	Oct. 30, 2023
SPEAG	Dosimetric E-Field Probe	EX3DV4	3976	Feb. 21, 2023	Feb. 20, 2024
SPEAG	Dosimetric E-Field Probe	EX3DV4	7590	Mar. 23, 2023	Mar. 22, 2024
SPEAG	Dosimetric E-Field Probe	EX3DV4	7625	Jan. 26, 2023	Jan. 25, 2024
SPEAG	Dosimetric E-Field Probe	EX3DV4	7694	Nov. 15, 2022	Nov. 14, 2023
SPEAG	Dosimetric E-Field Probe	EX3DV4	7700	Jan. 24, 2023	Jan. 23, 2024
SPEAG	Dosimetric E-Field Probe	EX3DV4	7791	Feb. 22, 2023	Feb. 21, 2024
Testo	Hygro meter	608-H1	45196600	Nov. 02, 2022	Nov. 01, 2023
Testo	Hygro meter	608-H1	45207528	Nov. 02, 2022	Nov. 01, 2023
RCPTWN	Thermometer	HTC-1	TM685-1	Jun. 27, 2022	Jun. 26, 2023
RCPTWN	Thermometer	HTC-1	TM560-2	Mar. 21, 2023	Mar. 20, 2024
Anritsu	Radio Communication Analyzer	MT8821C	6201341950	Oct. 31, 2022	Oct. 30, 2023
Keysight	Wireless Communication Test Set	E5515C	MY50267236	Mar. 12, 2023	Mar. 11, 2024
R&S	BT Base Station	CBT32	101136	Oct. 25, 2022	Oct. 24, 2023
SPEAG	Device Holder	N/A	N/A	N/A	N/A
Anritsu	Signal Generator	MG3710A	6201502524	Oct. 12, 2022	Oct. 11, 2023
Keysight	ENA Network Analyzer	E5071C	MY46104758	Sep. 22, 2022	Sep. 21, 2023
SPEAG	Dielectric Probe Kit	DAK-3.5	1126	Sep. 28, 2022	Sep. 27, 2023
SPEAG	Dielectric Probe Kit	DAK-12	1156	Jul. 28, 2022	Jul. 27, 2023
LINE SEIKI	Digital Thermometer	DTM3000-spezial	3796	Jan. 13, 2023	Jan. 12, 2024
Anritsu	Power Meter	ML2495A	1419002	Aug. 16, 2022	Aug. 15, 2023
Anritsu	Power Meter	ML2495A	1804003	Oct. 17, 2022	Oct. 16, 2023
Anritsu	Power Sensor	MA2411B	1911176	Aug. 16, 2022	Aug. 15, 2023
Anritsu	Power Sensor	MA2411B	1726150	Oct. 17, 2022	Oct. 16, 2023
Anritsu	Spectrum Analyzer	MS2830A	6201396378	Jul. 21, 2022	Jul. 20, 2023
Anritsu	Spectrum Analyzer	N9010A	MY53470118	Jan. 10, 2023	Jan. 09, 2024
Mini-Circuits	Power Amplifier	ZVE-8G+	6418	Oct. 14, 2022	Oct. 13, 2023
Mini-Circuits	Power Amplifier	ZVE-8G+	479102029	Sep. 15, 2022	Sep. 14, 2023
ATM	Dual Directional Coupler	C122H-10	P610410z-02		Note 1
Warison	Directional Coupler	WCOU-10-50S-10	WR889BMC4B1		Note 1
Woken	Attenuator 1	WK0602-XX	N/A		Note 1
PE	Attenuator 2	PE7005-10	N/A		Note 1
PE	Attenuator 3	PE7005-3	N/A		Note 1

General Note:

- 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 source.
- The dipole calibration interval can be extended to 3 years with justification according to KDB 865664 D01. The dipoles are also not physically damaged, or repaired during the interval. The justification data in appendix C can be found which the return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration for each dipole.



12. System Verification

12.1 Tissue Verification

The tissue dielectric parameters of tissue-equivalent media used for SAR measurements must be characterized within a temperature range of 18°C to 25°C, measured with calibrated instruments and apparatuses, such as network analyzers and temperature probes. The temperature of the tissue-equivalent medium during SAR measurement must also be within 18°C to 25°C and within ± 2°C of the temperature when the tissue parameters are characterized. The tissue dielectric measurement system must be calibrated before use. The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements.

The liquid tissue depth was at least 15cm in the phantom for all SAR testing

<Tissue Dielectric Parameter Check Results>

Table with 10 columns: Frequency (MHz), Liquid Temp. (°C), Conductivity (σ), Permittivity (εr), Conductivity Target (σ), Permittivity Target (εr), Delta (σ) (%), Delta (εr) (%), Limit (%), Date. It contains multiple rows of test data for various frequencies (750, 835, 1750, 1900 MHz) and temperatures.



Frequency (MHz)	Liquid Temp. (°C)	Conductivity (σ)	Permittivity (ε _r)	Conductivity Target (σ)	Permittivity Target (ε _r)	Delta (σ) (%)	Delta (ε _r) (%)	Limit (%)	Date
2300	22.3	1.660	39.800	1.67	39.50	-0.60	0.76	±5	2023/5/12
2300	22.9	1.610	39.200	1.67	39.50	-3.59	-0.76	±5	2023/5/19
2300	22.4	1.680	40.000	1.67	39.50	0.60	1.27	±5	2023/5/27
2600	22.6	1.990	38.700	1.96	39.00	1.53	-0.77	±5	2023/5/4
2600	22.2	2.010	38.800	1.96	39.00	2.55	-0.51	±5	2023/5/9
2600	22.5	2.010	38.900	1.96	39.00	2.55	-0.26	±5	2023/5/16
2600	22.5	1.950	38.000	1.96	39.00	-0.51	-2.56	±5	2023/5/20
2600	22.4	1.980	38.000	1.96	39.00	1.02	-2.56	±5	2023/5/20
2600	22.5	1.930	38.000	1.96	39.00	-1.53	-2.56	±5	2023/5/22
2600	22.4	1.950	38.200	1.96	39.00	-0.51	-2.05	±5	2023/5/26
2600	22.2	1.970	38.100	1.96	39.00	0.51	-2.31	±5	2023/5/30
2600	22.6	1.990	38.300	1.96	39.00	1.53	-1.79	±5	2023/5/31
2600	22.4	2.010	37.900	1.96	39.00	2.55	-2.82	±5	2023/6/1
2600	22.3	1.960	38.200	1.96	39.00	0.00	-2.05	±5	2023/7/7
3300	22.5	2.770	38.900	2.70	38.13	2.59	2.02	±5	2023/5/31
3500	22.7	3.030	38.600	2.91	37.90	4.12	1.85	±5	2023/5/28
3500	22.5	2.980	38.700	2.91	37.90	2.41	2.11	±5	2023/5/31
3500	22.7	2.960	38.300	2.91	37.90	1.72	1.06	±5	2023/6/1
3500	22.7	2.960	38.300	2.91	37.90	1.72	1.06	±5	2023/6/1
3500	22.7	2.920	37.600	2.91	37.90	0.34	-0.79	±5	2023/6/2
3500	22.4	2.980	37.600	2.91	37.90	2.41	-0.79	±5	2023/6/2
3500	22.5	2.940	38.300	2.91	37.90	1.03	1.06	±5	2023/6/2
3500	22.5	2.850	36.900	2.91	37.90	-2.06	-2.64	±5	2023/6/3
3500	22.7	3.010	37.700	2.91	37.90	3.44	-0.53	±5	2023/6/5
3500	22.5	2.910	37.900	2.91	37.90	0.00	0.00	±5	2023/6/5
3500	22.6	2.880	37.000	2.91	37.90	-1.03	-2.37	±5	2023/6/6
3500	22.2	2.900	36.900	2.91	37.90	-0.34	-2.64	±5	2023/6/7
3500	22.8	2.980	38.200	2.91	37.90	2.41	0.79	±5	2023/6/8
3500	22.3	2.950	38.300	2.91	37.90	1.37	1.06	±5	2023/7/7
3500	22.8	2.960	37.500	2.91	37.90	1.72	-1.06	±5	2023/7/7
3700	22.5	3.210	38.200	3.12	37.70	2.88	1.33	±5	2023/5/20
3700	22.7	3.250	38.400	3.12	37.70	4.17	1.86	±5	2023/5/28
3700	22.5	3.190	38.500	3.12	37.70	2.24	2.12	±5	2023/5/31
3700	22.7	3.170	38.100	3.12	37.70	1.60	1.06	±5	2023/6/1
3700	22.7	3.170	38.100	3.12	37.70	1.60	1.06	±5	2023/6/1
3700	22.7	3.080	37.400	3.12	37.70	-1.28	-0.80	±5	2023/6/2
3700	22.2	3.050	36.700	3.12	37.70	-2.24	-2.65	±5	2023/6/7
3900	22.5	3.400	38.300	3.33	37.51	2.10	2.11	±5	2023/5/31
3900	22.5	3.360	37.900	3.33	37.51	0.90	1.04	±5	2023/6/2
3900	22.5	3.220	36.300	3.33	37.51	-3.30	-3.23	±5	2023/6/3
3900	22.7	3.400	37.100	3.33	37.51	2.10	-1.09	±5	2023/6/5
3900	22.5	3.320	37.500	3.33	37.51	-0.30	-0.03	±5	2023/6/5
3900	22.6	3.350	36.500	3.33	37.51	0.60	-2.69	±5	2023/6/6
3900	22.8	3.410	37.900	3.33	37.51	2.40	1.04	±5	2023/6/8
3900	22.8	3.280	37.100	3.33	37.51	-1.50	-1.09	±5	2023/7/7



Frequency (MHz)	Liquid Temp. (°C)	Conductivity (σ)	Permittivity (ε _r)	Conductivity Target (σ)	Permittivity Target (ε _r)	Delta (σ) (%)	Delta (ε _r) (%)	Limit (%)	Date
2450	22.2	1.790	39.000	1.80	39.20	-0.56	-0.51	±5	2023/5/20
2450	22.3	1.750	38.600	1.80	39.20	-2.78	-1.53	±5	2023/5/24
2450	22.7	1.770	38.700	1.80	39.20	-1.67	-1.28	±5	2023/5/27
2450	22.9	1.790	38.800	1.80	39.20	-0.56	-1.02	±5	2023/5/30
2450	22.6	1.820	39.200	1.80	39.20	1.11	0.00	±5	2023/5/31
2450	22.3	1.800	39.000	1.80	39.20	0.00	-0.51	±5	2023/6/5
2450	22.3	1.770	38.800	1.80	39.20	-1.67	-1.02	±5	2023/6/8
5250	22.4	4.630	35.500	4.71	35.95	-1.70	-1.25	±5	2023/5/25
5250	22.7	4.720	37.000	4.71	35.95	0.21	2.92	±5	2023/5/30
5250	22.2	4.590	35.400	4.71	35.95	-2.55	-1.53	±5	2023/6/2
5250	22.5	4.610	35.900	4.71	35.95	-2.12	-0.14	±5	2023/6/5
5250	22.1	4.570	35.800	4.71	35.95	-2.97	-0.42	±5	2023/6/7
5600	22.4	5.030	34.900	5.07	35.50	-0.79	-1.69	±5	2023/5/25
5600	22.1	5.020	36.300	5.07	35.50	-0.99	2.25	±5	2023/5/31
5600	22.6	4.990	35.000	5.07	35.50	-1.58	-1.41	±5	2023/6/4
5600	22.5	5.060	35.200	5.07	35.50	-0.20	-0.85	±5	2023/6/5
5600	22.1	5.020	35.000	5.07	35.50	-0.99	-1.41	±5	2023/6/7
5750	22.4	5.210	34.600	5.22	35.35	-0.19	-2.12	±5	2023/5/25
5750	22.7	5.230	36.200	5.22	35.35	0.19	2.40	±5	2023/5/30
5750	22.1	5.190	36.100	5.22	35.35	-0.57	2.12	±5	2023/5/31
5750	22.5	5.230	35.100	5.22	35.35	0.19	-0.71	±5	2023/6/5
5750	22.1	5.190	35.000	5.22	35.35	-0.57	-0.99	±5	2023/6/7
5850	22.4	5.320	34.400	5.32	35.25	0.00	-2.41	±5	2023/5/25
5850	22.2	5.270	34.300	5.32	35.25	-0.94	-2.70	±5	2023/6/2
5850	22.6	5.280	34.200	5.32	35.25	-0.75	-2.98	±5	2023/6/8
6500	22.5	6.140	34.720	6.07	34.50	1.15	0.64	±5	2023/5/15
13	22.5	0.728	54.443	0.75	55.00	-2.93	-1.01	±5	2023/6/1



12.2 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.

Test Site	Date	Frequency (MHz)	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
SAR16	2023/4/22	750	50	D750V3-1107	EX3DV4 - SN3931	DAE4 Sn1696	0.400	8.540	8	-6.32	0.261	5.570	5.22	-6.28
SAR16	2023/4/23	750	50	D750V3-1107	EX3DV4 - SN3931	DAE4 Sn1696	0.400	8.540	8	-6.32	0.262	5.570	5.24	-5.92
SAR16	2023/4/24	750	50	D750V3-1107	EX3DV4 - SN3931	DAE4 Sn1696	0.391	8.540	7.82	-8.43	0.255	5.570	5.1	-8.44
SAR16	2023/4/27	750	50	D750V3-1107	EX3DV4 - SN3931	DAE4 Sn1696	0.440	8.540	8.8	3.04	0.278	5.570	5.56	-0.18
SAR16	2023/5/1	750	50	D750V3-1107	EX3DV4 - SN3931	DAE4 Sn1696	0.392	8.540	7.84	-8.20	0.256	5.570	5.12	-8.08
SAR15	2023/5/13	750	50	D750V3-1107	EX3DV4 - SN7791	DAE4 Sn1647	0.420	8.540	8.4	-1.64	0.274	5.570	5.48	-1.62
SAR15	2023/5/15	750	50	D750V3-1107	EX3DV4 - SN7791	DAE4 Sn1647	0.418	8.540	8.36	-2.11	0.275	5.570	5.5	-1.26
SAR15	2023/5/17	750	50	D750V3-1107	EX3DV4 - SN7791	DAE4 Sn1647	0.407	8.540	8.14	-4.68	0.268	5.570	5.36	-3.77
SAR16	2023/5/18	750	50	D750V3-1107	EX3DV4 - SN3931	DAE4 Sn1696	0.395	8.540	7.9	-7.49	0.262	5.570	5.24	-5.92
SAR15	2023/5/27	750	50	D750V3-1107	EX3DV4 - SN7791	DAE4 Sn1647	0.408	8.540	8.16	-4.45	0.268	5.570	5.36	-3.77
SAR16	2023/4/25	835	50	D835V2-4d167	EX3DV4 - SN3931	DAE4 Sn1696	0.486	9.800	9.72	-0.82	0.314	6.380	6.28	-1.57
SAR16	2023/5/3	835	50	D835V2-4d167	EX3DV4 - SN3931	DAE4 Sn1696	0.493	9.800	9.86	0.61	0.320	6.380	6.4	0.31
SAR16	2023/5/5	835	50	D835V2-4d167	EX3DV4 - SN3931	DAE4 Sn1696	0.492	9.800	9.84	0.41	0.317	6.380	6.34	-0.63
SAR16	2023/5/14	835	50	D835V2-4d167	EX3DV4 - SN3931	DAE4 Sn1696	0.495	9.800	9.9	1.02	0.321	6.380	6.42	0.63
SAR15	2023/5/15	835	50	D835V2-4d167	EX3DV4 - SN7791	DAE4 Sn1647	0.505	9.800	10.1	3.06	0.328	6.380	6.56	2.82
SAR16	2023/5/19	835	50	D835V2-4d167	EX3DV4 - SN3931	DAE4 Sn1696	0.477	9.800	9.54	-2.65	0.310	6.380	6.2	-2.82
SAR16	2023/5/23	835	50	D835V2-4d167	EX3DV4 - SN3931	DAE4 Sn1696	0.492	9.800	9.84	0.41	0.318	6.380	6.36	-0.31
SAR15	2023/5/27	835	50	D835V2-4d167	EX3DV4 - SN7791	DAE4 Sn1647	0.506	9.800	10.12	3.27	0.328	6.380	6.56	2.82
SAR16	2023/5/4	1750	50	D1750V2-1112	EX3DV4 - SN3931	DAE4 Sn1696	1.750	36.900	35	-5.15	0.928	19.400	18.56	-4.33
SAR16	2023/5/6	1750	50	D1750V2-1112	EX3DV4 - SN3931	DAE4 Sn1696	1.710	36.900	34.2	-7.32	0.910	19.400	18.2	-6.19
SAR16	2023/5/12	1750	50	D1750V2-1112	EX3DV4 - SN3931	DAE4 Sn1696	1.790	36.900	35.8	-2.98	0.949	19.400	18.98	-2.16
SAR16	2023/5/14	1750	50	D1750V2-1112	EX3DV4 - SN3931	DAE4 Sn1696	1.680	36.900	33.6	-8.94	0.895	19.400	17.9	-7.73
SAR16	2023/5/17	1750	50	D1750V2-1112	EX3DV4 - SN3931	DAE4 Sn1696	1.710	36.900	34.2	-7.32	0.902	19.400	18.04	-7.01
SAR15	2023/5/17	1750	50	D1750V2-1112	EX3DV4 - SN7791	DAE4 Sn1647	1.870	36.900	37.4	1.36	0.995	19.400	19.9	2.58
SAR15	2023/5/23	1750	50	D1750V2-1112	EX3DV4 - SN7791	DAE4 Sn1694	1.870	36.900	37.4	1.36	1.000	19.400	20	3.09
SAR15	2023/5/24	1750	50	D1750V2-1112	EX3DV4 - SN7791	DAE4 Sn1647	1.840	36.900	36.8	-0.27	0.980	19.400	19.6	1.03
SAR16	2023/5/25	1750	50	D1750V2-1112	EX3DV4 - SN3931	DAE4 Sn1696	1.860	36.900	37.2	0.81	0.999	19.400	19.98	2.99
SAR16	2023/6/4	1750	50	D1750V2-1112	EX3DV4 - SN3931	DAE4 Sn1696	1.680	36.900	33.6	-8.94	0.907	19.400	18.14	-6.49
SAR16	2023/6/5	1750	50	D1750V2-1112	EX3DV4 - SN3931	DAE4 Sn1696	1.700	36.900	34	-7.86	0.915	19.400	18.3	-5.67
SAR16	2023/6/6	1750	50	D1750V2-1112	EX3DV4 - SN3931	DAE4 Sn1696	1.750	36.900	35	-5.15	0.939	19.400	18.78	-3.20
SAR11	2023/7/7	1750	50	D1750V2-1112	EX3DV4 - SN7694	DAE4 Sn316	1.700	36.900	34.00	-7.86	0.908	19.400	18.16	-6.39
SAR16	2023/5/4	1900	50	D1900V2-5d185	EX3DV4 - SN3931	DAE4 Sn1696	1.930	39.000	38.6	-1.03	0.999	20.400	19.98	-2.06
SAR16	2023/5/6	1900	50	D1900V2-5d185	EX3DV4 - SN3931	DAE4 Sn1696	1.970	39.000	39.4	1.03	1.020	20.400	20.4	0.00
SAR16	2023/5/15	1900	50	D1900V2-5d185	EX3DV4 - SN3931	DAE4 Sn1696	1.910	39.000	38.2	-2.05	0.989	20.400	19.78	-3.04
SAR16	2023/5/17	1900	50	D1900V2-5d185	EX3DV4 - SN3931	DAE4 Sn1696	1.940	39.000	38.8	-0.51	1.000	20.400	20	-1.96
SAR17	2023/5/21	1900	50	D1900V2-5d185	EX3DV4 - SN7625	DAE4 Sn656	1.870	39.000	37.4	-4.10	0.982	20.400	19.64	-3.73
SAR15	2023/5/22	1900	50	D1900V2-5d185	EX3DV4 - SN7791	DAE4 Sn1647	2.040	39.000	40.8	4.62	1.070	20.400	21.4	4.90
SAR16	2023/5/24	1900	50	D1900V2-5d185	EX3DV4 - SN3931	DAE4 Sn1696	1.930	39.000	38.6	-1.03	1.000	20.400	20	-1.96
SAR16	2023/6/3	1900	50	D1900V2-5d185	EX3DV4 - SN3931	DAE4 Sn1696	1.880	39.000	37.6	-3.59	0.990	20.400	19.8	-2.94
SAR16	2023/6/5	1900	50	D1900V2-5d185	EX3DV4 - SN3931	DAE4 Sn1696	1.920	39.000	38.4	-1.54	1.010	20.400	20.2	-0.98
SAR16	2023/6/6	1900	50	D1900V2-5d185	EX3DV4 - SN3931	DAE4 Sn1696	1.970	39.000	39.4	1.03	1.030	20.400	20.6	0.98



FCC SAR TEST REPORT

Report No. : FA2D0208-02D

Test Site	Date	Frequency (MHz)	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
SAR16	2023/5/12	2300	50	D2300V2-1006	EX3DV4 - SN3931	DAE4 Sn1696	2.350	48.300	47	-2.69	1.120	23.500	22.4	-4.68
SAR15	2023/5/19	2300	50	D2300V2-1006	EX3DV4 - SN7791	DAE4 Sn1647	2.440	48.300	48.8	1.04	1.170	23.500	23.4	-0.43
SAR16	2023/5/27	2300	50	D2300V2-1006	EX3DV4 - SN3931	DAE4 Sn1696	2.320	48.300	46.4	-3.93	1.120	23.500	22.4	-4.68
SAR16	2023/5/4	2600	50	D2600V2-1078	EX3DV4 - SN3931	DAE4 Sn1696	2.800	55.400	56	1.08	1.260	24.900	25.2	1.20
SAR16	2023/5/9	2600	50	D2600V2-1078	EX3DV4 - SN3931	DAE4 Sn1696	2.740	55.400	54.8	-1.08	1.230	24.900	24.6	-1.20
SAR16	2023/5/16	2600	50	D2600V2-1078	EX3DV4 - SN3931	DAE4 Sn1696	2.750	55.400	55	-0.72	1.230	24.900	24.6	-1.20
SAR16	2023/5/20	2600	50	D2600V2-1078	EX3DV4 - SN3931	DAE4 Sn1696	2.680	55.400	53.6	-3.25	1.210	24.900	24.2	-2.81
SAR15	2023/5/20	2600	50	D2600V2-1078	EX3DV4 - SN7791	DAE4 Sn1647	2.940	55.400	58.8	6.14	1.330	24.900	26.6	6.83
SAR16	2023/5/22	2600	50	D2600V2-1078	EX3DV4 - SN3931	DAE4 Sn1696	2.730	55.400	54.6	-1.44	1.240	24.900	24.8	-0.40
SAR16	2023/5/26	2600	50	D2600V2-1078	EX3DV4 - SN3931	DAE4 Sn1696	2.700	55.400	54	-2.53	1.230	24.900	24.6	-1.20
SAR15	2023/5/30	2600	50	D2600V2-1078	EX3DV4 - SN7791	DAE4 Sn1647	2.900	55.400	58	4.69	1.310	24.900	26.2	5.22
SAR15	2023/5/31	2600	50	D2600V2-1078	EX3DV4 - SN7791	DAE4 Sn1647	2.920	55.400	58.4	5.42	1.320	24.900	26.4	6.02
SAR15	2023/6/1	2600	50	D2600V2-1078	EX3DV4 - SN7791	DAE4 Sn1647	2.970	55.400	59.4	7.22	1.340	24.900	26.8	7.63
SAR11	2023/7/7	2600	50	D2600V2-1078	EX3DV4 - SN7694	DAE4 Sn316	2.600	55.400	52.00	-6.14	1.170	24.900	23.40	-6.02
SAR13	2023/5/31	3300	50	D3300V2-1034	EX3DV4 - SN7700	DAE4 Sn1697	3.290	67.300	65.8	-2.23	1.270	25.900	25.4	-1.93
SAR16	2023/5/28	3500	50	D3500V2-1014	EX3DV4 - SN3931	DAE4 Sn1696	3.360	67.200	67.2	0.00	1.340	25.100	26.8	6.77
SAR13	2023/5/31	3500	50	D3500V2-1014	EX3DV4 - SN7700	DAE4 Sn1697	3.160	67.200	63.2	-5.95	1.200	25.100	24	-4.38
SAR16	2023/6/1	3500	50	D3500V2-1014	EX3DV4 - SN3931	DAE4 Sn1696	3.420	67.200	68.4	1.79	1.350	25.100	27	7.57
SAR12	2023/6/1	3500	50	D3500V2-1014	EX3DV4 - SN7590	DAE4 Sn699	3.450	67.200	69	2.68	1.360	25.100	27.2	8.37
SAR16	2023/6/2	3500	50	D3500V2-1014	EX3DV4 - SN3931	DAE4 Sn1696	3.410	67.200	68.2	1.49	1.350	25.100	27	7.57
SAR15	2023/6/2	3500	50	D3500V2-1014	EX3DV4 - SN7791	DAE4 Sn1647	3.100	67.200	62	-7.74	1.240	25.100	24.8	-1.20
SAR13	2023/6/2	3500	50	D3500V2-1014	EX3DV4 - SN7700	DAE4 Sn1697	3.240	67.200	64.8	-3.57	1.240	25.100	24.8	-1.20
SAR15	2023/6/3	3500	50	D3500V2-1014	EX3DV4 - SN7791	DAE4 Sn1647	3.080	67.200	61.6	-8.33	1.230	25.100	24.6	-1.99
SAR15	2023/6/5	3500	50	D3500V2-1014	EX3DV4 - SN7791	DAE4 Sn1647	3.180	67.200	63.6	-5.36	1.280	25.100	25.6	1.99
SAR13	2023/6/5	3500	50	D3500V2-1014	EX3DV4 - SN7700	DAE4 Sn1697	3.150	67.200	63	-6.25	1.200	25.100	24	-4.38
SAR15	2023/6/6	3500	50	D3500V2-1014	EX3DV4 - SN7791	DAE4 Sn1647	3.310	67.200	66.2	-1.49	1.320	25.100	26.4	5.18
SAR15	2023/6/7	3500	50	D3500V2-1014	EX3DV4 - SN7791	DAE4 Sn1647	3.400	67.200	68	1.19	1.350	25.100	27	7.57
SAR14	2023/6/8	3500	50	D3500V2-1014	EX3DV4 - SN3976	DAE4 Sn661	3.440	67.200	68.8	2.38	1.360	25.100	27.2	8.37
SAR11	2023/7/7	3500	50	D3500V2-1014	EX3DV4 - SN7694	DAE4 Sn316	3.220	67.200	64.40	-4.17	1.240	25.100	24.80	-1.20
SAR14	2023/7/7	3500	47	D3500V2-1014	EX3DV4 - SN3976	DAE4 Sn1707	2.900	67.200	61.70	-8.18	1.120	25.100	23.83	-5.06
SAR16	2023/5/20	3700	50	D3700V2-1006	EX3DV4 - SN3931	DAE4 Sn1696	3.380	65.600	67.6	3.05	1.290	23.700	25.8	8.86
SAR16	2023/5/28	3700	50	D3700V2-1022	EX3DV4 - SN3931	DAE4 Sn1696	3.500	68.200	70	2.64	1.350	24.700	27	9.31
SAR13	2023/5/31	3700	50	D3700V2-1006	EX3DV4 - SN7700	DAE4 Sn1697	3.180	65.600	63.6	-3.05	1.170	23.700	23.4	-1.27
SAR16	2023/6/1	3700	50	D3700V2-1006	EX3DV4 - SN3931	DAE4 Sn1696	3.560	65.600	71.2	8.54	1.250	23.700	25	5.49
SAR12	2023/6/1	3700	50	D3700V2-1006	EX3DV4 - SN7590	DAE4 Sn699	3.590	65.600	71.8	9.45	1.280	23.700	25.6	8.02
SAR16	2023/6/2	3700	50	D3700V2-1006	EX3DV4 - SN3931	DAE4 Sn1696	3.510	65.600	70.2	7.01	1.250	23.700	25	5.49
SAR15	2023/6/7	3700	50	D3700V2-1006	EX3DV4 - SN7791	DAE4 Sn1647	3.260	65.600	65.2	-0.61	1.270	23.700	25.4	7.17
SAR13	2023/5/31	3900	50	D3900V2-1017	EX3DV4 - SN7700	DAE4 Sn1697	3.380	68.700	67.6	-1.60	1.200	23.900	24	0.42
SAR13	2023/6/2	3900	50	D3900V2-1017	EX3DV4 - SN7700	DAE4 Sn1697	3.670	68.700	73.4	6.84	1.310	23.900	26.2	9.62
SAR15	2023/6/3	3900	50	D3900V2-1017	EX3DV4 - SN7791	DAE4 Sn1647	3.390	68.700	67.8	-1.31	1.250	23.900	25	4.60
SAR15	2023/6/5	3900	50	D3900V2-1017	EX3DV4 - SN7791	DAE4 Sn1647	3.290	68.700	65.8	-4.22	1.240	23.900	24.8	3.77
SAR13	2023/6/5	3900	50	D3900V2-1017	EX3DV4 - SN7700	DAE4 Sn1697	3.310	68.700	66.2	-3.64	1.180	23.900	23.6	-1.26
SAR15	2023/6/6	3900	50	D3900V2-1017	EX3DV4 - SN7791	DAE4 Sn1647	3.270	68.700	65.4	-4.80	1.180	23.900	23.6	-1.26
SAR14	2023/6/8	3900	50	D3900V2-1017	EX3DV4 - SN3976	DAE4 Sn661	3.440	68.700	68.8	0.15	1.270	23.900	25.4	6.28
SAR14	2023/7/7	3900	46	D3900V2-1017-3900	EX3DV4 - SN3976	DAE4 Sn1707	2.880	68.700	62.61	-8.87	1.000	23.900	21.74	-9.04

Test Site	Date	Frequency (MHz)	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
SAR17	2023/5/20	2450	50	D2450V2-929	EX3DV4 - SN7625	DAE4 Sn656	2.400	52.400	48	-8.40	1.140	24.700	22.8	-7.69
SAR17	2023/5/24	2450	50	D2450V2-929	EX3DV4 - SN7625	DAE4 Sn656	2.370	52.400	47.4	-9.54	1.120	24.700	22.4	-9.31
SAR17	2023/5/27	2450	50	D2450V2-929	EX3DV4 - SN7625	DAE4 Sn656	2.410	52.400	48.2	-8.02	1.150	24.700	23	-6.88
SAR17	2023/5/30	2450	50	D2450V2-929	EX3DV4 - SN7625	DAE4 Sn656	2.680	52.400	53.6	2.29	1.260	24.700	25.2	2.02
SAR17	2023/5/31	2450	50	D2450V2-929	EX3DV4 - SN7625	DAE4 Sn656	2.380	52.400	47.6	-9.16	1.130	24.700	22.6	-8.50
SAR17	2023/6/5	2450	50	D2450V2-929	EX3DV4 - SN7625	DAE4 Sn656	2.360	52.400	47.2	-9.92	1.120	24.700	22.4	-9.31
SAR17	2023/6/8	2450	50	D2450V2-929	EX3DV4 - SN7625	DAE4 Sn656	2.370	52.400	47.4	-9.54	1.140	24.700	22.8	-7.69
SAR17	2023/5/25	5250	50	D5GHZV2-1128	EX3DV4 - SN7625	DAE4 Sn656	3.840	77.900	76.8	-1.41	1.160	22.600	23.2	2.65
SAR16	2023/5/30	5250	50	D5GHZV2-1128	EX3DV4 - SN3931	DAE4 Sn1696	3.910	77.900	78.2	0.39	1.160	22.600	23.2	2.65
SAR17	2023/6/2	5250	50	D5GHZV2-1128	EX3DV4 - SN7625	DAE4 Sn656	4.010	77.900	80.2	2.95	1.200	22.600	24	6.19
SAR14	2023/6/5	5250	50	D5GHZV2-1128	EX3DV4 - SN7694	DAE4 Sn316	3.530	77.900	70.6	-9.37	1.020	22.600	20.4	-9.73
SAR14	2023/6/7	5250	50	D5GHZV2-1128	EX3DV4 - SN7694	DAE4 Sn316	3.980	77.900	79.6	2.18	1.140	22.600	22.8	0.88
SAR17	2023/5/25	5600	50	D5GHZV2-1128	EX3DV4 - SN7625	DAE4 Sn656	4.160	80.100	83.2	3.87	1.240	22.700	24.8	9.25
SAR16	2023/5/31	5600	50	D5GHZV2-1128	EX3DV4 - SN3931	DAE4 Sn1696	3.680	80.100	73.6	-8.11	1.150	22.700	23	1.32
SAR17	2023/6/4	5600	50	D5GHZV2-1128	EX3DV4 - SN7625	DAE4 Sn656	3.950	80.100	79	-1.37	1.190	22.700	23.8	4.85
SAR14	2023/6/5	5600	50	D5GHZV2-1128	EX3DV4 - SN7694	DAE4 Sn316	3.960	80.100	79.2	-1.12	1.130	22.700	22.6	-0.44
SAR14	2023/6/7	5600	50	D5GHZV2-1128	EX3DV4 - SN7694	DAE4 Sn316	4.150	80.100	83	3.62	1.180	22.700	23.6	3.96
SAR17	2023/5/25	5750	50	D5GHZV2-1128	EX3DV4 - SN7625	DAE4 Sn656	3.910	79.300	78.2	-1.39	1.190	22.700	23.8	4.85
SAR16	2023/5/30	5750	50	D5GHZV2-1128	EX3DV4 - SN3931	DAE4 Sn1696	4.240	79.300	84.8	6.94	1.230	22.700	24.6	8.37
SAR16	2023/5/31	5750	50	D5GHZV2-1128	EX3DV4 - SN3931	DAE4 Sn1696	3.710	79.300	74.2	-6.43	1.150	22.700	23	1.32
SAR14	2023/6/5	5750	50	D5GHZV2-1128	EX3DV4 - SN7694	DAE4 Sn316	3.600	79.300	72	-9.21	1.030	22.700	20.6	-9.25
SAR14	2023/6/7	5750	50	D5GHZV2-1128	EX3DV4 - SN7694	DAE4 Sn316	3.770	79.300	75.4	-4.92	1.070	22.700	21.4	-5.73
SAR17	2023/5/25	5850	50	D5GHZV2-1171	EX3DV4 - SN7625	DAE4 Sn656	4.150	82.300	83	0.85	1.260	23.100	25.2	9.09
SAR17	2023/6/2	5850	50	D5GHZV2-1171	EX3DV4 - SN7625	DAE4 Sn656	3.860	82.300	77.2	-6.20	1.180	23.100	23.6	2.16
SAR17	2023/6/8	5850	50	D5GHZV2-1171	EX3DV4 - SN7625	DAE4 Sn656	4.070	82.300	81.4	-1.09	1.250	23.100	25	8.23
SAR13	2023/5/15	6500	100	D6.5GHZV2-1003	EX3DV4 - SN7700	DAE4 Sn1697	30.100	297.000	301	1.35	5.450	54.500	54.5	0.00
SAR16	2023/6/1	13	1000	CLA13-1022	EX3DV4 - SN3931	DAE4 Sn1696					0.347	0.349	0.347	-0.86

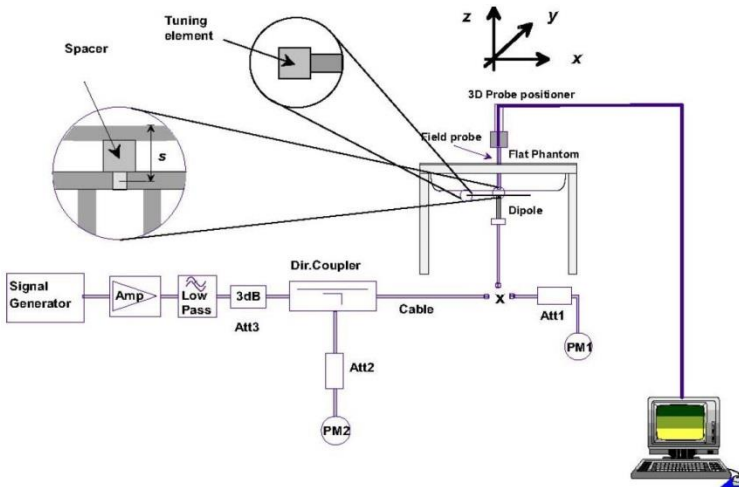


Fig 8.3.1 System Performance Check Setup

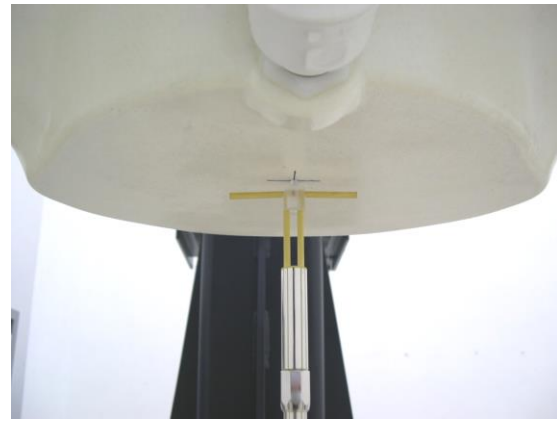


Fig 8.3.2 Setup Photo

13. RF Exposure Positions

13.1 Ear and handset reference point

Figure 9.1.1 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 9.1.2 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 9.1.3). 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 9.1.2. The ear truncation is introduced to preclude the ear lobe from interfering with handset tilt, which could lead to unstable positioning at the cheek.

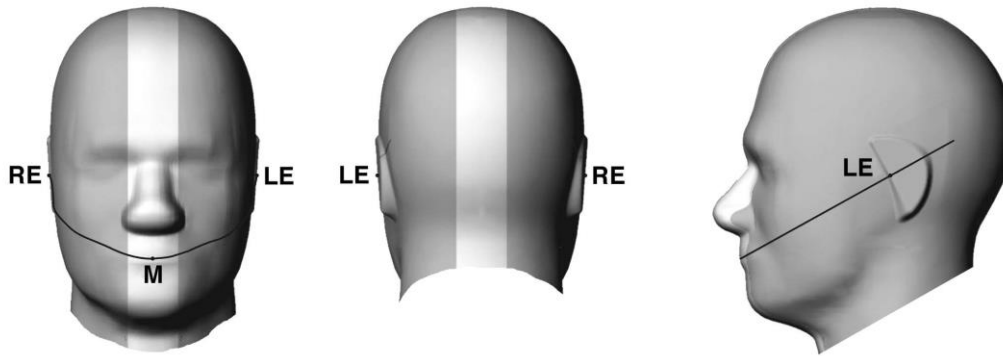


Fig 9.1.1 Front, back, and side views of SAM twin phantom



Fig 9.1.2 Close-up side view of phantom showing the ear region.

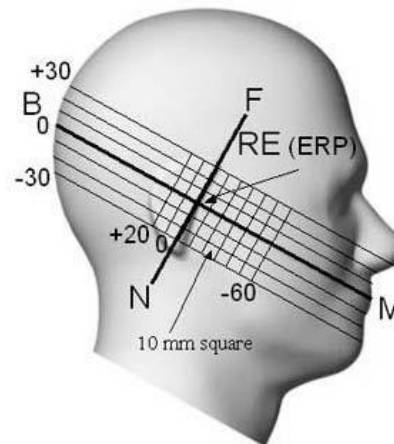


Fig 9.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

13.2 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 9.2.1 and Figure 9.2.2), 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 9.2.1). 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 9.2.2), 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 9.2.3), 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 9.2.3. The actual rotation angles should be documented in the test report.



Fig 9.2.1 Handset vertical and horizontal reference lines—“fixed case”

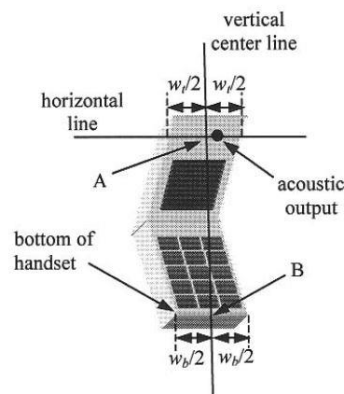


Fig 9.2.2 Handset vertical and horizontal reference lines—“clam-shell case”

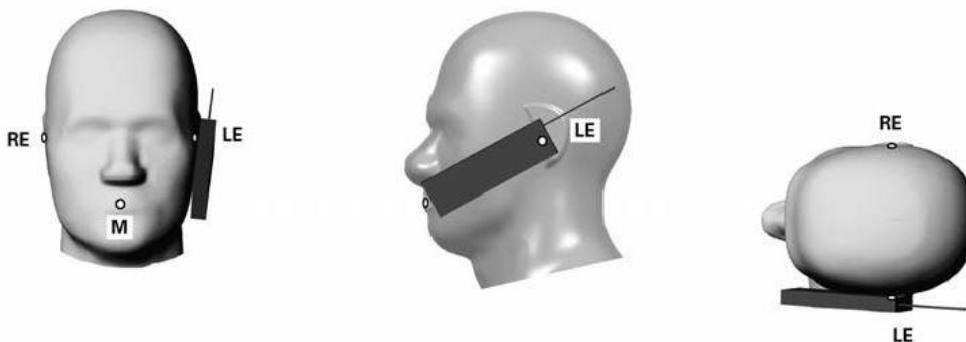


Fig 9.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

13.3 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 9.3.1. 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

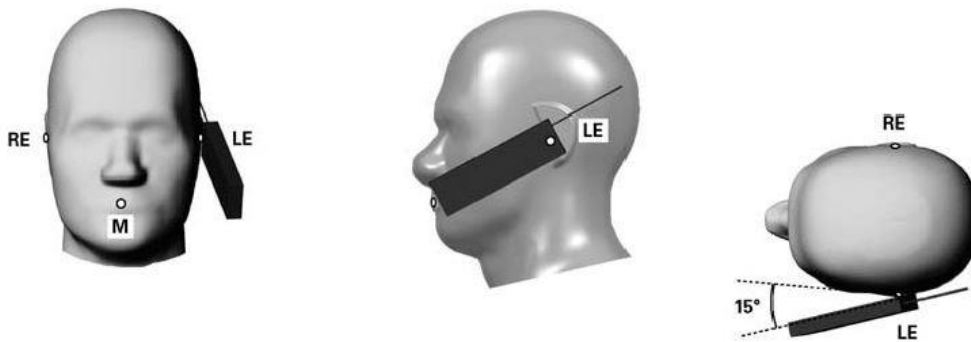


Fig 9.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

13.4 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 9.4). Per KDB648474 D04v01r03, body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB 447498 D01v06 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for body-worn accessory, measured without a headset connected to the handset is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a 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.

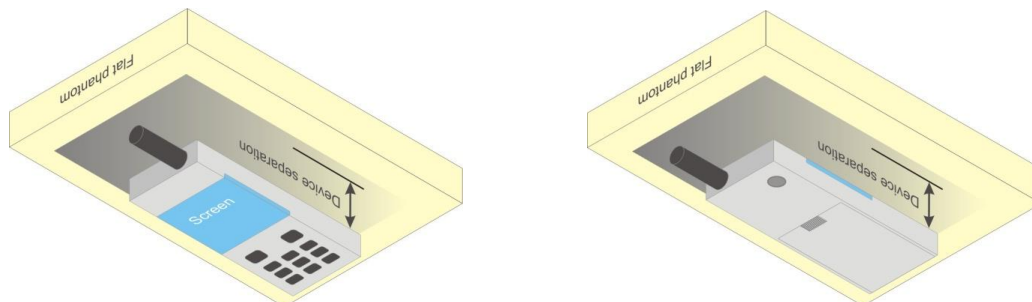


Fig 9.4 Body Worn Position



13.5 Product Specific Exposure

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

1. The normally required head and body-worn accessory SAR test procedures for handsets, including hotspot mode, must be applied.
2. The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 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.

13.6 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.



14. Spot Check SAR Results

General Note:

- SAR spot check verification on the worst cases from the original model was performed to demonstrate the test data from original model remains representative for the variant model.
- If the 1-g SAR spot check result “does not exceed 30%, but larger than 1.2 W/kg”, more spot check on the next-higher exposure position until the spot check result does not exceed 1.2 W/kg.
- The spot check results don’t show the SAR increase more than 30%, therefore referring to the guidance in the KDB inquiry, SAR data reuse is justified.

1st as parent model

2nd as variant model

14.1 Head SAR

Plot No.	No.	Band	Mode	Test Position	Gap (mm)	Power Index	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)	Deviation (%)
	1st	GSM850_Ant 0	GPRS (4 Tx slots)	Left Cheek	0mm	2	128	824.2	27.06	28.70	1.459			0.04	0.452	0.659	-3.3%
	2nd	GSM850_Ant 0	GPRS (4 Tx slots)	Left Cheek	0mm	2	128	824.2	26.91	28.70	1.510			0.01	0.422	0.637	
	1st	GSM850_Ant 0	GPRS (4 Tx slots)	Left Cheek	0mm	3	128	824.2	27.06	28.00	1.242			0.04	0.452	0.561	-3.4%
	2nd	GSM850_Ant 0	GPRS (4 Tx slots)	Left Cheek	0mm	3	128	824.2	26.91	28.00	1.285			0.01	0.422	0.542	
	1st	GSM850_Ant 1	GPRS (4 Tx slots)	Right Cheek	0mm	2	251	848.8	23.74	24.90	1.306			0.01	0.721	0.942	-2.7%
01	2nd	GSM850_Ant 1	GPRS (4 Tx slots)	Right Cheek	0mm	2	251	848.8	23.38	24.90	1.419			-0.04	0.646	0.917	
	1st	GSM850_Ant 1	GPRS (4 Tx slots)	Right Cheek	0mm	3	251	848.8	23.74	24.20	1.112			0.01	0.721	0.802	-2.7%
	2nd	GSM850_Ant 1	GPRS (4 Tx slots)	Right Cheek	0mm	3	251	848.8	23.38	24.20	1.208			-0.04	0.646	0.780	
	1st	GSM1900_Ant 2	GPRS (4 Tx slots)	Right Cheek	0mm	2/3	810	1909.8	26.96	28.00	1.271			-0.12	0.526	0.668	-11.7%
02	2nd	GSM1900_Ant 2	GPRS (4 Tx slots)	Right Cheek	0mm	2/3	810	1909.8	26.82	28.00	1.312			-0.15	0.450	0.590	
	1st	GSM1900_Ant 0	GPRS (4 Tx slots)	Left Cheek	0mm	2/3	810	1909.8	25.85	27.20	1.365			0.05	0.083	0.113	-25.7%
	2nd	GSM1900_Ant 0	GPRS (4 Tx slots)	Left Cheek	0mm	2/3	810	1909.8	25.72	27.20	1.406			0.17	0.060	0.084	
	1st	WCDMA II_Ant 2	RMC 12.2Kbps	Right Cheek	0mm	2	9538	1907.6	24.35	25.10	1.189			-0.01	0.780	0.927	-1.3%
03	2nd	WCDMA II_Ant 2	RMC 12.2Kbps	Right Cheek	0mm	2	9538	1907.6	23.76	25.10	1.361			-0.07	0.672	0.915	
	1st	WCDMA II_Ant 2	RMC 12.2Kbps	Right Cheek	0mm	3	9538	1907.6	24.35	24.40	1.012			-0.01	0.780	0.789	-1.3%
	2nd	WCDMA II_Ant 2	RMC 12.2Kbps	Right Cheek	0mm	3	9538	1907.6	23.76	24.40	1.159			-0.07	0.672	0.779	
	1st	WCDMA II_Ant 0	RMC 12.2Kbps	Right Cheek	0mm	2/3	9262	1852.4	24.34	25.30	1.247			0.05	0.140	0.175	-19.4%
	2nd	WCDMA II_Ant 0	RMC 12.2Kbps	Right Cheek	0mm	2/3	9262	1852.4	23.84	25.30	1.400			-0.18	0.101	0.141	
	1st	WCDMA IV_Ant 2	RMC 12.2Kbps	Right Cheek	0mm	2/3	1513	1752.6	24.81	25.50	1.172			-0.14	0.619	0.726	-13.5%
04	2nd	WCDMA IV_Ant 2	RMC 12.2Kbps	Right Cheek	0mm	2/3	1513	1752.6	24.62	25.50	1.225			-0.16	0.513	0.628	
	1st	WCDMA IV_Ant 0	RMC 12.2Kbps	Right Cheek	0mm	2/3	1312	1712.4	24.41	25.30	1.227			0.05	0.175	0.215	-20.0%
	2nd	WCDMA IV_Ant 0	RMC 12.2Kbps	Right Cheek	0mm	2/3	1312	1712.4	23.84	25.30	1.400			0.05	0.123	0.172	
	1st	WCDMA V_Ant 0	RMC 12.2Kbps	Left Cheek	0mm	2/3	4233	846.6	24.90	25.50	1.148			-0.06	0.474	0.544	-4.0%
	2nd	WCDMA V_Ant 0	RMC 12.2Kbps	Left Cheek	0mm	2/3	4233	846.6	24.74	25.50	1.191			0.02	0.438	0.522	
	1st	WCDMA V_Ant 1	RMC 12.2Kbps	Right Cheek	0mm	2	4132	826.4	20.66	22.40	1.493			-0.02	0.450	0.672	-9.5%
05	2nd	WCDMA V_Ant 1	RMC 12.2Kbps	Right Cheek	0mm	2	4132	826.4	20.48	22.40	1.556			-0.06	0.391	0.608	
	1st	WCDMA V_Ant 1	RMC 12.2Kbps	Right Cheek	0mm	3	4132	826.4	20.66	21.70	1.271			-0.02	0.450	0.572	-9.4%
	2nd	WCDMA V_Ant 1	RMC 12.2Kbps	Right Cheek	0mm	3	4132	826.4	20.48	21.70	1.324			-0.06	0.391	0.518	
	1st	LTE Band 2_Ant 1	20M_QPSK_1_0	Right Tilted	0mm	2	19100	1900	16.29	17.20	1.233			-0.05	0.799	0.985	-1.0%
06	2nd	LTE Band 2_Ant 1	20M_QPSK_1_0	Right Tilted	0mm	2	19100	1900	16.33	17.20	1.222			-0.07	0.798	0.975	
	1st	LTE Band 2_Ant 1	20M_QPSK_1_0	Right Tilted	0mm	3	19100	1900	16.29	16.50	1.050			-0.05	0.799	0.839	-1.1%
	2nd	LTE Band 2_Ant 1	20M_QPSK_1_0	Right Tilted	0mm	3	19100	1900	16.33	16.50	1.040			-0.07	0.798	0.830	
	1st	LTE Band 2_Ant 5	20M_QPSK_1_0	Left Cheek	0mm	2	19100	1900	15.83	17.20	1.371			-0.12	0.452	0.620	-3.5%
	2nd	LTE Band 2_Ant 5	20M_QPSK_1_0	Left Cheek	0mm	2	19100	1900	15.75	17.20	1.396			-0.05	0.428	0.598	
	1st	LTE Band 2_Ant 5	20M_QPSK_1_0	Left Cheek	0mm	3	19100	1900	15.83	16.50	1.167			-0.12	0.452	0.527	-3.4%
	2nd	LTE Band 2_Ant 5	20M_QPSK_1_0	Left Cheek	0mm	3	19100	1900	15.75	16.50	1.189			-0.05	0.428	0.509	
	1st	LTE Band 7_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2	20850	2510	21.36	22.20	1.213			-0.07	0.658	0.798	-12.3%
07	2nd	LTE Band 7_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2	20850	2510	21.03	22.20	1.309			-0.09	0.535	0.700	



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	1st	LTE Band 7_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	3	20850	2510	21.36	21.50	1.033			-0.07	0.658	0.680	-12.4%
	2nd	LTE Band 7_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	3	20850	2510	21.03	21.50	1.114			-0.09	0.535	0.596	
	1st	LTE Band 7_Ant 0	20M_QPSK_1_0	Right Cheek	0mm	2/3	21100	2535	23.27	25.00	1.489			-0.1	0.202	0.301	-23.3%
	2nd	LTE Band 7_Ant 0	20M_QPSK_1_0	Right Cheek	0mm	2/3	21100	2535	23.07	25.00	1.560			0.15	0.148	0.231	
	1st	LTE Band 12_Ant 0	10M_QPSK_1_0	Left Cheek	0mm	2/3	23095	707.5	24.37	25.50	1.297			-0.05	0.240	0.311	-6.1%
	2nd	LTE Band 12_Ant 0	10M_QPSK_1_0	Left Cheek	0mm	2/3	23095	707.5	24.39	25.50	1.291			-0.01	0.226	0.292	
	1st	LTE Band 12_Ant 1	10M_QPSK_1_0	Right Tilted	0mm	2	23095	707.5	23.15	24.70	1.429			0	0.686	0.980	-3.2%
08	2nd	LTE Band 12_Ant 1	10M_QPSK_1_0	Right Tilted	0mm	2	23095	707.5	23.05	24.70	1.462			0.03	0.649	0.949	
	1st	LTE Band 12_Ant 1	10M_QPSK_1_0	Right Tilted	0mm	3	23095	707.5	23.15	24.00	1.216			0	0.686	0.834	-3.1%
	2nd	LTE Band 12_Ant 1	10M_QPSK_1_0	Right Tilted	0mm	3	23095	707.5	23.05	24.00	1.245			0.03	0.649	0.808	
	1st	LTE Band 13_Ant 0	10M_QPSK_1_0	Left Cheek	0mm	2/3	23230	782	24.65	25.50	1.216			-0.05	0.397	0.483	-6.2%
	2nd	LTE Band 13_Ant 0	10M_QPSK_1_0	Left Cheek	0mm	2/3	23230	782	24.63	25.50	1.222			-0.04	0.371	0.453	
	1st	LTE Band 13_Ant 1	10M_QPSK_1_0	Right Cheek	0mm	2	23230	782	22.70	23.60	1.230			0	0.675	0.830	-3.0%
09	2nd	LTE Band 13_Ant 1	10M_QPSK_1_0	Right Cheek	0mm	2	23230	782	22.66	23.60	1.242			0.02	0.648	0.805	
	1st	LTE Band 13_Ant 1	10M_QPSK_1_0	Right Cheek	0mm	3	23230	782	22.70	22.90	1.047			0	0.675	0.707	-3.1%
	2nd	LTE Band 13_Ant 1	10M_QPSK_1_0	Right Cheek	0mm	3	23230	782	22.66	22.90	1.057			0.02	0.648	0.685	
	1st	LTE Band 14_Ant 0	10M_QPSK_1_0	Left Cheek	0mm	2/3	23330	793	25.07	25.50	1.104			0	0.452	0.499	-10.4%
	2nd	LTE Band 14_Ant 0	10M_QPSK_1_0	Left Cheek	0mm	2/3	23330	793	25.16	25.50	1.081			-0.06	0.413	0.447	
	1st	LTE Band 14_Ant 1	10M_QPSK_1_0	Right Cheek	0mm	2	23330	793	21.67	23.30	1.455			0.01	0.565	0.822	-2.1%
10	2nd	LTE Band 14_Ant 1	10M_QPSK_1_0	Right Cheek	0mm	2	23330	793	21.70	23.30	1.445			0.01	0.557	0.805	
	1st	LTE Band 14_Ant 1	10M_QPSK_1_0	Right Cheek	0mm	3	23330	793	21.67	22.60	1.239			0.01	0.565	0.700	-2.1%
	2nd	LTE Band 14_Ant 1	10M_QPSK_1_0	Right Cheek	0mm	3	23330	793	21.70	22.60	1.230			0.01	0.557	0.685	
	1st	LTE Band 25_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2	26590	1905	23.74	24.50	1.191			-0.08	0.775	0.923	-0.5%
11	2nd	LTE Band 25_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2	26590	1905	23.60	24.50	1.230			-0.12	0.746	0.918	
	1st	LTE Band 25_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	3	26590	1905	23.74	23.80	1.014			-0.08	0.775	0.786	-0.6%
	2nd	LTE Band 25_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	3	26590	1905	23.60	23.80	1.047			-0.12	0.746	0.781	
	1st	LTE Band 25_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	26590	1905	23.86	25.30	1.393			0.17	0.118	0.164	-7.9%
	2nd	LTE Band 25_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	26590	1905	23.81	25.30	1.409			0.13	0.107	0.151	
	1st	LTE Band 26_Ant 0	15M_QPSK_1_0	Left Cheek	0mm	2/3	26865	831.5	24.64	25.50	1.219			-0.02	0.398	0.485	-1.0%
	2nd	LTE Band 26_Ant 0	15M_QPSK_1_0	Left Cheek	0mm	2/3	26865	831.5	24.53	25.50	1.250			0.08	0.384	0.480	
	1st	LTE Band 26_Ant 1	15M_QPSK_1_0	Right Cheek	0mm	2	26865	831.5	20.74	22.10	1.368			0.02	0.597	0.817	-14.3%
12	2nd	LTE Band 26_Ant 1	15M_QPSK_1_0	Right Cheek	0mm	2	26865	831.5	20.34	22.10	1.500			-0.01	0.467	0.700	
	1st	LTE Band 26_Ant 1	15M_QPSK_1_0	Right Cheek	0mm	3	26865	831.5	20.74	21.40	1.164			0.02	0.597	0.695	-14.2%
	2nd	LTE Band 26_Ant 1	15M_QPSK_1_0	Right Cheek	0mm	3	26865	831.5	20.34	21.40	1.276			-0.01	0.467	0.596	
	1st	LTE Band 30_Ant 2	10M_QPSK_1_0	Right Cheek	0mm	2/3	27710	2310	21.45	22.50	1.274			0.17	0.508	0.647	-7.0%
13	2nd	LTE Band 30_Ant 2	10M_QPSK_1_0	Right Cheek	0mm	2/3	27710	2310	21.19	22.50	1.352			0.04	0.445	0.602	
	1st	LTE Band 30_Ant 0	10M_QPSK_1_0	Left Cheek	0mm	2/3	27710	2310	19.05	20.80	1.496			-0.08	0.069	0.103	-16.5%
	2nd	LTE Band 30_Ant 0	10M_QPSK_1_0	Left Cheek	0mm	2/3	27710	2310	18.80	20.80	1.585			-0.03	0.054	0.086	
	1st	LTE Band 41_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2	39750	2506	22.75	23.90	1.303	62.9	1.006	-0.19	0.690	0.905	-6.9%
14	2nd	LTE Band 41_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2	39750	2506	22.60	23.90	1.349	62.9	1.006	-0.14	0.621	0.843	
	1st	LTE Band 41_HPUE_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2	39750	2506	24.28	25.60	1.355	42.9	1.009	0	0.605	0.827	-15.5%
	2nd	LTE Band 38_HPUE_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2	38000	2595	23.85	25.60	1.496	42.9	1.009	-0.16	0.463	0.699	
	1st	LTE Band 41_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	3	39750	2506	22.75	23.30	1.135	62.9	1.006	-0.19	0.690	0.788	-6.9%
	2nd	LTE Band 41_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	3	39750	2506	22.60	23.30	1.175	62.9	1.006	-0.14	0.621	0.734	
	1st	LTE Band 41_HPUE_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	3	39750	2506	24.28	24.90	1.153	42.9	1.009	0	0.605	0.704	-15.5%
	2nd	LTE Band 38_HPUE_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	3	38000	2595	23.85	24.90	1.274	42.9	1.009	-0.16	0.463	0.595	
	1st	LTE Band 41_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	41490	2680	22.10	23.70	1.445	62.9	1.006	0.03	0.116	0.169	-16.0%
	2nd	LTE Band 41_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	41490	2680	21.84	23.70	1.535	62.9	1.006	0.12	0.092	0.142	
	1st	LTE Band 41_HPUE_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	41490	2680	24.85	26.50	1.462	42.9	1.009	0.19	0.145	0.214	-15.9%
	2nd	LTE Band 38_HPUE_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	38000	2595	24.62	26.50	1.542	42.9	1.009	0.07	0.116	0.180	
	1st	LTE Band 48_Ant 6	20M_QPSK_1_0	Left Cheek	0mm	2/3	55340	3560	21.51	22.50	1.256	62.9	1.006	0.19	0.479	0.605	-16%
15	2nd	LTE Band 48_Ant 6	20M_QPSK_1_0	Left Cheek	0mm	2/3	55340	3560	21.33	22.50	1.309	62.9	1.006	-0.1	0.388	0.511	
	1st	LTE Band 48_Ant 7	20M_QPSK_1_0	Right Cheek	0mm	2/3	56640	3690	22.55	24.00	1.396	62.9	1.006	0.08	0.154	0.216	-27%
	2nd	LTE Band 48_Ant 7	20M_QPSK_1_0	Right Cheek	0mm	2/3	56640	3690	22.08	24.00	1.556	62.9	1.006	-0.16	0.101	0.158	
	1st	LTE Band 66_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2	132572	1770	24.62	25.50	1.225			-0.07	0.668	0.818	-20.5%
	2nd	LTE Band 66_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2	132572	1770	24.35	25.50	1.303			0.04	0.499	0.650	



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	1st	LTE Band 66_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	3	132572	1770	24.62	25.30	1.169			-0.07	0.668	0.781	-20.5%
	2nd	LTE Band 66_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	3	132572	1770	24.35	25.30	1.245			0.04	0.499	0.621	
	1st	LTE Band 66_Ant 0	20M_QPSK_1_0	Right Cheek	0mm	2/3	132322	1745	24.42	25.30	1.225			-0.07	0.163	0.200	-6.5%
	2nd	LTE Band 66_Ant 0	20M_QPSK_1_0	Right Cheek	0mm	2/3	132322	1745	24.35	25.30	1.245			0.18	0.150	0.187	
	1st	LTE Band 66_Ant 1	20M_QPSK_1_0	Right Tilted	0mm	2	132572	1770	18.29	19.20	1.233			-0.01	0.803	0.990	-5.7%
16	2nd	LTE Band 66_Ant 1	20M_QPSK_1_0	Right Tilted	0mm	2	132572	1770	18.14	19.20	1.276			-0.03	0.732	0.934	
	1st	LTE Band 66_Ant 1	20M_QPSK_1_0	Right Tilted	0mm	3	132572	1770	18.29	18.50	1.050			-0.01	0.803	0.843	-5.7%
	2nd	LTE Band 66_Ant 1	20M_QPSK_1_0	Right Tilted	0mm	3	132572	1770	18.14	18.50	1.086			-0.03	0.732	0.795	
	1st	LTE Band 66_Ant 5	20M_QPSK_50_0	Left Cheek	0mm	2	132572	1770	18.73	19.90	1.309			0.02	0.466	0.610	-5.2%
	2nd	LTE Band 66_Ant 5	20M_QPSK_50_0	Left Cheek	0mm	2	132572	1770	18.93	19.90	1.250			-0.02	0.462	0.578	
	1st	LTE Band 66_Ant 5	20M_QPSK_50_0	Left Cheek	0mm	3	132572	1770	18.73	19.20	1.114			0.02	0.466	0.519	-5.2%
	2nd	LTE Band 66_Ant 5	20M_QPSK_50_0	Left Cheek	0mm	3	132572	1770	18.93	19.20	1.064			-0.02	0.462	0.492	
	1st	LTE Band 71_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	133297	680.5	24.71	25.50	1.199			0.1	0.274	0.329	-8.2%
	2nd	LTE Band 71_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	133297	680.5	24.62	25.50	1.225			0.11	0.247	0.302	
	1st	LTE Band 71_Ant 1	20M_QPSK_1_0	Right Tilted	0mm	2	133297	680.5	22.64	24.20	1.432			0	0.687	0.984	-7.9%
17	2nd	LTE Band 71_Ant 1	20M_QPSK_1_0	Right Tilted	0mm	2	133297	680.5	22.60	24.20	1.445			-0.05	0.627	0.906	
	1st	LTE Band 71_Ant 1	20M_QPSK_1_0	Right Tilted	0mm	3	133297	680.5	22.64	23.50	1.219			0	0.687	0.837	-7.9%
	2nd	LTE Band 71_Ant 1	20M_QPSK_1_0	Right Tilted	0mm	3	133297	680.5	22.60	23.50	1.230			-0.05	0.627	0.771	
	1st	FR1 n2_Ant 1	20M_BPSK_1_53	Right Tilted	0mm	2	380000	1900	16.59	17.70	1.291			-0.02	0.744	0.961	-6.3%
18	2nd	FR1 n2_Ant 1	20M_BPSK_1_53	Right Tilted	0mm	2	380000	1900	16.49	17.70	1.321			-0.06	0.681	0.900	
	1st	FR1 n2_Ant 1	20M_BPSK_1_53	Right Tilted	0mm	3	380000	1900	16.59	17.00	1.099			-0.02	0.744	0.818	-6.4%
	2nd	FR1 n2_Ant 1	20M_BPSK_1_53	Right Tilted	0mm	3	380000	1900	16.49	17.00	1.125			-0.06	0.681	0.766	
	1st	FR1 n2_Ant 5	20M_BPSK_50_0	Left Cheek	0mm	2	380000	1900	15.82	17.30	1.406			-0.1	0.440	0.619	-2.9%
	2nd	FR1 n2_Ant 5	20M_BPSK_50_0	Left Cheek	0mm	2	380000	1900	15.73	17.30	1.435			0	0.419	0.601	
	1st	FR1 n2_Ant 5	20M_BPSK_50_0	Left Cheek	0mm	3	380000	1900	15.82	16.60	1.197			-0.1	0.440	0.527	-2.8%
	2nd	FR1 n2_Ant 5	20M_BPSK_50_0	Left Cheek	0mm	3	380000	1900	15.73	16.60	1.222			0	0.419	0.512	
	1st	FR1 n7_Ant 2	50M_BPSK_1_1	Right Cheek	0mm	2	507000	2535	21.30	22.80	1.413			-0.09	0.649	0.917	-3.6%
19	2nd	FR1 n7_Ant 2	50M_BPSK_1_1	Right Cheek	0mm	2	507000	2535	21.16	22.80	1.459			0.06	0.606	0.884	
	1st	FR1 n7_Ant 2	50M_BPSK_1_1	Right Cheek	0mm	3	507000	2535	21.30	22.10	1.202			-0.09	0.649	0.780	-3.6%
	2nd	FR1 n7_Ant 2	50M_BPSK_1_1	Right Cheek	0mm	3	507000	2535	21.16	22.10	1.242			0.06	0.606	0.752	
	1st	FR1 n7_Ant 0	50M_BPSK_1_1	Right Cheek	0mm	2/3	507000	2535	23.82	25.00	1.312			-0.03	0.211	0.277	-8.7%
	2nd	FR1 n7_Ant 0	50M_BPSK_1_1	Right Cheek	0mm	2/3	507000	2535	23.49	25.00	1.416			0.05	0.179	0.253	
	1st	FR1 n12_Ant 0	15M_BPSK_1_1	Left Cheek	0mm	2/3	141500	707.5	24.66	25.50	1.213			0.01	0.312	0.379	-8.7%
	2nd	FR1 n12_Ant 0	15M_BPSK_1_1	Left Cheek	0mm	2/3	141500	707.5	24.52	25.50	1.253			0.09	0.276	0.346	
	1st	FR1 n12_Ant 1	15M_BPSK_1_1	Right Cheek	0mm	2	141500	707.5	21.67	23.40	1.489			0.04	0.622	0.926	-3.5%
20	2nd	FR1 n12_Ant 1	15M_BPSK_1_1	Right Cheek	0mm	2	141500	707.5	21.77	23.40	1.455			-0.01	0.614	0.894	
	1st	FR1 n12_Ant 1	15M_BPSK_1_1	Right Cheek	0mm	3	141500	707.5	21.67	22.70	1.268			0.04	0.622	0.788	-3.4%
	2nd	FR1 n12_Ant 1	15M_BPSK_1_1	Right Cheek	0mm	3	141500	707.5	21.77	22.70	1.239			-0.01	0.614	0.761	
	1st	FR1 n25_Ant 2	40M_BPSK_1_1	Right Cheek	0mm	2	376500	1882.5	23.42	24.70	1.343			0.12	0.603	0.810	-11.5%
21	2nd	FR1 n25_Ant 2	40M_BPSK_1_1	Right Cheek	0mm	2	376500	1882.5	23.38	24.70	1.355			0.04	0.529	0.717	
	1st	FR1 n25_Ant 2	40M_BPSK_1_1	Right Cheek	0mm	3	376500	1882.5	23.42	24.00	1.143			0.12	0.603	0.689	-11.5%
	2nd	FR1 n25_Ant 2	40M_BPSK_1_1	Right Cheek	0mm	3	376500	1882.5	23.38	24.00	1.153			0.04	0.529	0.610	
	1st	FR1 n25_Ant 0	40M_BPSK_1_108	Left Cheek	0mm	2/3	376500	1882.5	24.58	25.30	1.180			0.07	0.115	0.136	-25.0%
	2nd	FR1 n25_Ant 0	40M_BPSK_1_108	Left Cheek	0mm	2/3	376500	1882.5	24.35	25.30	1.245			0.18	0.082	0.102	
	1st	FR1 n26_Ant 0	20M_BPSK_1_1	Left Cheek	0mm	2/3	166300	831.5	24.60	25.50	1.230			-0.13	0.437	0.538	-6.7%
	2nd	FR1 n5_Ant 0	20M_BPSK_1_1	Left Cheek	0mm	2/3	167300	836.5	24.75	25.50	1.189			0.16	0.422	0.502	
	1st	FR1 n5_Ant 1	20M_BPSK_1_1	Right Cheek	0mm	2	166300	831.5	20.43	21.30	1.222			0.03	0.637	0.778	-5.1%
22	2nd	FR1 n5_Ant 1	20M_BPSK_1_1	Right Cheek	0mm	2	167300	836.5	20.35	21.30	1.245			-0.05	0.593	0.738	
	1st	FR1 n26_Ant 1	20M_BPSK_1_1	Right Cheek	0mm	3	166300	831.5	20.43	20.60	1.040			0.03	0.637	0.662	-5.1%
	2nd	FR1 n5_Ant 1	20M_BPSK_1_1	Right Cheek	0mm	3	167300	836.5	20.35	20.60	1.059			-0.05	0.593	0.628	
	1st	FR1 n30_Ant 2	10M_BPSK_1_1	Right Cheek	0mm	2/3	462000	2310	21.51	22.50	1.256			-0.06	0.539	0.677	-5.6%
23	2nd	FR1 n30_Ant 2	10M_BPSK_1_1	Right Cheek	0mm	2/3	462000	2310	21.32	22.50	1.312			0.02	0.487	0.639	
	1st	FR1 n30_Ant 0	10M_BPSK_1_26	Left Cheek	0mm	2/3	462000	2310	20.03	20.80	1.194			0.02	0.132	0.158	-17.1%
	2nd	FR1 n30_Ant 0	10M_BPSK_1_26	Left Cheek	0mm	2/3	462000	2310	19.36	20.80	1.393			0.05	0.094	0.131	
	1st	FR1 n38_Ant 0	20M_BPSK_1_1	Right Cheek	0mm	2/3	519000	2595	23.56	25.00	1.393			-0.08	0.245	0.341	-18.8%
24	2nd	FR1 n38_Ant 0	20M_BPSK_1_1	Right Cheek	0mm	2/3	519000	2595	23.22	25.00	1.507			0.14	0.184	0.277	



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	1st	FR1 n41_Ant 2	100M_BPSK_135_0	Right Cheek	0mm	2	518598	2592.99	20.96	22.40	1.393			-0.1	0.583	0.812	-15.6%
	2nd	FR1 n41_Ant 2	100M_BPSK_135_0	Right Cheek	0mm	2	518598	2592.99	20.89	22.40	1.416			-0.19	0.484	0.685	
	1st	FR1 n41_Ant 2	100M_BPSK_135_0	Right Cheek	0mm	3	518598	2592.99	20.96	21.70	1.186			-0.1	0.583	0.691	-15.6%
	2nd	FR1 n41_Ant 2	100M_BPSK_135_0	Right Cheek	0mm	3	518598	2592.99	20.89	21.70	1.205			-0.19	0.484	0.583	
	1st	FR1 n41_Ant 0	100M_BPSK_1_1	Right Cheek	0mm	2/3	518598	2592.99	22.17	23.70	1.422			-0.05	0.220	0.313	-26.2%
	2nd	FR1 n41_Ant 0	100M_BPSK_1_1	Right Cheek	0mm	2/3	518598	2592.99	21.99	23.70	1.483			-0.04	0.156	0.231	
	1st	FR1 n41_Ant 1	100M_BPSK_1_1	Right Tilted	0mm	2	518598	2592.99	13.34	14.4	1.276			0.18	0.662	0.845	-6.3%
25	2nd	FR1 n41_Ant 1	100M_BPSK_1_1	Right Tilted	0mm	2	518598	2592.99	13.46	14.4	1.242			0.06	0.638	0.792	
	1st	FR1 n41_Ant 1	100M_BPSK_1_1	Right Tilted	0mm	3	518598	2592.99	13.34	13.7	1.086			0.18	0.662	0.719	-6.3%
	2nd	FR1 n41_Ant 1	100M_BPSK_1_1	Right Tilted	0mm	3	518598	2592.99	13.46	13.7	1.057			0.06	0.638	0.674	
	1st	FR1 n41_Ant 5	100M_BPSK_1_1	Left Cheek	0mm	2	518598	2592.99	16.49	17.40	1.233			-0.1	0.496	0.612	-16.3%
	2nd	FR1 n41_Ant 5	100M_BPSK_1_1	Left Cheek	0mm	2	518598	2592.99	16.31	17.40	1.285			-0.02	0.398	0.512	
	1st	FR1 n41_Ant 5	100M_BPSK_1_1	Left Cheek	0mm	3	518598	2592.99	16.49	16.70	1.050			-0.1	0.496	0.521	-16.5%
	2nd	FR1 n41_Ant 5	100M_BPSK_1_1	Left Cheek	0mm	3	518598	2592.99	16.31	16.70	1.094			-0.02	0.398	0.435	
	1st	FR1 n66_Ant 2	40M_BPSK_1_1	Right Cheek	0mm	2/3	349000	1745	24.59	25.50	1.233			-0.14	0.572	0.705	-10.5%
	2nd	FR1 n66_Ant 2	40M_BPSK_1_1	Right Cheek	0mm	2/3	349000	1745	24.41	25.50	1.285			-0.03	0.491	0.631	
	1st	FR1 n66_Ant 0	40M_BPSK_1_108	Right Cheek	0mm	2/3	349000	1745	24.78	25.30	1.127			-0.06	0.175	0.197	-12.2%
	2nd	FR1 n66_Ant 0	40M_BPSK_1_108	Right Cheek	0mm	2/3	349000	1745	24.67	25.30	1.156			-0.03	0.150	0.173	
	1st	FR1 n66_Ant 1	40M_BPSK_216_0	Right Tilted	0mm	2	349000	1745	19.39	20.10	1.178			-0.04	0.847	0.997	-10.3%
26	2nd	FR1 n66_Ant 1	40M_BPSK_216_0	Right Tilted	0mm	2	349000	1745	19.35	20.10	1.189			-0.02	0.752	0.894	
	1st	FR1 n66_Ant 1	40M_BPSK_216_0	Right Tilted	0mm	3	349000	1745	19.39	19.40	1.002			-0.04	0.847	0.849	-10.4%
	2nd	FR1 n66_Ant 1	40M_BPSK_216_0	Right Tilted	0mm	3	349000	1745	19.35	19.40	1.012			-0.02	0.752	0.761	
	1st	FR1 n66_Ant 5	40M_BPSK_108_0	Left Cheek	0mm	2	349000	1745	18.78	19.80	1.265			-0.06	0.488	0.617	-2.6%
	2nd	FR1 n66_Ant 5	40M_BPSK_108_0	Left Cheek	0mm	2	349000	1745	18.66	19.80	1.300			-0.16	0.462	0.601	
	1st	FR1 n66_Ant 5	40M_BPSK_108_0	Left Cheek	0mm	3	349000	1745	18.78	19.10	1.076			-0.06	0.488	0.525	-2.7%
	2nd	FR1 n66_Ant 5	40M_BPSK_108_0	Left Cheek	0mm	3	349000	1745	18.66	19.10	1.107			-0.16	0.462	0.511	
	1st	FR1 n71_Ant 0	20M_BPSK_1_1	Left Cheek	0mm	2/3	136100	680.5	24.54	25.50	1.247			0.19	0.266	0.332	-5.7%
	2nd	FR1 n71_Ant 0	20M_BPSK_1_1	Left Cheek	0mm	2/3	136100	680.5	24.68	25.50	1.208			-0.11	0.259	0.313	
	1st	FR1 n71_Ant 1	20M_BPSK_1_53	Right Cheek	0mm	2	136100	680.5	22.75	23.50	1.189			0	0.792	0.941	-6.0%
27	2nd	FR1 n71_Ant 1	20M_BPSK_1_53	Right Cheek	0mm	2	136100	680.5	22.78	23.50	1.180			0.02	0.750	0.885	
	1st	FR1 n71_Ant 1	20M_BPSK_1_53	Right Cheek	0mm	3	136100	680.5	22.75	22.80	1.012			0	0.792	0.801	-6.0%
	2nd	FR1 n71_Ant 1	20M_BPSK_1_53	Right Cheek	0mm	3	136100	680.5	22.78	22.80	1.005			0.02	0.750	0.753	
	1st	FR1 n77_Ant 6	100M_BPSK_1_1	Left Cheek	0mm	2	656000	3840	21.45	22.20	1.189			-0.03	0.494	0.587	-11%
	2nd	FR1 n77_Ant 6	100M_BPSK_1_1	Left Cheek	0mm	2	656000	3840	21.43	22.20	1.194			-0.03	0.436	0.521	
	1st	FR1 n77_Ant 6	100M_BPSK_1_1	Left Cheek	0mm	3	656000	3840	21.45	21.50	1.012			-0.03	0.494	0.500	-11%
	2nd	FR1 n77_Ant 6	100M_BPSK_1_1	Left Cheek	0mm	3	656000	3840	21.43	21.50	1.016			-0.03	0.436	0.443	
	1st	FR1 n77_Ant 6	100M_BPSK_1_1	Left Cheek	0mm	2	633332	3499.98	21.23	22.20	1.250			-0.18	0.517	0.646	-14%
	2nd	FR1 n77_Ant 6	100M_BPSK_1_1	Left Cheek	0mm	2	633332	3499.98	21.14	22.20	1.276			0.14	0.437	0.558	
	1st	FR1 n77_Ant 6	100M_BPSK_1_1	Left Cheek	0mm	3	633332	3499.98	21.23	21.50	1.064			-0.18	0.517	0.550	-14%
	2nd	FR1 n77_Ant 6	100M_BPSK_1_1	Left Cheek	0mm	3	633332	3499.98	21.14	21.50	1.086			0.14	0.437	0.475	
	1st	FR1 n77_Ant 7	100M_BPSK_1_1	Right Cheek	0mm	2/3	656000	3840	22.56	24.00	1.393			0.05	0.359	0.500	-24%
	2nd	FR1 n77_Ant 7	100M_BPSK_1_1	Right Cheek	0mm	2/3	656000	3840	22.42	24.00	1.439			0.11	0.263	0.378	
	1st	FR1 n77_Ant 7	100M_BPSK_1_1	Right Cheek	0mm	2/3	633332	3499.98	22.81	24.00	1.315			-0.04	0.289	0.380	-3%
	2nd	FR1 n77_Ant 7	100M_BPSK_1_1	Right Cheek	0mm	2/3	633332	3499.98	22.80	24.00	1.318			-0.04	0.281	0.370	
	1st	FR1 n77_Ant 1	100M_BPSK_1_1	Right Cheek	0mm	2	656000	3840	20.45	21.8	1.365			-0.09	0.588	0.802	-18%
28	2nd	FR1 n77_Ant 1	100M_BPSK_1_1	Right Cheek	0mm	2	656000	3840	20.39	21.8	1.384			-0.11	0.478	0.661	
	1st	FR1 n77_Ant 1	100M_BPSK_1_1	Right Cheek	0mm	3	656000	3840	20.45	21.1	1.161			-0.09	0.574	0.667	-16%
	2nd	FR1 n77_Ant 1	100M_BPSK_1_1	Right Cheek	0mm	3	656000	3840	20.39	21.1	1.178			-0.11	0.478	0.563	
	1st	FR1 n77_Ant 1	100M_BPSK_1_1	Right Cheek	0mm	2	633332	3499.98	21.08	21.8	1.180			0.01	0.640	0.755	-25%
	2nd	FR1 n77_Ant 1	100M_BPSK_1_1	Right Cheek	0mm	2	633332	3499.98	21.06	21.8	1.186			-0.13	0.479	0.568	
	1st	FR1 n77_Ant 1	100M_BPSK_1_1	Right Cheek	0mm	3	633332	3499.98	21.08	21.1	1.005			0.01	0.640	0.643	-25%
	2nd	FR1 n77_Ant 1	100M_BPSK_1_1	Right Cheek	0mm	3	633332	3499.98	21.06	21.1	1.009			-0.13	0.479	0.483	
	1st	FR1 n77_Ant 5	100M_BPSK_1_1	Left Cheek	0mm	2	656000	3840	14.29	15.10	1.205			0.07	0.513	0.618	-2%
	2nd	FR1 n77_Ant 5	100M_BPSK_1_1	Left Cheek	0mm	2	656000	3840	14.07	15.10	1.268			-0.07	0.480	0.608	
	1st	FR1 n77_Ant 5	100M_BPSK_1_1	Left Cheek	0mm	3	656000	3840	14.29	14.40	1.026			0.07	0.513	0.526	-2%
	2nd	FR1 n77_Ant 5	100M_BPSK_1_1	Left Cheek	0mm	3	656000	3840	14.07	14.40	1.079			-0.07	0.480	0.518	



FCC SAR TEST REPORT

Report No. : FA2D0208-02D

Summary table with 17 columns: Plot No., No., Band, Mode, Test Position, Gap (mm), Antenna, Power Index, Ch., Freq. (MHz), Average Power (dBm), Tune-Up Limit (dBm), Tune-up Scaling Factor, Duty Cycle %, Duty Cycle Scaling Factor, Power Drift (dB), Measured 1g SAR (W/kg), Reported 1g SAR (W/kg), Measured APD (W/m^2), Reported APD (W/m^2), Deviation (%). Rows 1-4 show FR1 n77_Ant 5 results.

Main test results table with 20 columns: Plot No., No., Band, Mode, Test Position, Gap (mm), Antenna, Power Index, Ch., Freq. (MHz), Average Power (dBm), Tune-Up Limit (dBm), Tune-up Scaling Factor, Duty Cycle %, Duty Cycle Scaling Factor, Power Drift (dB), Measured 1g SAR (W/kg), Reported 1g SAR (W/kg), Measured APD (W/m^2), Reported APD (W/m^2), Deviation (%). Contains multiple rows for various bands (WLAN2.4GHz, WLAN5GHz) and modes.



FCC SAR TEST REPORT

Report No. : FA2D0208-02D

	1st	WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 3+4(3)	3/4	155	5775	10.85	11.00	1.035	91.94	1.088	-0.11	0.197	0.222			
		WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 3+4(4)	3/4	155	5775	10.60	11.00	1.096	91.94	1.088	-0.11	0.090	0.107			
	2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 3+4(3)	3/4	155	5775	10.71	11.00	1.069	91.94	1.088	-0.16	0.149	0.173			-22.07%
		WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 3+4(4)	3/4	155	5775	10.55	11.00	1.109	91.94	1.088	-0.16	0.079	0.095			
	1st	WLAN5GHz	802.11ac-VHT160 MCS0	Right Cheek	0mm	Ant 3+4(3)	1/2	163	5815	16.45	16.50	1.012	87.95	1.137	-0.17	0.824	0.948			
		WLAN5GHz	802.11ac-VHT160 MCS0	Right Cheek	0mm	Ant 3+4(4)	1/2	163	5815	15.90	16.50	1.148	87.95	1.137	-0.17	0.314	0.410			
33	2nd	WLAN5GHz	802.11ac-VHT160 MCS0	Right Cheek	0mm	Ant 3+4(3)	1/2	163	5815	16.39	16.50	1.026	87.95	1.137	-0.12	0.791	0.922			-2.74%
		WLAN5GHz	802.11ac-VHT160 MCS0	Right Cheek	0mm	Ant 3+4(4)	1/2	163	5815	16.01	16.50	1.119	87.95	1.137	-0.12	0.317	0.403			
	1st	WLAN5GHz	802.11ac-VHT160 MCS0	Right Cheek	0mm	Ant 3+4(3)	3/4	163	5815	10.75	11.00	1.059	87.95	1.137	0.05	0.196	0.236			
		WLAN5GHz	802.11ac-VHT160 MCS0	Right Cheek	0mm	Ant 3+4(4)	3/4	163	5815	10.40	11.00	1.148	87.95	1.137	0.05	0.097	0.127			
	2nd	WLAN5GHz	802.11ac-VHT160 MCS0	Right Cheek	0mm	Ant 3+4(3)	3/4	163	5815	10.75	11.00	1.059	87.95	1.137	-0.15	0.196	0.236			0.00%
		WLAN5GHz	802.11ac-VHT160 MCS0	Right Cheek	0mm	Ant 3+4(4)	3/4	163	5815	10.40	11.00	1.148	87.95	1.137	-0.15	0.088	0.115			
	1st	WLAN6GHz	802.11ax-HE160 MCS0	Right Cheek	0mm	Ant 3+4(3)	1/2	15	6025	12.40	12.50	1.023	86.3	1.159	0.01	0.366	0.434	2.33	2.763	
		WLAN6GHz	802.11ax-HE160 MCS0	Right Cheek	0mm	Ant 3+4(4)	1/2	15	6025	12.30	12.50	1.047	86.3	1.159	0.01	0.094	0.114	0.69	0.837	
34	2nd	WLAN6GHz	802.11ax-HE160 MCS0	Right Cheek	0mm	Ant 3+4(3)	1/2	15	6025	12.16	12.50	1.081	86.3	1.159	-0.02	0.277	0.347	1.73	2.168	-20.05%
		WLAN6GHz	802.11ax-HE160 MCS0	Right Cheek	0mm	Ant 3+4(4)	1/2	15	6025	12.06	12.50	1.107	86.3	1.159	-0.02	0.086	0.110	0.707	0.907	
	1st	WLAN6GHz	802.11ax-HE160 MCS0	Right Cheek	0mm	Ant 3+4(3)	3/4	15	6025	10.55	11.00	1.109	86.11	1.161	0.07	0.181	0.233	1.48	1.906	
		WLAN6GHz	802.11ax-HE160 MCS0	Right Cheek	0mm	Ant 3+4(4)	3/4	15	6025	10.65	11.00	1.084	86.3	1.159	0.07	0.040	0.050	0.264	0.332	
	2nd	WLAN6GHz	802.11ax-HE160 MCS0	Right Cheek	0mm	Ant 3+4(3)	3/4	15	6025	10.78	11.00	1.052	86.11	1.161	0.01	0.172	0.210	0.925	1.130	-9.87%
		WLAN6GHz	802.11ax-HE160 MCS0	Right Cheek	0mm	Ant 3+4(4)	3/4	15	6025	10.66	11.00	1.081	86.3	1.159	0.01	0.070	0.088	0.519	0.651	
	1st	Bluetooth	1Mbps	Right Cheek	0mm	Ant 3	1	39	2441	8.40	9.00	1.148	76.86	1.084	0.19	0.066	0.082			-21.95%
	2nd	Bluetooth	1Mbps	Right Cheek	0mm	Ant 3	1	39	2441	8.22	9.00	1.197	76.86	1.084	0.14	0.049	0.064			
	1st	Bluetooth	1Mbps	Left Tilted	0mm	Ant 4	1	39	2441	9.00	9.00	1.000	76.86	1.084	-0.14	0.314	0.340			-0.88%
	2nd	Bluetooth	1Mbps	Left Tilted	0mm	Ant 4	1	39	2441	8.71	9.00	1.069	76.86	1.084	-0.15	0.291	0.337			
	1st	Bluetooth	1Mbps	Left Tilted	0mm	Ant 3+4(3)	1	39	2441	8.44	9.00	1.138	77.07	1.081	-0.15	0.001	0.001			
		Bluetooth	1Mbps	Left Tilted	0mm	Ant 3+4(4)	1	39	2441	8.86	9.00	1.033	77.07	1.081	-0.15	0.391	0.437			
35	2nd	Bluetooth	1Mbps	Left Tilted	0mm	Ant 3+4(3)	1	39	2441	8.26	9.00	1.186	77.07	1.081	-0.02	0.001	0.001			-8.70%
		Bluetooth	1Mbps	Left Tilted	0mm	Ant 3+4(4)	1	39	2441	8.82	9.00	1.042	77.07	1.081	-0.02	0.354	0.399			



14.2 Hotspot SAR

Table with 17 columns: Plot No., No., Band, Mode, Test Position, Gap (mm), Power Index, 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), Deviation (%). Rows contain test data for various bands and modes.



FCC SAR TEST REPORT

Report No. : FA2D0208-02D

	1st	LTE Band 41_Ant 2	20M_QPSK_1_0	Right Side	10mm	4	39750	2506	20.91	21.20	1.069	62.9	1.006	-0.02	0.546	0.587	
49	2nd	LTE Band 41_Ant 2	20M_QPSK_1_0	Right Side	10mm	4	39750	2506	20.88	21.20	1.076	62.9	1.006	0.1	0.536	0.580	-1.2%
	1st	LTE Band 41_HPUE_Ant 2	20M_QPSK_1_0	Right Side	10mm	4	40620	2593	22.36	22.80	1.107	42.9	1.009	0	0.550	0.614	
	2nd	LTE Band 38_HPUE_Ant 2	20M_QPSK_1_0	Right Side	10mm	4	38000	2595	22.29	22.80	1.125	42.9	1.009	-0.02	0.466	0.529	-13.8%
	1st	LTE Band 41_Ant 0	20M_QPSK_1_0	Bottom Side	10mm	4	39750	2506	18.50	19.90	1.380	62.9	1.006	0.02	0.487	0.676	
	2nd	LTE Band 41_Ant 0	20M_QPSK_1_0	Bottom Side	10mm	4	39750	2506	18.44	19.90	1.400	62.9	1.006	0.03	0.402	0.566	-16.3%
	1st	LTE Band 41_HPUE_Ant 0	20M_QPSK_1_0	Bottom Side	10mm	4	39750	2506	19.93	21.60	1.469	42.9	1.009	-0.09	0.462	0.685	
	2nd	LTE Band 38_HPUE_Ant 0	20M_QPSK_1_0	Bottom Side	10mm	4	38000	2595	19.91	21.50	1.442	42.9	1.009	0.03	0.389	0.566	-17.4%
	1st	LTE Band 48_Ant 6	20M_QPSK_1_0	Left Side	10mm	4	56640	3690	19.93	20.70	1.194	62.9	1.006	-0.05	0.699	0.840	
50	2nd	LTE Band 48_Ant 6	20M_QPSK_1_0	Left Side	10mm	4	56640	3690	19.95	20.70	1.189	62.9	1.006	-0.03	0.658	0.787	-6.3%
	1st	LTE Band 48_Ant 7	20M_QPSK_1_0	Bottom Side	10mm	4	55830	3609	22.28	22.40	1.028	62.9	1.006	0.01	0.704	0.728	
	2nd	LTE Band 48_Ant 7	20M_QPSK_1_0	Bottom Side	10mm	4	55830	3609	22.25	22.40	1.035	62.9	1.006	0.03	0.653	0.680	-6.6%
	1st	LTE Band 66_Ant 2	20M_QPSK_1_0	Right Side	10mm	4	132572	1770	20.84	21.30	1.112			-0.01	0.468	0.520	
	2nd	LTE Band 66_Ant 2	20M_QPSK_1_0	Right Side	10mm	4	132572	1770	20.80	21.30	1.122			-0.03	0.415	0.466	-10.4%
	1st	LTE Band 66_Ant 0	20M_QPSK_1_0	Bottom Side	10mm	4	132072	1720	17.81	18.80	1.256			0	0.544	0.683	
51	2nd	LTE Band 66_Ant 0	20M_QPSK_1_0	Bottom Side	10mm	4	132072	1720	17.83	18.80	1.250			0	0.540	0.675	-1.2%
	1st	LTE Band 66_Ant 1	20M_QPSK_50_0	Top Side	10mm	4	132572	1770	21.19	22.20	1.262			-0.02	0.486	0.613	
	2nd	LTE Band 66_Ant 1	20M_QPSK_50_0	Top Side	10mm	4	132572	1770	21.20	22.20	1.259			0.04	0.448	0.564	-8.0%
	1st	LTE Band 66_Ant 5	20M_QPSK_50_0	Right Side	10mm	4	132572	1770	20.23	20.50	1.064			0.02	0.283	0.301	
	2nd	LTE Band 66_Ant 5	20M_QPSK_50_0	Right Side	10mm	4	132572	1770	20.25	20.50	1.059			-0.02	0.270	0.286	-5.0%
	1st	LTE Band 71_Ant 0	20M_QPSK_1_0	Left Side	10mm	4	133297	680.5	24.71	25.50	1.199			0.02	0.400	0.480	
52	2nd	LTE Band 71_Ant 0	20M_QPSK_1_0	Left Side	10mm	4	133297	680.5	24.72	25.50	1.197			-0.08	0.386	0.462	-3.7%
	1st	LTE Band 71_Ant 1	20M_QPSK_1_0	Back	10mm	4	133297	680.5	24.51	25.10	1.146			0.01	0.195	0.223	
	2nd	LTE Band 71_Ant 1	20M_QPSK_1_0	Back	10mm	4	133297	680.5	24.47	25.10	1.156			0.16	0.186	0.215	-3.6%
	1st	FR1 n2_Ant 1	20M_BPSK_1_53	Top Side	10mm	4	380000	1900	20.63	21.20	1.140			-0.03	0.580	0.661	
	2nd	FR1 n2_Ant 1	20M_BPSK_1_53	Top Side	10mm	4	380000	1900	20.61	21.20	1.146			0	0.552	0.632	-4.4%
	1st	FR1 n2_Ant 5	20M_BPSK_50_0	Right Side	10mm	4	380000	1900	20.35	21.20	1.216			-0.04	0.541	0.658	
53	2nd	FR1 n2_Ant 5	20M_BPSK_50_0	Right Side	10mm	4	380000	1900	20.36	21.20	1.213			0.01	0.537	0.652	-0.9%
	1st	FR1 n7_Ant 2	50M_BPSK_1_1	Right Side	10mm	4	507000	2535	18.97	19.90	1.239			0.08	0.561	0.695	
	2nd	FR1 n7_Ant 2	50M_BPSK_1_1	Right Side	10mm	4	507000	2535	18.94	19.90	1.247			-0.01	0.535	0.667	-4.0%
	1st	FR1 n7_Ant 0	50M_BPSK_1_1	Bottom Side	10mm	4	507000	2535	17.52	18.60	1.282			-0.01	0.628	0.805	
54	2nd	FR1 n7_Ant 0	50M_BPSK_1_1	Bottom Side	10mm	4	507000	2535	17.53	18.60	1.279			0.02	0.618	0.791	-1.7%
	1st	FR1 n12_Ant 0	15M_BPSK_1_1	Left Side	10mm	4	141500	707.5	24.66	25.50	1.213			0.01	0.450	0.546	
55	2nd	FR1 n12_Ant 0	15M_BPSK_1_1	Left Side	10mm	4	141500	707.5	24.62	25.50	1.225			0.02	0.401	0.491	-10.1%
	1st	FR1 n12_Ant 1	15M_BPSK_1_77	Back	10mm	4	141500	707.5	24.84	25.10	1.062			0	0.227	0.241	
	2nd	FR1 n12_Ant 1	15M_BPSK_1_77	Back	10mm	4	141500	707.5	24.79	25.10	1.074			-0.11	0.178	0.191	-20.7%
	1st	FR1 n25_Ant 2	40M_BPSK_1_1	Right Side	10mm	4	376500	1882.5	20.29	21.20	1.233			0.02	0.462	0.570	
	2nd	FR1 n25_Ant 2	40M_BPSK_1_1	Right Side	10mm	4	376500	1882.5	20.26	21.20	1.242			0.03	0.448	0.556	-2.5%
	1st	FR1 n25_Ant 0	40M_BPSK_1_1	Bottom Side	10mm	4	376500	1882.5	18.20	18.20	1.000			0	0.846	0.846	
56	2nd	FR1 n25_Ant 0	40M_BPSK_1_1	Bottom Side	10mm	4	376500	1882.5	18.19	18.20	1.002			-0.02	0.840	0.842	-0.5%
	1st	FR1 n26_Ant 0	20M_BPSK_1_1	Bottom Side	10mm	4	166300	831.5	24.60	25.10	1.122			-0.01	0.704	0.790	
57	2nd	FR1 n5_Ant 0	20M_BPSK_1_1	Bottom Side	10mm	4	167300	836.5	24.53	25.10	1.140			0.02	0.664	0.757	-4.2%
	1st	FR1 n26_Ant 1	20M_BPSK_1_104	Back	10mm	4	166300	831.5	24.81	25.10	1.069			0	0.417	0.446	
	2nd	FR1 n5_Ant 1	20M_BPSK_1_104	Back	10mm	4	167300	836.5	24.63	25.10	1.114			-0.01	0.368	0.410	-8.1%
	1st	FR1 n30_Ant 2	10M_BPSK_1_1	Right Side	10mm	4	462000	2310	18.42	19.40	1.253			0	0.363	0.455	
	2nd	FR1 n30_Ant 2	10M_BPSK_1_1	Right Side	10mm	4	462000	2310	18.36	19.40	1.271			0	0.324	0.412	-9.5%
	1st	FR1 n30_Ant 0	10M_BPSK_1_26	Bottom Side	10mm	4	462000	2310	15.76	16.90	1.300			0.02	0.641	0.833	
58	2nd	FR1 n30_Ant 0	10M_BPSK_1_26	Bottom Side	10mm	4	462000	2310	15.77	16.90	1.297			-0.08	0.631	0.819	-1.7%
	1st	FR1 n41_Ant 2	100M_BPSK_135_0	Right Side	10mm	4	518598	2592.99	17.68	18.70	1.265			-0.02	0.399	0.505	
	2nd	FR1 n41_Ant 2	100M_BPSK_135_0	Right Side	10mm	4	518598	2592.99	17.72	18.70	1.253			-0.02	0.392	0.491	-2.8%
	1st	FR1 n41_Ant 0	100M_BPSK_1_1	Bottom Side	10mm	4	518598	2592.99	18.20	18.40	1.047			0	0.687	0.719	
	2nd	FR1 n41_Ant 0	100M_BPSK_1_1	Bottom Side	10mm	4	518598	2592.99	18.12	18.40	1.067			0.01	0.610	0.651	-9.5%
	1st	FR1 n41_Ant 1	100M_BPSK_135_0	Top Side	10mm	4	518598	2592.99	18.35	19.3	1.245			-0.02	0.655	0.815	
59	2nd	FR1 n41_Ant 1	100M_BPSK_135_0	Top Side	10mm	4	518598	2592.99	18.37	19.3	1.239			0.03	0.623	0.772	-5.3%
	1st	FR1 n41_Ant 5	100M_BPSK_1_1	Right Side	10mm	4	518598	2592.99	18.57	19.40	1.211			-0.01	0.399	0.483	
	2nd	FR1 n41_Ant 5	100M_BPSK_1_1	Right Side	10mm	4	518598	2592.99	18.52	19.40	1.225			-0.02	0.327	0.400	-17.2%



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	1st	FR1 n66_Ant 2	40M_BPSK_1_1	Right Side	10mm	4	349000	1745	20.56	21.50	1.242			-0.03	0.388	0.482	-3.9%
	2nd	FR1 n66_Ant 2	40M_BPSK_1_1	Right Side	10mm	4	349000	1745	20.51	21.50	1.256			0	0.369	0.463	
60	1st	FR1 n66_Ant 0	40M_BPSK_108_0	Bottom Side	10mm	4	349000	1745	17.76	18.10	1.081			-0.03	0.749	0.810	-3.2%
	2nd	FR1 n66_Ant 0	40M_BPSK_108_0	Bottom Side	10mm	4	349000	1745	17.77	18.10	1.079			-0.04	0.727	0.784	
	1st	FR1 n66_Ant 1	40M_BPSK_1_108	Top Side	10mm	4	349000	1745	22.27	22.70	1.104			-0.02	0.412	0.455	-1.3%
	2nd	FR1 n66_Ant 1	40M_BPSK_1_108	Top Side	10mm	4	349000	1745	22.29	22.70	1.099			0	0.409	0.449	
	1st	FR1 n66_Ant 5	40M_BPSK_108_0	Right Side	10mm	4	349000	1745	20.78	21.00	1.052			-0.01	0.306	0.322	-0.9%
	2nd	FR1 n66_Ant 5	40M_BPSK_108_0	Right Side	10mm	4	349000	1745	20.75	21.00	1.059			0	0.301	0.319	
61	1st	FR1 n71_Ant 0	20M_BPSK_1_1	Left Side	10mm	4	136100	680.5	24.54	25.50	1.247			-0.01	0.499	0.622	-9.2%
	2nd	FR1 n71_Ant 0	20M_BPSK_1_1	Left Side	10mm	4	136100	680.5	24.52	25.50	1.253			0	0.451	0.565	
	1st	FR1 n71_Ant 1	20M_BPSK_1_53	Left Side	10mm	4	136100	680.5	24.96	25.10	1.033			0	0.271	0.280	-5.7%
	2nd	FR1 n71_Ant 1	20M_BPSK_1_53	Left Side	10mm	4	136100	680.5	24.91	25.10	1.045			0	0.253	0.264	
	1st	FR1 n77_Ant 6	100M_BPSK_1_1	Left Side	10mm	4	656000	3840	17.25	17.50	1.059			-0.06	0.392	0.415	-16%
	2nd	FR1 n77_Ant 6	100M_BPSK_1_1	Left Side	10mm	4	656000	3840	17.23	17.50	1.064			-0.06	0.327	0.348	
62	1st	FR1 n77_Ant 6	100M_BPSK_1_1	Left Side	10mm	4	633332	3499.98	16.97	17.50	1.130			-0.04	0.513	0.580	-7%
	2nd	FR1 n77_Ant 6	100M_BPSK_1_1	Left Side	10mm	4	633332	3499.98	16.96	17.50	1.132			-0.04	0.478	0.541	
	1st	FR1 n77_Ant 7	100M_BPSK_1_1	Bottom Side	10mm	4	656000	3840	20.08	20.40	1.076			0.05	0.595	0.640	-22%
	2nd	FR1 n77_Ant 7	100M_BPSK_1_1	Bottom Side	10mm	4	656000	3840	20.05	20.40	1.084			0.05	0.462	0.501	
	1st	FR1 n77_Ant 7	100M_BPSK_1_1	Right Side	10mm	4	633332	3499.98	20.23	20.40	1.040			-0.17	0.407	0.423	-1%
	2nd	FR1 n77_Ant 7	100M_BPSK_1_1	Right Side	10mm	4	633332	3499.98	20.17	20.40	1.054			0.08	0.398	0.420	
	1st	FR1 n77_Ant 1	100M_BPSK_1_1	Top Side	10mm	4	656000	3840	22.94	23.1	1.038			-0.1	0.473	0.491	-1%
	2nd	FR1 n77_Ant 1	100M_BPSK_1_1	Top Side	10mm	4	656000	3840	22.63	23.1	1.114			-0.02	0.438	0.488	
	1st	FR1 n77_Ant 1	100M_BPSK_135_69	Back	10mm	4	633332	3499.98	22.9	23.1	1.047			0.13	0.299	0.313	-20%
	2nd	FR1 n77_Ant 1	100M_BPSK_135_69	Back	10mm	4	633332	3499.98	22.85	23.1	1.059			-0.04	0.235	0.249	
	1st	FR1 n77_Ant 5	100M_BPSK_1_1	Right Side	10mm	4	656000	3840	18.33	19.10	1.194			-0.01	0.543	0.648	-17%
	2nd	FR1 n77_Ant 5	100M_BPSK_1_1	Right Side	10mm	4	656000	3840	18.11	19.10	1.256			0.02	0.430	0.540	
	1st	FR1 n77_Ant 5	100M_BPSK_1_1	Right Side	10mm	4	633332	3499.98	18.51	19.10	1.146			0.02	0.214	0.245	-25%
	2nd	FR1 n77_Ant 5	100M_BPSK_1_1	Right Side	10mm	4	633332	3499.98	18.49	19.10	1.151			-0.02	0.159	0.183	

Plot No.	No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power Index	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)	Deviation (%)
	1st	WLAN2.4GHz	802.11b 1Mbps	Left Side	10mm	Ant 3	7	11	2462	16.85	17.00	1.035	98.85	1.012	-0.14	0.319	0.334	-23.95%
	2nd	WLAN2.4GHz	802.11b 1Mbps	Left Side	10mm	Ant 3	7	11	2462	16.51	17.00	1.119	98.85	1.012	-0.14	0.224	0.254	
	1st	WLAN2.4GHz	802.11b 1Mbps	Top Side	10mm	Ant 4	7	12	2467	16.85	17.00	1.035	98.97	1.010	-0.11	0.666	0.696	-8.33%
63	2nd	WLAN2.4GHz	802.11b 1Mbps	Top Side	10mm	Ant 4	7	12	2467	16.85	17.00	1.035	98.97	1.010	-0.04	0.610	0.638	
	1st	WLAN2.4GHz	802.11g 6Mbps	Top Side	10mm	Ant 3+4(3)	7	11	2462	16.75	17.00	1.059	93.46	1.070	0.01	0.001	0.001	-7.44%
		WLAN2.4GHz	802.11g 6Mbps	Top Side	10mm	Ant 3+4(4)	7	11	2462	16.85	17.00	1.035	93.46	1.070	0.01	0.582	0.645	
	2nd	WLAN2.4GHz	802.11g 6Mbps	Top Side	10mm	Ant 3+4(3)	7	11	2462	16.71	17.00	1.069	93.46	1.070	-0.06	0.001	0.001	
		WLAN2.4GHz	802.11g 6Mbps	Top Side	10mm	Ant 3+4(4)	7	11	2462	16.92	17.00	1.019	93.46	1.070	-0.06	0.548	0.597	
	1st	WLAN2.4GHz	802.11b 1Mbps	Left Side	10mm	Ant 3	8	11	2462	14.25	14.50	1.059	98.85	1.012	-0.11	0.148	0.159	-23.90%
	2nd	WLAN2.4GHz	802.11b 1Mbps	Left Side	10mm	Ant 3	8	11	2462	14.15	14.50	1.084	98.85	1.012	-0.09	0.110	0.121	
	1st	WLAN2.4GHz	802.11b 1Mbps	Top Side	10mm	Ant 4	8	12	2467	14.15	14.50	1.084	98.97	1.010	-0.04	0.368	0.403	-16.13%
	2nd	WLAN2.4GHz	802.11b 1Mbps	Top Side	10mm	Ant 4	8	12	2467	14.11	14.50	1.094	98.97	1.010	-0.01	0.306	0.338	
	1st	WLAN2.4GHz	802.11g 6Mbps	Top Side	10mm	Ant 3+4(3)	8	12	2467	14.35	14.50	1.035	93.46	1.070	-0.02	0.001	0.001	-9.70%
		WLAN2.4GHz	802.11g 6Mbps	Top Side	10mm	Ant 3+4(4)	8	12	2467	14.15	14.50	1.084	93.46	1.070	-0.02	0.347	0.402	
	2nd	WLAN2.4GHz	802.11g 6Mbps	Top Side	10mm	Ant 3+4(3)	8	12	2467	14.20	14.50	1.072	93.46	1.070	-0.1	0.001	0.001	
		WLAN2.4GHz	802.11g 6Mbps	Top Side	10mm	Ant 3+4(4)	8	12	2467	14.09	14.50	1.099	93.46	1.070	-0.1	0.309	0.363	
	1st	WLAN5GHz	802.11ac-VHT80 MCS0	Right Side	10mm	Ant 3+4(3)	7/8/9	42	5210	14.55	15.00	1.109	91.94	1.088	-0.1	0.001	0.001	-23.16%
		WLAN5GHz	802.11ac-VHT80 MCS0	Right Side	10mm	Ant 3+4(4)	7/8/9	42	5210	15.00	15.00	1.000	91.94	1.088	-0.1	0.163	0.177	
64	2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Right Side	10mm	Ant 3+4(3)	7/8/9	42	5210	14.61	15.00	1.094	91.94	1.088	0.02	0.001	0.001	
		WLAN5GHz	802.11ac-VHT80 MCS0	Right Side	10mm	Ant 3+4(4)	7/8/9	42	5210	14.91	15.00	1.021	91.94	1.088	0.02	0.122	0.136	
	1st	WLAN5GHz	802.11ac-VHT80 MCS0	Back	10mm	Ant 3+4(3)	7	155	5775	17.90	18.00	1.023	87.8	1.139	-0.08	0.167	0.195	-10.34%
		WLAN5GHz	802.11ac-VHT80 MCS0	Back	10mm	Ant 3+4(4)	7	155	5775	17.70	18.00	1.072	87.8	1.139	-0.08	0.380	0.464	
65	2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Back	10mm	Ant 3+4(3)	7	155	5775	17.95	18.00	1.012	87.8	1.139	-0.09	0.180	0.207	
		WLAN5GHz	802.11ac-VHT80 MCS0	Back	10mm	Ant 3+4(4)	7	155	5775	17.55	18.00	1.109	87.8	1.139	-0.09	0.329	0.416	
	1st	WLAN5GHz	802.11ac-VHT80 MCS0	Back	10mm	Ant 3+4(3)	8/9	155	5775	14.95	15.00	1.012	87.8	1.139	-0.04	0.103	0.119	-19.12%
		WLAN5GHz	802.11ac-VHT80 MCS0	Back	10mm	Ant 3+4(4)	8/9	155	5775	14.50	15.00	1.122	87.8	1.139	-0.04	0.250	0.319	
	2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Back	10mm	Ant 3+4(3)	8/9	155	5775	14.99	15.00	1.002	87.8	1.139	-0.02	0.099	0.113	
		WLAN5GHz	802.11ac-VHT80 MCS0	Back	10mm	Ant 3+4(4)	8/9	155	5775	14.44	15.00	1.138	87.8	1.139	-0.02	0.199	0.258	
	1st	Bluetooth	1Mbps	Left Side	10mm	Ant 3	3/4	39	2441	14.50	15.00	1.122	76.86	1.084	-0.18	0.130	0.158	-4.43%
	2nd	Bluetooth	1Mbps	Left Side	10mm	Ant 3	3/4	39	2441	14.46	15.00	1.132	76.86	1.084	-0.15	0.123	0.151	
	1st	Bluetooth	1Mbps	Top Side	10mm	Ant 4	3/4	0	2402	15.00	15.00	1.000	76.86	1.084	-0.04	0.309	0.335	-24.78%
	2nd	Bluetooth	1Mbps	Top Side	10mm	Ant 4	3/4	0	2402	14.85	15.00	1.035	76.86	1.084	-0.08	0.225	0.252	
	1st	Bluetooth	1Mbps	Top Side	10mm	Ant 3+4(3)	3/4	78	2480	14.54	15.00	1.112	77.07	1.081	-0.02	0.001	0.001	-22.67%
		Bluetooth	1Mbps	Top Side	10mm	Ant 3+4(4)	3/4	78	2480	14.20	15.00	1.202	77.07	1.081	-0.02	0.363	0.472	
66	2nd	Bluetooth	1Mbps	Top Side	10mm	Ant 3+4(3)	3/4	78	2480	14.55	15.00	1.109	77.07	1.081	-0.13	0.001	0.001	
		Bluetooth	1Mbps	Top Side	10mm	Ant 3+4(4)	3/4	78	2480	14.75	15.00	1.059	77.07	1.081	-0.1	0.319	0.365	



14.3 Body-Worn SAR

Plot No.	No.	Band	Mode	Test Position	Gap (mm)	Power Index	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)	Deviation (%)
67	1st	GSM850_Ant 0	GPRS (4 Tx slots)	Front	10mm	5	189	836.4	28.07	29.40	1.358			0.05	0.701	0.952	-4.3%
	2nd	GSM850_Ant 0	GPRS (4 Tx slots)	Front	10mm	5	189	836.4	28.10	29.40	1.349			-0.05	0.675	0.911	
	1st	GSM850_Ant 0	GPRS (4 Tx slots)	Front	10mm	6	189	836.4	28.07	28.70	1.156			0.05	0.701	0.810	-4.3%
	2nd	GSM850_Ant 0	GPRS (4 Tx slots)	Front	10mm	6	189	836.4	28.10	28.70	1.148			-0.05	0.675	0.775	
	1st	GSM850_Ant 1	GPRS (4 Tx slots)	Back	10mm	5/6	189	836.4	28.46	30.00	1.426			0.06	0.418	0.596	-22.7%
	2nd	GSM850_Ant 1	GPRS (4 Tx slots)	Back	10mm	5/6	189	836.4	28.35	30.00	1.462			-0.13	0.315	0.461	
	1st	GSM1900_Ant 2	GPRS (4 Tx slots)	Back	10mm	5	512	1850.2	23.34	24.80	1.400			0.01	0.384	0.537	-15.8%
	2nd	GSM1900_Ant 2	GPRS (4 Tx slots)	Back	10mm	5	512	1850.2	23.31	24.80	1.409			-0.05	0.321	0.452	
	1st	GSM1900_Ant 2	GPRS (4 Tx slots)	Back	10mm	6	512	1850.2	23.34	24.10	1.191			0.01	0.384	0.457	-15.8%
	2nd	GSM1900_Ant 2	GPRS (4 Tx slots)	Back	10mm	6	512	1850.2	23.31	24.10	1.199			-0.05	0.321	0.385	
68	1st	GSM1900_Ant 0	GPRS (4 Tx slots)	Front	10mm	5	661	1880	21.34	22.60	1.337			-0.17	0.547	0.731	-7.8%
	2nd	GSM1900_Ant 0	GPRS (4 Tx slots)	Front	10mm	5	661	1880	21.31	22.60	1.346			-0.18	0.501	0.674	
	1st	GSM1900_Ant 0	GPRS (4 Tx slots)	Front	10mm	6	661	1880	21.34	21.90	1.138			-0.17	0.547	0.622	-7.7%
	2nd	GSM1900_Ant 0	GPRS (4 Tx slots)	Front	10mm	6	661	1880	21.31	21.90	1.146			-0.18	0.501	0.574	
	1st	WCDMA II_Ant 2	RMC 12.2Kbps	Back	10mm	5	9538	1907.6	20.69	22.00	1.352			0.02	0.416	0.562	-21.0%
	2nd	WCDMA II_Ant 2	RMC 12.2Kbps	Back	10mm	5	9538	1907.6	20.66	22.00	1.361			-0.02	0.326	0.444	
	1st	WCDMA II_Ant 2	RMC 12.2Kbps	Back	10mm	6	9538	1907.6	20.69	21.30	1.151			0.02	0.416	0.479	-21.1%
	2nd	WCDMA II_Ant 2	RMC 12.2Kbps	Back	10mm	6	9538	1907.6	20.66	21.30	1.159			-0.02	0.326	0.378	
69	1st	WCDMA II_Ant 0	RMC 12.2Kbps	Front	10mm	5	9538	1907.6	18.38	20.10	1.486			-0.02	0.518	0.770	-2.5%
	2nd	WCDMA II_Ant 0	RMC 12.2Kbps	Front	10mm	5	9538	1907.6	18.40	20.10	1.479			-0.07	0.508	0.751	
	1st	WCDMA II_Ant 0	RMC 12.2Kbps	Front	10mm	6	9538	1907.6	18.38	19.40	1.265			-0.02	0.518	0.655	-2.3%
	2nd	WCDMA II_Ant 0	RMC 12.2Kbps	Front	10mm	6	9538	1907.6	18.40	19.40	1.259			-0.07	0.508	0.640	
	1st	WCDMA IV_Ant 2	RMC 12.2Kbps	Back	10mm	5	1312	1712.4	20.66	21.90	1.330			-0.05	0.382	0.508	-18.7%
	2nd	WCDMA IV_Ant 2	RMC 12.2Kbps	Back	10mm	5	1312	1712.4	20.58	21.90	1.355			-0.14	0.305	0.413	
	1st	WCDMA IV_Ant 2	RMC 12.2Kbps	Back	10mm	6	1312	1712.4	20.66	21.20	1.132			-0.05	0.382	0.433	-18.7%
	2nd	WCDMA IV_Ant 2	RMC 12.2Kbps	Back	10mm	6	1312	1712.4	20.58	21.20	1.153			-0.14	0.305	0.352	
70	1st	WCDMA IV_Ant 0	RMC 12.2Kbps	Front	10mm	5	1413	1732.6	18.94	20.00	1.276			0.01	0.409	0.522	-1.9%
	2nd	WCDMA IV_Ant 0	RMC 12.2Kbps	Front	10mm	5	1413	1732.6	18.96	20.00	1.271			-0.13	0.403	0.512	
	1st	WCDMA IV_Ant 0	RMC 12.2Kbps	Front	10mm	6	1413	1732.6	18.94	19.30	1.086			0.01	0.409	0.444	-1.8%
	2nd	WCDMA IV_Ant 0	RMC 12.2Kbps	Front	10mm	6	1413	1732.6	18.96	19.30	1.081			-0.13	0.403	0.436	
71	1st	WCDMA V_Ant 0	RMC 12.2Kbps	Back	10mm	5/6	4182	836.4	25.10	25.50	1.096			0.03	0.651	0.714	-3.8%
	2nd	WCDMA V_Ant 0	RMC 12.2Kbps	Back	10mm	5/6	4182	836.4	25.12	25.50	1.091			-0.02	0.629	0.687	
	1st	WCDMA V_Ant 1	RMC 12.2Kbps	Back	10mm	5/6	4182	836.4	24.62	25.10	1.117			-0.01	0.355	0.396	-16.4%
	2nd	WCDMA V_Ant 1	RMC 12.2Kbps	Back	10mm	5/6	4182	836.4	24.61	25.10	1.119			-0.03	0.296	0.331	
72	1st	LTE Band 2_Ant 1	20M_QPSK_50_0	Back	10mm	5	19100	1900	20.99	22.70	1.483			-0.01	0.387	0.574	-2.8%
	2nd	LTE Band 2_Ant 1	20M_QPSK_50_0	Back	10mm	5	19100	1900	20.94	22.70	1.500			-0.02	0.372	0.558	
	1st	LTE Band 2_Ant 1	20M_QPSK_50_0	Back	10mm	6	19100	1900	20.99	22.00	1.262			-0.01	0.387	0.488	-2.9%
	2nd	LTE Band 2_Ant 1	20M_QPSK_50_0	Back	10mm	6	19100	1900	20.95	22.00	1.274			-0.02	0.372	0.474	
	1st	LTE Band 2_Ant 5	20M_QPSK_50_0	Back	10mm	5	19100	1900	21.03	21.90	1.222			-0.1	0.419	0.512	-0.4%
	2nd	LTE Band 2_Ant 5	20M_QPSK_50_0	Back	10mm	5	19100	1900	20.97	21.90	1.239			-0.07	0.412	0.510	
	1st	LTE Band 2_Ant 5	20M_QPSK_50_0	Back	10mm	6	19100	1900	21.03	21.20	1.040			-0.1	0.419	0.436	-0.5%
	2nd	LTE Band 2_Ant 5	20M_QPSK_50_0	Back	10mm	6	19100	1900	20.97	21.20	1.054			-0.07	0.412	0.434	
	1st	LTE Band 7_Ant 2	20M_QPSK_1_0	Front	10mm	5	21100	2535	19.45	20.40	1.245			0	0.521	0.648	-6.8%
	2nd	LTE Band 7_Ant 2	20M_QPSK_1_0	Front	10mm	5	21100	2535	19.50	20.40	1.230			0.02	0.491	0.604	
	1st	LTE Band 7_Ant 2	20M_QPSK_1_0	Front	10mm	6	21100	2535	19.45	19.70	1.059			0	0.521	0.552	-6.9%
	2nd	LTE Band 7_Ant 2	20M_QPSK_1_0	Front	10mm	6	21100	2535	19.50	19.70	1.047			0.02	0.491	0.514	
73	1st	LTE Band 7_Ant 0	20M_QPSK_1_0	Front	10mm	5	21100	2535	19.65	21.40	1.496			-0.12	0.625	0.935	-12.8%
	2nd	LTE Band 7_Ant 0	20M_QPSK_1_0	Front	10mm	5	21100	2535	19.58	21.40	1.521			-0.08	0.536	0.815	
	1st	LTE Band 7_Ant 0	20M_QPSK_1_0	Front	10mm	6	21100	2535	19.65	20.70	1.274			-0.12	0.625	0.796	-12.8%
	2nd	LTE Band 7_Ant 0	20M_QPSK_1_0	Front	10mm	6	21100	2535	19.58	20.70	1.294			-0.08	0.536	0.694	
74	1st	LTE Band 12_Ant 0	10M_QPSK_1_0	Back	10mm	5/6	23095	707.5	24.37	25.50	1.297			0.01	0.380	0.493	-4.3%
	2nd	LTE Band 12_Ant 0	10M_QPSK_1_0	Back	10mm	5/6	23095	707.5	24.30	25.50	1.318			-0.02	0.358	0.472	



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	1st	LTE Band 12_Ant 1	10M_QPSK_1_0	Front	10mm	5/6	23095	707.5	24.32	25.10	1.197			-0.02	0.212	0.254	
	2nd	LTE Band 12_Ant 1	10M_QPSK_1_0	Front	10mm	5/6	23095	707.5	24.31	25.10	1.199			-0.09	0.205	0.246	-3.1%
	1st	LTE Band 13_Ant 0	10M_QPSK_1_0	Back	10mm	5/6	23230	782	24.65	25.50	1.216			-0.08	0.440	0.535	
75	2nd	LTE Band 13_Ant 0	10M_QPSK_1_0	Back	10mm	5/6	23230	782	24.58	25.50	1.236			-0.04	0.415	0.513	-4.1%
	1st	LTE Band 13_Ant 1	10M_QPSK_1_0	Back	10mm	5/6	23230	782	24.59	25.10	1.125			-0.1	0.330	0.371	
	2nd	LTE Band 13_Ant 1	10M_QPSK_1_0	Back	10mm	5/6	23230	782	24.57	25.10	1.130			-0.11	0.314	0.355	-4.3%
	1st	LTE Band 14_Ant 0	10M_QPSK_1_0	Front	10mm	5	23330	793	24.27	25.00	1.183			0.01	0.450	0.532	
76	2nd	LTE Band 14_Ant 0	10M_QPSK_1_0	Front	10mm	5	23330	793	24.28	25.00	1.180			0	0.448	0.529	-0.6%
	1st	LTE Band 14_Ant 0	10M_QPSK_1_0	Front	10mm	6	23330	793	24.27	24.30	1.007			0.01	0.450	0.453	
	2nd	LTE Band 14_Ant 0	10M_QPSK_1_0	Front	10mm	6	23330	793	24.28	24.30	1.005			0	0.448	0.450	-0.7%
	1st	LTE Band 14_Ant 1	10M_QPSK_1_0	Back	10mm	5/6	23330	793	24.92	25.10	1.042			-0.01	0.373	0.389	
	2nd	LTE Band 14_Ant 1	10M_QPSK_1_0	Back	10mm	5/6	23330	793	24.91	25.10	1.045			0	0.356	0.372	-4.4%
	1st	LTE Band 25_Ant 2	20M_QPSK_1_0	Back	10mm	5	26590	1905	19.64	20.70	1.276			-0.01	0.263	0.336	
	2nd	LTE Band 25_Ant 2	20M_QPSK_1_0	Back	10mm	5	26590	1905	19.62	20.70	1.282			-0.12	0.254	0.326	-3.0%
	1st	LTE Band 25_Ant 2	20M_QPSK_1_0	Back	10mm	6	26590	1905	19.64	20.00	1.086			-0.01	0.263	0.286	
	2nd	LTE Band 25_Ant 2	20M_QPSK_1_0	Back	10mm	6	26590	1905	19.62	20.00	1.091			-0.12	0.254	0.277	-3.1%
	1st	LTE Band 25_Ant 0	20M_QPSK_1_0	Front	10mm	5	26340	1880	19.33	20.10	1.194			-0.07	0.511	0.610	
77	2nd	LTE Band 25_Ant 0	20M_QPSK_1_0	Front	10mm	5	26340	1880	19.32	20.10	1.197			-0.1	0.497	0.595	-2.5%
	1st	LTE Band 25_Ant 0	20M_QPSK_1_0	Front	10mm	6	26340	1880	19.33	19.40	1.016			-0.07	0.511	0.519	
	2nd	LTE Band 25_Ant 0	20M_QPSK_1_0	Front	10mm	6	26340	1880	19.32	19.40	1.019			-0.1	0.497	0.506	-2.5%
	1st	LTE Band 26_Ant 0	15M_QPSK_1_0	Back	10mm	5/6	26865	831.5	24.64	25.50	1.219			-0.01	0.515	0.628	
78	2nd	LTE Band 26_Ant 0	15M_QPSK_1_0	Back	10mm	5/6	26865	831.5	24.59	25.50	1.233			0.04	0.491	0.605	-3.7%
	1st	LTE Band 26_Ant 1	15M_QPSK_1_0	Back	10mm	5/6	26865	831.5	24.57	25.10	1.130			0.17	0.376	0.425	
	2nd	LTE Band 26_Ant 1	15M_QPSK_1_0	Back	10mm	5/6	26865	831.5	24.58	25.10	1.127			0.08	0.360	0.406	-4.5%
	1st	LTE Band 30_Ant 2	10M_QPSK_1_0	Front	10mm	5	27710	2310	18.85	20.60	1.496			-0.01	0.289	0.432	
	2nd	LTE Band 30_Ant 2	10M_QPSK_1_0	Front	10mm	5	27710	2310	18.82	20.60	1.507			-0.01	0.285	0.429	-0.7%
	1st	LTE Band 30_Ant 2	10M_QPSK_1_0	Front	10mm	6	27710	2310	18.85	19.90	1.274			-0.01	0.289	0.368	
	2nd	LTE Band 30_Ant 2	10M_QPSK_1_0	Front	10mm	6	27710	2310	18.82	19.90	1.282			-0.01	0.285	0.365	-0.8%
	1st	LTE Band 30_Ant 0	10M_QPSK_1_0	Front	10mm	5	27710	2310	19.05	20.20	1.303			-0.13	0.763	0.994	
79	2nd	LTE Band 30_Ant 0	10M_QPSK_1_0	Front	10mm	5	27710	2310	19.09	20.20	1.291			-0.19	0.755	0.975	-1.9%
	1st	LTE Band 30_Ant 0	10M_QPSK_1_0	Front	10mm	6	27710	2310	19.05	19.50	1.109			-0.13	0.763	0.846	
	2nd	LTE Band 30_Ant 0	10M_QPSK_1_0	Front	10mm	6	27710	2310	19.09	19.50	1.099			-0.19	0.755	0.830	-1.9%
	1st	LTE Band 41_Ant 2	20M_QPSK_1_0	Front	10mm	5	39750	2506	20.91	22.30	1.377	62.9	1.006	0.05	0.465	0.644	
80	2nd	LTE Band 41_Ant 2	20M_QPSK_1_0	Front	10mm	5	39750	2506	20.88	22.30	1.387	62.9	1.006	-0.03	0.403	0.562	-12.7%
	1st	LTE Band 41_HPUE_Ant 2	20M_QPSK_1_0	Front	10mm	5	40185	2549.5	22.39	23.90	1.416	42.9	1.009	0.04	0.458	0.654	
	2nd	LTE Band 38_HPUE_Ant 2	20M_QPSK_1_0	Front	10mm	5	38000	2595	22.30	23.90	1.445	42.9	1.009	0.02	0.355	0.518	-20.8%
	1st	LTE Band 41_Ant 2	20M_QPSK_1_0	Front	10mm	6	39750	2506	20.91	21.60	1.172	62.9	1.006	0.05	0.465	0.548	
	2nd	LTE Band 41_Ant 2	20M_QPSK_1_0	Front	10mm	6	39750	2506	20.88	21.60	1.180	62.9	1.006	-0.03	0.403	0.479	-12.6%
	1st	LTE Band 41_HPUE_Ant 2	20M_QPSK_1_0	Front	10mm	6	40185	2549.5	22.39	23.20	1.205	42.9	1.009	0.04	0.458	0.557	
	2nd	LTE Band 38_HPUE_Ant 2	20M_QPSK_1_0	Front	10mm	6	38000	2595	22.30	23.20	1.230	42.9	1.009	0.02	0.355	0.441	-20.8%
	1st	LTE Band 41_Ant 0	20M_QPSK_1_0	Back	10mm	5	41055	2636.5	21.22	22.60	1.374	62.9	1.006	-0.12	0.490	0.677	
	2nd	LTE Band 41_Ant 0	20M_QPSK_1_0	Back	10mm	5	41055	2636.5	21.17	22.60	1.390	62.9	1.006	-0.16	0.397	0.555	-18.0%
	1st	LTE Band 41_HPUE_Ant 0	20M_QPSK_1_0	Back	10mm	5	41055	2636.5	22.79	24.30	1.416	42.9	1.009	-0.03	0.432	0.617	
	2nd	LTE Band 38_HPUE_Ant 0	20M_QPSK_1_0	Back	10mm	5	38000	2595	22.55	24.20	1.462	42.9	1.009	-0.12	0.295	0.435	-29.5%
	1st	LTE Band 41_Ant 0	20M_QPSK_1_0	Back	10mm	6	41055	2636.5	21.22	21.90	1.169	62.9	1.006	-0.12	0.490	0.576	
	2nd	LTE Band 41_Ant 0	20M_QPSK_1_0	Back	10mm	6	41055	2636.5	21.17	21.90	1.183	62.9	1.006	-0.16	0.397	0.472	-18.1%
	1st	LTE Band 41_HPUE_Ant 0	20M_QPSK_1_0	Back	10mm	6	41055	2636.5	22.79	23.60	1.205	42.9	1.009	-0.03	0.432	0.525	
	2nd	LTE Band 38_HPUE_Ant 0	20M_QPSK_1_0	Back	10mm	6	38000	2595	22.55	23.50	1.245	42.9	1.009	-0.12	0.295	0.370	-29.5%
	1st	LTE Band 48_Ant 6	20M_QPSK_1_0	Front	10mm	5	55830	3609	20.47	21.60	1.297	62.9	1.006	-0.15	0.372	0.485	
	2nd	LTE Band 48_Ant 6	20M_QPSK_1_0	Front	10mm	5	55830	3609	20.45	21.60	1.303	62.9	1.006	-0.14	0.329	0.431	-11.1%
	1st	LTE Band 48_Ant 6	20M_QPSK_1_0	Front	10mm	6	55830	3609	20.47	20.90	1.104	62.9	1.006	-0.15	0.372	0.413	
	2nd	LTE Band 48_Ant 6	20M_QPSK_1_0	Front	10mm	6	55830	3609	20.45	20.90	1.109	62.9	1.006	-0.14	0.329	0.367	-11.1%
	1st	LTE Band 48_Ant 7	20M_QPSK_1_0	Front	10mm	5	56640	3690	21.75	23.60	1.531	62.9	1.006	-0.03	0.319	0.491	
81	2nd	LTE Band 48_Ant 7	20M_QPSK_1_0	Front	10mm	5	56640	3690	21.77	23.60	1.524	62.9	1.006	-0.04	0.315	0.483	-1.6%
	1st	LTE Band 48_Ant 7	20M_QPSK_1_0	Front	10mm	6	56640	3690	21.75	22.90	1.303	62.9	1.006	-0.03	0.319	0.418	
	2nd	LTE Band 48_Ant 7	20M_QPSK_1_0	Front	10mm	6	56640	3690	21.77	22.90	1.297	62.9	1.006	-0.04	0.315	0.411	-1.7%



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	1st	LTE Band 66_Ant 2	20M_QPSK_1_0	Back	10mm	5	132572	1770	20.84	22.00	1.306		-0.07	0.345	0.451	-10.2%
	2nd	LTE Band 66_Ant 2	20M_QPSK_1_0	Back	10mm	5	132572	1770	20.80	22.00	1.318		-0.01	0.307	0.405	
	1st	LTE Band 66_Ant 2	20M_QPSK_1_0	Back	10mm	6	132572	1770	20.84	21.30	1.112		-0.07	0.345	0.384	-10.4%
	2nd	LTE Band 66_Ant 2	20M_QPSK_1_0	Back	10mm	6	132572	1770	20.80	21.30	1.122		-0.01	0.307	0.344	
82	1st	LTE Band 66_Ant 0	20M_QPSK_1_0	Front	10mm	5	132072	1720	19.61	21.50	1.545		-0.01	0.598	0.924	-2.6%
	2nd	LTE Band 66_Ant 0	20M_QPSK_1_0	Front	10mm	5	132072	1720	19.59	21.50	1.552		-0.02	0.580	0.900	
	1st	LTE Band 66_Ant 0	20M_QPSK_1_0	Front	10mm	6	132072	1720	19.61	20.80	1.315		-0.01	0.598	0.787	-2.7%
	2nd	LTE Band 66_Ant 0	20M_QPSK_1_0	Front	10mm	6	132072	1720	19.59	20.80	1.321		-0.02	0.580	0.766	
	1st	LTE Band 66_Ant 1	20M_QPSK_50_0	Back	10mm	5	132572	1770	21.19	22.90	1.483		-0.11	0.246	0.365	-3.8%
	2nd	LTE Band 66_Ant 1	20M_QPSK_50_0	Back	10mm	5	132572	1770	21.20	22.90	1.479		-0.1	0.237	0.351	
	1st	LTE Band 66_Ant 1	20M_QPSK_50_0	Back	10mm	6	132572	1770	21.19	22.20	1.262		-0.11	0.246	0.310	-3.9%
	2nd	LTE Band 66_Ant 1	20M_QPSK_50_0	Back	10mm	6	132572	1770	21.20	22.20	1.259		-0.1	0.237	0.298	
	1st	LTE Band 66_Ant 5	20M_QPSK_50_0	Back	10mm	5	132572	1770	20.23	21.20	1.250		-0.09	0.191	0.239	-1.3%
	2nd	LTE Band 66_Ant 5	20M_QPSK_50_0	Back	10mm	5	132572	1770	20.25	21.20	1.245		-0.13	0.190	0.236	
	1st	LTE Band 66_Ant 5	20M_QPSK_50_0	Back	10mm	6	132572	1770	20.23	20.50	1.064		-0.09	0.191	0.203	-1.0%
	2nd	LTE Band 66_Ant 5	20M_QPSK_50_0	Back	10mm	6	132572	1770	20.25	20.50	1.059		-0.13	0.190	0.201	
83	1st	LTE Band 71_Ant 0	20M_QPSK_1_0	Back	10mm	5/6	133297	680.5	24.71	25.50	1.199		-0.09	0.417	0.500	-3.4%
	2nd	LTE Band 71_Ant 0	20M_QPSK_1_0	Back	10mm	5/6	133297	680.5	24.72	25.50	1.197		-0.16	0.404	0.483	
	1st	LTE Band 71_Ant 1	20M_QPSK_1_0	Back	10mm	5/6	133297	680.5	24.51	25.10	1.146		0.01	0.195	0.223	-3.6%
	2nd	LTE Band 71_Ant 1	20M_QPSK_1_0	Back	10mm	5/6	133297	680.5	24.47	25.10	1.156		0.16	0.186	0.215	
84	1st	FR1 n2_Ant 1	20M_BPSK_1_53	Back	10mm	5	380000	1900	21.58	22.80	1.324		-0.05	0.411	0.544	-3.5%
	2nd	FR1 n2_Ant 1	20M_BPSK_1_53	Back	10mm	5	380000	1900	21.63	22.80	1.309		-0.17	0.401	0.525	
	1st	FR1 n2_Ant 1	20M_BPSK_1_53	Back	10mm	6	380000	1900	21.58	22.10	1.127		-0.05	0.411	0.463	-3.5%
	2nd	FR1 n2_Ant 1	20M_BPSK_1_53	Back	10mm	6	380000	1900	21.63	22.10	1.114		-0.17	0.401	0.447	
	1st	FR1 n2_Ant 5	20M_BPSK_50_0	Back	10mm	5	380000	1900	20.35	21.90	1.429		-0.09	0.380	0.543	-11.8%
	2nd	FR1 n2_Ant 5	20M_BPSK_50_0	Back	10mm	5	380000	1900	20.36	21.90	1.426		-0.05	0.336	0.479	
	1st	FR1 n2_Ant 5	20M_BPSK_50_0	Back	10mm	6	380000	1900	20.35	21.20	1.216		-0.09	0.380	0.462	-11.7%
	2nd	FR1 n2_Ant 5	20M_BPSK_50_0	Back	10mm	6	380000	1900	20.36	21.20	1.213		-0.05	0.336	0.408	
	1st	FR1 n7_Ant 2	50M_BPSK_1_1	Back	10mm	5	507000	2535	18.97	20.60	1.455		0.03	0.442	0.643	-19.8%
	2nd	FR1 n7_Ant 2	50M_BPSK_1_1	Back	10mm	5	507000	2535	18.94	20.60	1.466		-0.06	0.352	0.516	
	1st	FR1 n7_Ant 2	50M_BPSK_1_1	Back	10mm	6	507000	2535	18.97	19.90	1.239		0.03	0.442	0.548	-19.9%
	2nd	FR1 n7_Ant 2	50M_BPSK_1_1	Back	10mm	6	507000	2535	18.94	19.90	1.247		-0.06	0.352	0.439	
85	1st	FR1 n7_Ant 0	50M_BPSK_1_1	Front	10mm	5	507000	2535	19.25	20.80	1.429		0.01	0.691	0.987	-3.5%
	2nd	FR1 n7_Ant 0	50M_BPSK_1_1	Front	10mm	5	507000	2535	19.28	20.80	1.419		-0.15	0.671	0.952	
	1st	FR1 n7_Ant 0	50M_BPSK_1_1	Front	10mm	6	507000	2535	19.25	20.10	1.216		0.01	0.691	0.840	-3.6%
	2nd	FR1 n7_Ant 0	50M_BPSK_1_1	Front	10mm	6	507000	2535	19.28	20.10	1.208		-0.15	0.671	0.810	
86	1st	FR1 n12_Ant 0	15M_BPSK_1_1	Back	10mm	5/6	141500	707.5	24.66	25.50	1.213		-0.04	0.408	0.495	-6.5%
	2nd	FR1 n12_Ant 0	15M_BPSK_1_1	Back	10mm	5/6	141500	707.5	24.62	25.50	1.225		-0.01	0.378	0.463	
	1st	FR1 n12_Ant 1	15M_BPSK_1_77	Back	10mm	5/6	141500	707.5	24.84	25.10	1.062		0	0.227	0.241	-20.7%
	2nd	FR1 n12_Ant 1	15M_BPSK_1_77	Back	10mm	5/6	141500	707.5	24.79	25.10	1.074		-0.11	0.178	0.191	
	1st	FR1 n25_Ant 2	40M_BPSK_1_1	Back	10mm	5	376500	1882.5	20.29	21.90	1.449		0.01	0.407	0.590	-11.0%
	2nd	FR1 n25_Ant 2	40M_BPSK_1_1	Back	10mm	5	376500	1882.5	20.26	21.90	1.459		-0.01	0.360	0.525	
	1st	FR1 n25_Ant 2	40M_BPSK_1_1	Back	10mm	6	376500	1882.5	20.29	21.20	1.233		0.01	0.407	0.502	-11.0%
	2nd	FR1 n25_Ant 2	40M_BPSK_1_1	Back	10mm	6	376500	1882.5	20.26	21.20	1.242		-0.01	0.360	0.447	
	1st	FR1 n25_Ant 0	40M_BPSK_1_1	Front	10mm	5	376500	1882.5	18.20	19.50	1.349		-0.01	0.550	0.742	-11.9%
87	2nd	FR1 n25_Ant 0	40M_BPSK_1_1	Front	10mm	5	376500	1882.5	18.19	19.50	1.352		-0.05	0.484	0.654	
		1st	FR1 n25_Ant 0	40M_BPSK_1_1	Front	10mm	6	376500	1882.5	18.20	18.80	1.148		-0.01	0.550	0.631
	2nd	FR1 n25_Ant 0	40M_BPSK_1_1	Front	10mm	6	376500	1882.5	18.19	18.80	1.151		-0.05	0.484	0.557	
	1st	FR1 n26_Ant 0	20M_BPSK_1_1	Front	10mm	5/6	166300	831.5	24.60	25.50	1.230		-0.09	0.604	0.743	-5.2%
88	2nd	FR1 n5_Ant 0	20M_BPSK_1_1	Front	10mm	5/6	167300	836.5	24.53	25.50	1.250		0	0.563	0.704	
		1st	FR1 n26_Ant 1	20M_BPSK_1_104	Back	10mm	5/6	166300	831.5	24.81	25.10	1.069		0	0.417	0.446
	2nd	FR1 n5_Ant 1	20M_BPSK_1_104	Back	10mm	5/6	167300	836.5	24.63	25.10	1.114		-0.01	0.368	0.410	
	1st	FR1 n30_Ant 2	10M_BPSK_1_1	Back	10mm	5	462000	2310	18.42	20.10	1.472		-0.09	0.285	0.420	-4.8%
	2nd	FR1 n30_Ant 2	10M_BPSK_1_1	Back	10mm	5	462000	2310	18.36	20.10	1.493		-0.09	0.268	0.400	
	1st	FR1 n30_Ant 2	10M_BPSK_1_1	Back	10mm	6	462000	2310	18.42	19.40	1.253		-0.09	0.285	0.357	-4.5%
	2nd	FR1 n30_Ant 2	10M_BPSK_1_1	Back	10mm	6	462000	2310	18.36	19.40	1.271		-0.09	0.268	0.341	



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	1st	FR1 n30_Ant 0	10M_BPSK_1_26	Front	10mm	5	462000	2310	17.87	19.50	1.455			-0.16	0.672	0.978	
89	2nd	FR1 n30_Ant 0	10M_BPSK_1_26	Front	10mm	5	462000	2310	17.82	19.50	1.472			-0.1	0.655	0.964	-1.4%
	1st	FR1 n30_Ant 0	10M_BPSK_1_26	Front	10mm	6	462000	2310	17.87	18.80	1.239			-0.16	0.672	0.832	
	2nd	FR1 n30_Ant 0	10M_BPSK_1_26	Front	10mm	6	462000	2310	17.82	18.80	1.253			-0.1	0.655	0.821	-1.3%
	1st	FR1 n41_Ant 2	100M_BPSK_1_1	Front	10mm	5	518598	2592.99	20.08	21.50	1.387			-0.08	0.355	0.492	-8.9%
	2nd	FR1 n41_Ant 2	100M_BPSK_1_1	Front	10mm	5	518598	2592.99	19.96	21.50	1.426			-0.04	0.314	0.448	
	1st	FR1 n41_Ant 2	100M_BPSK_1_1	Front	10mm	6	518598	2592.99	20.08	20.80	1.180			-0.08	0.355	0.419	-9.1%
	2nd	FR1 n41_Ant 2	100M_BPSK_1_1	Front	10mm	6	518598	2592.99	19.96	20.80	1.213			-0.04	0.314	0.381	
	1st	FR1 n41_Ant 0	100M_BPSK_1_1	Front	10mm	5	518598	2592.99	19.02	20.50	1.406			-0.06	0.555	0.780	-13.2%
90	2nd	FR1 n41_Ant 0	100M_BPSK_1_1	Front	10mm	5	518598	2592.99	18.85	20.50	1.462			-0.09	0.463	0.677	-13.3%
	1st	FR1 n41_Ant 0	100M_BPSK_1_1	Front	10mm	6	518598	2592.99	19.02	19.80	1.197			-0.06	0.555	0.664	
	2nd	FR1 n41_Ant 0	100M_BPSK_1_1	Front	10mm	6	518598	2592.99	18.85	19.80	1.245			-0.09	0.463	0.576	-4.0%
	1st	FR1 n41_Ant 1	100M_BPSK_1_1	Front	10mm	5	518598	2592.99	19.38	20.7	1.355			-0.06	0.391	0.530	-4.0%
	2nd	FR1 n41_Ant 1	100M_BPSK_1_1	Front	10mm	5	518598	2592.99	19.35	20.7	1.365			0.01	0.373	0.509	
	1st	FR1 n41_Ant 1	100M_BPSK_1_1	Front	10mm	6	518598	2592.99	19.38	20	1.153			-0.06	0.391	0.451	-4.0%
	2nd	FR1 n41_Ant 1	100M_BPSK_1_1	Front	10mm	6	518598	2592.99	19.35	20	1.161			0.01	0.373	0.433	
	1st	FR1 n41_Ant 5	100M_BPSK_1_1	Back	10mm	5	518598	2592.99	19.73	21.40	1.469			-0.08	0.284	0.417	-10.6%
	2nd	FR1 n41_Ant 5	100M_BPSK_1_1	Back	10mm	5	518598	2592.99	19.56	21.40	1.528			0.03	0.244	0.373	
	1st	FR1 n41_Ant 5	100M_BPSK_1_1	Back	10mm	6	518598	2592.99	19.73	20.70	1.250			-0.08	0.284	0.355	-10.7%
	2nd	FR1 n41_Ant 5	100M_BPSK_1_1	Back	10mm	6	518598	2592.99	19.56	20.70	1.300			0.03	0.244	0.317	
	1st	FR1 n66_Ant 2	40M_BPSK_1_1	Back	10mm	5	349000	1745	20.56	22.20	1.459			-0.03	0.351	0.512	-5.1%
	2nd	FR1 n66_Ant 2	40M_BPSK_1_1	Back	10mm	5	349000	1745	20.51	22.20	1.476			-0.06	0.329	0.486	
	1st	FR1 n66_Ant 2	40M_BPSK_1_1	Back	10mm	6	349000	1745	20.56	21.50	1.242			-0.03	0.351	0.436	-5.3%
	2nd	FR1 n66_Ant 2	40M_BPSK_1_1	Back	10mm	6	349000	1745	20.51	21.50	1.256			-0.06	0.329	0.413	
	1st	FR1 n66_Ant 0	40M_BPSK_108_0	Front	10mm	5	349000	1745	19.74	21.00	1.337			-0.16	0.727	0.972	-3.4%
91	2nd	FR1 n66_Ant 0	40M_BPSK_108_0	Front	10mm	5	349000	1745	19.78	21.00	1.324			-0.13	0.709	0.939	-3.4%
	1st	FR1 n66_Ant 0	40M_BPSK_108_0	Front	10mm	6	349000	1745	19.74	20.30	1.138			-0.16	0.727	0.827	-3.4%
	2nd	FR1 n66_Ant 0	40M_BPSK_108_0	Front	10mm	6	349000	1745	19.78	20.30	1.127			-0.13	0.709	0.799	-1.2%
	1st	FR1 n66_Ant 1	40M_BPSK_1_1	Back	10mm	5	349000	1745	23.20	24.60	1.380			-0.02	0.313	0.432	-1.2%
	2nd	FR1 n66_Ant 1	40M_BPSK_1_1	Back	10mm	5	349000	1745	23.22	24.60	1.374			-0.01	0.311	0.427	
	1st	FR1 n66_Ant 1	40M_BPSK_1_1	Back	10mm	6	349000	1745	23.20	23.90	1.175			-0.02	0.313	0.368	-1.1%
	2nd	FR1 n66_Ant 1	40M_BPSK_1_1	Back	10mm	6	349000	1745	23.22	23.90	1.169			-0.01	0.311	0.364	
	1st	FR1 n66_Ant 5	40M_BPSK_108_54	Back	10mm	5	349000	1745	22.36	23.80	1.393			0.03	0.337	0.469	-1.7%
	2nd	FR1 n66_Ant 5	40M_BPSK_108_54	Back	10mm	5	349000	1745	22.37	23.80	1.390			0.04	0.332	0.461	
	1st	FR1 n66_Ant 5	40M_BPSK_108_54	Back	10mm	6	349000	1745	22.36	23.10	1.186			0.03	0.337	0.400	-1.8%
	2nd	FR1 n66_Ant 5	40M_BPSK_108_54	Back	10mm	6	349000	1745	22.37	23.10	1.183			0.04	0.332	0.393	
	1st	FR1 n71_Ant 0	20M_BPSK_1_1	Back	10mm	5/6	136100	680.5	24.54	25.50	1.247			0.02	0.424	0.529	-5.3%
92	2nd	FR1 n71_Ant 0	20M_BPSK_1_1	Back	10mm	5/6	136100	680.5	24.52	25.50	1.253			-0.02	0.400	0.501	-5.2%
	1st	FR1 n71_Ant 1	20M_BPSK_1_53	Front	10mm	5/6	136100	680.5	24.96	25.10	1.033			-0.01	0.259	0.267	
	2nd	FR1 n71_Ant 1	20M_BPSK_1_53	Front	10mm	5/6	136100	680.5	24.91	25.10	1.045			-0.03	0.242	0.253	
	1st	FR1 n77_Ant 6	100M_BPSK_1_1	Front	10mm	5	656000	3840	19.33	20.40	1.279			-0.04	0.608	0.778	-8%
93	2nd	FR1 n77_Ant 6	100M_BPSK_1_1	Front	10mm	5	656000	3840	19.31	20.40	1.285			0.03	0.556	0.715	-8%
	1st	FR1 n77_Ant 6	100M_BPSK_1_1	Front	10mm	6	656000	3840	19.33	19.70	1.089			-0.04	0.608	0.662	
	2nd	FR1 n77_Ant 6	100M_BPSK_1_1	Front	10mm	6	656000	3840	19.31	19.70	1.094			0.03	0.556	0.608	-3%
	1st	FR1 n77_Ant 6	100M_BPSK_1_1	Front	10mm	5	633332	3499.98	19.04	20.40	1.368			0.19	0.363	0.496	
	2nd	FR1 n77_Ant 6	100M_BPSK_1_1	Front	10mm	5	633332	3499.98	19.02	20.40	1.374			-0.12	0.351	0.482	-3%
	1st	FR1 n77_Ant 6	100M_BPSK_1_1	Front	10mm	6	633332	3499.98	19.04	19.70	1.164			0.19	0.363	0.423	
	2nd	FR1 n77_Ant 6	100M_BPSK_1_1	Front	10mm	6	633332	3499.98	19.02	19.70	1.169			-0.12	0.351	0.410	-3%
	1st	FR1 n77_Ant 7	100M_BPSK_1_1	Front	10mm	5	656000	3840	20.08	21.10	1.265			0.09	0.447	0.565	-24%
	2nd	FR1 n77_Ant 7	100M_BPSK_1_1	Front	10mm	5	656000	3840	20.05	21.10	1.274			-0.09	0.335	0.427	
	1st	FR1 n77_Ant 7	100M_BPSK_1_1	Front	10mm	6	656000	3840	20.08	20.40	1.076			0.09	0.447	0.481	-25%
	2nd	FR1 n77_Ant 7	100M_BPSK_1_1	Front	10mm	6	656000	3840	20.05	20.40	1.084			-0.09	0.335	0.363	
	1st	FR1 n77_Ant 7	100M_BPSK_1_1	Front	10mm	5	633332	3499.98	20.23	21.10	1.222			0.19	0.174	0.213	-3%
	2nd	FR1 n77_Ant 7	100M_BPSK_1_1	Front	10mm	5	633332	3499.98	20.17	21.10	1.239			0.09	0.167	0.207	
	1st	FR1 n77_Ant 7	100M_BPSK_1_1	Front	10mm	6	633332	3499.98	20.23	20.40	1.040			0.19	0.174	0.181	-3%
	2nd	FR1 n77_Ant 7	100M_BPSK_1_1	Front	10mm	6	633332	3499.98	20.17	20.40	1.054			0.09	0.167	0.176	



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1st	FR1 n77_Ant 1	100M_BPSK_1_1	Back	10mm	5	656000	3840	22.94	23.8	1.219				-0.08	0.389	0.474		-1%
2nd	FR1 n77_Ant 1	100M_BPSK_1_1	Back	10mm	5	656000	3840	22.63	23.8	1.309				-0.15	0.360	0.471		
1st	FR1 n77_Ant 1	100M_BPSK_1_1	Back	10mm	6	656000	3840	22.94	23.1	1.038				-0.08	0.389	0.404		-1%
2nd	FR1 n77_Ant 1	100M_BPSK_1_1	Back	10mm	6	656000	3840	22.63	23.1	1.114				-0.15	0.360	0.401		
1st	FR1 n77_Ant 1	100M_BPSK_135_69	Back	10mm	5	633332	3499.98	22.90	23.8	1.230				-0.13	0.299	0.368		-17%
2nd	FR1 n77_Ant 1	100M_BPSK_135_69	Back	10mm	5	633332	3499.98	22.85	23.8	1.245				-0.12	0.244	0.304		
1st	FR1 n77_Ant 1	100M_BPSK_135_69	Back	10mm	6	633332	3499.98	22.90	23.1	1.047				-0.13	0.299	0.313		-18%
2nd	FR1 n77_Ant 1	100M_BPSK_135_69	Back	10mm	6	633332	3499.98	22.85	23.1	1.059				-0.12	0.244	0.258		
1st	FR1 n77_Ant 5	100M_BPSK_1_1	Front	10mm	5	656000	3840	20.26	21.30	1.271				-0.19	0.349	0.443		-16%
2nd	FR1 n77_Ant 5	100M_BPSK_1_1	Front	10mm	5	656000	3840	20.20	21.30	1.288				0.03	0.290	0.374		
1st	FR1 n77_Ant 5	100M_BPSK_1_1	Front	10mm	6	656000	3840	20.26	20.60	1.081				-0.19	0.349	0.377		-16%
2nd	FR1 n77_Ant 5	100M_BPSK_1_1	Front	10mm	6	656000	3840	20.20	20.60	1.096				0.03	0.290	0.318		
1st	FR1 n77_Ant 5	100M_BPSK_1_1	Front	10mm	5	633332	3499.98	20.57	21.30	1.183				0.1	0.136	0.161		-25%
2nd	FR1 n77_Ant 5	100M_BPSK_1_1	Front	10mm	5	633332	3499.98	20.51	21.30	1.199				-0.11	0.100	0.120		
1st	FR1 n77_Ant 5	100M_BPSK_1_1	Front	10mm	6	633332	3499.98	20.57	20.60	1.007				0.1	0.136	0.137		-26%
2nd	FR1 n77_Ant 5	100M_BPSK_1_1	Front	10mm	6	633332	3499.98	20.51	20.60	1.021				-0.11	0.100	0.102		

Plot No.	No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power Index	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Measured APD (W/m^2)	Reported APD (W/m^2)	Deviation (%)
94	1st	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Ant 3	5/6	11	2462	20.85	21.00	1.035	98.85	1.012	-0.13	0.507	0.531			-18.08%
	2nd	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Ant 3	5/6	11	2462	20.71	21.00	1.069	98.85	1.012	-0.13	0.402	0.435			
94	1st	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 4	5/6	11	2462	20.95	21.00	1.012	98.97	1.010	-0.12	0.934	0.954			-3.77%
	2nd	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 4	5/6	11	2462	20.78	21.00	1.052	98.97	1.010	-0.17	0.864	0.918			
94	1st	WLAN2.4GHz	802.11g 6Mbps	Front	10mm	Ant 3+4(3)	5/6	6	2437	20.95	21.00	1.012	93.46	1.070	-0.06	0.356	0.385			-7.11%
		WLAN2.4GHz	802.11g 6Mbps	Front	10mm	Ant 3+4(4)	5/6	6	2437	20.95	21.00	1.012	93.46	1.070	-0.06	0.857	0.928			
	2nd	WLAN2.4GHz	802.11g 6Mbps	Front	10mm	Ant 3+4(3)	5/6	6	2437	20.85	21.00	1.035	93.46	1.070	-0.15	0.257	0.285			
	2nd	WLAN2.4GHz	802.11g 6Mbps	Front	10mm	Ant 3+4(4)	5/6	6	2437	20.78	21.00	1.052	93.46	1.070	-0.15	0.766	0.862			
94	1st	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 3	7	11	2462	16.85	17.00	1.035	98.85	1.012	-0.11	0.157	0.164			-18.29%
	2nd	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 3	7	11	2462	16.51	17.00	1.119	98.85	1.012	-0.12	0.118	0.134			
94	1st	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 4	7	12	2467	16.85	17.00	1.035	98.97	1.010	-0.18	0.401	0.419			-20.29%
	2nd	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 4	7	12	2467	16.85	17.00	1.035	98.97	1.010	-0.16	0.319	0.334			
94	1st	WLAN2.4GHz	802.11g 6Mbps	Front	10mm	Ant 3+4(3)	7	11	2462	16.75	17.00	1.059	93.46	1.070	-0.18	0.110	0.125			-20.61%
		WLAN2.4GHz	802.11g 6Mbps	Front	10mm	Ant 3+4(4)	7	11	2462	16.85	17.00	1.035	93.46	1.070	-0.18	0.355	0.393			
	2nd	WLAN2.4GHz	802.11g 6Mbps	Front	10mm	Ant 3+4(3)	7	11	2462	16.71	17.00	1.069	93.46	1.070	-0.06	0.143	0.164			
	2nd	WLAN2.4GHz	802.11g 6Mbps	Front	10mm	Ant 3+4(4)	7	11	2462	16.92	17.00	1.019	93.46	1.070	-0.06	0.286	0.312			
94	1st	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Ant 3	8	11	2462	14.25	14.50	1.059	98.85	1.012	-0.09	0.082	0.088			-19.32%
	2nd	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Ant 3	8	11	2462	14.15	14.50	1.084	98.85	1.012	-0.04	0.065	0.071			
94	1st	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 4	8	11	2462	14.15	14.50	1.084	98.97	1.010	-0.07	0.189	0.207			-12.08%
	2nd	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 4	8	11	2462	14.21	14.50	1.069	98.97	1.010	-0.13	0.169	0.182			
94	1st	WLAN2.4GHz	802.11g 6Mbps	Front	10mm	Ant 3+4(3)	8	12	2467	14.35	14.50	1.035	93.46	1.070	-0.11	0.059	0.065			-12.39%
		WLAN2.4GHz	802.11g 6Mbps	Front	10mm	Ant 3+4(4)	8	12	2467	14.15	14.50	1.084	93.46	1.070	-0.11	0.195	0.226			
	2nd	WLAN2.4GHz	802.11g 6Mbps	Front	10mm	Ant 3+4(3)	8	12	2467	14.20	14.50	1.072	93.46	1.070	-0.15	0.078	0.089			
	2nd	WLAN2.4GHz	802.11g 6Mbps	Front	10mm	Ant 3+4(4)	8	12	2467	14.09	14.50	1.099	93.46	1.070	-0.15	0.168	0.198			
95	1st	WLAN5GHz	802.11n-HT40 MCS0	Front	10mm	Ant 3+4(3)	5	54	5270	18.15	19.50	1.365	96.79	1.033	-0.03	0.359	0.506			-22.73%
		WLAN5GHz	802.11n-HT40 MCS0	Front	10mm	Ant 3+4(4)	5	54	5270	18.70	19.50	1.202	96.79	1.033	-0.03	0.306	0.380			
	2nd	WLAN5GHz	802.11n-HT40 MCS0	Front	10mm	Ant 3+4(3)	5	54	5270	18.06	19.50	1.393	96.79	1.033	-0.08	0.272	0.391			
	2nd	WLAN5GHz	802.11n-HT40 MCS0	Front	10mm	Ant 3+4(4)	5	54	5270	18.51	19.50	1.256	96.79	1.033	-0.08	0.248	0.322			
95	1st	WLAN5GHz	802.11n-HT40 MCS0	Front	10mm	Ant 3+4(3)	6	54	5270	18.15	19.00	1.216	96.79	1.033	-0.03	0.359	0.451			-22.62%
		WLAN5GHz	802.11n-HT40 MCS0	Front	10mm	Ant 3+4(4)	6	54	5270	18.70	19.00	1.072	96.79	1.033	-0.03	0.306	0.339			
	2nd	WLAN5GHz	802.11n-HT40 MCS0	Front	10mm	Ant 3+4(3)	6	54	5270	18.06	19.00	1.242	96.79	1.033	-0.08	0.272	0.349			
	2nd	WLAN5GHz	802.11n-HT40 MCS0	Front	10mm	Ant 3+4(4)	6	54	5270	18.51	19.00	1.119	96.79	1.033	-0.08	0.248	0.287			
95	1st	WLAN5GHz	802.11n-HT40 MCS0	Front	10mm	Ant 3+4(3)	7	54	5270	16.65	18.50	1.531	96.79	1.033	-0.08	0.270	0.427			-25.06%
		WLAN5GHz	802.11n-HT40 MCS0	Front	10mm	Ant 3+4(4)	7	54	5270	17.20	18.50	1.349	96.79	1.033	-0.08	0.180	0.251			
	2nd	WLAN5GHz	802.11n-HT40 MCS0	Front	10mm	Ant 3+4(3)	7	54	5270	16.51	18.50	1.581	96.79	1.033	-0.07	0.196	0.320			
	2nd	WLAN5GHz	802.11n-HT40 MCS0	Front	10mm	Ant 3+4(4)	7	54	5270	16.59	18.50	1.552	96.79	1.033	-0.07	0.171	0.274			
95	1st	WLAN5GHz	802.11n-HT40 MCS0	Front	10mm	Ant 3+4(3)	8/9	54	5270	16.65	17.50	1.216	96.79	1.033	-0.08	0.235	0.295			-13.90%



14.4 Product Specific SAR

Plot No.	No.	Band	Mode	Test Position	Gap (mm)	Power Index	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)	Deviation (%)
101	1st	GSM1900_Ant 0	GPRS (4 Tx slots)	Bottom Side	0mm	5	512	1850.2	21.33	22.60	1.340			-0.03	1.840	2.465	-10.7%
	2nd	GSM1900_Ant 0	GPRS (4 Tx slots)	Bottom Side	0mm	5	512	1850.2	21.24	22.60	1.368			0.01	1.610	2.202	
102	1st	LTE Band 7_Ant 0	20M_QPSK_1_0	Bottom Side	0mm	5	20850	2510	19.64	21.40	1.500			-0.04	1.210	1.815	-3.0%
	2nd	LTE Band 7_Ant 0	20M_QPSK_1_0	Bottom Side	0mm	5	20850	2510	19.66	21.40	1.493			-0.06	1.180	1.761	
103	1st	LTE Band 25_Ant 0	20M_QPSK_1_0	Bottom Side	0mm	5	26340	1880	19.33	20.10	1.194			-0.07	2.040	2.436	-5.7%
	2nd	LTE Band 25_Ant 0	20M_QPSK_1_0	Bottom Side	0mm	5	26340	1880	19.32	20.10	1.197			-0.05	1.920	2.298	
104	1st	LTE Band 30_Ant 0	10M_QPSK_1_0	Bottom Side	0mm	5	27710	2310	19.05	20.20	1.303			-0.03	1.420	1.850	-19.7%
	2nd	LTE Band 30_Ant 0	10M_QPSK_1_0	Bottom Side	0mm	5	27710	2310	19.09	20.20	1.291			-0.03	1.150	1.485	
105	1st	LTE Band 41_Ant 0	20M_QPSK_1_0	Bottom Side	0mm	5	41490	2680	21.45	22.60	1.303	62.9	1.006	-0.04	1.270	1.665	-8.0%
	2nd	LTE Band 41_Ant 0	20M_QPSK_1_0	Bottom Side	0mm	5	41490	2680	21.42	22.60	1.312	62.9	1.006	-0.14	1.160	1.531	
	1st	LTE Band 41_HPUE_Ant 0	20M_QPSK_1_0	Bottom Side	0mm	5	41055	2636.5	22.79	24.30	1.416	42.9	1.009	-0.01	1.080	1.543	-25.0%
	2nd	LTE Band 38_HPUE_Ant 0	20M_QPSK_1_0	Bottom Side	0mm	5	38000	2595	22.55	24.20	1.462	42.9	1.009	-0.01	0.784	1.157	
106	1st	LTE Band 66_Ant 0	20M_QPSK_1_0	Bottom Side	0mm	5	132072	1720	19.61	21.50	1.545			0.02	0.733	1.133	-2.0%
	2nd	LTE Band 66_Ant 0	20M_QPSK_1_0	Bottom Side	0mm	5	132072	1720	19.59	21.50	1.552			0	0.715	1.110	
107	1st	FR1 n7_Ant 0	50M_BPSK_1_1	Bottom Side	0mm	5	507000	2535	19.25	20.80	1.429			-0.04	1.100	1.572	-18.3%
	2nd	FR1 n7_Ant 0	50M_BPSK_1_1	Bottom Side	0mm	5	507000	2535	19.28	20.80	1.419			-0.02	0.905	1.284	
108	1st	FR1 n30_Ant 0	10M_BPSK_1_26	Bottom Side	0mm	5	462000	2310	17.87	19.50	1.455			0.01	1.040	1.514	-11.5%
	2nd	FR1 n30_Ant 0	10M_BPSK_1_26	Bottom Side	0mm	5	462000	2310	17.82	19.50	1.472			0.02	0.910	1.340	
109	1st	FR1 n41_Ant 0	100M_BPSK_1_1	Bottom Side	0mm	5	518598	2592.99	19.02	20.50	1.406			-0.03	1.000	1.406	-4%
	2nd	FR1 n41_Ant 0	100M_BPSK_1_1	Bottom Side	0mm	5	518598	2592.99	18.85	20.50	1.462			-0.03	0.919	1.344	
110	1st	FR1 n66_Ant 0	40M_BPSK_108_0	Bottom Side	0mm	5	349000	1745	19.74	21.00	1.337			-0.03	0.713	0.953	-5.0%
	2nd	FR1 n66_Ant 0	40M_BPSK_108_0	Bottom Side	0mm	5	349000	1745	19.78	21.00	1.324			0.04	0.683	0.905	

Plot No.	No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power Index	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)	Measured APD (W/m^2)	Reported APD (W/m^2)	Deviation (%)
111	1st	WLAN5GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 3+4(3)	5	54	5270	18.15	19.50	1.365	96.79	1.033	-0.12	0.001	0.001			-7.38%
		WLAN5GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 3+4(4)	5	54	5270	18.70	19.50	1.202	96.79	1.033	-0.12	1.320	1.639			
	2nd	WLAN5GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 3+4(3)	5	54	5270	18.06	19.50	1.393	96.79	1.033	0.12	0.001	0.001			
		WLAN5GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 3+4(4)	5	54	5270	18.51	19.50	1.256	96.79	1.033	0.12	1.170	1.518			
	1st	WLAN5GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 3+4(3)	6	54	5270	18.15	19.00	1.216	96.79	1.033	-0.12	0.001	0.001			-7.39%
		WLAN5GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 3+4(4)	6	54	5270	18.70	19.00	1.072	96.79	1.033	-0.12	1.320	1.461			
	2nd	WLAN5GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 3+4(3)	6	54	5270	18.06	19.00	1.242	96.79	1.033	0.12	0.001	0.001			
		WLAN5GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 3+4(4)	6	54	5270	18.51	19.00	1.119	96.79	1.033	0.12	1.170	1.353			
	1st	WLAN5GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 3+4(3)	7	54	5270	16.65	18.50	1.531	96.79	1.033	-0.14	0.001	0.002			-11.70%
		WLAN5GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 3+4(4)	7	54	5270	17.20	18.50	1.349	96.79	1.033	-0.14	0.963	1.342			
	2nd	WLAN5GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 3+4(3)	7	54	5270	16.51	18.50	1.581	96.79	1.033	-0.04	0.001	0.002			
		WLAN5GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 3+4(4)	7	54	5270	16.59	18.50	1.552	96.79	1.033	-0.04	0.739	1.185			
	1st	WLAN5GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 3+4(3)	8/9	54	5270	16.65	17.50	1.216	96.79	1.033	-0.14	0.001	0.001			-29.88%
		WLAN5GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 3+4(4)	8/9	54	5270	17.20	17.50	1.072	96.79	1.033	-0.14	0.963	1.066			
	2nd	WLAN5GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 3+4(3)	8/9	54	5270	16.51	17.50	1.256	96.79	1.033	-0.04	0.001	0.001			
		WLAN5GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 3+4(4)	8/9	54	5270	16.59	17.50	1.233	96.79	1.033	-0.04	0.739	0.941			
112	1st	WLAN5GHz	802.11ac-VHT80 MCS0	Left Side	0mm	Ant 3+4(3)	5	122	5610	18.35	19.50	1.303	91.94	1.088	-0.15	1.010	1.432			-14.32%
		WLAN5GHz	802.11ac-VHT80 MCS0	Left Side	0mm	Ant 3+4(4)	5	122	5610	18.40	19.50	1.288	91.94	1.088	-0.15	0.001	0.001			
	2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Left Side	0mm	Ant 3+4(3)	5	122	5610	18.12	19.50	1.374	91.94	1.088	0	0.821	1.227			
		WLAN5GHz	802.11ac-VHT80 MCS0	Left Side	0mm	Ant 3+4(4)	5	122	5610	18.12	19.50	1.374	91.94	1.088	0	0.001	0.001			
	1st	WLAN5GHz	802.11ac-VHT80 MCS0	Left Side	0mm	Ant 3+4(3)	6/7/8/9	122	5610	18.35	18.50	1.035	91.94	1.088	-0.15	1.010	1.137			-20.32%
		WLAN5GHz	802.11ac-VHT80 MCS0	Left Side	0mm	Ant 3+4(4)	6/7/8/9	122	5610	18.40	18.50	1.023	91.94	1.088	-0.15	0.001	0.001			
	2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Left Side	0mm	Ant 3+4(3)	6/7/8/9	122	5610	18.12	18.50	1.091	91.94	1.088	0.18	0.763	0.906			
		WLAN5GHz	802.11ac-VHT80 MCS0	Left Side	0mm	Ant 3+4(4)	6/7/8/9	122	5610	18.12	18.50	1.091	91.94	1.088	0.18	0.001	0.001			
	1st	WLAN5GHz	802.11a 6Mbps	Front	0mm	Ant 3+4(3)	5	173	5865	20.25	20.50	1.059	93.42	1.070	-0.09	1.930	2.187			-27.98%
		WLAN5GHz	802.11a 6Mbps	Front	0mm	Ant 3+4(4)	5	173	5865	20.00	20.50	1.122	93.42	1.070	-0.09	0.925	1.111			



113	2nd	WLAN5GHz	802.11a 6Mbps	Front	0mm	Ant 3+4(3)	5	173	5865	20.25	20.50	1.059	93.42	1.070	-0.11	1.390	1.575			
		WLAN5GHz	802.11a 6Mbps	Front	0mm	Ant 3+4(4)	5	173	5865	20.00	20.50	1.122	93.42	1.070	-0.11	1.280	1.537			
	1st	WLAN5GHz	802.11ac-VHT160 MCS0	Front	0mm	Ant 3+4(3)	6	163	5815	18.45	19.00	1.135	87.95	1.137	0.17	1.010	1.303			
		WLAN5GHz	802.11ac-VHT160 MCS0	Front	0mm	Ant 3+4(4)	6	163	5815	18.25	19.00	1.189	87.95	1.137	0.17	0.489	0.661			
	2nd	WLAN5GHz	802.11ac-VHT160 MCS0	Front	0mm	Ant 3+4(3)	6	163	5815	18.42	19.00	1.143	87.95	1.137	-0.15	0.810	1.053			-19.19%
		WLAN5GHz	802.11ac-VHT160 MCS0	Front	0mm	Ant 3+4(4)	6	163	5815	18.35	19.00	1.161	87.95	1.137	-0.15	0.793	1.047			
	1st	WLAN5GHz	802.11ac-VHT160 MCS0	Front	0mm	Ant 3+4(3)	7/8/9	163	5815	18.45	18.50	1.012	87.95	1.137	0.17	1.010	1.162			
		WLAN5GHz	802.11ac-VHT160 MCS0	Front	0mm	Ant 3+4(4)	7/8/9	163	5815	18.25	18.50	1.059	87.95	1.137	0.17	0.489	0.589			-19.28%
	2nd	WLAN5GHz	802.11ac-VHT160 MCS0	Front	0mm	Ant 3+4(3)	7/8/9	163	5815	18.42	18.50	1.019	87.95	1.137	-0.15	0.810	0.938			
		WLAN5GHz	802.11ac-VHT160 MCS0	Front	0mm	Ant 3+4(4)	7/8/9	163	5815	18.35	18.50	1.035	87.95	1.137	-0.15	0.793	0.933			
	1st	WLAN6GHz	802.11ax-HE160 MCS0	Front	0mm	Ant 3+4(3)	5/6/7/8/9	111	6505	14.95	15.00	1.012	86.11	1.161	0.02	0.328	0.385	7.76	9.114	
		WLAN6GHz	802.11ax-HE160 MCS0	Front	0mm	Ant 3+4(4)	5/6/7/8/9	111	6505	14.85	15.00	1.035	86.11	1.161	0.02	0.123	0.148	2.94	3.533	
114	2nd	WLAN6GHz	802.11ax-HE160 MCS0	Front	0mm	Ant 3+4(3)	5/6/7/8/9	111	6505	14.59	15.00	1.099	86.11	1.161	0.03	0.267	0.341	6.36	8.115	-11.43%
		WLAN6GHz	802.11ax-HE160 MCS0	Front	0mm	Ant 3+4(4)	5/6/7/8/9	111	6505	14.59	15.00	1.099	86.11	1.161	0.03	0.162	0.207	3.83	4.887	

Plot No.	No.	Band	Test Position	Gap (mm)	Freq. (MHz)	Power Drift (dB)	Measured 10g SAR (W/kg)	Deviation (%)
	1st	NFC	Back	0mm	13.56	-0.13	0.131	
115	2nd	NFC	Back	0mm	13.56	-0.17	0.110	-16.03%

Conclusion:

The spot check results don't show the SAR increase more than 30%, and all below 1.2W/kg for 1-g SAR, below 3W/kg for 10-g SAR. Referring to the guidance in the KDB inquiry, SAR data reuse is justified.

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15. Uncertainty Assessment

Declaration of Conformity:

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

Comments and Explanations:

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

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

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

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

Uncertainty Distributions	Normal	Rectangular	Triangular	U-Shape
Multi-plying Factor ^(a)	1/k ^(b)	1/√3	1/√6	1/√2

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

(b) κ is the coverage factor

Standard Uncertainty for Assumed Distribution

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

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

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



Applicable for SAR Measurements:

Uncertainty Budget (4 MHz - 10 GHz range)							
Error Description	Uncertainty Value (±%)	Probability	Divisor	(C1) 1g	(C1) 10g	Standard Uncertainty (1g) (±%)	Standard Uncertainty (10g) (±%)
Measurement System							
Probe Calibration	18.60	N	2	1	1	9.3	9.3
Axial Isotropy	4.70	R	1.732	0.7	0.7	1.9	1.9
Hemispherical Isotropy	9.60	R	1.732	0.7	0.7	3.9	3.9
Linearity	4.70	R	1.732	1	1	2.7	2.7
Modulation Response	4.68	R	1.732	1	1	2.7	2.7
System Detection Limits	1.00	R	1.732	1	1	0.6	0.6
Boundary Effects	2.00	R	1.732	1	1	1.2	1.2
Readout Electronics	0.30	N	1	1	1	0.3	0.3
Response Time	0.00	R	1.732	1	1	0.0	0.0
Integration Time	2.60	R	1.732	1	1	1.5	1.5
RF Ambient Noise	3.00	R	1.732	1	1	1.7	1.7
RF Ambient Reflections	3.00	R	1.732	1	1	1.7	1.7
Probe Positioner	0.40	R	1.732	1	1	0.2	0.2
Probe Positioning	6.70	R	1.732	1	1	3.9	3.9
Post-processing	4.00	R	1.732	1	1	2.3	2.3
Test Sample Related							
Device Holder	3.60	N	1	1	1	3.6	3.6
Test sample Positioning	3.03	N	1	1	1	3.0	3.0
Power Scaling	0.00	R	1.732	1	1	0.0	0.0
Power Drift	5.00	R	1.732	1	1	2.9	2.9
Phantom and Setup							
Phantom Uncertainty	7.60	R	1.732	1	1	4.4	4.4
SAR correction	0.00	R	1.732	1	0.84	0.0	0.0
Liquid Conductivity Repeatability	0.03	N	1	0.78	0.77	0.0	0.0
Liquid Conductivity (target)	5.00	R	1.732	0.78	0.77	2.3	2.2
Liquid Conductivity (mea.)	2.50	R	1.732	0.78	0.77	1.1	1.1
Temp. unc. - Conductivity	3.68	R	1.732	0.78	0.77	1.7	1.6
Liquid Permittivity Repeatability	0.02	N	1	0.23	0.26	0.0	0.0
Liquid Permittivity (target)	5.00	R	1.732	0.23	0.26	0.7	0.8
Liquid Permittivity (mea.)	2.50	R	1.732	0.23	0.26	0.3	0.4
Temp. unc. - Permittivity	0.84	R	1.732	0.23	0.26	0.1	0.1
Combined Std. Uncertainty						14.5%	14.2%
Coverage Factor for 95 %						K=2	K=2
Expanded STD Uncertainty						29.0%	28.4%



16. References

- [1] FCC 47 CFR Part 2 "Frequency Allocations and Radio Treaty Matters; General Rules and Regulations"
- [2] ANSI/IEEE Std. C95.1-1992, "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz", September 1992
- [3] IEEE Std. 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", Sep 2013
- [4] SPEAG DASY System Handbook
- [5] FCC KDB 248227 D01 v02r02, "SAR Guidance for IEEE 802.11 (WiFi) Transmitters", Oct 2015.
- [6] FCC KDB 447498 D01 v06, "Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies", Oct 2015
- [7] FCC KDB 648474 D04 v01r03, "SAR Evaluation Considerations for Wireless Handsets", Oct 2015.
- [8] FCC KDB 941225 D01 v03r01, "3G SAR MEAUREMENT PROCEDURES", Oct 2015
- [9] FCC KDB 941225 D05 v02r05, "SAR Evaluation Considerations for LTE Devices", Dec 2015
- [10] FCC KDB 941225 D05A v01r02, "Rel. 10 LTE SAR Test Guidance and KDB Inquiries", Oct 2015
- [11] FCC KDB 941225 D06 v02r01, "SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities", Oct 2015.
- [12] FCC KDB 941225 D07 v01r02, " SAR Evaluation Procedures for UMPC Mini-Tablet Devices", Oct 2015.
- [13] FCC KDB 865664 D01 v01r04, "SAR Measurement Requirements for 100 MHz to 6 GHz", Aug 2015.
- [14] FCC KDB 865664 D02 v01r02, "RF Exposure Compliance Reporting and Documentation Considerations" Oct 2015.
- [15] IEC/IEEE 62209-1528:2020, "Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Part 1528: Human models, instrumentation, and procedures (Frequency range of 4 MHz to 10 GHz)", Oct. 2020
- [16] SPEAG DASY6 System Handbook
- [17] SPEAG DASY6 Application Note (Interim Procedure for Device Operation at 6GHz-10GHz)