

FCC SAR TEST REPORT

FCC ID : A4RG576D
Equipment : Phone
Model Name : G576D
Applicant : Google LLC
1600 Amphitheatre Parkway,
Mountain View, California, 94043 USA
Standard : FCC 47 CFR Part 2 (2.1093)

The product was received on Aug. 18, 2023 and testing was started from Aug. 30, 2023 and completed on Nov. 01, 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



Sporton International Inc. Wensan Laboratory

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Appendix A. Plots of SAR System Performance Check for SAR and PD

Appendix B. Plots of High SAR and PD Measurement

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Appendix D. Test Setup Photos and Antenna Location



History of this test report

Report No.	Version	Description	Issued Date
FA370537-01B	01	Initial issue of report	Nov. 17, 2023
FA370537-01B	02	Update Section 6.1	Nov. 21, 2023
FA370537-01B	03	Update Section 14.1	Dec. 26, 2023



1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for Google LLC, Phone, G576D, are as follows.

Equipment Class	Frequency Band	Highest SAR Summary				Highest Simultaneous Transmission 1g 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	0.99	0.67	0.75		1.59
	GSM1900	0.68	0.75	0.69		
	WCDMA II	0.67	0.74	0.72		
	WCDMA IV	0.54	0.71	0.59		
	WCDMA V	0.85	0.43	0.47		
	LTE B2	0.73	0.64	0.64		
	LTE B5	0.69	0.48	0.72		
	LTE B7	0.99	0.78	0.79		
	LTE B12/B17	0.93	0.45	0.60		
	LTE B41/B38	0.98	0.96	0.69		
	LTE B66/B4	0.65	0.74	0.50		
	FR1 n2	0.76	0.69	0.68		
	FR1 n5	0.97	0.52	0.67		
	FR1 n7	0.99	0.84	0.81		
	FR1 n12	0.99	0.47	0.51		
	FR1 n41/n38	0.82	0.99	0.78		
FR1 n66	0.66	0.79	0.68			
FR1 n77	0.95	0.76	0.61			
DXX	13.56 MHz				0.07	
DTS	2.4GHz WLAN	0.80	0.58	0.48		1.58
NII	5GHz WLAN	1.10	0.39	0.35		1.59
6CD	6GHz WLAN	0.56	0.26			
DSS	Bluetooth	0.29	0.37	0.61		1.59
Equipment Class	Frequency Band	Head Reported APD (mW/cm ²)		Body Reported APD (mW/cm ²)		Reported PD (mW/cm ²)
6CD	6GHz WLAN	0.32		0.17		0.71
Date of Testing:		2023/8/30-2023/11/1				

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: Paula Chen



2. Data Reuse Approach

FCC ID: A4RG8HHN, A4RGKV4X, A4RG6GPR (reference model) and FCC ID: A4RG576D (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: A4RG576D

3. Model Difference Information

A4RG8HHN, A4RGKV4X, A4RG6GPR and A4RG576D use the identical internal printed circuit board layout, and the major differences which may relate to RF are listed below:

- 5G FR2 related components are depopulated

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	NFC	13.56	A4RG8HHN	Original Grant	FA380306C	A4RG576D	Spot check
	DSS	Bluetooth	2400~2483.5	A4RGKV4X	Original Grant	FA380307B	A4RG576D	Spot check
	DTS	BLE WiFi	2400~2483.5	A4RGKV4X	Original Grant	FA380307B	A4RG576D	Spot check
	NII	Wi-Fi	5150 ~ 5250 5250 ~ 5350 5470 ~ 5725 5725 ~ 5850 5850 ~ 5895	A4RGKV4X	Original Grant	FA380307B	A4RG576D	Spot check
	6CD	Wi-Fi	5925 ~ 6425 6425 ~ 6525 6525 ~ 6875 6875 ~ 7125	A4RGKV4X	Original Grant	FA380307B	A4RG576D	Spot check Full Test on 6E PD, per KDB 484596
	PCB CBE	GSM	850/1900	A4RG8HHN A4RG6GPR	Original Grant	FA380306C FA380308B	A4RG576D	Spot check
		WCDMA	B2/4/5	A4RG6GPR	Original Grant	FA380308B	A4RG576D	Spot check
		LTE	B2/4/5/7/12/17/38/41/66	A4RG8HHN A4RG6GPR	Original Grant	FA380306C FA380308B	A4RG576D	Spot check
		5G FR1	n2/5/7/12/38/41/66/77	A4RG8HHN A4RG6GPR	Original Grant	FA380306C FA380308B	A4RG576D	Spot check

5. 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
- IEC/IEEE 62209-1528:2020
- SPEAG DASY6 System Handbook
- SPEAG DASY6 Application Note (Interim Procedure for Device Operation at 6GHz-10GHz)



6. Equipment Under Test (EUT) Information

6.1 General Information

Product Feature & Specification	
Equipment Name	Phone
Model Name	G576D
FCC ID	A4RG576D
S / N	38031JEKB01480, 38031JEKB01472, 38031JEKB01474
Frequency Band	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 17: 704 MHz ~ 716 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 66: 1710 MHz ~ 1780 MHz 5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n7 : 2500 MHz ~ 2570 MHz 5G NR n12 : 699 MHz ~ 716 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n77: 3700 MHz ~ 3980 MHz, 3450MHz ~ 3550MHz 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 5.9 GHz Band: 5850 MHz ~ 5895 MHz WLAN 6E: 5925 MHz~6425 MHz, 6425 MHz~6525 MHz, 6525MHz~6875 MHz, 6875MHz~7125 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz NFC : 13.56 MHz WPC Rx: 110.1KHz ~ 148.5KHz
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 HT20/HT40/VHT20/VHT40/VHT80/HE20/HE40/HE80 Bluetooth BR/EDR/LE/HR/Channel sounding NFC: ASK WPC Rx: 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.



6.2 Maximum Tune-up Limit

General Note:

- 1. In the report PC3 as power class3, PC2 as power class2
2. For each cellular band, the device has several WWAN antennas, the antenna selection is based on the connection quality condition.
3. The following table shows maximum output power configurations for various exposure conditions (output power index) with tune-up tolerance accounted. For TAS enabled bands, the values associate with Plimit plus the total uncertainty, or Pmax plus total uncertainty when the derived Plimit is higher than Pmax. In some frequency bands, for some power indexes which associate with the same power level, conducted power measurement for those only need to perform at once.
4. The max power conditions use case were evaluated in the reference model G8HHN, the report exhibit of G8HHN_Part 1 SAR Report_Appendix G.
5. SAR compliance for the scenario, when device in next-to-ear voice call with hotspot enabled, is justified via head SAR test at Power Index 3.

Table with 2 columns: Transmit switching diversity configuration, Antenna configuration. Rows include TX 0 and TX 1 with their respective antenna and band support details.



Maximum Transmit Burst Average Power (dBm)								
Band	Antenna	Duty cycle	Maximum Power Condition	Head	Head	Hotspot	Body-worn	Body-worn
				Standalone	Simultaneous	Simultaneous	Standalone	Simultaneous
				Index 1	Index 2	Index 3	Index 4	Index 5
GSM850 GSM/GPRS 1TX	0	12.50%	33.50	33.50	33.50	33.50	33.50	33.50
GSM850 GPRS 2TX	0	25.00%	32.50	32.50	32.50	32.30	32.50	32.30
GSM850 GPRS 3TX	0	37.50%	31.50	31.50	31.00	30.60	31.50	30.60
GSM850 GPRS 4TX	0	50.00%	30.00	30.00	29.70	29.30	30.00	29.30
GSM850 EDGE 1TX	0	12.50%	28.00	28.00	28.00	28.00	28.00	28.00
GSM850 EDGE 2TX	0	25.00%	27.50	27.50	27.50	27.50	27.50	27.50
GSM850 EDGE 3TX	0	37.50%	27.50	27.50	27.50	27.50	27.50	27.50
GSM850 EDGE 4TX	0	50.00%	25.50	25.50	25.50	25.50	25.50	25.50
GSM850 GSM/GPRS 1TX	1	12.50%	33.00	31.90	29.80	33.00	33.00	33.00
GSM850 GPRS 2TX	1	25.00%	32.50	28.90	26.80	32.50	32.50	32.50
GSM850 GPRS 3TX	1	37.50%	30.50	27.00	24.90	30.50	30.50	30.50
GSM850 GPRS 4TX	1	50.00%	28.00	25.80	23.70	28.00	28.00	28.00
GSM850 EDGE 1TX	1	12.50%	27.50	27.50	27.50	27.50	27.50	27.50
GSM850 EDGE 2TX	1	25.00%	27.00	27.00	26.80	27.00	27.00	27.00
GSM850 EDGE 3TX	1	37.50%	27.00	27.00	24.90	27.00	27.00	27.00
GSM850 EDGE 4TX	1	50.00%	24.00	24.00	23.70	24.00	24.00	24.00
GSM1900 GSM/GPRS 1TX	2	12.50%	30.50	30.50	30.50	30.30	30.50	30.30
GSM1900 GPRS 2TX	2	25.00%	29.50	29.50	29.50	27.30	28.10	27.30
GSM1900 GPRS 3TX	2	37.50%	29.00	29.00	28.70	25.50	26.30	25.50
GSM1900 GPRS 4TX	2	50.00%	28.00	28.00	27.50	24.30	25.10	24.30
GSM1900 EDGE 1TX	2	12.50%	26.00	26.00	26.00	26.00	26.00	26.00
GSM1900 EDGE 2TX	2	25.00%	25.00	25.00	25.00	25.00	25.00	25.00
GSM1900 EDGE 3TX	2	37.50%	25.00	25.00	25.00	25.00	25.00	25.00
GSM1900 EDGE 4TX	2	50.00%	24.00	24.00	24.00	24.00	24.00	24.00
GSM1900 GSM/GPRS 1TX	0	12.50%	30.00	30.00	30.00	30.00	30.00	30.00
GSM1900 GPRS 2TX	0	25.00%	29.50	29.50	29.50	29.50	29.50	29.50
GSM1900 GPRS 3TX	0	37.50%	28.50	28.50	28.50	28.50	28.50	28.50
GSM1900 GPRS 4TX	0	50.00%	27.50	27.50	27.50	27.40	27.50	27.50
GSM1900 EDGE 1TX	0	12.50%	26.00	26.00	26.00	26.00	26.00	26.00
GSM1900 EDGE 2TX	0	25.00%	24.50	24.50	24.50	24.50	24.50	24.50
GSM1900 EDGE 3TX	0	37.50%	24.50	24.50	24.50	24.50	24.50	24.50
GSM1900 EDGE 4TX	0	50.00%	23.50	23.50	23.50	23.50	23.50	23.50



Maximum Transmit Burst Average Power (dBm)								
Band	Antenna	Duty cycle	Maximum Power Condition	Head	Head	Hotspot	Body-worn	Body-worn
				Standalone	Simultaneous	Simultaneous	Standalone	Simultaneous
				Index 1	Index 2	Index 3	Index 4	Index 5
WCDMA B2	2	100.00%	25.00	25.00	25.00	20.50	21.30	20.50
WCDMA B2	0	100.00%	24.50	24.50	23.80	24.50	24.50	24.50
WCDMA B4	2	100.00%	25.70	25.70	25.10	23.60	24.40	23.60
WCDMA B4	0	100.00%	25.20	25.20	25.20	23.80	25.20	23.80
WCDMA B5	0	100.00%	25.00	25.00	25.00	25.00	25.00	25.00
WCDMA B5	1	100.00%	24.50	22.40	21.60	24.50	24.50	24.50
LTE B2	2	100.00%	25.00	25.00	24.70	20.90	21.70	20.90
LTE B2	0	100.00%	24.50	24.50	24.50	24.10	24.50	24.20
LTE B5	0	100.00%	25.70	25.70	25.70	25.70	25.70	25.70
LTE B5	1	100.00%	25.20	21.10	19.00	25.20	25.20	25.20
LTE B7	2	100.00%	25.70	24.50	22.50	19.20	23.60	22.30
LTE B7	0	100.00%	25.20	25.20	23.80	21.90	23.70	22.00
LTE B12	0	100.00%	25.70	25.70	25.70	25.70	25.70	25.70
LTE B12	1	100.00%	25.30	22.40	20.30	25.30	25.30	25.30
LTE B17	0	100.00%	25.70	25.70	25.70	25.70	25.70	25.70
LTE B17	1	100.00%	25.20	22.40	20.30	25.20	25.20	25.20
LTE B38 PC3	2	63.30%	25.00	25.00	23.10	20.90	25.00	24.50
LTE B38 PC3	0	63.30%	24.50	24.50	24.50	23.30	24.50	24.20
LTE B41 PC3	2	63.30%	25.70	25.10	23.10	20.90	25.60	24.50
LTE B41 PC3	0	63.30%	25.20	25.20	25.20	23.30	25.20	24.20
LTE B66/B4	2	100.00%	25.70	25.70	25.50	23.00	24.10	23.00
LTE B66/B4	0	100.00%	25.20	25.20	25.20	23.60	25.20	23.60

Maximum Transmit Burst Average Power (dBm)								
Band	Antenna	Duty cycle	Maximum Power Condition	Head	Head	Hotspot	Body-worn	Body-worn
				Standalone	Simultaneous	Simultaneous	Standalone	Simultaneous
				Index 1	Index 2	Index 3	Index 4	Index 5
FR1 n2	2	100.00%	25.00	25.00	24.50	20.40	21.20	20.40
FR1 n2	0	100.00%	24.50	24.50	24.50	24.00	24.50	24.00
FR1 n5	0	100.00%	25.70	25.70	25.70	25.50	25.70	25.70
FR1 n5	1	100.00%	25.20	22.20	20.20	25.20	25.20	25.20
FR1 n7	2	100.00%	25.70	25.70	24.00	20.00	23.90	23.00
FR1 n7	0	100.00%	25.20	25.20	23.70	21.30	23.60	21.70
FR1 n12	0	100.00%	25.70	25.70	25.70	25.70	25.70	25.70
FR1 n12	1	100.00%	25.30	23.40	21.30	25.30	25.30	25.30
FR1 n41/n38 PC3	2	100.00%	25.70	24.30	23.50	20.40	23.50	22.60
FR1 n41/n38 PC3	0	100.00%	25.20	25.20	24.40	21.30	25.20	24.40
FR1 n66	2	100.00%	25.70	25.70	25.70	23.70	24.50	23.70
FR1 n66	0	100.00%	25.20	25.20	25.20	22.70	25.20	22.70
FR1 n77 PC3	6	100.00%	25.20	23.70	22.90	18.80	21.10	20.30
FR1 n77 PC3	2	100.00%	24.70	24.70	23.00	19.50	21.60	20.30
FR1 n77 PC3	1	100.00%	25.00	19.20	18.40	24.30	25.00	25.00
FR1 n77 PC3	5	100.00%	25.00	16.50	12.30	19.70	24.00	21.60



6.3 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05																																																															
FCC ID	A4RG576D																																																														
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 17: 704 MHz ~ 716 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 66: 1710 MHz ~ 1780 MHz																																																														
Channel Bandwidth	LTE Band 2: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 4: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 5: 1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 12: 1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 17: 5MHz, 10MHz LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 66: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz																																																														
uplink modulations used	QPSK / 16QAM / 64QAM / 256QAM																																																														
LTE Voice / Data requirements	Voice and Data																																																														
LTE 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)																																																								
	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																																																								
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 reference model FCC ID: A4RG8HHN, Part1 SAR report section 13.																																																														
LTE Carrier Aggregation Additional Information	This device supports maximum of 6 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					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20407	824.7	20415	825.5	20425	826.5	20450	829				
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5				
H	20643	848.3	20635	847.5	20625	846.5	20600	844				
LTE Band 7												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510				
M	21100	2535	21100	2535	21100	2535	21100	2535				
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560				
LTE Band 12												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	23017	699.7	23025	700.5	23035	701.5	23060	704				
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5				
H	23173	715.3	23165	714.5	23155	713.5	23130	711				
LTE Band 17												
	Bandwidth 5 MHz				Bandwidth 10 MHz							
	Channel #		Freq.(MHz)		Channel #		Freq. (MHz)					
L	23755		706.5		23780		709					
M	23790		710		23790		710					
H	23825		713.5		23800		711					
LTE Band 38												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	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)	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				
M	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5				
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680				
LTE Band 66												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	131979	1710.7	131987	1711.5	131997	1712.5	132022	1715	132047	1717.5	132072	1720
M	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745
H	132665	1779.3	132657	1778.5	132647	1777.5	132622	1775	132597	1772.5	132572	1770



6.4 General 5G NR SAR Test and Reporting Considerations

5G NR Information																
FCC	A4RG576D															
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 n38: 2570 MHz ~ 2620 MHz 5G NR n41: 2496 MHz ~ 2690 MHz 5G NR n66: 1710 MHz ~ 1780 MHz 5G NR n77: 3700 MHz ~ 3980 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 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 n77: 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 B5/12															
LTE Anchor Bands for n5	LTE B2/7/66															
LTE Anchor Bands for n7	LTE B5/12															
LTE Anchor Bands for n12	LTE B2/7/66															
LTE Anchor Bands for n38	LTE B2/5/12/66															
LTE Anchor Bands for n41	LTE B2/5/12/66															
LTE Anchor Bands for n66	LTE B5/12															
LTE Anchor Bands for n77	LTE B2/5/7/12/41/66															
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 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		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth70MHz		Bandwidth 80MHz		Bandwidth 90MHz		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 77																								
Bandwidth10MHz		Bandwidth15MHz		Bandwidth 20MHz		Bandwidth25MHz		Bandwidth30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		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 77 (3450MHz - 3550MHz)																								
Bandwidth10MHz		Bandwidth15MHz		Bandwidth 20MHz		Bandwidth25MHz		Bandwidth30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		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		
M	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98
H	636332	3544.98	636166	3542.49	636000	3540	635832	3537.48	635666	3534.99	635332	3529.98	635000	3525	634666	3519.99	634332	3514.98	634000	3510	633666	3504.99		



7. TAS feature for RF Exposure compliance

The FCC RF exposure limit is based on time-averaged RF exposure. Both SAR and PD regulatory specifications are defined over certain measurement duration allowing for time-averaging. The Samsung S.LSI proprietary TAS (Time Average SAR) algorithm has been designed to meet the compliance limits over the required duration, while still allowing dynamic control of transmit power for meeting system performance. Under the control of TAS algorithm, the device can transmit at high power up to Pmax for certain interval, but the average power will be maintained not exceeding the pre-defined averaged level (Plimit), and thus maintain the time-averaged RF exposure compliance

The following table shows Plimit and maximum tune up output power Pmax, for all exposure and transmit transmit conditions (output power index).

Pmax	Maximum Tx power that can be transmitted physically from RFIC for a given RAT
SAR_FCC_limit	SAR limit specified by FCC 1.6 W/kg averaged over 1-gram, for head and body exposure, and 4 W/kg averaged over 10-gram, for extremity exposure
Plimit	The time-averaged RF power that corresponds to SAR_target



7.1 SAR Characterization – Power Table

General Note:

1. The P_{limit} values correspond to SAR_{design_target}.
2. GSM and WCDMA don't support time average feature of dynamic power varying, the power will be fixed at the static reduce power level at different exposure conditions for RF exposure compliance. For the GSM (TDD) P_{limit} power levels in the table correspond to the burst average power levels which don't account for TX duty cycle.

<P_{limit} for supported technologies and bands (P_{limit} corresponding to SAR design target)>

Wireless technology/ band (No Accounting duty cycle)	Antenna	Duty cycle	Maximum Power Condition	Head		Hotspot	Body-worn		P Max Burst average power (dBm)
				Standalone	Simultaneous	Simultaneous	Standalone	Simultaneous	
			Index 1	Index 2	Index 3	Index 4	Index 5	Index 6	
			P limit						
GSM850 GSM/GPRS 1TX	0	12.50%	32.5	37.1	34.7	34.3	37.5	34.3	32.5
GSM850 GPRS 2TX	0	25.00%	31.5	34.1	31.7	31.3	34.5	31.3	31.5
GSM850 GPRS 3TX	0	37.50%	30.5	32.4	30	29.6	32.8	29.6	30.5
GSM850 GPRS 4TX	0	50.00%	29	31.1	28.7	28.3	31.5	28.3	29
GSM850 EDGE 1TX	0	12.50%	27	37.1	34.7	34.3	37.5	34.3	27
GSM850 EDGE 2TX	0	25.00%	26.5	34.1	31.7	31.3	34.5	31.3	26.5
GSM850 EDGE 3TX	0	37.50%	26.5	32.4	30	29.6	32.8	29.6	26.5
GSM850 EDGE 4TX	0	50.00%	24.5	31.1	28.7	28.3	31.5	28.3	24.5
GSM850 GSM/GPRS 1TX	1	12.50%	32	30.9	28.8	38.5	39.3	38.5	32
GSM850 GPRS 2TX	1	25.00%	31.5	27.9	25.8	35.5	36.3	35.5	31.5
GSM850 GPRS 3TX	1	37.50%	29.5	26	23.9	33.6	34.4	33.6	29.5
GSM850 GPRS 4TX	1	50.00%	27	24.8	22.7	32.4	33.2	32.4	27
GSM850 EDGE 1TX	1	12.50%	26.5	30.9	28.8	38.5	39.3	38.5	26.5
GSM850 EDGE 2TX	1	25.00%	26	27.9	25.8	35.5	36.3	35.5	26
GSM850 EDGE 3TX	1	37.50%	26	26	23.9	33.6	34.4	33.6	26
GSM850 EDGE 4TX	1	50.00%	23	24.8	22.7	32.4	33.2	32.4	23
GSM1900 GSM/GPRS 1TX	0	12.50%	29	34.6	33.8	32.4	34.6	33.8	29
GSM1900 GPRS 2TX	0	25.00%	28.5	31.6	30.8	29.4	31.6	30.8	28.5
GSM1900 GPRS 3TX	0	37.50%	27.5	29.8	29	27.6	29.8	29	27.5
GSM1900 GPRS 4TX	0	50.00%	26.5	28.6	27.8	26.4	28.6	27.8	26.5
GSM1900 EDGE 1TX	0	12.50%	25	34.6	33.8	32.4	34.6	33.8	25
GSM1900 EDGE 2TX	0	25.00%	23.5	31.6	30.8	29.4	31.6	30.8	23.5
GSM1900 EDGE 3TX	0	37.50%	23.5	29.8	29	27.6	29.8	29	23.5
GSM1900 EDGE 4TX	0	50.00%	22.5	28.6	27.8	26.4	28.6	27.8	22.5
GSM1900 GSM/GPRS 1TX	2	12.50%	29.5	34.3	32.5	29.3	30.1	29.3	29.5
GSM1900 GPRS 2TX	2	25.00%	28.5	31.3	29.5	26.3	27.1	26.3	28.5
GSM1900 GPRS 3TX	2	37.50%	28	29.5	27.7	24.5	25.3	24.5	28
GSM1900 GPRS 4TX	2	50.00%	27	28.3	26.5	23.3	24.1	23.3	27
GSM1900 EDGE 1TX	2	12.50%	25	34.3	32.5	29.3	30.1	29.3	25
GSM1900 EDGE 2TX	2	25.00%	24	31.3	29.5	26.3	27.1	26.3	24
GSM1900 EDGE 3TX	2	37.50%	24	29.5	27.7	24.5	25.3	24.5	24
GSM1900 EDGE 4TX	2	50.00%	23	28.3	26.5	23.3	24.1	23.3	23



<P_{limit} for supported technologies and bands (P_{limit} corresponding to SAR design target)>

Wireless technology/ band (No Accounting duty cycle)	Antenna	Duty cycle	Maximum Power Condition Index 1	Head		Hotspot	Body-worn		P Max Burst average power (dBm)
				Standalone	Simultaneous	Simultaneous	Standalone	Simultaneous	
				Index 2	Index 3	Index 4	Index 5	Index 6	
				P limit					
Burst average power (dBm)									
WCDMA B2	0	100.00%	23.5	25.8	22.8	23.6	25.8	25	23.5
WCDMA B2	2	100.00%	24	25.9	25.1	19.5	20.3	19.5	24
WCDMA B4	0	100.00%	24.2	28.4	27.6	22.8	25.8	22.8	24.2
WCDMA B4	2	100.00%	24.7	27.5	24.1	22.6	23.4	22.6	24.7
WCDMA B5	0	100.00%	24	28.4	27.6	25.2	28.1	27.3	24
WCDMA B5	1	100.00%	23.5	21.4	20.6	28.2	29	28.2	23.5
LTE B2	0	100.00%	23.5	25.4	24.6	23.1	26	23.2	23.5
LTE B2	2	100.00%	24	25.6	23.7	19.9	20.7	19.9	24
LTE B5	0	100.00%	24.7	27.6	26.8	25.1	27.5	26.7	24.7
LTE B5	1	100.00%	24.2	20.1	18	28	28.8	28	24.2
LTE B7	0	100.00%	24.2	24.5	22.8	20.9	22.7	21	24.2
LTE B7	2	100.00%	24.7	23.5	21.5	18.2	22.6	21.3	24.7
LTE B12	0	100.00%	24.8	30	29.2	26.3	28.1	27.3	24.8
LTE B12	1	100.00%	24.3	21.4	19.3	28.2	29	28.2	24.3
LTE B17	0	100.00%	24.7	29.9	29.1	26.2	28	27.2	24.7
LTE B17	1	100.00%	24.2	21.4	19.3	28.2	29	28.2	24.2
LTE B38 PC3	0	63.30%	21.5	24.4	23.6	20.3	23.9	21.2	21.5
LTE B38 PC3	2	63.30%	22	22.1	20.1	17.9	22.6	21.5	22
LTE B41 PC3	0	63.30%	22.2	24.4	23.6	20.3	23.9	21.2	22.2
LTE B41 PC3	2	63.30%	22.7	22.1	20.1	17.9	22.6	21.5	22.7
LTE B66/B4	0	100.00%	24.2	27.3	26.5	22.6	25.2	22.6	24.2
LTE B66/B4	2	100.00%	24.7	27	24.5	22	23.1	22	24.7
FR1 n2	0	100.00%	23.5	27.7	26.9	23	25.1	23	23.5
FR1 n2	2	100.00%	24	25.3	23.5	19.4	20.2	19.4	24
FR1 n5	0	100.00%	24.7	27.7	26.9	24.5	27.4	26.6	24.7
FR1 n5	1	100.00%	24.2	21.2	19.2	27.6	28.4	27.6	24.2
FR1 n7	0	100.00%	24.2	24.2	22.7	20.3	22.6	20.7	24.2
FR1 n7	2	100.00%	24.7	25	23	19	22.9	22	24.7
FR1 n12	0	100.00%	24.8	28.7	27.9	27	28	27.2	24.8
FR1 n12	1	100.00%	24.3	22.4	20.3	29.5	30.4	29.6	24.3
FR1 n41/n38 PC3	0	100.00%	24.2	24.2	23.4	20.3	24.2	23.4	24.2
FR1 n41/n38 PC3	2	100.00%	24.7	23.3	22.5	19.4	22.5	21.6	24.7
FR1 n66	0	100.00%	24.2	26.8	26	21.7	24.8	21.7	24.2
FR1 n66	2	100.00%	24.7	27	26.2	22.7	23.5	22.7	24.7
FR1 n77 PC3	6	100.00%	24.2	22.7	21.9	17.8	20.1	19.3	24.2
FR1 n77 PC3	2	100.00%	23.2	23.5	21.5	18	20.1	18.8	23.2
FR1 n77 PC3	1	100.00%	24	18.2	17.4	23.3	26	25.2	24
FR1 n77 PC3	5	100.00%	24	15.5	11.3	18.7	23	20.6	24

1. LTE and 5GNR TDD: P_{limit} power levels in the table correspond to the time-averaged power levels which accounts for TX duty cycle.
2. Maximum target power, P_{max}, is configured in NV settings in EUT to limit maximum transmitting power. This power is converted into peak power in NV settings for TDD schemes.

8. RF Exposure Limits

8.1 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.

8.2 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

9. Specific Absorption Rate (SAR)

9.1 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.

9.2 SAR Definition

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

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

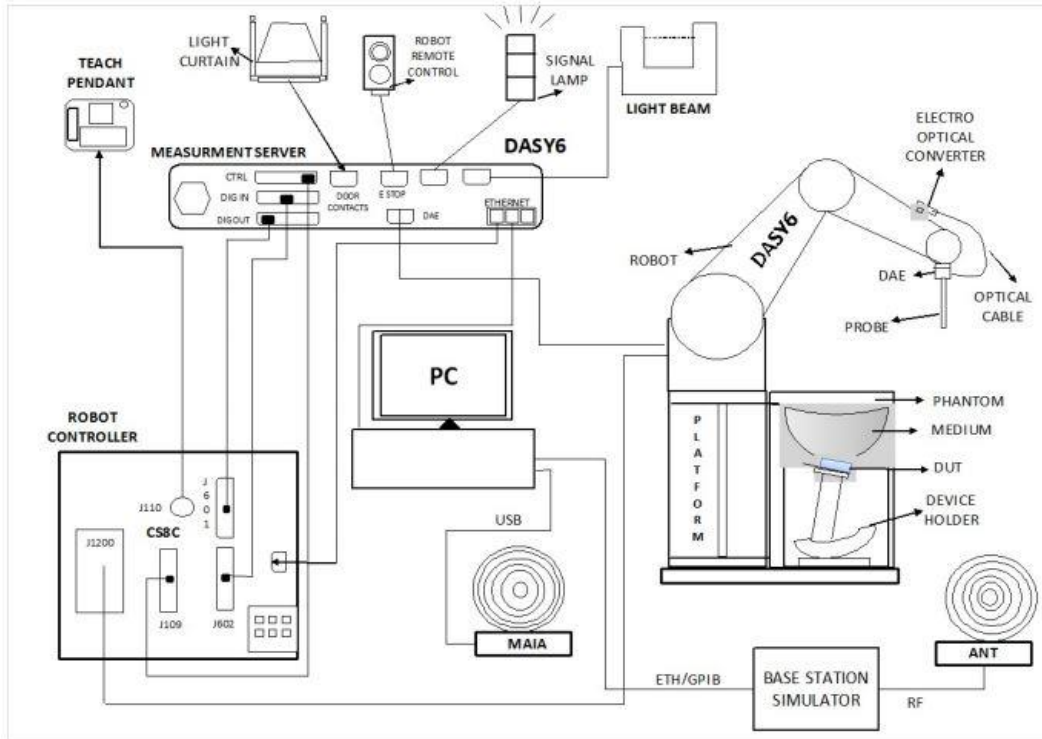
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

10. System Description and Setup

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



- The DASY system in DASY6/DASY5 V5.2 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 DASY5/DASY6 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

10.1 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
			SAR18-HY	SAR-20HY	


10.2 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 μ W/g – >100 mW/g; Linearity: ± 0.2 dB	
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 3.9 mm (body: 12 mm) Distance from probe tip to dipole centers: 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 μ W/g – >100 mW/g Linearity: ± 0.2 dB (noise: typically <1 μ W/g)	
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 2.5 mm (body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	

10.3 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.

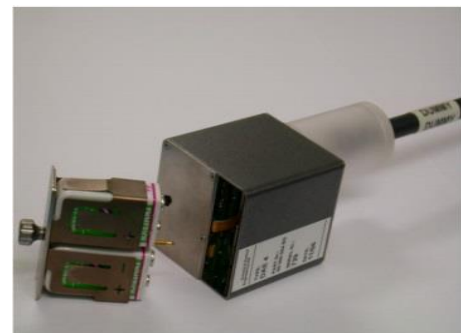


Fig 5.1 Photo of DAE

10.4 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.

10.5 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



11. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

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

<SAR measurement>

- (a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN continuously transmission, at maximum RF power, in the highest power channel.
- (b) Place the EUT in the positions as Appendix G 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

11.1 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

11.2 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.

11.3 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: Δx_{Area} , Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

11.4 Zoom Scan

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

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

		≤ 3 GHz	> 3 GHz	
Maximum zoom scan spatial resolution: $\Delta x_{Zoom}, \Delta y_{Zoom}$		≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*	
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$	≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm	
	graded grid	$\Delta z_{Zoom}(1)$: between 1 st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z	≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm	
<p>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.</p> <p>* 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.</p>				

11.5 Volume Scan Procedures

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

11.6 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.



12. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit ⁽²⁾	D750V3	1107	Jun. 22, 2022	Jun. 20, 2024
SPEAG	835MHz System Validation Kit	D835V2	4d167	Nov. 24, 2022	Nov. 23, 2023
SPEAG	1750MHz System Validation Kit ⁽²⁾	D1750V2	1112	Jun. 22, 2022	Jun. 20, 2024
SPEAG	1900MHz System Validation Kit ⁽²⁾	D1900V2	5d185	Jun. 17, 2022	Jun. 15, 2024
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 ⁽²⁾	D2600V2	1078	Jun. 23, 2022	Jun. 21, 2024
SPEAG	3500MHz System Validation Kit ⁽²⁾	D3500V2	1014	Jan. 17, 2022	Jan. 15, 2024
SPEAG	3500MHz System Validation Kit ⁽²⁾	D3500V2	1036	Mar. 23, 2022	Mar. 21, 2024
SPEAG	3700MHz System Validation Kit ⁽²⁾	D3700V2	1006	Jun. 20, 2022	Jun. 18, 2024
SPEAG	3900MHz System Validation Kit ⁽²⁾	D3900V2	1017	Apr. 22, 2022	Apr. 20, 2024
SPEAG	3900MHz System Validation Kit	D3900V2	1092	May. 15, 2023	May. 14, 2024
SPEAG	5GHz System Validation Kit ⁽²⁾	D5GHzV2	1006	May. 25, 2023	May. 23, 2025
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. 30, 2024
SPEAG	5G Verification Source	10GHz	1020	Jan. 20, 2023	Jan. 19, 2024
SPEAG	EUmmWV Probe Tip Protection	EUmmWV4	9441	Nov. 18, 2022	Nov. 17, 2023
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	1424	Jan. 19, 2023	Jan. 18, 2024
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	7625	Jan. 26, 2023	Jan. 25, 2024
SPEAG	Dosimetric E-Field Probe	EX3DV4	7692	Jul. 18, 2023	Jul. 17, 2024
SPEAG	Dosimetric E-Field Probe	EX3DV4	7695	May. 22, 2023	May. 21, 2024
SPEAG	Dosimetric E-Field Probe	EX3DV4	7700	Jan. 24, 2023	Jan. 23, 2024
SPEAG	Dosimetric E-Field Probe	EX3DV4	7785	Jan. 05, 2023	Jan. 04, 2024
SPEAG	Dosimetric E-Field Probe	EX3DV4	7791	Feb. 22, 2023	Feb. 21, 2024
RCPTWN	Thermometer	HTC-1	TM685-1	Mar. 21, 2023	Mar. 20, 2024
RCPTWN	Thermometer	HTC-1	TM560-2	Mar. 21, 2023	Mar. 20, 2024
Anritsu	Radio Communication Analyzer	MT8821C	6201074414	Aug. 23, 2023	Aug. 22, 2024
Keysight	Wireless Communication Test Set	E5515C	MY50266977	May. 15, 2023	May. 14, 2024
R&S	BT Base Station	CBT	100815	Mar. 05, 2023	Mar. 04, 2024
SPEAG	Device Holder	N/A	N/A	N/A	N/A
Anritsu	Signal Generator	MG3692A	212506	Nov. 14, 2022	Nov. 13, 2023
Keysight	ENA Network Analyzer	E5071C	MY46104758	Sep. 22, 2022	Sep. 21, 2023
Keysight	ENA Network Analyzer	E5071C	MY46316648	Sep. 07, 2023	Sep. 06, 2024
SPEAG	Dielectric Probe Kit	DAK-3.5	1146	Jul. 11, 2023	Jul. 10, 2024
SPEAG	Dielectric Probe Kit	DAK-12	1156	Jul. 17, 2023	Jul. 16, 2024
LINE SEIKI	Digital Thermometer	DTM3000-spezial	3690	Aug. 09, 2023	Aug. 08, 2024
Anritsu	Power Meter	ML2495A	1419002	Aug. 17, 2023	Aug. 16, 2024
Anritsu	Power Sensor	MA2411B	1911176	Aug. 18, 2023	Aug. 17, 2024
Anritsu	Spectrum Analyzer	MS2830A	6201396378	Jul. 10, 2023	Jul. 09, 2024
Mini-Circuits	Power Amplifier	ZHL-42W+	715701915	May. 19, 2023	May. 18, 2024
ATM	Dual Directional Coupler	C122H-10	P610410z-02	Note 1	Note 1
Warison	Directional Coupler	WCOU-10-50S-10	WR889BMC4B1	Note 1	Note 1
Woken	Attenuator 1	WK0602-XX	N/A	Note 1	Note 1
PE	Attenuator 2	PE7005-10	N/A	Note 1	Note 1
PE	Attenuator 3	PE7005-3	N/A	Note 1	Note 1

General Note:

1. Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check source.
2. 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.

13. System Verification

13.1 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>

Frequency (MHz)	Liquid Temp. (°C)	Conductivity (σ)	Permittivity (ε _r)	Conductivity Target (σ)	Permittivity Target (ε _r)	Delta (σ) (%)	Delta (ε _r) (%)	Limit (%)	Date
13	22.3	0.728	54.685	0.75	55.00	-2.93	-0.57	±5	2023/10/13
750	22.6	0.895	43.4	0.89	41.9	0.56	3.58	±5	2023/9/12
750	22.4	0.89	41.9	0.89	41.9	0	0	±5	2023/9/14
750	22.3	0.887	41.7	0.89	41.9	-0.34	-0.48	±5	2023/9/16
750	22.4	0.883	41.6	0.89	41.9	-0.79	-0.72	±5	2023/9/18
750	22.3	0.895	41.8	0.89	41.9	0.56	-0.24	±5	2023/9/23
750	22.6	0.878	41.9	0.89	41.9	-1.35	0	±5	2023/9/12
750	22.6	0.889	41.8	0.89	41.9	-0.11	-0.24	±5	2023/9/25
750	22.8	0.896	41.8	0.89	41.9	0.67	-0.24	±5	2023/10/16
835	22.8	0.926	41.5	0.9	41.5	2.89	0	±5	2023/9/13
835	22.3	0.921	41.4	0.9	41.5	2.33	-0.24	±5	2023/9/16
835	22.1	0.93	41.6	0.9	41.5	3.33	0.24	±5	2023/9/19
835	22.6	0.892	41.4	0.9	41.5	-0.89	-0.24	±5	2023/9/24
835	22.2	0.92	41.4	0.9	41.5	2.22	-0.24	±5	2023/9/25
835	22.6	0.911	41.6	0.9	41.5	1.22	0.24	±5	2023/9/13
835	22.3	0.924	41.3	0.9	41.5	2.67	-0.48	±5	2023/10/13
835	22.6	0.909	40.6	0.9	41.5	1	-2.17	±5	2023/9/18
835	22.6	0.934	41.8	0.9	41.5	3.78	0.72	±5	2023/10/15
835	22.8	0.922	41.4	0.9	41.5	2.44	-0.24	±5	2023/10/18
1750	22.5	1.35	40.9	1.37	40.1	-1.46	2	±5	2023/9/15
1750	22.6	1.35	40.8	1.37	40.1	-1.46	1.75	±5	2023/9/20
1750	22.6	1.36	40.9	1.37	40.1	-0.73	2	±5	2023/9/24
1750	22.9	1.37	41.1	1.37	40.1	0	2.49	±5	2023/9/29
1750	22.7	1.36	40.6	1.37	40.1	-0.73	1.25	±5	2023/10/13
1750	22.6	1.36	40.5	1.37	40.1	-0.73	1	±5	2023/9/16
1750	22.6	1.36	40.8	1.37	40.1	-0.73	1.75	±5	2023/9/21
1750	22.7	1.36	40.6	1.37	40.1	-0.73	1.25	±5	2023/10/13
1750	22.4	1.37	40.2	1.37	40.1	0	0.25	±5	2023/10/14
1750	22.5	1.37	40.7	1.37	40.1	0	1.5	±5	2023/10/25
1900	22.8	1.46	39.5	1.4	40	4.29	-1.25	±5	2023/8/30
1900	22.2	1.42	39.3	1.4	40	1.43	-1.75	±5	2023/9/17
1900	22.7	1.42	40.8	1.4	40	1.43	2	±5	2023/9/20
1900	22.6	1.43	41	1.4	40	2.14	2.5	±5	2023/9/21
1900	22.2	1.43	39.4	1.4	40	2.14	-1.5	±5	2023/9/26
1900	22.3	1.44	39.4	1.4	40	2.86	-1.5	±5	2023/10/3
1900	22.7	1.44	38.7	1.4	40	2.86	-3.25	±5	2023/10/11
1900	22.4	1.42	40.6	1.4	40	1.43	1.5	±5	2023/9/15
1900	22.7	1.42	40.8	1.4	40	1.43	2	±5	2023/9/20
1900	22.4	1.45	38.7	1.4	40	3.57	-3.25	±5	2023/10/14
1900	22.7	1.45	39.3	1.4	40	3.57	-1.75	±5	2023/10/16
1900	22.8	1.43	39	1.4	40	2.14	-2.5	±5	2023/10/18
1900	22.5	1.44	39.2	1.4	40	2.86	-2	±5	2023/10/25



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2300	22.7	1.67	39.1	1.67	39.5	0	-1.01	±5	2023/9/21
2300	22.4	1.67	39	1.67	39.5	0	-1.27	±5	2023/9/27
2450	22.3	1.77	38.6	1.8	39.2	-1.67	-1.53	±5	2023/10/7
2450	22.2	1.84	39	1.8	39.2	2.22	-0.51	±5	2023/10/12
2450	22.3	1.81	38.8	1.8	39.2	0.56	-1.02	±5	2023/10/12
2450	22.5	1.78	38.9	1.8	39.2	-1.11	-0.77	±5	2023/10/13
2450	22.3	1.78	38.6	1.8	39.2	-1.11	-1.53	±5	2023/10/15
2450	22.3	1.79	38.7	1.8	39.2	-0.56	-1.28	±5	2023/10/18
2450	22.9	1.79	39.9	1.8	39.2	-0.56	1.79	±5	2023/10/19
2600	22.7	2	37.9	1.96	39	2.04	-2.82	±5	2023/9/21
2600	22.4	1.98	37.8	1.96	39	1.02	-3.08	±5	2023/9/24
2600	22.6	1.98	38.8	1.96	39	1.02	-0.51	±5	2023/9/26
2600	22.4	1.99	37.9	1.96	39	1.53	-2.82	±5	2023/9/27
2600	22.2	1.98	38	1.96	39	1.02	-2.56	±5	2023/9/28
2600	22.3	1.97	37.8	1.96	39	0.51	-3.08	±5	2023/10/4
2600	22.8	1.92	38	1.96	39	-2.04	-2.56	±5	2023/10/10
2600	22.5	1.93	38.2	1.96	39	-1.53	-2.05	±5	2023/10/12
3500	22.5	2.97	38.4	2.91	37.9	2.06	1.32	±5	2023/9/22
3500	22.6	2.92	37.6	2.91	37.9	0.34	-0.79	±5	2023/9/29
3500	22.7	2.92	37.8	2.91	37.9	0.34	-0.26	±5	2023/10/3
3500	22.5	2.95	38.2	2.91	37.9	1.37	0.79	±5	2023/10/5
3500	22.6	2.96	38.1	2.91	37.9	1.72	0.53	±5	2023/10/5
3500	22.7	2.95	37.4	2.91	37.9	1.37	-1.32	±5	2023/10/7
3500	22.7	2.95	37.9	2.91	37.9	1.37	0	±5	2023/10/7
3500	22.8	2.93	37.3	2.91	37.9	0.69	-1.58	±5	2023/10/8
3500	22.6	3.01	37.9	2.91	37.9	3.44	0	±5	2023/10/9
3500	22.7	2.95	38.1	2.91	37.9	1.37	0.53	±5	2023/10/12
3500	22.3	2.92	37.6	2.91	37.9	0.34	-0.79	±5	2023/10/31
3500	22.2	2.93	38.2	2.91	37.9	0.69	0.79	±5	2023/11/1
3500	22.5	2.92	37.2	2.91	37.9	0.34	-1.85	±5	2023/10/16
3500	22.7	2.92	37.1	2.91	37.9	0.34	-2.11	±5	2023/10/17
3700	22.5	3.13	38.2	3.12	37.7	0.32	1.33	±5	2023/9/22
3700	22.6	3.08	37.4	3.12	37.7	-1.28	-0.8	±5	2023/9/29
3700	22.7	3.11	37.7	3.12	37.7	-0.32	0	±5	2023/10/3
3700	22.5	3.11	38	3.12	37.7	-0.32	0.8	±5	2023/10/5
3700	22.6	3.12	37.8	3.12	37.7	0	0.27	±5	2023/10/5
3700	22.7	3.14	37.1	3.12	37.7	0.64	-1.59	±5	2023/10/7
3700	22.8	3.12	37	3.12	37.7	0	-1.86	±5	2023/10/8
3700	22.7	3.16	37.9	3.12	37.7	1.28	0.53	±5	2023/10/12
3700	22.3	3.08	37.4	3.12	37.7	-1.28	-0.8	±5	2023/10/31
3700	22.2	3.14	38	3.12	37.7	0.64	0.8	±5	2023/11/1
3700	22.5	3.1	36.9	3.12	37.7	-0.64	-2.12	±5	2023/10/16
3700	22.7	3.1	36.8	3.12	37.7	-0.64	-2.39	±5	2023/10/17
3900	22.6	3.25	37.1	3.33	37.51	-2.4	-1.09	±5	2023/9/29
3900	22.7	3.25	37.3	3.33	37.51	-2.4	-0.56	±5	2023/10/1
3900	22.7	3.28	37.4	3.33	37.51	-1.5	-0.29	±5	2023/10/3
3900	22.6	3.29	37.6	3.33	37.51	-1.2	0.24	±5	2023/10/5
3900	22.5	3.38	37	3.33	37.51	1.5	-1.36	±5	2023/10/6
3900	22.7	3.34	36.9	3.33	37.51	0.3	-1.63	±5	2023/10/7
3900	22.7	3.28	37.3	3.33	37.51	-1.5	-0.56	±5	2023/10/7
3900	22.8	3.32	36.7	3.33	37.51	-0.3	-2.16	±5	2023/10/8
3900	22.3	3.25	37.1	3.33	37.51	-2.4	-1.09	±5	2023/10/31
3900	22.2	3.35	37.8	3.33	37.51	0.6	0.77	±5	2023/11/1
3900	22.5	3.31	36.6	3.33	37.51	-0.6	-2.43	±5	2023/10/16
3900	22.7	3.3	36.6	3.33	37.51	-0.9	-2.43	±5	2023/10/17
5250	22.3	4.6	35.4	4.71	35.95	-2.34	-1.53	±5	2023/10/7



5250	22.3	4.75	37	4.71	35.95	0.85	2.92	±5	2023/10/14
5250	22.3	4.82	36.9	4.71	35.95	2.34	2.64	±5	2023/10/15
5250	22.3	4.68	35.7	4.71	35.95	-0.64	-0.7	±5	2023/10/16
5250	22.6	4.82	36.5	4.71	35.95	2.34	1.53	±5	2023/10/16
5250	22.3	4.68	36	4.71	35.95	-0.64	0.14	±5	2023/10/17
5250	22.6	4.7	36.8	4.71	35.95	-0.21	2.36	±5	2023/10/18
5250	22.8	4.57	35.4	4.71	35.95	-2.97	-1.53	±5	2023/10/18
5250	22.5	4.67	37.2	4.71	35.95	-0.85	3.48	±5	2023/10/20
5600	22.3	5	34.8	5.07	35.5	-1.38	-1.97	±5	2023/10/7
5600	22.3	5.12	36.5	5.07	35.5	0.99	2.82	±5	2023/10/14
5600	22.3	5.21	36.3	5.07	35.5	2.76	2.25	±5	2023/10/15
5600	22.3	5.08	35.1	5.07	35.5	0.2	-1.13	±5	2023/10/16
5600	22.3	5.08	35.4	5.07	35.5	0.2	-0.28	±5	2023/10/17
5600	22.6	5.06	36.3	5.07	35.5	-0.2	2.25	±5	2023/10/18
5600	22.8	4.96	34.8	5.07	35.5	-2.17	-1.97	±5	2023/10/18
5750	22.3	5.18	34.5	5.22	35.35	-0.77	-2.4	±5	2023/10/7
5750	22.3	5.29	36.3	5.22	35.35	1.34	2.69	±5	2023/10/14
5750	22.3	5.36	36.2	5.22	35.35	2.68	2.4	±5	2023/10/15
5750	22.3	5.26	34.8	5.22	35.35	0.77	-1.56	±5	2023/10/16
5750	22.5	5.36	35.8	5.22	35.35	2.68	1.27	±5	2023/10/16
5750	22.3	5.27	35.1	5.22	35.35	0.96	-0.71	±5	2023/10/17
5750	22.6	5.22	36.1	5.22	35.35	0	2.12	±5	2023/10/18
5750	22.8	5.15	34.5	5.22	35.35	-1.34	-2.4	±5	2023/10/18
5850	22.5	5.44	35.5	5.32	35.25	2.26	0.71	±5	2023/10/17
5850	22.6	5.18	36	5.32	35.25	-2.63	2.13	±5	2023/10/18
6500	22.5	6.31	35.2	6.07	34.5	3.95	2.03	±5	2023/10/13
6500	22.5	5.97	34.2	6.07	34.5	-1.65	-0.87	±5	2023/10/14



13.2 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 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
SAR-15	2023/10/13	13	1000	CLA13-1022	EX3DV4 - SN7695	DAE4 Sn656	0.335	0.349	0.335	-4.29
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 (%)
SAR17	2023/9/12	750	50	D750V3-1107	EX3DV4 - SN7700	DAE4 Sn1707	0.403	8.54	8.06	-5.62
SAR17	2023/9/14	750	50	D750V3-1107	EX3DV4 - SN7700	DAE4 Sn1707	0.427	8.54	8.54	0
SAR17	2023/9/16	750	50	D750V3-1107	EX3DV4 - SN7700	DAE4 Sn1707	0.426	8.54	8.52	-0.23
SAR17	2023/9/18	750	50	D750V3-1107	EX3DV4 - SN7700	DAE4 Sn1707	0.388	8.54	7.76	-9.13
SAR17	2023/9/23	750	50	D750V3-1107	EX3DV4 - SN7700	DAE4 Sn1707	0.427	8.54	8.54	0
SAR16	2023/9/12	750	50	D750V3-1107	EX3DV4 - SN3931	DAE4 Sn1696	0.413	8.54	8.26	-3.28
SAR18	2023/9/25	750	50	D750V3-1107	EX3DV4 - SN3931	DAE4 Sn1696	0.392	8.54	7.84	-8.2
SAR17	2023/10/16	750	50	D750V3-1107	EX3DV4 - SN7700	DAE4 Sn1707	0.392	8.54	7.84	-8.2
SAR17	2023/9/13	835	50	D835V2-4d167	EX3DV4 - SN7700	DAE4 Sn1707	0.461	9.8	9.22	-5.92
SAR17	2023/9/16	835	50	D835V2-4d167	EX3DV4 - SN7700	DAE4 Sn1707	0.446	9.8	8.92	-8.98
SAR17	2023/9/19	835	50	D835V2-4d167	EX3DV4 - SN7700	DAE4 Sn1707	0.471	9.8	9.42	-3.88
SAR18	2023/9/24	835	50	D835V2-4d167	EX3DV4 - SN3931	DAE4 Sn1696	0.468	9.8	9.36	-4.49
SAR17	2023/9/25	835	50	D835V2-4d167	EX3DV4 - SN7700	DAE4 Sn1707	0.446	9.8	8.92	-8.98
SAR16	2023/9/13	835	50	D835V2-4d167	EX3DV4 - SN3931	DAE4 Sn1696	0.523	9.8	10.46	6.73
SAR17	2023/10/13	835	50	D835V2-4d167	EX3DV4 - SN7700	DAE4 Sn1707	0.465	9.8	9.3	-5.1
SAR16	2023/9/18	835	50	D835V2-4d167	EX3DV4 - SN3931	DAE4 Sn1696	0.482	9.8	9.64	-1.63
SAR15	2023/10/15	835	50	D835V2-4d167	EX3DV4 - SN7692	DAE4 Sn661	0.515	9.8	10.3	5.1
SAR17	2023/10/18	835	50	D835V2-4d167	EX3DV4 - SN7700	DAE4 Sn1707	0.471	9.8	9.42	-3.88
SAR17	2023/9/15	1750	50	D1750V2-1112	EX3DV4 - SN7700	DAE4 Sn1707	1.86	36.9	37.2	0.81
SAR17	2023/9/20	1750	50	D1750V2-1112	EX3DV4 - SN7700	DAE4 Sn1707	1.81	36.9	36.2	-1.9
SAR18	2023/9/24	1750	50	D1750V2-1112	EX3DV4 - SN3931	DAE4 Sn1696	1.75	36.9	35	-5.15
SAR17	2023/9/29	1750	50	D1750V2-1112	EX3DV4 - SN7700	DAE4 Sn1707	1.87	36.9	37.4	1.36
SAR16	2023/10/13	1750	50	D1750V2-1112	EX3DV4 - SN7692	DAE4 Sn661	1.68	36.9	33.6	-8.94
SAR16	2023/9/16	1750	50	D1750V2-1112	EX3DV4 - SN3931	DAE4 Sn1696	1.72	36.9	34.4	-6.78
SAR16	2023/9/21	1750	50	D1750V2-1112	EX3DV4 - SN3931	DAE4 Sn1696	1.73	36.9	34.6	-6.23
SAR15	2023/10/13	1750	50	D1750V2-1112	EX3DV4 - SN7692	DAE4 Sn661	1.68	36.9	33.6	-8.94
SAR17	2023/10/14	1750	50	D1750V2-1112	EX3DV4 - SN7700	DAE4 Sn1707	1.68	36.9	33.6	-8.94
SAR17	2023/10/25	1750	50	D1750V2-1112	EX3DV4 - SN7700	DAE4 Sn1707	1.7	36.9	34	-7.86
SAR18	2023/8/30	1900	50	D1900V2-5d185	EX3DV4 - SN3931	DAE4 Sn1696	1.83	39	36.6	-6.15
SAR17	2023/9/17	1900	50	D1900V2-5d185	EX3DV4 - SN7700	DAE4 Sn1707	1.83	39	36.6	-6.15
SAR18	2023/9/20	1900	50	D1900V2-5d185	EX3DV4 - SN3931	DAE4 Sn1696	1.93	39	38.6	-1.03
SAR18	2023/9/21	1900	50	D1900V2-5d185	EX3DV4 - SN3931	DAE4 Sn1696	1.95	39	39	0
SAR17	2023/9/26	1900	50	D1900V2-5d185	EX3DV4 - SN7700	DAE4 Sn1707	1.87	39	37.4	-4.1
SAR17	2023/10/3	1900	50	D1900V2-5d185	EX3DV4 - SN7700	DAE4 Sn1707	1.84	39	36.8	-5.64
SAR16	2023/10/11	1900	50	D1900V2-5d185	EX3DV4 - SN7692	DAE4 Sn661	1.84	39	36.8	-5.64
SAR16	2023/9/15	1900	50	D1900V2-5d185	EX3DV4 - SN3931	DAE4 Sn1696	1.92	39	38.4	-1.54
SAR16	2023/9/20	1900	50	D1900V2-5d185	EX3DV4 - SN3931	DAE4 Sn1696	1.93	39	38.6	-1.03
SAR17	2023/10/14	1900	50	D1900V2-5d185	EX3DV4 - SN7700	DAE4 Sn1707	1.91	39	38.2	-2.05
SAR15	2023/10/16	1900	50	D1900V2-5d185	EX3DV4 - SN7692	DAE4 Sn661	1.98	39	39.6	1.54
SAR17	2023/10/18	1900	50	D1900V2-5d185	EX3DV4 - SN7700	DAE4 Sn1707	1.96	39	39.2	0.51
SAR17	2023/10/25	1900	50	D1900V2-5d185	EX3DV4 - SN7700	DAE4 Sn1707	1.9	39	38	-2.56
SAR17	2023/9/21	2300	50	D2300V2-1006	EX3DV4 - SN7700	DAE4 Sn1707	2.27	48.3	45.4	-6
SAR17	2023/9/27	2300	50	D2300V2-1006	EX3DV4 - SN7700	DAE4 Sn1707	2.35	48.3	47	-2.69
SAR-15	2023/10/7	2450	50	D2450V2-929	EX3DV4 - SN7791	DAE4 Sn699	2.78	52.4	55.6	6.11
SAR-13	2023/10/12	2450	50	D2450V2-929	EX3DV4 - SN7791	DAE4 Sn1697	2.62	52.4	52.4	0
SAR-15	2023/10/12	2450	50	D2450V2-929	EX3DV4 - SN7785	DAE4 Sn699	2.58	52.4	51.6	-1.53
SAR-17	2023/10/13	2450	50	D2450V2-929	EX3DV4 - SN7700	DAE4 Sn1707	2.37	52.4	47.4	-9.54
SAR-15	2023/10/15	2450	50	D2450V2-929	EX3DV4 - SN7785	DAE4 Sn699	2.51	52.4	50.2	-4.2
SAR-15	2023/10/18	2450	50	D2450V2-929	EX3DV4 - SN7785	DAE4 Sn699	2.54	52.4	50.8	-3.05
SAR-15	2023/10/19	2450	50	D2450V2-929	EX3DV4 - SN7785	DAE4 Sn699	2.46	52.4	49.2	-6.11



FCC SAR TEST REPORT

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SAR17	2023/9/21	2600	50	D2600V2-1078	EX3DV4 - SN7700	DAE4 Sn1707	2.79	55.4	55.8	0.72
SAR17	2023/9/24	2600	50	D2600V2-1078	EX3DV4 - SN7700	DAE4 Sn1707	2.62	55.4	52.4	-5.42
SAR18	2023/9/26	2600	50	D2600V2-1078	EX3DV4 - SN3931	DAE4 Sn1696	2.71	55.4	54.2	-2.17
SAR17	2023/9/27	2600	50	D2600V2-1078	EX3DV4 - SN7700	DAE4 Sn1707	2.59	55.4	51.8	-6.5
SAR17	2023/9/28	2600	50	D2600V2-1078	EX3DV4 - SN7700	DAE4 Sn1707	2.59	55.4	51.8	-6.5
SAR17	2023/10/4	2600	50	D2600V2-1078	EX3DV4 - SN7700	DAE4 Sn1707	2.6	55.4	52	-6.14
SAR17	2023/10/10	2600	50	D2600V2-1078	EX3DV4 - SN7700	DAE4 Sn1707	2.51	55.4	50.2	-9.39
SAR17	2023/10/12	2600	50	D2600V2-1078	EX3DV4 - SN7700	DAE4 Sn1707	2.53	55.4	50.6	-8.66
SAR17	2023/9/22	3500	50	D3500V2-1014	EX3DV4 - SN7700	DAE4 Sn1707	3.23	67.2	64.6	-3.87
SAR18	2023/9/29	3500	50	D3500V2-1014	EX3DV4 - SN3931	DAE4 Sn1696	3.4	67.2	68	1.19
SAR16	2023/10/3	3500	50	D3500V2-1014	EX3DV4 - SN7692	DAE4 Sn661	3.55	67.2	71	5.65
SAR17	2023/10/5	3500	50	D3500V2-1014	EX3DV4 - SN7700	DAE4 Sn1707	3.03	67.2	60.6	-9.82
SAR16	2023/10/5	3500	50	D3500V2-1014	EX3DV4 - SN7692	DAE4 Sn661	3.14	67.2	62.8	-6.55
SAR17	2023/10/7	3500	50	D3500V2-1036	EX3DV4 - SN7700	DAE4 Sn1707	3.18	67.4	63.6	-5.64
SAR16	2023/10/7	3500	50	D3500V2-1036	EX3DV4 - SN7692	DAE4 Sn661	3.27	67.4	65.4	-2.97
SAR17	2023/10/8	3500	50	D3500V2-1036	EX3DV4 - SN7700	DAE4 Sn1707	3.08	67.4	61.6	-8.61
SAR16	2023/10/9	3500	50	D3500V2-1036	EX3DV4 - SN7692	DAE4 Sn661	3.16	67.4	63.2	-6.23
SAR16	2023/10/12	3500	50	D3500V2-1036	EX3DV4 - SN7692	DAE4 Sn661	3.15	67.4	63	-6.53
SAR16	2023/10/31	3500	50	D3500V2-1036	EX3DV4 - SN7692	DAE4 Sn661	3.54	67.4	70.8	5.04
SAR16	2023/11/1	3500	50	D3500V2-1036	EX3DV4 - SN7692	DAE4 Sn661	3.58	67.4	71.6	6.23
SAR17	2023/10/16	3500	50	D3500V2-1036	EX3DV4 - SN7700	DAE4 Sn1707	3.14	67.4	62.8	-6.82
SAR17	2023/10/17	3500	50	D3500V2-1036	EX3DV4 - SN7700	DAE4 Sn1707	3.3	67.4	66	-2.08
SAR17	2023/9/22	3700	50	D3700V2-1006	EX3DV4 - SN7700	DAE4 Sn1707	3.25	65.6	65	-0.91
SAR18	2023/9/29	3700	50	D3700V2-1006	EX3DV4 - SN3931	DAE4 Sn1696	3.06	65.6	61.2	-6.71
SAR16	2023/10/3	3700	50	D3700V2-1006	EX3DV4 - SN7692	DAE4 Sn661	3.08	65.6	61.6	-6.1
SAR17	2023/10/5	3700	50	D3700V2-1006	EX3DV4 - SN7700	DAE4 Sn1707	3.1	65.6	62	-5.49
SAR16	2023/10/5	3700	50	D3700V2-1006	EX3DV4 - SN7692	DAE4 Sn661	3.24	65.6	64.8	-1.22
SAR17	2023/10/7	3700	50	D3700V2-1006	EX3DV4 - SN7700	DAE4 Sn1707	3.2	65.6	64	-2.44
SAR17	2023/10/8	3700	50	D3700V2-1006	EX3DV4 - SN7700	DAE4 Sn1707	3.16	65.6	63.2	-3.66
SAR16	2023/10/12	3700	50	D3700V2-1006	EX3DV4 - SN7692	DAE4 Sn661	3.26	65.6	65.2	-0.61
SAR16	2023/10/31	3700	50	D3700V2-1006	EX3DV4 - SN7692	DAE4 Sn661	3.26	65.6	65.2	-0.61
SAR16	2023/11/1	3700	50	D3700V2-1006	EX3DV4 - SN7692	DAE4 Sn661	3.15	65.6	63	-3.96
SAR17	2023/10/16	3700	50	D3700V2-1006	EX3DV4 - SN7700	DAE4 Sn1707	2.96	65.6	59.2	-9.76
SAR17	2023/10/17	3700	50	D3700V2-1006	EX3DV4 - SN7700	DAE4 Sn1707	2.97	65.6	59.4	-9.45
SAR18	2023/9/29	3900	50	D3900V2-1092	EX3DV4 - SN3931	DAE4 Sn1696	3.06	67	61.2	-8.66
SAR18	2023/10/1	3900	50	D3900V2-1092	EX3DV4 - SN3931	DAE4 Sn1696	3.37	67	67.4	0.6
SAR16	2023/10/3	3900	50	D3900V2-1017-3900	EX3DV4 - SN7692	DAE4 Sn661	3.31	68.7	66.2	-3.64
SAR16	2023/10/5	3900	50	D3900V2-1017-3900	EX3DV4 - SN7692	DAE4 Sn661	3.22	68.7	64.4	-6.26
SAR17	2023/10/6	3900	50	D3900V2-1092	EX3DV4 - SN7700	DAE4 Sn1707	3.24	67	64.8	-3.28
SAR17	2023/10/7	3900	50	D3900V2-1092	EX3DV4 - SN7700	DAE4 Sn1707	3.08	67	61.6	-8.06
SAR16	2023/10/7	3900	50	D3900V2-1092	EX3DV4 - SN7692	DAE4 Sn661	3.36	67	67.2	0.3
SAR17	2023/10/8	3900	50	D3900V2-1092	EX3DV4 - SN7700	DAE4 Sn1707	3.02	67	60.4	-9.85
SAR16	2023/10/31	3900	50	D3900V2-1092	EX3DV4 - SN7692	DAE4 Sn661	3.57	67	71.4	6.57
SAR16	2023/11/1	3900	50	D3900V2-1092	EX3DV4 - SN7692	DAE4 Sn661	3.33	67	66.6	-0.6
SAR17	2023/10/16	3900	50	D3900V2-1092	EX3DV4 - SN7700	DAE4 Sn1707	3.22	67	64.4	-3.88
SAR17	2023/10/17	3900	50	D3900V2-1092	EX3DV4 - SN7700	DAE4 Sn1707	3.44	67	68.8	2.69
SAR-15	2023/10/7	5250	50	D5GHzV2-1171-5250	EX3DV4 - SN7791	DAE4 Sn699	3.85	80.3	77	-4.11
SAR-15	2023/10/14	5250	100	D5GHzV2-1171-5250	EX3DV4 - SN7785	DAE4 Sn699	7.41	80.3	74.1	-7.72
SAR-15	2023/10/15	5250	100	D5GHzV2-1171-5250	EX3DV4 - SN7785	DAE4 Sn699	7.83	80.3	78.3	-2.49
SAR-15	2023/10/16	5250	100	D5GHzV2-1171-5250	EX3DV4 - SN7785	DAE4 Sn699	7.78	80.3	77.8	-3.11
SAR-13	2023/10/16	5250	50	D5GHzV2-1171-5250	EX3DV4 - SN7791	DAE4 Sn1697	3.87	80.3	77.4	-3.61
SAR-15	2023/10/17	5250	100	D5GHzV2-1171-5250	EX3DV4 - SN7785	DAE4 Sn699	8.34	80.3	83.4	3.86
SAR-16	2023/10/18	5250	50	D5GHzV2-1171-5250	EX3DV4 - SN7692	DAE4 Sn661	3.82	80.3	76.4	-4.86
SAR-17	2023/10/18	5250	50	D5GHzV2-1171-5250	EX3DV4 - SN7700	DAE4 Sn1707	4.16	80.3	83.2	3.61
SAR-13	2023/10/20	5250	50	D5GHzV2-1171-5250	EX3DV4 - SN7695	DAE4 Sn1697	3.77	80.3	75.4	-6.1
SAR-15	2023/10/7	5600	50	D5GHzV2-1171-5600	EX3DV4 - SN7791	DAE4 Sn699	4.12	83.4	82.4	-1.2
SAR-15	2023/10/14	5600	100	D5GHzV2-1171-5600	EX3DV4 - SN7785	DAE4 Sn699	8.16	83.4	81.6	-2.16
SAR-15	2023/10/15	5600	100	D5GHzV2-1171-5600	EX3DV4 - SN7785	DAE4 Sn699	8.04	83.4	80.4	-3.6
SAR-15	2023/10/16	5600	100	D5GHzV2-1171-5600	EX3DV4 - SN7785	DAE4 Sn699	8.16	83.4	81.6	-2.16
SAR-15	2023/10/17	5600	100	D5GHzV2-1171-5600	EX3DV4 - SN7785	DAE4 Sn699	7.96	83.4	79.6	-4.56

SAR-16	2023/10/18	5600	50	D5GHzV2-1171-5600	EX3DV4 - SN7692	DAE4 Sn661	4.34	83.4	86.8	4.08
SAR-17	2023/10/18	5600	50	D5GHzV2-1171-5600	EX3DV4 - SN7700	DAE4 Sn1707	4.25	83.4	85	1.92
SAR-15	2023/10/7	5750	50	D5GHzV2-1171-5750	EX3DV4 - SN7791	DAE4 Sn699	3.79	80.4	75.8	-5.72
SAR-15	2023/10/14	5750	100	D5GHzV2-1171-5750	EX3DV4 - SN7785	DAE4 Sn699	7.36	80.4	73.6	-8.46
SAR-15	2023/10/15	5750	100	D5GHzV2-1171-5750	EX3DV4 - SN7785	DAE4 Sn699	7.67	80.4	76.7	-4.6
SAR-15	2023/10/16	5750	100	D5GHzV2-1171-5750	EX3DV4 - SN7785	DAE4 Sn699	7.35	80.4	73.5	-8.58
SAR-13	2023/10/16	5750	100	D5GHzV2-1171-5750	EX3DV4 - SN7791	DAE4 Sn1697	8.24	80.4	82.4	2.49
SAR-15	2023/10/17	5750	100	D5GHzV2-1171-5750	EX3DV4 - SN7785	DAE4 Sn699	7.32	80.4	73.2	-8.96
SAR-16	2023/10/18	5750	50	D5GHzV2-1171-5750	EX3DV4 - SN7692	DAE4 Sn661	4.13	80.4	82.6	2.74
SAR-17	2023/10/18	5750	50	D5GHzV2-1171-5750	EX3DV4 - SN7700	DAE4 Sn1707	4.04	80.4	80.8	0.5
SAR-13	2023/10/17	5850	50	D5GHzV2-1006-5850	EX3DV4 - SN7625	DAE4 Sn1697	3.93	81.8	78.6	-3.91
SAR-13	2023/10/18	5850	50	D5GHzV2-1171-5850	EX3DV4 - SN7625	DAE4 Sn1697	3.78	82.3	75.6	-8.14
SAR-13	2023/10/13	6500	100	D6.5GHzV2-1003	EX3DV4 - SN7791	DAE4 Sn1697	27.4	297	274	-7.74
SAR-13	2023/10/14	6500	100	D6.5GHzV2-1003	EX3DV4 - SN7791	DAE4 Sn1697	32.1	297	321	8.08

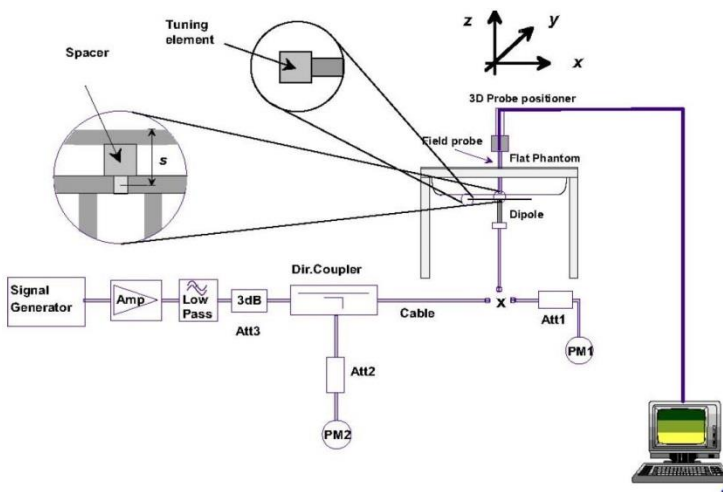


Fig 8.3.1 System Performance Check Setup



Fig 8.3.2 Setup Photo

13.3 PD System Performance Check Results

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

Test Site	Frequency (GHz)	5G Verification Source	Probe S/N	DAE S/N	Distance (mm)	Measured 4 cm ² (W/m ²)	Targeted 4 cm ² (W/m ²)	Deviation (dB)	Date
SAR13	10G	10GHz_1020	9441	1424	10mm	55.4	54.9	0.04	2023/10/27
SAR13	10G	10GHz_1020	9424	656	10mm	51.3	54.9	-0.29	2023/11/14

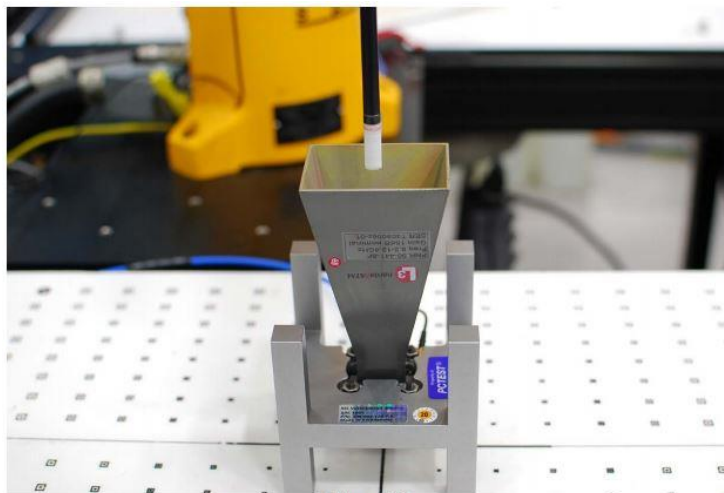


Figure 4-3
System Verification Setup Photo

System Performance Check Setup



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	BW (MHz)	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 (3 Tx slots)	Left Cheek	0mm	Index 2	251	848.8	30.00	31.50	1.413			0.05	0.457	0.646	-0.15%
	2nd	GSM850_Ant 0	GPRS (3 Tx slots)	Left Cheek	0mm	Index 2	251	848.8	29.84	31.50	1.466			-0.04	0.440	0.645	
	1st	GSM850_Ant 0	GPRS (3 Tx slots)	Left Cheek	0mm	Index 3	251	848.8	30.00	31.00	1.259			0.05	0.457	0.575	0.00%
	2nd	GSM850_Ant 0	GPRS (3 Tx slots)	Left Cheek	0mm	Index 3	251	848.8	29.84	31.00	1.306			-0.04	0.440	0.575	
	1st	GSM850_Ant 1	GPRS (2 Tx slots)	Right Cheek	0mm	Index 2	128	824.2	27.99	28.90	1.233			0	0.800	0.986	-1.93%
01	2nd	GSM850_Ant 1	GPRS (2 Tx slots)	Right Cheek	0mm	Index 2	128	824.2	27.80	28.90	1.288			0.01	0.751	0.967	
	1st	GSM850_Ant 1	GPRS (2 Tx slots)	Right Cheek	0mm	Index 3	128	824.2	26.79	26.80	1.002			0	0.635	0.636	-4.09%
	2nd	GSM850_Ant 1	GPRS (2 Tx slots)	Right Cheek	0mm	Index 3	128	824.2	26.71	26.80	1.021			0.01	0.597	0.610	
	1st	GSM1900_Ant 2	GPRS (4 Tx slots)	Right Cheek	0mm	Index 2	810	1909.8	26.63	28.00	1.371			0.03	0.494	0.677	-1.48%
02	2nd	GSM1900_Ant 2	GPRS (4 Tx slots)	Right Cheek	0mm	Index 2	810	1909.8	26.61	28.00	1.377			0.06	0.484	0.667	
	1st	GSM1900_Ant 2	GPRS (4 Tx slots)	Right Cheek	0mm	Index 3	810	1909.8	26.63	27.50	1.222			0.03	0.494	0.604	-1.66%
	2nd	GSM1900_Ant 2	GPRS (4 Tx slots)	Right Cheek	0mm	Index 3	810	1909.8	26.61	27.50	1.227			0.06	0.484	0.594	
	1st	GSM1900_Ant 0	GPRS (4 Tx slots)	Left Cheek	0mm	Index 2/3	661	1880	26.22	27.50	1.343			0.04	0.443	0.595	-6.05%
	2nd	GSM1900_Ant 0	GPRS (4 Tx slots)	Left Cheek	0mm	Index 2/3	661	1880	26.29	27.50	1.321			0.07	0.423	0.559	
	1st	WCDMA II_Ant 2	RMC 12.2Kbps	Right Cheek	0mm	Index 2/3	9538	1907.6	24.30	25.00	1.175			0.1	0.528	0.620	-5.65%
	2nd	WCDMA II_Ant 2	RMC 12.2Kbps	Right Cheek	0mm	Index 2/3	9538	1907.6	24.71	25.00	1.069			0.03	0.547	0.585	
	1st	WCDMA II_Ant 0	RMC 12.2Kbps	Left Cheek	0mm	Index 2	9538	1907.6	23.79	24.50	1.178			0.07	0.568	0.669	-11.06%
03	2nd	WCDMA II_Ant 0	RMC 12.2Kbps	Left Cheek	0mm	Index 2	9538	1907.6	23.68	24.50	1.208			0.16	0.493	0.595	
	1st	WCDMA II_Ant 0	RMC 12.2Kbps	Left Cheek	0mm	Index 3	9538	1907.6	23.79	23.80	1.002			0.07	0.568	0.569	-10.90%
	2nd	WCDMA II_Ant 0	RMC 12.2Kbps	Left Cheek	0mm	Index 3	9538	1907.6	23.68	23.80	1.028			0.16	0.493	0.507	
	1st	WCDMA IV_Ant 2	RMC 12.2Kbps	Right Cheek	0mm	Index 2	1513	1752.6	24.71	25.70	1.256			0.16	0.428	0.538	-15.06%
04	2nd	WCDMA IV_Ant 2	RMC 12.2Kbps	Right Cheek	0mm	Index 2	1513	1752.6	24.84	25.70	1.219			0.12	0.375	0.457	
	1st	WCDMA IV_Ant 2	RMC 12.2Kbps	Right Cheek	0mm	Index 3	1513	1752.6	24.71	25.10	1.094			0.16	0.428	0.468	-14.96%
	2nd	WCDMA IV_Ant 2	RMC 12.2Kbps	Right Cheek	0mm	Index 3	1513	1752.6	24.84	25.10	1.062			0.12	0.375	0.398	
	1st	WCDMA IV_Ant 0	RMC 12.2Kbps	Left Cheek	0mm	Index 2/3	1513	1752.6	24.25	25.20	1.245			0.16	0.319	0.397	-0.25%
	2nd	WCDMA IV_Ant 0	RMC 12.2Kbps	Left Cheek	0mm	Index 2/3	1513	1752.6	23.99	25.20	1.321			0.14	0.300	0.396	
	1st	WCDMA V_Ant 0	RMC 12.2Kbps	Left Cheek	0mm	Index 2/3	4233	846.6	24.05	25.00	1.245			0.17	0.369	0.459	-1.09%
	2nd	WCDMA V_Ant 0	RMC 12.2Kbps	Left Cheek	0mm	Index 2/3	4233	846.6	23.76	25.00	1.330			0.13	0.341	0.454	
	1st	WCDMA V_Ant 1	RMC 12.2Kbps	Right Cheek	0mm	Index 2	4182	836.4	21.24	22.40	1.306			0	0.654	0.854	-7.85%
05	2nd	WCDMA V_Ant 1	RMC 12.2Kbps	Right Cheek	0mm	Index 2	4182	836.4	21.55	22.40	1.216			-0.03	0.647	0.787	
	1st	WCDMA V_Ant 1	RMC 12.2Kbps	Right Cheek	0mm	Index 3	4182	836.4	21.24	21.60	1.086			0	0.654	0.711	-8.02%
	2nd	WCDMA V_Ant 1	RMC 12.2Kbps	Right Cheek	0mm	Index 3	4182	836.4	21.55	21.60	1.012			-0.03	0.647	0.654	
	1st	LTE Band 2_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	Index 2	18900	1880	23.82	25.00	1.312			0.02	0.557	0.731	-9.71%
06	2nd	LTE Band 2_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	Index 2	18900	1880	23.94	25.00	1.276			0.08	0.517	0.660	
	1st	LTE Band 2_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	Index 3	18900	1880	23.82	24.70	1.225			0.02	0.557	0.682	-9.68%
	2nd	LTE Band 2_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	Index 3	18900	1880	23.94	24.70	1.191			0.08	0.517	0.616	
	1st	LTE Band 2_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	Index 2/3	18900	1880	23.38	24.50	1.294			0.04	0.461	0.597	-0.67%
	2nd	LTE Band 2_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	Index 2/3	18900	1880	23.25	24.50	1.334			0.01	0.445	0.593	
	1st	LTE Band 26_Ant 0	15M_QPSK_1_0	Left Cheek	0mm	Index 2/3	26865	831.5	24.36	25.70	1.361			0.01	0.339	0.462	-0.87%
	2nd	LTE Band 5_Ant 0	10M_QPSK_1_0	Left Cheek	0mm	Index 2/3	20525	836.5	24.07	25.70	1.455			0.07	0.315	0.458	



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Table with columns: Row ID, Antenna, Modulation, Position, Distance, Index, Power, SAR, etc. Includes rows for LTE and FR1 bands.



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	1st	FR1 n41_Ant 2	100M_BPSK_135_0	Right Cheek	0mm	Index 2	518598	2592.99	22.33	24.30	1.574			-0.16	0.520	0.818	
	2nd	FR1 n41_Ant 2	100M_BPSK_135_0	Right Cheek	0mm	Index 2	518598	2592.99	22.30	24.30	1.585			-0.19	0.461	0.731	-10.64%
	1st	FR1 n41_Ant 2	100M_BPSK_135_0	Right Cheek	0mm	Index 3	518598	2592.99	22.33	23.50	1.309			-0.16	0.520	0.681	-10.72%
	2nd	FR1 n41_Ant 2	100M_BPSK_135_0	Right Cheek	0mm	Index 3	518598	2592.99	22.30	23.50	1.318			-0.19	0.461	0.608	
	1st	FR1 n41_Ant 0	100M_BPSK_1_1	Left Cheek	0mm	Index 2	518598	2592.99	23.87	25.20	1.358			0.14	0.604	0.820	-10.61%
16	2nd	FR1 n41_Ant 0	100M_BPSK_1_1	Left Cheek	0mm	Index 2	518598	2592.99	23.70	25.20	1.413			-0.08	0.519	0.733	
	1st	FR1 n41_Ant 0	100M_BPSK_1_1	Left Cheek	0mm	Index 3	518598	2592.99	23.87	24.40	1.130			0.14	0.604	0.682	-10.56%
	2nd	FR1 n41_Ant 0	100M_BPSK_1_1	Left Cheek	0mm	Index 3	518598	2592.99	23.70	24.40	1.175			-0.08	0.519	0.610	
	1st	FR1 n66_Ant 2	40M_BPSK_1_1	Right Cheek	0mm	Index 2/3	349000	1745	25.56	25.70	1.033			0.13	0.636	0.657	-0.46%
17	2nd	FR1 n66_Ant 2	40M_BPSK_1_1	Right Cheek	0mm	Index 2/3	349000	1745	25.20	25.70	1.122			0.09	0.583	0.654	
	1st	FR1 n66_Ant 0	40M_BPSK_1_1	Left Cheek	0mm	Index 2/3	349000	1745	24.35	25.20	1.216			0.13	0.422	0.513	-9.94%
	2nd	FR1 n66_Ant 0	40M_BPSK_1_1	Left Cheek	0mm	Index 2/3	349000	1745	24.42	25.20	1.197			0.15	0.386	0.462	
	1st	FR1 n77_Ant 6	100M_BPSK_1_1	Left Cheek	0mm	Index 2	656000	3840	22.37	23.70	1.358			-0.13	0.491	0.667	-10.49%
	2nd	FR1 n77_Ant 6	100M_BPSK_1_1	Left Cheek	0mm	Index 2	656000	3840	22.45	23.70	1.334			-0.09	0.448	0.597	
	1st	FR1 n77_Ant 6	100M_BPSK_1_1	Left Cheek	0mm	Index 3	656000	3840	22.37	22.90	1.130			-0.13	0.491	0.555	-10.45%
	2nd	FR1 n77_Ant 6	100M_BPSK_1_1	Left Cheek	0mm	Index 3	656000	3840	22.45	22.90	1.109			-0.09	0.448	0.497	
	1st	FR1 n77_Ant 6	100M_BPSK_1_1	Left Cheek	0mm	Index 2	633332	3499.98	22.19	23.70	1.416			-0.06	0.445	0.630	-5.40%
	2nd	FR1 n77_Ant 6	100M_BPSK_1_1	Left Cheek	0mm	Index 2	633332	3499.98	22.25	23.70	1.396			-0.14	0.427	0.596	
	1st	FR1 n77_Ant 6	100M_BPSK_1_1	Left Cheek	0mm	Index 3	633332	3499.98	22.19	22.90	1.178			-0.06	0.445	0.524	-5.34%
	2nd	FR1 n77_Ant 6	100M_BPSK_1_1	Left Cheek	0mm	Index 3	633332	3499.98	22.25	22.90	1.161			-0.14	0.427	0.496	
	1st	FR1 n77_Ant 2	100M_BPSK_1_1	Right Cheek	0mm	Index 2	656000	3840	23.70	24.70	1.259			0.04	0.391	0.492	-3.66%
	2nd	FR1 n77_Ant 2	100M_BPSK_1_1	Right Cheek	0mm	Index 2	656000	3840	23.73	24.70	1.250			-0.04	0.379	0.474	
	1st	FR1 n77_Ant 2	100M_BPSK_1_1	Right Cheek	0mm	Index 3	656000	3840	22.69	23.00	1.074			-0.02	0.311	0.334	-3.59%
	2nd	FR1 n77_Ant 2	100M_BPSK_1_1	Right Cheek	0mm	Index 3	656000	3840	22.71	23.00	1.069			0.06	0.301	0.322	
	1st	FR1 n77_Ant 2	100M_BPSK_1_1	Right Cheek	0mm	Index 2	633332	3499.98	23.55	24.70	1.303			-0.14	0.724	0.943	-4.77%
	2nd	FR1 n77_Ant 2	100M_BPSK_1_1	Right Cheek	0mm	Index 2	633332	3499.98	23.57	24.70	1.297			-0.16	0.692	0.898	
	1st	FR1 n77_Ant 2	100M_BPSK_1_1	Right Cheek	0mm	Index 3	633332	3499.98	22.53	23.00	1.114			0	0.599	0.667	-9.15%
	2nd	FR1 n77_Ant 2	100M_BPSK_1_1	Right Cheek	0mm	Index 3	633332	3499.98	22.58	23.00	1.102			-0.07	0.550	0.606	
	1st	FR1 n77_Ant 1	100M_BPSK_1_1	Right Tilted	0mm	Index 2	656000	3840	18.23	19.20	1.250			0.18	0.515	0.644	-17.86%
	2nd	FR1 n77_Ant 1	100M_BPSK_1_1	Right Tilted	0mm	Index 2	656000	3840	18.20	19.20	1.259			0.14	0.420	0.529	
	1st	FR1 n77_Ant 1	100M_BPSK_1_1	Right Tilted	0mm	Index 3	656000	3840	18.23	18.40	1.040			0.18	0.515	0.536	-17.91%
	2nd	FR1 n77_Ant 1	100M_BPSK_1_1	Right Tilted	0mm	Index 3	656000	3840	18.20	18.40	1.047			0.14	0.420	0.440	
	1st	FR1 n77_Ant 1	100M_BPSK_1_1	Right Tilted	0mm	Index 2	633332	3499.98	18.22	19.20	1.253			0.19	0.757	0.949	-1.79%
18	2nd	FR1 n77_Ant 1	100M_BPSK_1_1	Right Tilted	0mm	Index 2	633332	3499.98	18.12	19.20	1.282			0.17	0.727	0.932	
	1st	FR1 n77_Ant 1	100M_BPSK_1_1	Right Tilted	0mm	Index 3	633332	3499.98	18.22	18.40	1.042			0.19	0.757	0.789	-1.77%
	2nd	FR1 n77_Ant 1	100M_BPSK_1_1	Right Tilted	0mm	Index 3	633332	3499.98	18.12	18.40	1.067			0.17	0.727	0.775	
	1st	FR1 n77_Ant 5	100M_BPSK_1_1	Left Cheek	0mm	Index 2	656000	3840	15.27	16.5	1.327			-0.11	0.673	0.893	-3.14%
	2nd	FR1 n77_Ant 5	100M_BPSK_1_1	Left Cheek	0mm	Index 2	656000	3840	15.30	16.5	1.318			-0.02	0.656	0.865	
	1st	FR1 n77_Ant 5	100M_BPSK_1_1	Left Cheek	0mm	Index 3	656000	3840	12.25	12.3	1.012			-0.05	0.337	0.341	-2.35%
	2nd	FR1 n77_Ant 5	100M_BPSK_1_1	Left Cheek	0mm	Index 3	656000	3840	12.25	12.3	1.012			-0.03	0.329	0.333	
	1st	FR1 n77_Ant 5	100M_BPSK_1_1	Left Cheek	0mm	Index 2	633332	3499.98	15.33	16.5	1.309			-0.07	0.545	0.714	-1.68%
	2nd	FR1 n77_Ant 5	100M_BPSK_1_1	Left Cheek	0mm	Index 2	633332	3499.98	15.35	16.5	1.303			-0.08	0.539	0.702	
	1st	FR1 n77_Ant 5	100M_BPSK_1_1	Left Cheek	0mm	Index 3	633332	3499.98	12.26	12.3	1.009			-0.02	0.273	0.276	-0.36%
	2nd	FR1 n77_Ant 5	100M_BPSK_1_1	Left Cheek	0mm	Index 3	633332	3499.98	12.22	12.3	1.019			-0.03	0.270	0.275	



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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 (%)
	1st	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 4	Index 1	12	2467	12.40	12.50	1.023	98.85	1.012	-0.19	0.768	0.795			
19	2nd	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 4	Index 1	12	2467	12.40	12.50	1.023	98.85	1.012	-0.04	0.759	0.786			-1.13%
	1st	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 4	Index 3	12	2467	9.90	10.00	1.023	98.85	1.012	0	0.459	0.475			
	2nd	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 4	Index 3	12	2467	9.90	10.00	1.023	98.85	1.012	-0.08	0.454	0.470			-1.05%
	1st	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 3	Index 1/2	11	2462	12.45	12.50	1.012	98.85	1.012	0.01	0.399	0.408			
	2nd	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 3	Index 1/2	11	2462	12.45	12.50	1.012	98.85	1.012	0.06	0.369	0.378			-7.35%
	1st	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 3	Index 3/4	11	2462	9.95	10.00	1.012	98.85	1.012	-0.15	0.236	0.242			
	2nd	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 3	Index 3/4	11	2462	9.95	10.00	1.012	98.85	1.012	-0.01	0.221	0.226			-6.61%
	1st	WLAN2.4GHz	802.11g 6Mbps	Left Cheek	0mm	Ant 4+3(4)	Index 1	6	2437	12.40	12.50	1.023	93.46	1.070	-0.06	0.641	0.702			
		WLAN2.4GHz	802.11g 6Mbps	Left Cheek	0mm	Ant 4+3(3)	Index 1	6	2437	12.15	12.50	1.084	93.46	1.070	-0.06	0.134	0.155			
	2nd	WLAN2.4GHz	802.11g 6Mbps	Left Cheek	0mm	Ant 4+3(4)	Index 1	6	2437	12.40	12.50	1.023	93.46	1.070	-0.02	0.613	0.671			-4.42%
		WLAN2.4GHz	802.11g 6Mbps	Left Cheek	0mm	Ant 4+3(3)	Index 1	6	2437	12.15	12.50	1.084	93.46	1.070	-0.02	0.115	0.133			
	1st	WLAN2.4GHz	802.11g 6Mbps	Left Tilted	0mm	Ant 4+3(4)	Index 3	1	2412	9.80	10.00	1.047	93.46	1.070	0.08	0.284	0.318			
		WLAN2.4GHz	802.11g 6Mbps	Left Tilted	0mm	Ant 4+3(3)	Index 3	1	2412	9.45	10.00	1.135	93.46	1.070	0.08	0.007	0.009			
	2nd	WLAN2.4GHz	802.11g 6Mbps	Left Tilted	0mm	Ant 4+3(4)	Index 3	1	2412	9.80	10.00	1.047	93.46	1.070	-0.14	0.224	0.251			-21.07%
		WLAN2.4GHz	802.11g 6Mbps	Left Tilted	0mm	Ant 4+3(3)	Index 3	1	2412	9.45	10.00	1.135	93.46	1.070	-0.14	0.006	0.007			
	1st	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	Ant 4	Index 1/2	56	5280	17.90	18.00	1.023	93.46	1.070	0.16	0.609	0.667			
	2nd	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	Ant 4	Index 1/2	56	5280	17.90	18.00	1.023	93.46	1.070	-0.06	0.546	0.598			-10.34%
	1st	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 3	58	5290	11.90	12.00	1.023	89.9	1.112	-0.16	0.152	0.173			
	2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 3	58	5290	11.90	12.00	1.023	89.9	1.112	0.13	0.144	0.164			-5.20%
	1st	WLAN5GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 4	Index 4	54	5270	15.40	15.50	1.023	86.84	1.152	0.18	0.292	0.344			
	2nd	WLAN5GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 4	Index 4	54	5270	15.40	15.50	1.023	86.84	1.152	0.13	0.290	0.342			-0.58%
	1st	WLAN5GHz	802.11a 6Mbps	Right Cheek	0mm	Ant 4+3(4)	Index 1	52	5260	17.90	18.00	1.023	93.42	1.070	-0.17	0.158	0.173			
		WLAN5GHz	802.11a 6Mbps	Right Cheek	0mm	Ant 4+3(3)	Index 1	52	5260	17.90	18.00	1.023	93.42	1.070	-0.17	1.000	1.095			
20	2nd	WLAN5GHz	802.11a 6Mbps	Right Cheek	0mm	Ant 4+3(4)	Index 1	52	5260	17.90	18.00	1.023	93.42	1.070	-0.19	0.189	0.207			-3.47%
		WLAN5GHz	802.11a 6Mbps	Right Cheek	0mm	Ant 4+3(3)	Index 1	52	5260	17.90	18.00	1.023	93.42	1.070	-0.19	0.965	1.057			
	1st	WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(4)	Index 3	58	5290	11.90	12.00	1.023	89.9	1.112	0.1	0.017	0.019			
		WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(3)	Index 3	58	5290	11.50	12.00	1.122	89.9	1.112	0.1	0.262	0.327			
	2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(4)	Index 3	58	5290	11.90	12.00	1.023	89.9	1.112	0.16	0.019	0.022			-20.18%
		WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(3)	Index 3	58	5290	11.50	12.00	1.122	89.9	1.112	0.16	0.209	0.261			
	1st	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 1	122	5610	15.40	15.50	1.023	89.9	1.112	-0.15	0.628	0.715			-28.67%
	2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 1	122	5610	15.40	15.50	1.023	89.9	1.112	0.07	0.448	0.510			
	1st	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 2	122	5610	15.80	16.00	1.047	89.9	1.112	0.15	0.497	0.579			-29.36%
	2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 2	122	5610	15.80	16.00	1.047	89.9	1.112	0.14	0.351	0.409			
	1st	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 3	122	5610	9.30	9.50	1.047	89.9	1.112	-0.14	0.133	0.155			-7.10%
	2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 3	122	5610	9.30	9.50	1.047	89.9	1.112	0.15	0.124	0.144			
	1st	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 4	106	5530	12.40	12.50	1.023	89.9	1.112	0.05	0.279	0.317			
	2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 4	106	5530	12.40	12.50	1.023	89.9	1.112	0.06	0.204	0.232			-26.81%
	1st	WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(4)	Index 1	122	5610	15.40	15.50	1.023	89.9	1.112	-0.18	0.168	0.191			
		WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(3)	Index 1	122	5610	15.30	15.50	1.047	89.9	1.112	-0.18	0.874	1.018			-10.41%
21	2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(4)	Index 1	122	5610	15.40	15.50	1.023	89.9	1.112	0.01	0.146	0.166			
		WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(3)	Index 1	122	5610	15.30	15.50	1.047	89.9	1.112	0.01	0.783	0.912			
	1st	WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(4)	Index 3	122	5610	9.40	9.50	1.023	89.9	1.112	-0.17	0.024	0.027			
		WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(3)	Index 3	122	5610	9.20	9.50	1.072	89.9	1.112	-0.17	0.210	0.250			-27.20%
	2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(4)	Index 3	122	5610	9.40	9.50	1.023	89.9	1.112	0.13	0.018	0.020			
		WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(3)	Index 3	122	5610	9.20	9.50	1.072	89.9	1.112	0.13	0.153	0.182			
	1st	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 1	155	5775	17.40	17.50	1.023	89.9	1.112	0.06	0.572	0.651			-27.65%
	2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 1	155	5775	17.40	17.50	1.023	89.9	1.112	0.16	0.414	0.471			
	1st	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 2	155	5775	16.40	16.50	1.023	89.9	1.112	-0.11	0.406	0.462			-12.99%
	2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 2	155	5775	16.40	16.50	1.023	89.9	1.112	0.17	0.353	0.402			
	1st	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 3	155	5775	10.40	10.50	1.023	89.9	1.112	-0.09	0.081	0.092			-25.00%
	2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 3	155	5775	10.40	10.50	1.023	89.9	1.112	0.11	0.061	0.069			
	1st	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 4	155	5775	13.40	13.50	1.023	89.9	1.112	-0.11	0.185	0.211			
	2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 4	155	5775	13.40	13.50	1.023	89.9	1.112	0.13	0.163	0.185			-12.32%



FCC SAR TEST REPORT

Report No. : FA370537-01B

22	1st	WLAN5GHZ	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(4)	Index 1	155	5775	17.50	17.50	1.000	89.9	1.112	-0.17	0.236	0.262			-15.25%
		WLAN5GHZ	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(3)	Index 1	155	5775	16.80	17.50	1.175	89.9	1.112	-0.17	0.693	0.905			
22	2nd	WLAN5GHZ	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(4)	Index 1	155	5775	17.50	17.50	1.000	89.9	1.112	0.11	0.213	0.237			
		WLAN5GHZ	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(3)	Index 1	155	5775	16.80	17.50	1.175	89.9	1.112	0.11	0.587	0.767			
	1st	WLAN5GHZ	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(4)	Index 3	155	5775	9.70	10.50	1.202	89.9	1.112	0.11	0.024	0.032			-23.21%
		WLAN5GHZ	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(3)	Index 3	155	5775	10.40	10.50	1.023	89.9	1.112	0.11	0.098	0.112			
	2nd	WLAN5GHZ	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(4)	Index 3	155	5775	9.70	10.50	1.202	89.9	1.112	0.07	0.026	0.035			
		WLAN5GHZ	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(3)	Index 3	155	5775	10.40	10.50	1.023	89.9	1.112	0.07	0.076	0.086			
	1st	WLAN5GHZ	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 1	171	5855	16.40	16.50	1.023	89.9	1.112	-0.03	0.618	0.703			-1.14%
		WLAN5GHZ	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 1	171	5855	16.40	16.50	1.023	89.9	1.112	0.05	0.611	0.695			
	2nd	WLAN5GHZ	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 1	171	5855	16.40	16.50	1.023	89.9	1.112	0.03	0.582	0.662			-16.01%
		WLAN5GHZ	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 2	171	5855	16.40	16.50	1.023	89.9	1.112	-0.09	0.489	0.556			
	1st	WLAN5GHZ	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 3	171	5855	9.40	9.50	1.023	89.9	1.112	0.09	0.093	0.106			-8.49%
		WLAN5GHZ	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 3	171	5855	9.40	9.50	1.023	89.9	1.112	0.01	0.085	0.097			
	2nd	WLAN5GHZ	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 3	171	5855	9.40	9.50	1.023	89.9	1.112	0.01	0.085	0.097			
		WLAN5GHZ	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 4	171	5855	12.90	13.00	1.023	89.9	1.112	-0.06	0.204	0.232			
	1st	WLAN5GHZ	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 4	171	5855	12.90	13.00	1.023	89.9	1.112	-0.18	0.189	0.215			-7.33%
		WLAN5GHZ	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 4	Index 4	171	5855	12.90	13.00	1.023	89.9	1.112	-0.18	0.189	0.215			
23	1st	WLAN5GHZ	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(4)	Index 1	171	5855	16.40	16.50	1.023	89.9	1.112	-0.04	0.223	0.254			-12.03%
		WLAN5GHZ	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(3)	Index 1	171	5855	15.50	16.50	1.259	89.9	1.112	-0.04	0.665	0.931			
	2nd	WLAN5GHZ	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(4)	Index 1	171	5855	16.40	16.50	1.023	89.9	1.112	-0.01	0.177	0.201			
		WLAN5GHZ	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(3)	Index 1	171	5855	15.50	16.50	1.259	89.9	1.112	-0.01	0.585	0.819			
	1st	WLAN5GHZ	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(4)	Index 3	171	5855	9.40	9.50	1.023	89.9	1.112	-0.18	0.027	0.031			-24.07%
		WLAN5GHZ	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(3)	Index 3	171	5855	8.70	9.50	1.202	89.9	1.112	-0.18	0.121	0.162			
	2nd	WLAN5GHZ	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(4)	Index 3	171	5855	9.40	9.50	1.023	89.9	1.112	-0.05	0.020	0.023			
		WLAN5GHZ	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 4+3(3)	Index 3	171	5855	8.70	9.50	1.202	89.9	1.112	-0.05	0.092	0.123			
	1st	WLAN6GHZ	802.11ax-HE80 MCS0	Left Cheek	0mm	Ant 4	Index 1/2	119	6545	14.30	14.50	1.047	87.06	1.149	0.1	0.411	0.494	1.93	2.322	-10.12%
		WLAN6GHZ	802.11ax-HE80 MCS0	Left Cheek	0mm	Ant 4	Index 1/2	119	6545	14.30	14.50	1.047	87.06	1.149	-0.06	0.369	0.444	1.6	1.925	
	2nd	WLAN6GHZ	802.11ax-HE80 MCS0	Left Cheek	0mm	Ant 4	Index 3	119	6545	10.80	11.00	1.047	87.06	1.149	-0.04	0.140	0.168	0.718	0.864	-9.52%
		WLAN6GHZ	802.11ax-HE80 MCS0	Left Cheek	0mm	Ant 4	Index 3	119	6545	10.80	11.00	1.047	87.06	1.149	0.05	0.126	0.152	0.703	0.846	
	1st	WLAN6GHZ	802.11ax-HE80 MCS0	Left Cheek	0mm	Ant 4	Index 4	119	6545	13.90	14.00	1.023	87.06	1.149	-0.09	0.295	0.347	1.64	1.928	-20.17%
		WLAN6GHZ	802.11ax-HE80 MCS0	Left Cheek	0mm	Ant 4	Index 4	119	6545	13.90	14.00	1.023	87.06	1.149	0.11	0.236	0.277	1.26	1.481	
24	1st	WLAN6GHZ	802.11ax-HE80 MCS0	Right Cheek	0mm	Ant 4+3(4)	Index 1	71	6305	14.00	14.00	1.000	87.06	1.149	-0.04	0.061	0.070	0.236	0.271	-19.03%
		WLAN6GHZ	802.11ax-HE80 MCS0	Right Cheek	0mm	Ant 4+3(3)	Index 1	71	6305	13.00	14.00	1.259	87.06	1.149	-0.04	0.385	0.557	1.53	2.213	
	2nd	WLAN6GHZ	802.11ax-HE80 MCS0	Right Cheek	0mm	Ant 4+3(4)	Index 1	71	6305	14.00	14.00	1.000	87.06	1.149	-0.09	0.050	0.057	0.212	0.244	
		WLAN6GHZ	802.11ax-HE80 MCS0	Right Cheek	0mm	Ant 4+3(3)	Index 1	71	6305	13.00	14.00	1.259	87.06	1.149	-0.09	0.312	0.451	1.62	2.343	
	1st	WLAN6GHZ	802.11ax-HE80 MCS0	Right Cheek	0mm	Ant 4+3(4)	Index 3	215	7025	12.40	12.50	1.023	87.06	1.149	-0.09	0.001	0.001	0.001	0.001	-27.65%
		WLAN6GHZ	802.11ax-HE80 MCS0	Right Cheek	0mm	Ant 4+3(3)	Index 3	215	7025	12.20	12.50	1.072	87.06	1.149	-0.09	0.238	0.293	0.92	1.133	
	2nd	WLAN6GHZ	802.11ax-HE80 MCS0	Right Cheek	0mm	Ant 4+3(4)	Index 3	215	7025	12.40	12.50	1.023	87.06	1.149	0.03	0.027	0.032	0.117	0.138	
		WLAN6GHZ	802.11ax-HE80 MCS0	Right Cheek	0mm	Ant 4+3(3)	Index 3	215	7025	12.20	12.50	1.072	87.06	1.149	0.03	0.172	0.212	0.437	0.538	
25	1st	Bluetooth	1Mbps	Left Cheek	0mm	Ant 4	BT Index 1	39	2441	8.95	9.50	1.135	77.07	1.081	-0.06	0.236	0.290			-8.97%
		Bluetooth	1Mbps	Left Cheek	0mm	Ant 4	BT Index 1	39	2441	8.95	9.50	1.135	77.07	1.081	0.07	0.215	0.264			
	1st	Bluetooth	1Mbps	Right Cheek	0mm	Ant 3	BT Index 1	0	2402	8.75	9.50	1.189	77.07	1.081	0.06	0.084	0.108			-12.04%
		Bluetooth	1Mbps	Right Cheek	0mm	Ant 3	BT Index 1	0	2402	8.75	9.50	1.189	77.07	1.081	0.11	0.074	0.095			



14.2 Hotspot SAR

Plot No.	No.	Band	BW (MHz)	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 (%)
26	1st	GSM850_Ant 0	GPRS (3 Tx slots)	Left Side	10mm	Index 4	251	848.8	30.00	30.60	1.148			0	0.651	0.747	-9.37%
	2nd	GSM850_Ant 0	GPRS (3 Tx slots)	Left Side	10mm	Index 4	251	848.8	29.84	30.60	1.191			0.01	0.568	0.677	
	1st	GSM850_Ant 1	GPRS (2 Tx slots)	Back	10mm	Index 4	128	824.2	31.92	32.50	1.143			-0.1	0.377	0.431	-7.66%
	2nd	GSM850_Ant 1	GPRS (2 Tx slots)	Back	10mm	Index 4	128	824.2	31.85	32.50	1.161			0	0.343	0.398	
	1st	GSM1900_Ant 2	GPRS (4 Tx slots)	Front	10mm	Index 4	810	1909.8	24.18	24.30	1.028			-0.04	0.607	0.624	-2.08%
	2nd	GSM1900_Ant 2	GPRS (4 Tx slots)	Front	10mm	Index 4	810	1909.8	24.11	24.30	1.045			0.04	0.585	0.611	
27	1st	GSM1900_Ant 0	GPRS (4 Tx slots)	Left Side	10mm	Index 4	661	1880	26.22	27.40	1.312			0	0.527	0.692	-4.91%
	2nd	GSM1900_Ant 0	GPRS (4 Tx slots)	Left Side	10mm	Index 4	661	1880	26.25	27.40	1.303			0	0.505	0.658	
	1st	WCDMA II_Ant 2	RMC 12.2Kbps	Front	10mm	Index 4	9538	1907.6	19.82	20.50	1.169			-0.1	0.528	0.617	-9.40%
	2nd	WCDMA II_Ant 2	RMC 12.2Kbps	Front	10mm	Index 4	9538	1907.6	19.84	20.50	1.164			-0.01	0.480	0.559	
28	1st	WCDMA II_Ant 0	RMC 12.2Kbps	Left Side	10mm	Index 4	9538	1907.6	23.79	24.50	1.178			-0.01	0.607	0.715	-0.14%
	2nd	WCDMA II_Ant 0	RMC 12.2Kbps	Left Side	10mm	Index 4	9538	1907.6	23.68	24.50	1.208			-0.05	0.591	0.714	
29	1st	WCDMA IV_Ant 2	RMC 12.2Kbps	Front	10mm	Index 4	1513	1752.6	22.74	23.60	1.219			-0.07	0.483	0.589	-9.51%
	2nd	WCDMA IV_Ant 2	RMC 12.2Kbps	Front	10mm	Index 4	1513	1752.6	22.63	23.60	1.250			0.02	0.426	0.533	
	1st	WCDMA IV_Ant 0	RMC 12.2Kbps	Front	10mm	Index 4	1513	1752.6	23.56	23.80	1.057			-0.07	0.473	0.500	-4.00%
	2nd	WCDMA IV_Ant 0	RMC 12.2Kbps	Front	10mm	Index 4	1513	1752.6	23.39	23.80	1.099			0.05	0.437	0.480	
30	1st	WCDMA V_Ant 0	RMC 12.2Kbps	Left Side	10mm	Index 4	4233	846.6	24.05	25.00	1.245			-0.02	0.374	0.465	-0.65%
	2nd	WCDMA V_Ant 0	RMC 12.2Kbps	Left Side	10mm	Index 4	4233	846.6	23.76	25.00	1.330			-0.06	0.347	0.462	
	1st	WCDMA V_Ant 1	RMC 12.2Kbps	Front	10mm	Index 4	4132	826.4	23.64	24.50	1.219			0.01	0.197	0.240	-4.58%
	2nd	WCDMA V_Ant 1	RMC 12.2Kbps	Front	10mm	Index 4	4132	826.4	23.19	24.50	1.352			-0.06	0.169	0.229	
	1st	LTE Band 2_Ant 2	20M_QPSK_1_0	Front	10mm	Index 4	18900	1880	20.22	20.90	1.169			-0.01	0.458	0.536	-9.51%
	2nd	LTE Band 2_Ant 2	20M_QPSK_1_0	Front	10mm	Index 4	18900	1880	20.21	20.90	1.172			0	0.414	0.485	
31	1st	LTE Band 2_Ant 0	20M_QPSK_1_0	Left Side	10mm	Index 4	18900	1880	23.38	24.10	1.180			-0.01	0.543	0.641	-0.47%
	2nd	LTE Band 2_Ant 0	20M_QPSK_1_0	Left Side	10mm	Index 4	18900	1880	23.39	24.10	1.178			-0.03	0.542	0.638	
32	1st	LTE Band 26_Ant 0	15M_QPSK_1_0	Left Side	10mm	Index 4	26865	831.5	24.36	25.70	1.361			-0.01	0.540	0.735	-2.04%
	2nd	LTE Band 5_Ant 0	10M_QPSK_1_0	Left Side	10mm	Index 4	20525	836.5	24.07	25.70	1.455			0	0.495	0.720	
	1st	LTE Band 26_Ant 1	15M_QPSK_1_0	Back	10mm	Index 4	26865	831.5	24.33	25.20	1.222			0.03	0.267	0.326	-1.23%
	2nd	LTE Band 5_Ant 1	10M_QPSK_1_0	Back	10mm	Index 4	20525	836.5	24.14	25.20	1.276			0	0.252	0.322	
	1st	LTE Band 7_Ant 2	20M_QPSK_1_0	Right Side	10mm	Index 4	21100	2535	18.53	19.20	1.167			0.01	0.462	0.539	-15.96%
	2nd	LTE Band 7_Ant 2	20M_QPSK_1_0	Right Side	10mm	Index 4	21100	2535	18.31	19.20	1.227			0.1	0.369	0.453	
33	1st	LTE Band 7_Ant 0	20M_QPSK_1_0	Left Side	10mm	Index 4	20850	2510	20.82	21.90	1.282			0	0.619	0.794	-14.86%
	2nd	LTE Band 7_Ant 0	20M_QPSK_1_0	Left Side	0mm	Index 4	20850	2510	20.70	21.90	1.318			0.01	0.513	0.676	
34	1st	LTE Band 12_Ant 0	10M_QPSK_1_0	Left Side	10mm	Index 4	23095	707.5	24.20	25.70	1.413			0	0.422	0.596	-11.24%
	2nd	LTE Band 12_Ant 0	10M_QPSK_1_0	Left Side	10mm	Index 4	23095	707.5	24.10	25.70	1.445			0.01	0.366	0.529	
	1st	LTE Band 12_Ant 1	10M_QPSK_1_0	Back	10mm	Index 4	23095	707.5	23.77	25.30	1.422			0.05	0.226	0.321	-9.97%
	2nd	LTE Band 12_Ant 1	10M_QPSK_1_0	Back	10mm	Index 4	23095	707.5	23.85	25.30	1.396			-0.06	0.207	0.289	
35	1st	LTE Band 41_Ant 2	20M_QPSK_1_0	Right Side	10mm	Index 4	40185	2549.5	20.50	20.90	1.096	62.9	1.006	-0.02	0.499	0.550	-1.27%
	2nd	LTE Band 41_Ant 2	20M_QPSK_1_0	Right Side	10mm	Index 4	40185	2549.5	20.15	20.90	1.189	62.9	1.006	-0.05	0.454	0.543	
	1st	LTE Band 41_Ant 0	20M_QPSK_1_0	Left Side	10mm	Index 4	40185	2549.5	21.89	23.30	1.384	62.9	1.006	0.07	0.495	0.689	-29.03%
	2nd	LTE Band 41_Ant 0	20M_QPSK_1_0	Left Side	10mm	Index 4	40185	2549.5	21.84	23.30	1.400	62.9	1.006	-0.02	0.347	0.489	
	1st	LTE Band 66_Ant 2	20M_QPSK_1_0	Back	10mm	Index 4	132322	1745	22.30	23.00	1.175			0.07	0.423	0.497	-0.80%
	2nd	LTE Band 66_Ant 2	20M_QPSK_1_0	Back	10mm	Index 4	132322	1745	22.31	23.00	1.172			0.1	0.421	0.493	
36	1st	LTE Band 66_Ant 0	20M_QPSK_1_0	Front	10mm	Index 4	132322	1745	23.60	23.60	1.000			0.06	0.504	0.504	-0.60%
	2nd	LTE Band 66_Ant 0	20M_QPSK_1_0	Front	10mm	Index 4	132322	1745	23.55	23.60	1.012			0.03	0.495	0.501	
	1st	FR1 n2_Ant 2	20M_BPSK_50_28	Front	10mm	Index 4	376000	1880	19.58	20.40	1.208			0.01	0.479	0.579	-4.84%
	2nd	FR1 n2_Ant 2	20M_BPSK_50_28	Front	10mm	Index 4	376000	1880	19.66	20.40	1.186			0.05	0.465	0.551	
37	1st	FR1 n2_Ant 0	20M_BPSK_50_28	Bottom Side	10mm	Index 4	372000	1860	23.64	24.00	1.086			-0.1	0.626	0.680	-8.97%
	2nd	FR1 n2_Ant 0	20M_BPSK_50_28	Bottom Side	10mm	Index 4	372000	1860	23.64	24.00	1.086			-0.03	0.570	0.619	
38	1st	FR1 n5_Ant 0	20M_BPSK_50_28	Left Side	10mm	Index 4	167300	836.5	24.20	25.50	1.349			0.01	0.496	0.669	-0.30%
	2nd	FR1 n5_Ant 0	20M_BPSK_50_28	Left Side	10mm	Index 4	167300	836.5	24.07	25.50	1.390			-0.01	0.480	0.667	
	1st	FR1 n5_Ant 1	20M_BPSK_1_53	Back	10mm	Index 4	167300	836.5	23.87	25.20	1.358			0.03	0.252	0.342	-11.99%
	2nd	FR1 n5_Ant 1	20M_BPSK_1_53	Back	10mm	Index 4	167300	836.5	24.01	25.20	1.315			-0.12	0.229	0.301	



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	1st	FR1 n7_Ant 2	50M_BPSK_1_1	Right Side	10mm	Index 4	507000	2535	20.00	20.00	1.000			-0.01	0.594	0.594	-2.19%
	2nd	FR1 n7_Ant 2	50M_BPSK_1_1	Right Side	10mm	Index 4	507000	2535	19.98	20.00	1.005			-0.01	0.578	0.581	
	1st	FR1 n7_Ant 0	50M_BPSK_1_1	Left Side	10mm	Index 4	507000	2535	21.11	21.30	1.045			-0.01	0.773	0.808	-8.17%
39	2nd	FR1 n7_Ant 0	50M_BPSK_1_1	Left Side	10mm	Index 4	507000	2535	20.85	21.30	1.109			-0.01	0.669	0.742	
	1st	FR1 n12_Ant 0	15M_BPSK_1_1	Left Side	10mm	Index 4	141500	707.5	24.25	25.70	1.396			0.01	0.367	0.512	-0.39%
40	2nd	FR1 n12_Ant 0	15M_BPSK_1_1	Left Side	10mm	Index 4	141500	707.5	24.15	25.70	1.429			-0.02	0.357	0.510	
	1st	FR1 n12_Ant 1	15M_BPSK_36_22	Left Side	10mm	Index 4	141500	707.5	23.86	25.30	1.393			-0.01	0.236	0.329	-2.13%
	2nd	FR1 n12_Ant 1	15M_BPSK_36_22	Left Side	10mm	Index 4	141500	707.5	23.80	25.30	1.413			-0.02	0.228	0.322	
	1st	FR1 n41_Ant 2	100M_BPSK_1_1	Right Side	10mm	Index 4	518598	2592.99	19.51	20.40	1.227			-0.05	0.587	0.721	-9.02%
	2nd	FR1 n41_Ant 2	100M_BPSK_1_1	Right Side	10mm	Index 4	518598	2592.99	19.56	20.40	1.213			-0.03	0.541	0.656	
	1st	FR1 n41_Ant 0	100M_BPSK_1_1	Left Side	10mm	Index 4	518598	2592.99	19.62	21.30	1.472			-0.02	0.527	0.776	-10.31%
41	2nd	FR1 n41_Ant 0	100M_BPSK_1_1	Left Side	10mm	Index 4	518598	2592.99	19.65	21.30	1.462			-0.03	0.476	0.696	
	1st	FR1 n66_Ant 2	40M_BPSK_108_54	Right Side	10mm	Index 4	349000	1745	23.36	23.70	1.081			0	0.629	0.680	-10.59%
42	2nd	FR1 n66_Ant 2	40M_BPSK_108_54	Right Side	10mm	Index 4	349000	1745	23.35	23.70	1.084			-0.08	0.561	0.608	
	1st	FR1 n66_Ant 0	40M_BPSK_108_54	Front	10mm	Index 4	349000	1745	22.25	22.70	1.109			0.08	0.444	0.492	-10.57%
	2nd	FR1 n66_Ant 0	40M_BPSK_108_54	Front	10mm	Index 4	349000	1745	22.22	22.70	1.117			-0.05	0.394	0.440	
	1st	FR1 n77_Ant 6	100M_BPSK_1_1	Left Side	10mm	Index 4	656000	3840	17.73	18.80	1.279			-0.02	0.458	0.586	-5.46%
	2nd	FR1 n77_Ant 6	100M_BPSK_1_1	Left Side	10mm	Index 4	656000	3840	17.70	18.80	1.288			-0.14	0.430	0.554	
	1st	FR1 n77_Ant 6	100M_BPSK_1_1	Left Side	10mm	Index 4	633332	3499.98	17.72	18.80	1.282			-0.01	0.440	0.564	-8.16%
	2nd	FR1 n77_Ant 6	100M_BPSK_1_1	Left Side	10mm	Index 4	633332	3499.98	17.76	18.80	1.271			-0.08	0.408	0.518	
	1st	FR1 n77_Ant 2	100M_BPSK_1_1	Right Side	10mm	Index 4	656000	3840	19.33	19.50	1.040			-0.05	0.442	0.460	-1.30%
	2nd	FR1 n77_Ant 2	100M_BPSK_1_1	Right Side	10mm	Index 4	656000	3840	19.35	19.50	1.035			-0.05	0.439	0.454	
	1st	FR1 n77_Ant 2	100M_BPSK_1_1	Right Side	10mm	Index 4	633332	3499.98	19.08	19.50	1.102			-0.02	0.530	0.584	-6.34%
	2nd	FR1 n77_Ant 2	100M_BPSK_1_1	Right Side	10mm	Index 4	633332	3499.98	18.96	19.50	1.132			-0.02	0.483	0.547	
	1st	FR1 n77_Ant 1	100M_BPSK_1_1	Top Side	10mm	Index 4	656000	3840	23.15	24.30	1.303			-0.11	0.361	0.470	-19.79%
	2nd	FR1 n77_Ant 1	100M_BPSK_1_1	Top Side	10mm	Index 4	656000	3840	23.06	24.30	1.330			0.07	0.283	0.377	
	1st	FR1 n77_Ant 1	100M_BPSK_1_1	Top Side	10mm	Index 4	633332	3499.98	23.11	24.30	1.315			-0.13	0.467	0.614	-0.98%
43	2nd	FR1 n77_Ant 1	100M_BPSK_1_1	Top Side	10mm	Index 4	633332	3499.98	23.07	24.30	1.327			-0.14	0.458	0.608	
	1st	FR1 n77_Ant 5	100M_BPSK_1_1	Right Side	10mm	Index 4	656000	3840	19.16	19.7	1.132			-0.03	0.402	0.455	-5.93%
	2nd	FR1 n77_Ant 5	100M_BPSK_1_1	Right Side	10mm	Index 4	656000	3840	19.14	19.7	1.138			-0.08	0.376	0.428	
	1st	FR1 n77_Ant 5	100M_BPSK_1_1	Right Side	10mm	Index 4	633332	3499.98	19.16	19.7	1.132			0.01	0.485	0.549	-11.11%
	2nd	FR1 n77_Ant 5	100M_BPSK_1_1	Right Side	10mm	Index 4	633332	3499.98	19.15	19.7	1.135			0.05	0.430	0.488	



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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 (%)
44	1st	WLAN2.4GHZ	802.11b 1Mbps	Top Side	10mm	Ant 4	Index 7	12	2467	16.40	16.50	1.023	98.85	1.012	0.02	0.463	0.479	-0.63%
	2nd	WLAN2.4GHZ	802.11b 1Mbps	Top Side	10mm	Ant 4	Index 7	12	2467	16.40	16.50	1.023	98.85	1.012	-0.09	0.460	0.476	
	1st	WLAN2.4GHZ	802.11b 1Mbps	Left Side	10mm	Ant 3	Index 7	6	2437	16.45	16.50	1.012	98.85	1.012	-0.01	0.170	0.174	
	2nd	WLAN2.4GHZ	802.11b 1Mbps	Left Side	10mm	Ant 3	Index 7	6	2437	16.45	16.50	1.012	98.85	1.012	-0.07	0.161	0.165	
	1st	WLAN2.4GHZ	802.11b 1Mbps	Left Side	10mm	Ant 3	Index 8	6	2437	16.95	17.00	1.012	98.85	1.012	0.11	0.221	0.226	-20.35%
	2nd	WLAN2.4GHZ	802.11b 1Mbps	Left Side	10mm	Ant 3	Index 8	6	2437	16.95	17.00	1.012	98.85	1.012	-0.1	0.176	0.180	
	1st	WLAN2.4GHZ	802.11g 6Mbps	Top Side	10mm	Ant 4+3(4)	Index 7	6	2437	16.40	16.50	1.023	93.46	1.070	-0.06	0.375	0.411	
		WLAN2.4GHZ	802.11g 6Mbps	Top Side	10mm	Ant 4+3(3)	Index 7	6	2437	16.35	16.50	1.035	93.46	1.070	-0.06	0.001	0.001	
2nd	WLAN2.4GHZ	802.11g 6Mbps	Top Side	10mm	Ant 4+3(4)	Index 7	6	2437	16.40	16.50	1.023	93.46	1.070	-0.01	0.358	0.392		
	WLAN2.4GHZ	802.11g 6Mbps	Top Side	10mm	Ant 4+3(3)	Index 7	6	2437	16.35	16.50	1.035	93.46	1.070	-0.01	0.001	0.001		
1st	WLAN5GHZ	802.11a 6Mbps	Right Side	10mm	Ant 4	Index 7/9	48	5240	17.90	18.00	1.023	93.46	1.070	-0.18	0.316	0.346	-27.75%	
2nd	WLAN5GHZ	802.11a 6Mbps	Right Side	10mm	Ant 4	Index 7/9	48	5240	17.90	18.00	1.023	93.46	1.070	-0.14	0.228	0.250		
1st	WLAN5GHZ	802.11a 6Mbps	Right Side	10mm	Ant 4	Index 8	48	5240	19.00	19.00	1.000	93.46	1.070	-0.18	0.329	0.352	-15.91%	
45 2nd	WLAN5GHZ	802.11a 6Mbps	Right Side	10mm	Ant 4	Index 8	48	5240	19.00	19.00	1.000	93.46	1.070	-0.13	0.277	0.296		
1st	WLAN5GHZ	802.11a 6Mbps	Right Side	10mm	Ant 4+3(4)	Index 7/9	48	5240	17.90	18.00	1.023	93.46	1.070	-0.11	0.273	0.299	-18.39%	
	WLAN5GHZ	802.11a 6Mbps	Right Side	10mm	Ant 4+3(3)	Index 7/9	48	5240	17.90	18.00	1.023	93.46	1.070	0.01	0.001	0.001		
2nd	WLAN5GHZ	802.11a 6Mbps	Right Side	10mm	Ant 4+3(4)	Index 7/9	48	5240	17.90	18.00	1.023	93.46	1.070	-0.12	0.223	0.244		
	WLAN5GHZ	802.11a 6Mbps	Right Side	10mm	Ant 4+3(3)	Index 7/9	48	5240	17.90	18.00	1.023	93.46	1.070	-0.12	0.001	0.001		
1st	WLAN5GHZ	802.11a 6Mbps	Back	10mm	Ant 4	Index 7/8	157	5785	19.90	20.00	1.023	93.45	1.070	0.01	0.291	0.319	-1.88%	
46 2nd	WLAN5GHZ	802.11a 6Mbps	Back	10mm	Ant 4	Index 7/8	157	5785	19.90	20.00	1.023	93.45	1.070	0.03	0.286	0.313		
1st	WLAN5GHZ	802.11a 6Mbps	Back	10mm	Ant 4	Index 9	157	5785	19.40	19.50	1.023	93.45	1.070	0.09	0.188	0.206	-5.34%	
2nd	WLAN5GHZ	802.11a 6Mbps	Back	10mm	Ant 4	Index 9	157	5785	19.40	19.50	1.023	93.45	1.070	0.12	0.178	0.195		
1st	WLAN5GHZ	802.11a 6Mbps	Left Side	10mm	Ant 4+3(4)	Index 7	165	5825	19.90	20.00	1.023	93.42	1.070	-0.09	0.001	0.001	-6.97%	
	WLAN5GHZ	802.11a 6Mbps	Left Side	10mm	Ant 4+3(3)	Index 7	165	5825	19.60	20.00	1.096	93.42	1.070	-0.09	0.245	0.287		
2nd	WLAN5GHZ	802.11a 6Mbps	Left Side	10mm	Ant 4+3(4)	Index 7	165	5825	19.90	20.00	1.023	93.42	1.070	-0.02	0.001	0.001		
	WLAN5GHZ	802.11a 6Mbps	Left Side	10mm	Ant 4+3(3)	Index 7	165	5825	19.60	20.00	1.096	93.42	1.070	-0.02	0.228	0.267		
1st	WLAN5GHZ	802.11a 6Mbps	Left Side	10mm	Ant 4+3(4)	Index 9	157	5785	19.40	19.50	1.023	93.42	1.070	-0.17	0.001	0.001	-27.80%	
	WLAN5GHZ	802.11a 6Mbps	Left Side	10mm	Ant 4+3(3)	Index 9	157	5785	19.20	19.50	1.072	93.42	1.070	0.05	0.226	0.259		
2nd	WLAN5GHZ	802.11a 6Mbps	Left Side	10mm	Ant 4+3(4)	Index 9	157	5785	19.40	19.50	1.023	93.42	1.070	-0.17	0.001	0.001		
	WLAN5GHZ	802.11a 6Mbps	Left Side	10mm	Ant 4+3(3)	Index 9	157	5785	19.20	19.50	1.072	93.42	1.070	-0.17	0.163	0.187		
1st	Bluetooth	1Mbps	Top Side	10mm	Ant 4	BT Index 3/4	78	2480	14.90	15.00	1.023	77.07	1.081	-0.14	0.239	0.264	-0.76%	
2nd	Bluetooth	1Mbps	Top Side	10mm	Ant 4	BT Index 3/4	78	2480	14.90	15.00	1.023	77.07	1.081	0.15	0.237	0.262		
1st	Bluetooth	1Mbps	Left Side	10mm	Ant 3	BT Index 3	78	2480	20.50	21.00	1.123	77.07	1.081	0.01	0.503	0.611	-14.40%	
47 2nd	Bluetooth	1Mbps	Left Side	10mm	Ant 3	BT Index 3	78	2480	20.50	21.00	1.123	77.07	1.081	-0.03	0.431	0.523		
1st	Bluetooth	1Mbps	Left Side	10mm	Ant 3	BT Index 4	78	2480	14.65	15.00	1.084	77.07	1.081	-0.12	0.121	0.142	-7.75%	
2nd	Bluetooth	1Mbps	Left Side	10mm	Ant 3	BT Index 4	78	2480	14.65	15.00	1.084	77.07	1.081	0.04	0.112	0.131		



14.3 Body-Worn SAR

Plot No.	No.	Band	BW (MHz)	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 (%)
48	1st	GSM850_Ant 0	GPRS (3 Tx slots)	Front	10mm	Index 5	251	848.8	30.00	31.50	1.413			0.02	0.477	0.674	-0.89%
	2nd	GSM850_Ant 0	GPRS (3 Tx slots)	Front	10mm	Index 5	251	848.8	29.84	31.50	1.466			-0.03	0.456	0.668	
	1st	GSM850_Ant 0	GPRS (3 Tx slots)	Front	10mm	Index 6	251	848.8	30.00	30.60	1.148			0.02	0.477	0.548	-0.91%
	2nd	GSM850_Ant 0	GPRS (3 Tx slots)	Front	10mm	Index 6	251	848.8	29.84	30.60	1.191			-0.03	0.456	0.543	
	1st	GSM850_Ant 1	GPRS (2 Tx slots)	Back	10mm	Index 5/6	128	824.2	31.92	32.50	1.143			-0.1	0.377	0.431	-7.66%
	2nd	GSM850_Ant 1	GPRS (2 Tx slots)	Back	10mm	Index 5/6	128	824.2	31.85	32.50	1.161			0	0.343	0.398	
49	1st	GSM1900_Ant 2	GPRS (4 Tx slots)	Front	10mm	Index 5	810	1909.8	24.49	25.10	1.151			-0.11	0.650	0.748	-4.14%
	2nd	GSM1900_Ant 2	GPRS (4 Tx slots)	Front	10mm	Index 5	810	1909.8	24.52	25.10	1.143			-0.14	0.627	0.717	
	1st	GSM1900_Ant 2	GPRS (4 Tx slots)	Front	10mm	Index 6	810	1909.8	24.18	24.30	1.028			-0.04	0.607	0.624	-2.08%
	2nd	GSM1900_Ant 2	GPRS (4 Tx slots)	Front	10mm	Index 6	810	1909.8	24.11	24.30	1.045			0.04	0.585	0.611	
	1st	GSM1900_Ant 0	GPRS (4 Tx slots)	Back	10mm	Index 5/6	661	1880	26.22	27.50	1.343			0.05	0.370	0.497	-1.81%
	2nd	GSM1900_Ant 0	GPRS (4 Tx slots)	Back	10mm	Index 5/6	661	1880	26.25	27.50	1.334			0.04	0.366	0.488	
50	1st	WCDMA II_Ant 2	RMC 12.2Kbps	Front	10mm	Index 5	9538	1907.6	19.82	21.30	1.406			-0.1	0.528	0.742	-9.43%
	2nd	WCDMA II_Ant 2	RMC 12.2Kbps	Front	10mm	Index 5	9538	1907.6	19.84	21.30	1.400			-0.01	0.480	0.672	
	1st	WCDMA II_Ant 2	RMC 12.2Kbps	Front	10mm	Index 6	9538	1907.6	19.82	20.50	1.169			-0.1	0.528	0.617	-9.40%
	2nd	WCDMA II_Ant 2	RMC 12.2Kbps	Front	10mm	Index 6	9538	1907.6	19.84	20.50	1.164			-0.01	0.480	0.559	
	1st	WCDMA II_Ant 0	RMC 12.2Kbps	Back	10mm	Index 5/6	9538	1907.6	23.79	24.50	1.178			0.03	0.524	0.617	-17.34%
	2nd	WCDMA II_Ant 0	RMC 12.2Kbps	Back	10mm	Index 5/6	9538	1907.6	23.68	24.50	1.208			0	0.422	0.510	
	1st	WCDMA IV_Ant 2	RMC 12.2Kbps	Front	10mm	Index 5	1513	1752.6	22.74	24.40	1.466			-0.07	0.483	0.708	-9.60%
	2nd	WCDMA IV_Ant 2	RMC 12.2Kbps	Front	10mm	Index 5	1513	1752.6	22.63	24.40	1.503			0.02	0.426	0.640	
	1st	WCDMA IV_Ant 2	RMC 12.2Kbps	Front	10mm	Index 6	1513	1752.6	22.74	23.60	1.219			-0.07	0.483	0.589	-9.51%
	2nd	WCDMA IV_Ant 2	RMC 12.2Kbps	Front	10mm	Index 6	1513	1752.6	22.63	23.60	1.250			0.02	0.426	0.533	
51	1st	WCDMA IV_Ant 0	RMC 12.2Kbps	Front	10mm	Index 5	1513	1752.6	24.25	25.20	1.245			-0.11	0.555	0.691	-4.05%
	2nd	WCDMA IV_Ant 0	RMC 12.2Kbps	Front	10mm	Index 5	1513	1752.6	23.99	25.20	1.321			0.02	0.502	0.663	
	1st	WCDMA IV_Ant 0	RMC 12.2Kbps	Front	10mm	Index 6	1513	1752.6	23.56	23.80	1.057			-0.07	0.473	0.500	-4.00%
	2nd	WCDMA IV_Ant 0	RMC 12.2Kbps	Front	10mm	Index 6	1513	1752.6	23.39	23.80	1.099			0.05	0.437	0.480	
52	1st	WCDMA V_Ant 0	RMC 12.2Kbps	Front	10mm	Index 5/6	4233	846.6	24.05	25.00	1.245			0.02	0.349	0.434	-24.19%
	2nd	WCDMA V_Ant 0	RMC 12.2Kbps	Front	10mm	Index 5/6	4233	846.6	23.76	25.00	1.330			-0.03	0.247	0.329	
	1st	WCDMA V_Ant 1	RMC 12.2Kbps	Front	10mm	Index 5/6	4132	826.4	23.64	24.50	1.219			0.01	0.197	0.240	-4.58%
	2nd	WCDMA V_Ant 1	RMC 12.2Kbps	Front	10mm	Index 5/6	4132	826.4	23.19	24.50	1.352			-0.06	0.169	0.229	
53	1st	LTE Band 2_Ant 2	20M_QPSK_1_0	Front	10mm	Index 5	18900	1880	20.22	21.70	1.406			-0.01	0.458	0.644	-9.47%
	2nd	LTE Band 2_Ant 2	20M_QPSK_1_0	Front	10mm	Index 5	18900	1880	20.21	21.70	1.409			0	0.414	0.583	
	1st	LTE Band 2_Ant 2	20M_QPSK_1_0	Front	10mm	Index 6	18900	1880	20.22	20.90	1.169			-0.01	0.458	0.536	-9.51%
	2nd	LTE Band 2_Ant 2	20M_QPSK_1_0	Front	10mm	Index 6	18900	1880	20.21	20.90	1.172			0	0.414	0.485	
	1st	LTE Band 2_Ant 0	20M_QPSK_1_0	Back	10mm	Index 5	18900	1880	23.38	24.50	1.294			0.01	0.451	0.584	-4.28%
	2nd	LTE Band 2_Ant 0	20M_QPSK_1_0	Back	10mm	Index 5	18900	1880	23.25	24.50	1.334			0.02	0.419	0.559	
	1st	LTE Band 2_Ant 0	20M_QPSK_1_0	Back	10mm	Index 6	18900	1880	23.38	24.20	1.208			0.01	0.451	0.545	-4.40%
	2nd	LTE Band 2_Ant 0	20M_QPSK_1_0	Back	10mm	Index 6	18900	1880	23.25	24.20	1.245			0.02	0.419	0.521	
54	1st	LTE Band 26_Ant 0	15M_QPSK_1_0	Front	10mm	Index 5/6	26865	831.5	24.36	25.70	1.361			-0.01	0.373	0.508	-4.92%
	2nd	LTE Band 5_Ant 0	10M_QPSK_1_0	Front	10mm	Index 5/6	20525	836.5	24.07	25.70	1.455			-0.03	0.332	0.483	
	1st	LTE Band 26_Ant 1	15M_QPSK_1_0	Back	10mm	Index 5/6	26865	831.5	24.33	25.20	1.222			0.03	0.267	0.326	-1.23%
	2nd	LTE Band 5_Ant 1	10M_QPSK_1_0	Back	10mm	Index 5/6	20525	836.5	24.14	25.20	1.276			0	0.252	0.322	
55	1st	LTE Band 7_Ant 2	20M_QPSK_1_0	Back	10mm	Index 5	21100	2535	22.91	23.60	1.172			-0.03	0.655	0.768	-5.73%
	2nd	LTE Band 7_Ant 2	20M_QPSK_1_0	Back	10mm	Index 5	21100	2535	22.89	23.60	1.178			-0.04	0.615	0.724	
	1st	LTE Band 7_Ant 2	20M_QPSK_1_0	Back	10mm	Index 6	21100	2535	21.89	22.30	1.099			-0.1	0.520	0.571	-4.38%
	2nd	LTE Band 7_Ant 2	20M_QPSK_1_0	Back	10mm	Index 6	21100	2535	21.82	22.30	1.117			0.08	0.489	0.546	
	1st	LTE Band 7_Ant 0	20M_QPSK_1_0	Front	10mm	Index 5	20850	2510	23.34	23.70	1.086			0	0.715	0.777	-12.10%
	2nd	LTE Band 7_Ant 0	20M_QPSK_1_0	Front	10mm	Index 5	20850	2510	23.28	23.70	1.102			-0.01	0.620	0.683	
56	1st	LTE Band 7_Ant 0	20M_QPSK_1_0	Front	10mm	Index 6	20850	2510	21.24	22.00	1.191			0.08	0.441	0.525	-11.62%
	2nd	LTE Band 7_Ant 0	20M_QPSK_1_0	Front	10mm	Index 6	20850	2510	21.16	22.00	1.213			0.04	0.382	0.464	
	1st	LTE Band 12_Ant 0	10M_QPSK_1_0	Back	10mm	Index 5/6	23095	707.5	24.20	25.70	1.413			-0.01	0.321	0.453	-0.44%
	2nd	LTE Band 12_Ant 0	10M_QPSK_1_0	Back	10mm	Index 5/6	23095	707.5	24.10	25.70	1.445			-0.02	0.312	0.451	



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	1st	LTE Band 12_Ant 1	10M_QPSK_1_0	Back	10mm	Index 5/6	23095	707.5	23.77	25.30	1.422			0.05	0.226	0.321	-9.97%
	2nd	LTE Band 12_Ant 1	10M_QPSK_1_0	Back	10mm	Index 5/6	23095	707.5	23.85	25.30	1.396			-0.06	0.207	0.289	
	1st	LTE Band 41_Ant 2	20M_QPSK_1_0	Back	10mm	Index 5	41490	2680	23.70	25.60	1.549	62.9	1.006	-0.04	0.616	0.960	-6.77%
57	2nd	LTE Band 41_Ant 2	20M_QPSK_1_0	Back	10mm	Index 5	41490	2680	23.78	25.60	1.521	62.9	1.006	-0.04	0.585	0.895	
	1st	LTE Band 41_Ant 2	20M_QPSK_1_0	Back	10mm	Index 6	41490	2680	23.70	24.50	1.202	62.9	1.006	-0.04	0.616	0.745	-6.71%
	2nd	LTE Band 41_Ant 2	20M_QPSK_1_0	Back	10mm	Index 6	41490	2680	23.78	24.50	1.180	62.9	1.006	-0.04	0.585	0.695	
	1st	LTE Band 41_Ant 0	20M_QPSK_1_0	Front	10mm	Index 5	40185	2549.5	24.16	25.20	1.271	62.9	1.006	-0.05	0.557	0.712	-4.63%
	2nd	LTE Band 41_Ant 0	20M_QPSK_1_0	Front	10mm	Index 5	40185	2549.5	24.12	25.20	1.282	62.9	1.006	-0.07	0.526	0.679	
	1st	LTE Band 41_Ant 0	20M_QPSK_1_0	Front	10mm	Index 6	40185	2549.5	24.16	24.20	1.009	62.9	1.006	-0.05	0.557	0.566	-4.77%
	2nd	LTE Band 41_Ant 0	20M_QPSK_1_0	Front	10mm	Index 6	40185	2549.5	24.12	24.20	1.019	62.9	1.006	-0.07	0.526	0.539	
	1st	LTE Band 66_Ant 2	20M_QPSK_1_0	Back	10mm	Index 5	132322	1745	23.40	24.10	1.175			0	0.533	0.626	-0.96%
	2nd	LTE Band 66_Ant 2	20M_QPSK_1_0	Back	10mm	Index 5	132322	1745	23.42	24.10	1.169			-0.17	0.530	0.620	
	1st	LTE Band 66_Ant 2	20M_QPSK_1_0	Back	10mm	Index 6	132322	1745	22.30	23.00	1.175			0.07	0.423	0.497	-0.80%
	2nd	LTE Band 66_Ant 2	20M_QPSK_1_0	Back	10mm	Index 6	132322	1745	22.31	23.00	1.172			0.1	0.421	0.493	
	1st	LTE Band 66_Ant 0	20M_QPSK_1_0	Front	10mm	Index 5	132322	1745	23.60	25.20	1.445			0.06	0.514	0.743	-0.27%
58	2nd	LTE Band 66_Ant 0	20M_QPSK_1_0	Front	10mm	Index 5	132322	1745	23.45	25.20	1.496			0.03	0.495	0.741	
	1st	LTE Band 66_Ant 0	20M_QPSK_1_0	Front	10mm	Index 6	132322	1745	23.60	23.60	1.000			0.06	0.504	0.504	-0.60%
	2nd	LTE Band 66_Ant 0	20M_QPSK_1_0	Front	10mm	Index 6	132322	1745	23.55	23.60	1.012			0.03	0.495	0.501	
	1st	FR1 n2_Ant 2	20M_BPSK_50_28	Front	10mm	Index 5	376000	1880	21.13	21.20	1.016			-0.05	0.677	0.688	-13.66%
59	2nd	FR1 n2_Ant 2	20M_BPSK_50_28	Front	10mm	Index 5	376000	1880	21.05	21.20	1.035			-0.02	0.574	0.594	
	1st	FR1 n2_Ant 2	20M_BPSK_50_28	Front	10mm	Index 6	376000	1880	19.58	20.40	1.208			0.01	0.479	0.579	-4.84%
	2nd	FR1 n2_Ant 2	20M_BPSK_50_28	Front	10mm	Index 6	376000	1880	19.66	20.40	1.186			0.05	0.465	0.551	
	1st	FR1 n2_Ant 0	20M_BPSK_50_28	Back	10mm	Index 5	372000	1860	23.64	24.50	1.219			-0.02	0.522	0.636	-8.33%
	2nd	FR1 n2_Ant 0	20M_BPSK_50_28	Back	10mm	Index 5	372000	1860	23.64	24.50	1.219			-0.08	0.478	0.583	
	1st	FR1 n2_Ant 0	20M_BPSK_50_28	Back	10mm	Index 6	372000	1860	23.64	24.00	1.086			-0.02	0.522	0.567	-8.47%
	2nd	FR1 n2_Ant 0	20M_BPSK_50_28	Back	10mm	Index 6	372000	1860	23.64	24.00	1.086			-0.08	0.478	0.519	
	1st	FR1 n5_Ant 0	20M_BPSK_50_28	Front	10mm	Index 5/6	167300	836.5	24.20	25.70	1.413			-0.06	0.369	0.521	-11.13%
60	2nd	FR1 n5_Ant 0	20M_BPSK_50_28	Front	10mm	Index 5/6	167300	836.5	24.07	25.70	1.455			0.01	0.318	0.463	
	1st	FR1 n5_Ant 1	20M_BPSK_1_53	Back	10mm	Index 5/6	167300	836.5	23.87	25.20	1.358			0.03	0.252	0.342	-11.99%
	2nd	FR1 n5_Ant 1	20M_BPSK_1_53	Back	10mm	Index 5/6	167300	836.5	24.01	25.20	1.315			-0.12	0.229	0.301	
	1st	FR1 n7_Ant 2	50M_BPSK_1_1	Back	10mm	Index 5	507000	2535	23.34	23.90	1.138			-0.13	0.734	0.835	-6.83%
61	2nd	FR1 n7_Ant 2	50M_BPSK_1_1	Back	10mm	Index 5	507000	2535	23.48	23.90	1.102			-0.07	0.706	0.778	
	1st	FR1 n7_Ant 2	50M_BPSK_1_1	Back	10mm	Index 6	507000	2535	22.79	23.00	1.050			0.01	0.654	0.686	-6.56%
	2nd	FR1 n7_Ant 2	50M_BPSK_1_1	Back	10mm	Index 6	507000	2535	22.92	23.00	1.019			0.01	0.629	0.641	
	1st	FR1 n7_Ant 0	50M_BPSK_1_1	Front	10mm	Index 5	507000	2535	23.60	23.60	1.000			0.14	0.794	0.794	-3.53%
	2nd	FR1 n7_Ant 0	50M_BPSK_1_1	Front	10mm	Index 5	507000	2535	23.40	23.60	1.047			-0.06	0.732	0.766	
	1st	FR1 n7_Ant 0	50M_BPSK_1_1	Front	10mm	Index 6	507000	2535	21.02	21.70	1.169			0.14	0.446	0.522	-7.28%
	2nd	FR1 n7_Ant 0	50M_BPSK_1_1	Front	10mm	Index 6	507000	2535	21.00	21.70	1.175			-0.06	0.412	0.484	
	2nd	FR1 n12_Ant 0	15M_BPSK_36_22	Back	10mm	Index 5/6	141500	707.5	24.23	25.70	1.403			0.01	0.336	0.471	-1.49%
62	2nd	FR1 n12_Ant 0	15M_BPSK_36_22	Back	10mm	Index 5/6	141500	707.5	24.15	25.70	1.429			-0.03	0.325	0.464	
	1st	FR1 n12_Ant 1	15M_BPSK_36_22	Back	10mm	Index 5/6	141500	707.5	23.86	25.30	1.393			-0.02	0.228	0.318	-0.94%
	2nd	FR1 n12_Ant 1	15M_BPSK_36_22	Back	10mm	Index 5/6	141500	707.5	23.80	25.30	1.413			0.02	0.223	0.315	
	1st	FR1 n41_Ant 2	100M_BPSK_1_1	Back	10mm	Index 5	518598	2592.99	22.50	23.50	1.259			-0.04	0.704	0.886	-8.69%
	2nd	FR1 n41_Ant 2	100M_BPSK_1_1	Back	10mm	Index 5	518598	2592.99	22.53	23.50	1.250			-0.02	0.647	0.809	
	1st	FR1 n41_Ant 2	100M_BPSK_1_1	Back	10mm	Index 6	518598	2592.99	22.50	22.60	1.023			-0.04	0.704	0.720	-8.61%
	2nd	FR1 n41_Ant 2	100M_BPSK_1_1	Back	10mm	Index 6	518598	2592.99	22.53	22.60	1.016			-0.04	0.647	0.658	
	1st	FR1 n41_Ant 0	100M_BPSK_1_1	Front	10mm	Index 5	518598	2592.99	24.40	25.20	1.202			-0.06	0.824	0.991	-5.05%
63	2nd	FR1 n41_Ant 0	100M_BPSK_1_1	Front	10mm	Index 5	518598	2592.99	24.35	25.20	1.216			0.01	0.774	0.941	
	1st	FR1 n41_Ant 0	100M_BPSK_1_1	Front	10mm	Index 6	518598	2592.99	24.40	24.40	1.000			-0.06	0.824	0.824	-4.98%
	2nd	FR1 n41_Ant 0	100M_BPSK_1_1	Front	10mm	Index 6	518598	2592.99	24.35	24.40	1.012			0.01	0.774	0.783	
	1st	FR1 n66_Ant 2	40M_BPSK_108_54	Front	10mm	Index 5	349000	1745	23.89	24.50	1.151			-0.04	0.615	0.708	-10.31%
	2nd	FR1 n66_Ant 2	40M_BPSK_108_54	Front	10mm	Index 5	349000	1745	23.92	24.50	1.143			-0.04	0.556	0.635	
	1st	FR1 n66_Ant 2	40M_BPSK_108_54	Front	10mm	Index 6	349000	1745	23.36	23.70	1.081			-0.06	0.548	0.593	-9.27%
	2nd	FR1 n66_Ant 2	40M_BPSK_108_54	Front	10mm	Index 6	349000	1745	23.35	23.70	1.084			0.07	0.496	0.538	
	1st	FR1 n66_Ant 0	40M_BPSK_108_54	Front	10mm	Index 5	349000	1745	24.32	25.20	1.225			0.05	0.641	0.785	-4.71%
64	2nd	FR1 n66_Ant 0	40M_BPSK_108_54	Front	10mm	Index 5	349000	1745	24.42	25.20	1.197			0.04	0.625	0.748	



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	1st	FR1 n66_Ant 0	40M_BPSK_108_54	Front	10mm	Index 6	349000	1745	22.25	22.70	1.109			0.08	0.444	0.492	-10.57%
	2nd	FR1 n66_Ant 0	40M_BPSK_108_54	Front	10mm	Index 6	349000	1745	22.22	22.70	1.117			-0.05	0.394	0.440	
	1st	FR1 n77_Ant 6	100M_BPSK_1_1	Back	10mm	Index 5	656000	3840	20.30	21.10	1.202			0.05	0.455	0.547	-5.48%
	2nd	FR1 n77_Ant 6	100M_BPSK_1_1	Back	10mm	Index 5	656000	3840	20.29	21.10	1.205			0.01	0.429	0.517	
	1st	FR1 n77_Ant 6	100M_BPSK_1_1	Back	10mm	Index 6	656000	3840	20.30	20.30	1.000			0.05	0.455	0.455	-5.49%
	2nd	FR1 n77_Ant 6	100M_BPSK_1_1	Back	10mm	Index 6	656000	3840	20.29	20.30	1.002			0.01	0.429	0.430	
	1st	FR1 n77_Ant 6	100M_BPSK_1_1	Front	10mm	Index 5	633332	3499.98	20.19	21.10	1.233			-0.14	0.398	0.491	-6.11%
	2nd	FR1 n77_Ant 6	100M_BPSK_1_1	Front	10mm	Index 5	633332	3499.98	20.23	21.10	1.222			-0.17	0.377	0.461	
	1st	FR1 n77_Ant 6	100M_BPSK_1_1	Front	10mm	Index 6	633332	3499.98	20.19	20.30	1.026			-0.14	0.398	0.408	-6.13%
	2nd	FR1 n77_Ant 6	100M_BPSK_1_1	Front	10mm	Index 6	633332	3499.98	20.23	20.30	1.016			-0.17	0.377	0.383	
	1st	FR1 n77_Ant 2	100M_BPSK_1_1	Front	10mm	Index 5	656000	3840	21.36	21.60	1.057			-0.13	0.343	0.362	-4.97%
	2nd	FR1 n77_Ant 2	100M_BPSK_1_1	Front	10mm	Index 5	656000	3840	21.45	21.60	1.035			0.08	0.332	0.344	
	1st	FR1 n77_Ant 2	100M_BPSK_1_1	Front	10mm	Index 6	656000	3840	19.33	20.30	1.250			-0.02	0.219	0.274	-5.84%
	2nd	FR1 n77_Ant 2	100M_BPSK_1_1	Front	10mm	Index 6	656000	3840	19.19	20.30	1.291			-0.06	0.200	0.258	
	1st	FR1 n77_Ant 2	100M_BPSK_1_1	Back	10mm	Index 5	633332	3499.98	21.13	21.60	1.114			-0.17	0.580	0.646	-10.53%
	2nd	FR1 n77_Ant 2	100M_BPSK_1_1	Back	10mm	Index 5	633332	3499.98	21.38	21.60	1.052			-0.09	0.549	0.578	
	1st	FR1 n77_Ant 2	100M_BPSK_1_1	Back	10mm	Index 6	633332	3499.98	19.08	20.30	1.324			-0.1	0.371	0.491	-0.61%
	2nd	FR1 n77_Ant 2	100M_BPSK_1_1	Back	10mm	Index 6	633332	3499.98	18.72	20.30	1.439			0	0.339	0.488	
	1st	FR1 n77_Ant 1	100M_BPSK_1_1	Back	10mm	Index 5/6	656000	3840	23.15	25.00	1.531			-0.13	0.255	0.390	-4.10%
	2nd	FR1 n77_Ant 1	100M_BPSK_1_1	Back	10mm	Index 5/6	656000	3840	23.06	25.00	1.563			-0.02	0.239	0.374	
	1st	FR1 n77_Ant 1	100M_BPSK_1_1	Back	10mm	Index 5/6	633332	3499.98	23.11	25.00	1.545			-0.16	0.353	0.545	-2.75%
	2nd	FR1 n77_Ant 1	100M_BPSK_1_1	Back	10mm	Index 5/6	633332	3499.98	23.07	25.00	1.560			-0.14	0.340	0.530	
	1st	FR1 n77_Ant 5	100M_BPSK_1_1	Front	10mm	Index 5	656000	3840	22.18	24	1.521			-0.02	0.453	0.689	-7.26%
	2nd	FR1 n77_Ant 5	100M_BPSK_1_1	Front	10mm	Index 5	656000	3840	22.22	24	1.507			-0.19	0.424	0.639	
	1st	FR1 n77_Ant 5	100M_BPSK_1_1	Front	10mm	Index 6	656000	3840	21.15	21.6	1.109			0.09	0.360	0.399	-5.76%
	2nd	FR1 n77_Ant 5	100M_BPSK_1_1	Front	10mm	Index 6	656000	3840	21.13	21.6	1.114			0.01	0.337	0.376	
	1st	FR1 n77_Ant 5	100M_BPSK_1_1	Back	10mm	Index 5	633332	3499.98	22.16	24	1.528			-0.14	0.498	0.761	-8.41%
65	2nd	FR1 n77_Ant 5	100M_BPSK_1_1	Back	10mm	Index 5	633332	3499.98	22.01	24	1.581			0.14	0.441	0.697	
	1st	FR1 n77_Ant 5	100M_BPSK_1_1	Back	10mm	Index 6	633332	3499.98	21.11	21.6	1.119			0.08	0.396	0.443	-11.29%
	2nd	FR1 n77_Ant 5	100M_BPSK_1_1	Back	10mm	Index 6	633332	3499.98	21.10	21.6	1.122			-0.1	0.350	0.393	



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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 (%)
	1st	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 4	Index 5	1	2412	19.40	19.50	1.023	98.85	1.012	-0.09	0.471	0.488			-14.14%
	2nd	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 4	Index 5	1	2412	19.40	19.50	1.023	98.85	1.012	-0.15	0.405	0.419			-6.61%
	1st	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 4	Index 7	12	2467	16.40	16.50	1.023	98.85	1.012	-0.16	0.351	0.363			-30.31%
	2nd	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 4	Index 7	12	2467	16.40	16.50	1.023	98.85	1.012	-0.17	0.327	0.339			-30.20%
	1st	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 3	Index 5	1	2412	19.45	19.50	1.012	98.85	1.012	-0.09	0.280	0.287			-6.67%
	2nd	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 3	Index 5	1	2412	19.45	19.50	1.012	98.85	1.012	0.01	0.195	0.200			-7.03%
	1st	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 3	Index 6	1	2412	20.95	21.00	1.012	98.85	1.012	0.04	0.530	0.543			-1.79%
	2nd	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 3	Index 6	1	2412	20.95	21.00	1.012	98.85	1.012	0.02	0.370	0.379			-7.60%
	1st	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 3	Index 7	6	2437	16.45	16.50	1.012	98.85	1.012	-0.18	0.117	0.120			-1.79%
	2nd	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 3	Index 7	6	2437	16.45	16.50	1.012	98.85	1.012	-0.17	0.109	0.112			-17.44%
	1st	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 3	Index 8	6	2437	16.95	17.00	1.012	98.85	1.012	-0.18	0.125	0.128			-7.85%
	2nd	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 3	Index 8	6	2437	16.95	17.00	1.012	98.85	1.012	-0.17	0.116	0.119			-28.68%
	1st	WLAN2.4GHz	802.11g 6Mbps	Front	10mm	Ant 4+3(4)	Index 5	6	2437	19.40	19.50	1.023	93.46	1.070	0.01	0.529	0.579			-18.96%
	1st	WLAN2.4GHz	802.11g 6Mbps	Front	10mm	Ant 4+3(3)	Index 5	6	2437	18.65	19.50	1.216	93.46	1.070	0.01	0.217	0.282			-1.88%
	2nd	WLAN2.4GHz	802.11g 6Mbps	Front	10mm	Ant 4+3(4)	Index 5	6	2437	19.40	19.50	1.023	93.46	1.070	-0.11	0.489	0.535			-5.34%
	2nd	WLAN2.4GHz	802.11g 6Mbps	Front	10mm	Ant 4+3(3)	Index 5	6	2437	18.65	19.50	1.216	93.46	1.070	-0.11	0.209	0.272			-19.65%
	1st	WLAN2.4GHz	802.11g 6Mbps	Front	10mm	Ant 4+3(4)	Index 7	6	2437	16.40	16.50	1.023	93.46	1.070	-0.03	0.255	0.279			-6.03%
	1st	WLAN2.4GHz	802.11g 6Mbps	Front	10mm	Ant 4+3(3)	Index 7	6	2437	16.35	16.50	1.035	93.46	1.070	-0.03	0.120	0.133			-3.17%
	2nd	WLAN2.4GHz	802.11g 6Mbps	Front	10mm	Ant 4+3(4)	Index 7	6	2437	16.40	16.50	1.023	93.46	1.070	0	0.250	0.274			-10.41%
	2nd	WLAN2.4GHz	802.11g 6Mbps	Front	10mm	Ant 4+3(3)	Index 7	6	2437	16.35	16.50	1.035	93.46	1.070	0	0.111	0.123			-1.88%
	1st	WLAN5GHz	802.11a 6Mbps	Back	10mm	Ant 4	Index 5/7/9	52	5260	17.90	18.00	1.023	93.46	1.070	-0.04	0.120	0.131			-1.88%
	2nd	WLAN5GHz	802.11a 6Mbps	Back	10mm	Ant 4	Index 5/7/9	52	5260	17.90	18.00	1.023	93.46	1.070	0.02	0.108	0.118			-5.34%
	1st	WLAN5GHz	802.11n-HT20 MCS0	Back	10mm	Ant 4	Index 6/8	52	5260	18.80	19.00	1.047	93.46	1.070	0.08	0.101	0.113			-19.65%
	2nd	WLAN5GHz	802.11n-HT20 MCS0	Back	10mm	Ant 4	Index 6/8	52	5260	18.80	19.00	1.047	93.46	1.070	0.19	0.092	0.103			-1.88%
	1st	WLAN5GHz	802.11a 6Mbps	Front	10mm	Ant 4+3(4)	Index 5/7/9	52	5260	17.90	18.00	1.023	93.42	1.070	-0.04	0.094	0.103			-17.44%
	1st	WLAN5GHz	802.11a 6Mbps	Front	10mm	Ant 4+3(3)	Index 5/7/9	52	5260	17.90	18.00	1.023	93.42	1.070	-0.04	0.157	0.172			-1.88%
	2nd	WLAN5GHz	802.11a 6Mbps	Front	10mm	Ant 4+3(4)	Index 5/7/9	52	5260	17.90	18.00	1.023	93.42	1.070	0.02	0.099	0.108			-1.88%
	2nd	WLAN5GHz	802.11a 6Mbps	Front	10mm	Ant 4+3(3)	Index 5/7/9	52	5260	17.90	18.00	1.023	93.42	1.070	0.02	0.130	0.142			-1.88%
	1st	WLAN5GHz	802.11n-HT20 MCS0	Back	10mm	Ant 4	Index 5/6/7/9	116	5580	18.90	19.00	1.023	93.06	1.075	-0.1	0.313	0.344			-7.85%
	2nd	WLAN5GHz	802.11n-HT20 MCS0	Back	10mm	Ant 4	Index 5/6/7/9	116	5580	18.90	19.00	1.023	93.06	1.075	0.13	0.288	0.317			-1.88%
	1st	WLAN5GHz	802.11ac-VHT80 MCS0	Back	10mm	Ant 4	Index 8	138	5690	17.90	18.00	1.023	89.9	1.112	0.01	0.227	0.258			-28.68%
	2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Back	10mm	Ant 4	Index 8	138	5690	17.90	18.00	1.023	89.9	1.112	0.13	0.162	0.184			-18.96%
	1st	WLAN5GHz	802.11n-HT20 MCS0	Back	10mm	Ant 4+3(4)	Index 5/7/9	116	5580	19.00	19.00	1.000	93.06	1.075	0.13	0.358	0.385			-18.96%
	1st	WLAN5GHz	802.11n-HT20 MCS0	Back	10mm	Ant 4+3(3)	Index 5/7/9	116	5580	18.60	19.00	1.096	93.06	1.075	0.13	0.150	0.177			-18.96%
	2nd	WLAN5GHz	802.11n-HT20 MCS0	Back	10mm	Ant 4+3(4)	Index 5/7/9	116	5580	19.00	19.00	1.000	93.06	1.075	0.08	0.290	0.312			-18.96%
	2nd	WLAN5GHz	802.11n-HT20 MCS0	Back	10mm	Ant 4+3(3)	Index 5/7/9	116	5580	18.60	19.00	1.096	93.06	1.075	0.08	0.217	0.256			-18.96%
	1st	WLAN5GHz	802.11a 6Mbps	Back	10mm	Ant 4	Index 5/6/7/8	157	5785	19.90	20.00	1.023	93.45	1.070	0.01	0.291	0.319			-1.88%
	2nd	WLAN5GHz	802.11a 6Mbps	Back	10mm	Ant 4	Index 5/6/7/8	157	5785	19.90	20.00	1.023	93.45	1.070	0.03	0.286	0.313			-1.88%
	1st	WLAN5GHz	802.11a 6Mbps	Back	10mm	Ant 4	Index 9	157	5785	19.40	19.50	1.023	93.45	1.070	0.09	0.188	0.206			-5.34%
	2nd	WLAN5GHz	802.11a 6Mbps	Back	10mm	Ant 4	Index 9	157	5785	19.40	19.50	1.023	93.45	1.070	0.12	0.178	0.195			-5.34%
	1st	WLAN5GHz	802.11a 6Mbps	Front	10mm	Ant 4+3(4)	Index 5/7	165	5825	19.90	20.00	1.023	93.42	1.070	-0.08	0.176	0.193			-19.65%
	1st	WLAN5GHz	802.11a 6Mbps	Front	10mm	Ant 4+3(3)	Index 5/7	165	5825	19.60	20.00	1.096	93.42	1.070	-0.08	0.243	0.285			-19.65%
	2nd	WLAN5GHz	802.11a 6Mbps	Front	10mm	Ant 4+3(4)	Index 5/7	165	5825	19.90	20.00	1.023	93.42	1.070	-0.12	0.178	0.195			-19.65%
	2nd	WLAN5GHz	802.11a 6Mbps	Front	10mm	Ant 4+3(3)	Index 5/7	165	5825	19.60	20.00	1.096	93.42	1.070	-0.12	0.195	0.229			-19.65%
	1st	WLAN5GHz	802.11a 6Mbps	Back	10mm	Ant 4+3(4)	Index 9	157	5785	19.40	19.50	1.023	93.42	1.070	0.08	0.155	0.170			-6.03%
	1st	WLAN5GHz	802.11a 6Mbps	Back	10mm	Ant 4+3(3)	Index 9	157	5785	19.20	19.50	1.072	93.42	1.070	0.08	0.202	0.232			-6.03%
	2nd	WLAN5GHz	802.11a 6Mbps	Back	10mm	Ant 4+3(4)	Index 9	157	5785	19.40	19.50	1.023	93.42	1.070	-0.04	0.199	0.218			-6.03%
	2nd	WLAN5GHz	802.11a 6Mbps	Back	10mm	Ant 4+3(3)	Index 9	157	5785	19.20	19.50	1.072	93.42	1.070	-0.04	0.148	0.170			-6.03%
	1st	WLAN5GHz	802.11a 6Mbps	Back	10mm	Ant 4	Index 5/7/9	169	5845	19.40	19.50	1.023	93.46	1.070	0.09	0.173	0.189			-3.17%
	2nd	WLAN5GHz	802.11a 6Mbps	Back	10mm	Ant 4	Index 5/7/9	169	5845	19.40	19.50	1.023	93.46	1.070	-0.18	0.167	0.183			-3.17%
	1st	WLAN5GHz	802.11a 6Mbps	Back	10mm	Ant 4	Index 6/8	169	5845	19.90	20.00	1.023	93.45	1.070	0.02	0.202	0.221			-10.41%
	2nd	WLAN5GHz	802.11a 6Mbps	Back	10mm	Ant 4	Index 6/8	169	5845	19.90	20.00	1.023	93.45	1.070	0.15	0.181	0.198			-10.41%
	1st	WLAN5GHz	802.11a 6Mbps	Front	10mm	Ant 4+3(4)	Index 5/7/9	173	5865	19.40	19.50	1.023	93.42	1.070	-0.14	0.145	0.159			-10.41%



		WLAN5GHz	802.11a 6Mbps	Front	10mm	Ant 4+3(3)	Index 5/7/9	173	5865	19.10	19.50	1.096	93.42	1.070	-0.14	0.172	0.202			
		WLAN5GHz	802.11a 6Mbps	Front	10mm	Ant 4+3(4)	Index 5/7/9	173	5865	19.40	19.50	1.023	93.42	1.070	0.15	0.099	0.108			
		WLAN5GHz	802.11a 6Mbps	Front	10mm	Ant 4+3(3)	Index 5/7/9	173	5865	19.10	19.50	1.096	93.42	1.070	0.15	0.131	0.154			-23.76%
	1st	WLAN6GHz	802.11a 6Mbps	Back	10mm	Ant 4	Index 5/6/7/8/9	57	6235	19.90	20.00	1.023	93.46	1.070	0.02	0.239	0.262	1.58	1.730	
71	2nd	WLAN6GHz	802.11a 6Mbps	Back	10mm	Ant 4	Index 5/6/7/8/9	57	6235	19.90	20.00	1.023	93.46	1.070	0.04	0.194	0.212	1.35	1.478	-19.08%
	1st	WLAN6GHz	802.11a 6Mbps	Front	10mm	Ant 4+3(4)	Index 5/7/9	173	6815	19.90	20.00	1.023	93.46	1.070	-0.09	0.042	0.046	0.252	0.276	
		WLAN6GHz	802.11a 6Mbps	Front	10mm	Ant 4+3(3)	Index 5/7/9	173	6815	18.50	20.00	1.413	93.46	1.070	-0.09	0.159	0.240	1.05	1.587	
	2nd	WLAN6GHz	802.11a 6Mbps	Front	10mm	Ant 4+3(4)	Index 5/7/9	173	6815	19.90	20.00	1.023	93.46	1.070	0.06	0.042	0.046	0.278	0.304	-15.00%
		WLAN6GHz	802.11a 6Mbps	Front	10mm	Ant 4+3(3)	Index 5/7/9	173	6815	18.50	20.00	1.413	93.46	1.070	0.06	0.135	0.204	0.872	1.318	
	1st	Bluetooth	1Mbps	Front	10mm	Ant 4	BT Index 2	0	2402	20.90	21.00	1.024	77.07	1.081	-0.18	0.261	0.289			
	2nd	Bluetooth	1Mbps	Front	10mm	Ant 4	BT Index 2	0	2402	20.90	21.00	1.024	77.07	1.081	-0.18	0.231	0.256			-11.42%
	1st	Bluetooth	1Mbps	Front	10mm	Ant 4	BT Index 3/4	78	2480	14.90	15.00	1.023	77.07	1.081	0.09	0.177	0.196			
	2nd	Bluetooth	1Mbps	Front	10mm	Ant 4	BT Index 3/4	78	2480	14.90	15.00	1.023	77.07	1.081	0.15	0.174	0.192			-2.04%
	1st	Bluetooth	1Mbps	Front	10mm	Ant 3	BT Index 2	78	2480	20.50	21.00	1.123	77.07	1.081	0.05	0.304	0.369			
72	2nd	Bluetooth	1Mbps	Front	10mm	Ant 3	BT Index 2	78	2480	20.50	21.00	1.123	77.07	1.081	-0.11	0.258	0.313			-15.18%
	1st	Bluetooth	1Mbps	Front	10mm	Ant 3	BT Index 4	78	2480	14.65	15.00	1.084	77.07	1.081	0.11	0.084	0.098			
	2nd	Bluetooth	1Mbps	Front	10mm	Ant 3	BT Index 4	78	2480	14.65	15.00	1.084	77.07	1.081	-0.17	0.074	0.087			-11.22%

14.4 NFC SAR

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	-0.09	0.072	
73	2nd	NFC	Back	0mm	13.56	-0.01	0.057	-20.83%

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.



14.5 6GHz PD Test Result

Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Average Power (dBm)	Grid Step (λ)	iPDn	iPD ratio (≥ -1)	Scaling Factor for Measurement Uncertainty	Normal psPD (W/m ²)	Total psPD (W/m ²)
WLAN6GHz	802.11ax-HE80 MCS0	Front	2mm	Ant 4+3(4)	7	5985	14.00	0.0625	1.65	-0.98486401	1.5535	1.80	1.99
WLAN6GHz	802.11ax-HE80 MCS0	Front	10mm	Ant 4+3(3)	7	5985	13.30	0.25	2.07		1.5535	0.651	0.699
WLAN6GHz	802.11ax-HE80 MCS0	Front	2mm	Ant 4+3(3)	215	7025	14.10	0.0625	1.67	-0.65085259	1.5535	1.64	2.12
WLAN6GHz	802.11ax-HE80 MCS0	Front	8.59mm	Ant 4+3(3)	215	7025	14.10	0.25	1.94		1.5535	0.448	0.544

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Grid Step (λ)	Scaling Factor for Measurement Uncertainty	Power Drift (dB)	Normal psPD (W/m ²)	Scaled Normal psPD (W/m ²)	Total psPD (W/m ²)	Scaled Total psPD (W/m ²)
	WLAN6GHz	802.11ax-HE80 MCS0	Front	2mm	Ant 4	215	7025	14.30	15.00	1.175	87.06	1.149	0.0625	1.5535	0.06	0.885	1.86	1.12	2.35
	WLAN6GHz	802.11ax-HE80 MCS0	Front	2mm	Ant 4	7	5985	13.90	14.00	1.023	87.06	1.149	0.0625	1.5535	-0.09	1.60	2.92	1.81	3.31
	WLAN6GHz	802.11ax-HE80 MCS0	Front	2mm	Ant 4	71	6305	14.00	14.00	1.000	87.06	1.149	0.0625	1.5535	-0.01	0.804	1.44	1.36	2.43
	WLAN6GHz	802.11ax-HE80 MCS0	Front	2mm	Ant 4	119	6545	14.30	14.50	1.047	87.06	1.149	0.0625	1.5535	-0.06	2.05	3.83	2.60	4.86
	WLAN6GHz	802.11ax-HE80 MCS0	Front	2mm	Ant 4	167	6785	13.90	14.00	1.023	87.06	1.149	0.0625	1.5535	0.05	0.802	1.465	1.04	1.90
	WLAN6GHz	802.11a 6Mbps	Front	10mm	Ant 4	57	6235	19.90	20.00	1.023	93.46	1.070	0.0625	1.5535	0.00	1.09	1.85	1.19	2.02
	WLAN6GHz	802.11a 6Mbps	Back	10mm	Ant 4	57	6235	19.90	20.00	1.023	93.46	1.070	0.0625	1.5535	0.05	1.47	2.50	1.56	2.65
	WLAN6GHz	802.11a 6Mbps	Back	10mm	Ant 4	1	5955	18.90	19.00	1.023	93.46	1.070	0.0625	1.5535	0.12	1.67	2.84	1.90	3.23
	WLAN6GHz	802.11a 6Mbps	Back	10mm	Ant 4	173	6815	19.90	20.00	1.023	93.46	1.070	0.0625	1.5535	-0.02	3.10	5.27	3.19	5.43
	WLAN6GHz	802.11ax-HE80 MCS0	Back	10mm	Ant 4	215	7025	14.30	15.00	1.175	87.06	1.149	0.0625	1.5535	0.05	0.362	0.759	0.510	1.07
	WLAN6GHz	802.11ax-HE80 MCS0	Back	10mm	Ant 4	119	6545	14.30	14.50	1.047	87.06	1.149	0.0625	1.5535	0.03	0.867	1.62	0.907	1.70
	WLAN6GHz	802.11ax-HE80 MCS0	Front	2mm	Ant 4+3(4)	215	7025	14.80	15.00	1.047	87.06	1.149	0.0625	1.5535	0.09	1.64	3.07	2.12	3.96
	WLAN6GHz	802.11ax-HE80 MCS0	Front	2mm	Ant 4+3(4)	7	5985	14.00	14.00	1.000	87.06	1.149	0.0625	1.5535	-0.04	1.80	3.21	1.99	3.55
	WLAN6GHz	802.11ax-HE80 MCS0	Front	2mm	Ant 4+3(3)	71	6305	13.00	14.00	1.259	87.06	1.149	0.0625	1.5535	0.09	2.42	5.44	2.98	6.70
	WLAN6GHz	802.11ax-HE80 MCS0	Front	2mm	Ant 4+3(3)	119	6545	13.80	14.50	1.175	87.06	1.149	0.0625	1.5535	-0.05	2.66	5.58	2.97	6.23
74	WLAN6GHz	802.11ax-HE80 MCS0	Front	2mm	Ant 4+3(3)	167	6785	12.70	14.00	1.349	87.06	1.149	0.0625	1.5535	-0.03	2.56	6.16	2.94	7.08
	WLAN6GHz	802.11a 6Mbps	Front	10mm	Ant 4+3(3)	57	6235	18.80	20.00	1.318	93.46	1.070	0.0625	1.5535	0.05	1.87	4.10	2.10	4.60
	WLAN6GHz	802.11a 6Mbps	Back	10mm	Ant 4+3(3)	57	6235	18.80	20.00	1.318	93.46	1.070	0.0625	1.5535	-0.07	1.46	3.20	1.58	3.46
	WLAN6GHz	802.11a 6Mbps	Left Side	10mm	Ant 4+3(3)	57	6235	18.80	20.00	1.318	93.46	1.070	0.0625	1.5535	-0.03	2.36	5.17	2.60	5.70
	WLAN6GHz	802.11a 6Mbps	Left Side	10mm	Ant 4+3(3)	1	5955	18.20	19.00	1.202	93.46	1.070	0.0625	1.5535	-0.04	1.39	2.78	1.96	3.92
	WLAN6GHz	802.11ax-HE80 MCS0	Left Side	10mm	Ant 4+3(3)	119	6545	13.80	14.50	1.175	87.06	1.149	0.0625	1.5535	0.13	0.827	1.73	0.906	1.90
	WLAN6GHz	802.11a 6Mbps	Left Side	10mm	Ant 4+3(3)	173	6815	18.50	20.00	1.413	93.46	1.070	0.0625	1.5535	-0.17	2.38	5.59	2.61	6.13
	WLAN6GHz	802.11ax-HE80 MCS0	Left Side	10mm	Ant 4+3(3)	215	7025	14.10	15.00	1.230	87.06	1.149	0.0625	1.5535	-0.13	0.561	1.23	0.646	1.42
	WLAN6GHz	802.11a 6Mbps	Right Side	10mm	Ant 4+3(4)	57	6235	19.80	20.00	1.047	93.46	1.070	0.0625	1.5535	0.00	1.18	2.05	1.32	2.30
	WLAN6GHz	802.11a 6Mbps	Top Side	10mm	Ant 4+3(4)	57	6235	19.80	20.00	1.047	93.46	1.070	0.0625	1.5535	0.14	0.786	1.37	0.793	1.38

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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	(Ci) 1g	(Ci) 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%



Applicable for Power Density Measurements:

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



16. References

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