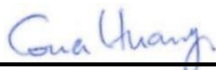


# FCC SAR TEST REPORT

**FCC ID** : 2AFZZPN8EG  
**Equipment** : Mobile Phone  
**Brand Name** : Xiaomi  
**Model Name** : 2407FPN8EG  
**Applicant** : Xiaomi Communications Co., Ltd.  
#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085  
**Manufacturer** : Xiaomi Communications Co., Ltd.  
#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085  
**Standard** : FCC 47 CFR Part 2 (2.1093)

The product was received on Apr. 26, 2024 and testing was started from May 01, 2024 and completed on May 21, 2024. 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**

No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan



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### History of this test report

Report No.	Version	Description	Issued Date
FA442005B	01	Initial issue of report	May 28, 2024



### 1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) for Xiaomi Communications Co., Ltd., Mobile Phone, 2407FPN8EG, are as follows.

Equipment Class	Frequency Band	Highest SAR Summary				Highest Simultaneous Transmission 1g SAR (W/kg)	Highest Simultaneous Transmission 10g SAR (W/kg)
		Head (Separation 0mm)	Body-worn (Separation 15mm)	Hotspot (Separation 10mm)	Product Specific (Separation 0mm)		
		1g SAR (W/kg)					
Licensed	GSM850	0.93	0.69	0.56		1.59	
	GSM1900	0.69	0.22	0.56			
	WCDMA II	0.86	0.57	0.82			
	WCDMA IV	0.88	0.59	0.95			
	WCDMA V	0.94	0.66	0.56			
	LTE Band 7	0.96	0.57	0.65			
	LTE Band 12	1.07	0.37	0.59			
	LTE Band 13	1.09	0.70	0.90			
	LTE Band 2 / 25	0.94	0.49	0.83			
	LTE Band 5/26	0.91	0.73	0.70			
	LTE Band 38/41	1.09	0.38	0.73			
	LTE Band 42	1.08	0.45	0.49			
	LTE Band 48	1.07	0.18	0.26			
	LTE Band 4/66	1.03	0.75	1.08			
	FR1 n7	1.06	0.52	0.63			
	FR1 n12	1.08	0.38	0.66			
	FR1 n2 / n25	0.96	0.54	0.89			
	FR1 n5/26	1.09	0.89	0.60			
	FR1 n38/41	0.96	0.67	0.58			
	FR1 n48	0.80	0.31	0.73			
FR1 n66	1.08	0.55	1.03				
FR1 n77	1.09	0.48	0.66				
FR1 n78	0.68	0.60	0.33				
DTS	2.4GHz WLAN	1.09	0.44	0.89		1.58	
NII	5GHz WLAN	1.09	0.51	0.94	2.51	1.59	2.51
6CD	6GHz WLAN	0.17	0.05		0.18	1.59	2.51
DSS	Bluetooth	0.11	0.10	0.24		1.59	
DXX	NFC				< 0.01		2.51
Equipment Class	Frequency Band	Head Reported APD (mW/cm <sup>2</sup> )	Body-worn Reported APD (mW/cm <sup>2</sup> )	Product Specific Reported APD (mW/cm <sup>2</sup> )	Reported PD (mW/cm <sup>2</sup> )		
6CD	6GHz WLAN	0.12	0.04	0.43	0.72		
Date of Testing:		2024/05/1 ~ 2024/05/21					

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) general population/uncontrolled exposure limits (1.6 W/kg for Partial-Body 1g SAR, 4 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/cm<sup>2</sup>=10 W/m<sup>2</sup>) 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: Daisy Peng**



## 2. Equipment Under Test (EUT) Information

### 2.1 General Information

Product Feature & Specification	
Equipment Name	Mobile Phone
Brand Name	Xiaomi
Model Name	2407FPN8EG
FCC ID	2AFZZPN8EG
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 42: 3550 MHz ~ 3600 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz 5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n7 : 2500 MHz ~ 2570 MHz 5G NR n12 : 699 MHz ~ 716 MHz 5G NR n25 : 1850 MHz ~ 1915 MHz 5G NR n26 : 814 MHz ~ 849 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n48 : 3550 MHz ~ 3700 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n77: 3700 MHz ~ 3980 MHz, 3450MHz ~ 3550MHz 5G NR n78: 3700 MHz ~ 3800 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 6E: 5925 MHz ~ 6425 MHz, 6425 MHz ~ 6525 MHz, 6525 MHz ~ 6875 MHz, 6875 MHz ~ 7125 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz NFC : 13.56 MHz
Mode	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+ (16QAM uplink) LTE: QPSK, 16QAM, 64QAM, 256QAM 5G NR: DFT-s-OFDM/CP-OFDM, Pi/2 BPSK/QPSK/16QAM/64QAM/256QAM WLAN: 802.11a/b/g/n/ac/ax/be HT20/HT40/VHT20/VHT40/VHT80/VHT160/HE20/HE40/HE80/HE160/EHT20/EHT40/EHT80/EHT160/EHT320 Bluetooth BR/EDR/LE NFC: 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.
EUT Stage	Identical Prototype
Remark:	<ol style="list-style-type: none"> <li>The device implements the power management and power reduction mechanism for SAR compliance at different exposure conditions (head, body-worn, hotspot/extremity) and the TA-SAR feature will manage to ensure the power level not exceeding the associated power table. Details about the power management decision and sensor detection are provided in the operational description. And power reduction mechanism verification include in appendix H.</li> <li>This device WLAN 2.4GHz / 5.2GHz / 5.8GHz supports Hotspot operation and Bluetooth support tethering applications.</li> <li>For dual SIM card mobile has two SIM slots and supports dual SIM dual standby. The WWAN radio transmission will be enabled by either one SIM at a time (single active). After pre-scan two SIM cards power, we found test result of the SIM1 was the worse, so we chose SIM1 slot to perform all tests.</li> <li>The device support different transmit path at different PA, other PA path will spot check worst configuration at different condition to ensure SAR result is compliance.</li> <li>The device support P-sensor detect at Extremity condition except Ant2 and ant7, the sensor verification result include in appendix H.</li> <li>The device FR1 support SCS15KHz and 30KHz for FDD and TDD, after pre-scan the worst case is SCS15KHz for FDD, SCS 30KHz for TDD, therefore, RF exposure evaluation only choose worst case performed, and the detail SCS support bandwidth include in operational description</li> </ol>



**2.2 Maximum Tune-up Limit**

**General Note:**

- For each cellular band, the device has several WWAN antennas, the antenna selection is based on the connection quality condition, and only one antenna will transmit at a time.
- The following table shows maximum output power configurations for various exposure conditions (Device State Index DSI) with tune-up tolerance accounted. For smart transmit 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 DSI which associate with the same power level, conducted power measurement for those only need to perform at once. Detail output power measurement refer to appendix F.
- The device support PC2 and PC3 power class, the PC2 was performed on the highest SAR test configuration in PC3, and use PC3 power level and SAR to estimated PC2 SAR linearly, and check if the deviation from the measured PC2 SAR is <10%.

**Trigger power reduction:**

- DSI 1: Voice Call earpiece on
- DSI 5: Turn on Hotspot function
- DSI 4: P-Sensor Off / receiver off
- DSI 3: P-Sensor on

**<WWAN>**

Maximum Transmit Burst Average Power (dBm)							
Band	Antenna	Duty cycle	Default	Head	Hotspot	Body worn	Extremity
			DSI 0	DSI 1	DSI 5	DSI 4	DSI 3
GSM850 GSM/GPRS 1TX	0	12.50%	34.00	34.00	34.00	34.00	34.00
GSM850 GPRS 2TX	0	25.00%	31.00	31.00	31.00	31.00	31.00
GSM850 GPRS 3TX	0	37.50%	29.20	29.20	29.20	29.20	29.20
GSM850 GPRS 4TX	0	50.00%	28.00	28.00	28.00	28.00	28.00
GSM850 EDGE 1TX	0	12.50%	28.00	28.00	28.00	28.00	28.00
GSM850 EDGE 2TX	0	25.00%	25.00	25.00	25.00	25.00	25.00
GSM850 EDGE 3TX	0	37.50%	23.00	23.00	23.00	23.00	23.00
GSM850 EDGE 4TX	0	50.00%	21.00	21.00	21.00	21.00	21.00
GSM1900 GSM/GPRS 1TX	2	12.50%	31.00	28.00	28.00	31.00	31.00
GSM1900 GPRS 2TX	2	25.00%	28.00	25.00	25.00	28.00	28.00
GSM1900 GPRS 3TX	2	37.50%	26.20	23.20	23.20	26.20	26.20
GSM1900 GPRS 4TX	2	50.00%	25.00	22.00	22.00	25.00	25.00
GSM1900 EDGE 1TX	2	12.50%	27.00	23.00	23.00	27.00	27.00
GSM1900 EDGE 2TX	2	25.00%	24.00	20.00	20.00	24.00	24.00
GSM1900 EDGE 3TX	2	37.50%	21.50	17.50	17.50	21.50	21.50
GSM1900 EDGE 4TX	2	50.00%	19.50	15.50	15.50	19.50	19.50
WCDMA B2	2	100.00%	25.00	18.50	18.50	22.00	22.00
WCDMA B4	2	100.00%	25.00	18.50	18.50	22.00	22.00
WCDMA B5	0	100.00%	25.00	25.00	25.00	25.00	25.00
LTE B2	2	100.00%	25.00	19.50	19.50	23.50	23.50
LTE B4	2	100.00%	25.70	18.70	18.70	21.70	21.70
LTE B4 Other PA	2	100.00%	24.50	17.50	17.50	21.70	21.70
LTE B5	0	100.00%	25.70	25.70	24.70	25.70	24.70
LTE B5 Other PA	0	100.00%	25.50	25.50	24.50	25.50	24.50
LTE B7	2	100.00%	25.70	16.70	16.70	20.20	20.20
LTE B12	0	100.00%	25.00	25.00	25.00	25.00	25.00
LTE B13	0	100.00%	25.70	25.70	25.70	25.70	25.70
LTE B17	0	100.00%	25.00	25.00	25.00	25.00	25.00
LTE B25	2	100.00%	25.00	19.50	19.50	23.50	23.50
LTE B26	0	100.00%	25.70	25.70	25.70	25.70	25.70
LTE B38	2	100.00%	25.70	18.50	18.50	23.50	23.50
LTE B41	2	100.00%	25.70	18.50	18.50	22.50	22.50
LTE B42	6	100.00%	25.70	15.50	15.50	25.70	19.00
LTE B48	6	100.00%	23.70	17.00	17.00	23.70	20.00
LTE B66	2	100.00%	25.00	17.50	17.50	22.00	22.00
LTE B66 Other PA	2	100.00%	24.00	16.50	16.50	22.00	22.00



Maximum Transmit Burst Average Power (dBm)							
Band	Antenna	Duty cycle	Default	Head	Hotspot	Body worn	Extremity
			DSI 0	DSI 1	DSI 5	DSI 4	DSI 3
FR1 n2	2	100.00%	25.00	19.50	19.50	22.50	22.50
FR1 n5	0	100.00%	25.70	25.70	24.70	25.70	24.70
FR1 n5 Other PA	0	100.00%	25.50	25.50	24.50	25.50	24.50
FR1 n7	2	100.00%	25.70	17.20	17.20	20.20	20.20
FR1 n12	0	100.00%	25.00	25.00	25.00	25.00	25.00
FR1 n25	2	100.00%	25.00	19.50	19.50	22.50	22.50
FR1 n26	0	100.00%	25.70	25.70	25.70	25.70	25.70
FR1 n38 PC3	2	100.00%	25.70	16.70	16.70	21.70	21.70
FR1 n41 PC3	2	100.00%	24.50	16.50	16.50	20.00	20.00
FR1 n41 PC2	2	50.00%	27.50	19.50	19.50	23.00	23.00
FR1 n48	6	100.00%	24.00	14.00	14.00	24.00	17.50
FR1 n66	2	100.00%	25.00	20.00	20.00	22.00	22.00
FR1 n66 Other PA	2	100.00%	23.50	18.50	18.50	20.50	20.50
FR1 n77 PC3	6	100.00%	23.50	15.50	15.50	23.50	16.50
FR1 n77 PC2	6	50.00%	26.50	18.50	18.50	26.50	19.50
FR1 n78 PC3	6	100.00%	24.50	15.50	15.50	24.50	17.50
FR1 n78 PC2	6	50.00%	27.50	18.50	18.50	27.50	20.50



Maximum Transmit Burst Average Power (dBm)							
Band	Antenna	Duty cycle	Default	Head	Hotspot	Body worn	Extremity
			DSI 0	DSI 1	DSI 5	DSI 4	DSI 3
GSM850 GSM/GPRS 1TX	1	12.50%	33.50	29.50	29.50	33.50	33.50
GSM850 GPRS 2TX	1	25.00%	30.50	26.50	26.50	30.50	30.50
GSM850 GPRS 3TX	1	37.50%	28.70	24.70	24.70	28.70	28.70
GSM850 GPRS 4TX	1	50.00%	27.50	23.50	23.50	27.50	27.50
GSM850 EDGE 1TX	1	12.50%	28.00	23.50	23.50	28.00	28.00
GSM850 EDGE 2TX	1	25.00%	24.50	20.00	20.00	24.50	24.50
GSM850 EDGE 3TX	1	37.50%	22.50	18.00	18.00	22.50	22.50
GSM850 EDGE 4TX	1	50.00%	21.00	16.00	16.00	21.00	21.00
GSM1900 GSM/GPRS 1TX	5	12.50%	30.00	30.00	30.00	30.00	30.00
GSM1900 GPRS 2TX	5	25.00%	27.00	27.00	27.00	27.00	27.00
GSM1900 GPRS 3TX	5	37.50%	25.20	25.20	25.20	25.20	25.20
GSM1900 GPRS 4TX	5	50.00%	24.00	24.00	24.00	24.00	24.00
GSM1900 EDGE 1TX	5	12.50%	25.50	25.50	25.50	25.50	25.50
GSM1900 EDGE 2TX	5	25.00%	22.00	22.00	22.00	22.00	22.00
GSM1900 EDGE 3TX	5	37.50%	20.00	20.00	20.00	20.00	20.00
GSM1900 EDGE 4TX	5	50.00%	18.00	18.00	18.00	18.00	18.00
WCDMA B2	5	100.00%	25.00	25.00	22.00	25.00	22.00
WCDMA B4	5	100.00%	25.20	25.20	23.20	25.20	24.20
WCDMA B5	1	100.00%	25.00	20.00	20.00	25.00	24.00
LTE B2	5	100.00%	25.00	25.00	22.00	25.00	22.00
LTE B4	5	100.00%	25.70	25.70	23.70	25.70	24.20
LTE B4 Other PA	5	100.00%	25.50	25.50	23.50	25.50	24.00
LTE B5	1	100.00%	25.70	20.20	20.20	25.70	23.70
LTE B5 Other PA	1	100.00%	25.50	20.00	20.00	25.50	23.50
LTE B7	5	100.00%	25.70	25.70	20.70	25.70	20.70
LTE B12	1	100.00%	25.00	22.50	22.50	25.00	25.00
LTE B13	1	100.00%	25.70	22.70	22.70	25.70	25.70
LTE B17	1	100.00%	25.00	22.00	22.00	25.00	25.00
LTE B25	5	100.00%	25.00	25.00	22.00	25.00	22.00
LTE B26	1	100.00%	25.70	20.20	20.20	25.70	24.20
LTE B38	5	63.30%	25.70	25.70	23.00	25.70	23.00
LTE B41	5	63.30%	25.70	25.70	23.00	25.70	23.00
LTE B42	7	63.30%	25.50	17.30	17.30	19.80	19.80
LTE B48	7	63.30%	23.50	16.30	16.30	20.30	20.30
LTE B66	5	100.00%	25.00	25.00	22.50	25.00	23.50
LTE B66 Other PA	5	100.00%	25.00	25.00	22.50	25.00	23.50





Maximum Transmit Burst Average Power (dBm)							
Band	Antenna	Duty cycle	Default	Head	Hotspot	Body worn	Extremity
			DSI 0	DSI 1	DSI 5	DSI 4	DSI 3
FR1 n2	5	100.00%	25.00	25.00	23.00	25.00	23.00
FR1 n5	1	100.00%	25.50	21.00	21.00	25.50	23.00
FR1 n5 Other PA	1	100.00%	25.50	21.00	21.00	25.50	23.00
FR1 n7	5	100.00%	25.70	25.70	20.70	25.70	20.70
FR1 n12	1	100.00%	24.50	23.00	23.00	24.50	24.50
FR1 n25	5	100.00%	25.00	25.00	23.00	25.00	23.00
FR1 n26	1	100.00%	25.50	21.00	21.00	25.50	23.00
FR1 n38 PC3	5	100.00%	25.70	25.70	21.20	25.70	21.20
FR1 n41 PC3	5	100.00%	24.00	24.00	20.00	24.00	20.00
FR1 n41 PC2	5	50.00%	27.00	27.00	23.00	27.00	23.00
FR1 n48	7	100.00%	23.50	14.50	14.50	17.00	17.00
FR1 n66	5	100.00%	25.00	25.00	23.50	25.00	24.00
FR1 n66 Other PA	5	100.00%	25.00	25.00	23.50	25.00	24.00
FR1 n77 PC3	7	100.00%	23.00	14.50	14.50	17.00	17.00
FR1 n77 PC2	7	50.00%	26.00	17.50	17.50	20.00	20.00
FR1 n78 PC3	7	100.00%	24.50	15.50	15.50	17.50	17.50
FR1 n78 PC2	7	50.00%	27.50	18.50	18.50	20.50	20.50

Maximum Transmit Burst Average Power (dBm)							
Band	Antenna	Duty cycle	Default	Head	Hotspot	Body worn	Extremity
			DSI 0	DSI 1	DSI 5	DSI 4	DSI 3
LTE B2	4	100.00%	23.50	18.50	18.50	23.50	23.50
LTE B7	4	100.00%	24.00	17.50	17.50	24.00	21.00
LTE B25	4	100.00%	23.50	18.50	18.50	23.50	23.50
LTE B38	4	63.30%	24.00	20.30	20.30	24.00	23.80
LTE B41	4	63.30%	24.00	20.30	20.30	24.00	23.80
LTE B42	8	63.30%	24.50	24.50	22.30	24.50	22.30
LTE B48	8	63.30%	22.50	22.50	21.30	22.50	21.30
LTE B66	4	100.00%	23.50	23.00	23.00	23.50	23.00
LTE B66 Other PA	4	100.00%	24.50	23.50	24.00	24.50	24.00
FR1 n2	4	100.00%	23.50	19.00	19.00	23.50	23.50
FR1 n7	4	100.00%	24.50	18.50	18.50	24.50	21.00
FR1 n25	4	100.00%	23.50	19.00	19.00	23.50	23.50
FR1 n38 PC3	4	100.00%	24.00	18.50	18.50	24.00	21.00
FR1 n41 PC3	4	100.00%	22.50	16.00	16.00	22.50	20.00
FR1 n41 PC2	4	50.00%	25.50	19.00	19.00	25.50	23.00
FR1 n48	8	100.00%	22.50	22.50	21.00	22.50	22.50
FR1 n66	4	100.00%	23.50	23.50	23.00	23.50	23.00
FR1 n66 Other PA	4	100.00%	24.50	24.50	24.00	24.50	24.00
FR1 n77 PC3	8	100.00%	22.50	22.50	19.50	22.50	19.50
FR1 n77 PC2	8	50.00%	25.50	25.50	22.50	25.50	22.50
FR1 n78 PC3	8	100.00%	23.50	23.50	19.50	23.50	19.50
FR1 n78 PC2	8	50.00%	26.50	26.50	22.50	26.50	22.50



Maximum Transmit Burst Average Power (dBm)							
Band	Antenna	Duty cycle	Default	Head	Hotspot	Body worn	Extremity
			DSI 0	DSI 1	DSI 5	DSI 4	DSI 3
LTE B2	3	100.00%	25.00	18.00	18.00	25.00	21.00
LTE B4	3	100.00%	25.70	17.00	17.70	25.70	21.70
LTE B4 Other PA	3	100.00%	25.70	17.70	17.70	25.70	21.70
LTE B7	3	100.00%	25.70	17.20	17.20	25.70	21.20
LTE B25	3	100.00%	25.00	18.00	18.00	25.00	21.00
LTE B38	3	63.30%	25.70	20.00	20.00	25.70	24.00
LTE B41	3	63.30%	25.70	20.00	20.00	25.70	24.00
LTE B42	9	63.30%	24.00	18.30	18.30	24.00	24.00
LTE B48	9	63.30%	22.00	22.00	20.80	22.00	20.80
LTE B66	3	100.00%	25.00	17.00	17.00	25.00	21.00
LTE B66 Other PA	3	100.00%	25.50	17.50	17.50	25.50	21.50
FR1 n2	3	100.00%	25.00	19.00	19.00	25.00	21.00
FR1 n7	3	100.00%	25.70	17.20	17.20	25.70	21.20
FR1 n25	3	100.00%	25.00	19.00	19.00	25.00	21.00
FR1 n38 PC3	3	100.00%	25.70	17.70	17.70	25.70	22.20
FR1 n41 PC3	3	100.00%	24.50	17.00	17.00	24.50	21.00
FR1 n41 PC2	3	50.00%	27.50	20.00	20.00	27.50	24.00
FR1 n48	9	100.00%	22.00	21.00	20.00	22.00	20.00
FR1 n66	3	100.00%	25.00	18.00	18.00	25.00	21.00
FR1 n66 Other PA	3	100.00%	25.50	18.50	18.50	25.50	21.50
FR1 n77 PC3	9	100.00%	22.00	18.50	16.50	21.00	17.00
FR1 n77 PC2	9	50.00%	25.00	21.50	19.50	24.00	20.00
FR1 n78 PC3	9	100.00%	23.00	18.50	18.50	23.00	20.50
FR1 n78 PC2	9	50.00%	26.00	21.50	21.50	26.00	23.50



**<WLAN Maximum Power>**

**General Note:**

- The device implements the power management for WLAN SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity). The control logic about the power management decision is provided in the operational description. For each exposure condition and simultaneous transmission configuration, SAR was tested according to the associated power table  
 Power Index 1: Default Power  
 Power Index 2: Receiver on, WLAN Non DBS  
 Power Index 3: Receiver on, WLAN DBS  
 Power Index 4: Hotspot on, WLAN Non DBS  
 Power Index 5: Hotspot on, WLAN DBS  
 Power Index 6: WWAN P-sensor on, WLAN Non DBS  
 Power Index 7: WWAN P-sensor on, WLAN DBS  
 Power Index 8: Receiver off, WLAN Standalone  
 Power Index 9: WWAN P-sensor on, WLAN Standalone

**<Power index 1>**

**<2.4GHz WLAN>**

Burst Average Power (dBm)						
2.4GHz WLAN	Transmit Antenna			SISO Ant 16	SISO Ant 7	MIMO Ant 16+7
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
2.4GHz WLAN	802.11b 1Mbps	1	2412	19.50	19.50	22.50
		6	2437	19.00	19.00	22.00
		11	2462	20.00	20.00	23.00
	802.11g 6Mbps	1	2412	18.00	19.00	22.00
		6	2437	18.00	19.00	22.00
		11	2462	18.50	19.50	22.50
	802.11n-HT20 MCS0	1	2412	17.50	18.00	21.00
		6	2437	17.00	18.00	21.00
		11	2462	17.00	18.50	21.50
	802.11n-HT40 MCS0	3	2422	18.00	17.50	20.50
		6	2437	18.00	17.00	20.00
		9	2452	18.50	17.00	20.00
	802.11ax-HE20 MCS0	1	2412	17.50	18.00	21.00
		6	2437	17.00	18.00	21.00
		11	2462	17.50	18.50	21.50
	802.11ax-HE40 MCS0	3	2422	18.00	17.50	20.50
		6	2437	18.00	17.00	20.00
		9	2452	18.50	17.50	20.50
802.11be-EHT20 MCS0	1	2412	17.50	18.00	21.00	
	6	2437	17.00	18.00	21.00	
	11	2462	17.50	18.50	21.50	
802.11be-EHT40 MCS0	3	2422	18.00	17.50	20.50	
	6	2437	18.00	17.00	20.00	
	9	2452	18.50	17.50	20.50	



<5GHz WLAN>

Burst Average Power (dBm)						
5.2GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
5.2GHz WLAN	802.11a 6Mbps	36	5180	19.50	19.50	22.50
		40	5200	19.50	19.50	22.50
		44	5220	19.50	19.50	22.50
		48	5240	19.50	19.50	22.50
	802.11n-HT20 MCS0	36	5180	18.50	18.50	21.50
		40	5200	19.00	19.00	22.00
		44	5220	18.50	18.50	21.50
		48	5240	19.00	19.00	22.00
	802.11n-HT40 MCS0	38	5190	19.00	19.00	22.00
		46	5230	19.00	19.00	22.00
	802.11ac-VHT20 MCS0	36	5180	19.00	19.00	22.00
		40	5200	19.00	19.00	22.00
		44	5220	18.50	18.50	21.50
		48	5240	19.00	19.00	22.00
	802.11ac-VHT40 MCS0	38	5190	19.00	19.00	22.00
		46	5230	19.00	19.00	22.00
	802.11ac-VHT80 MCS0	42	5210	18.50	18.50	21.50
	802.11ax-HE20 MCS0	36	5180	19.00	19.00	22.00
		40	5200	19.00	19.00	22.00
		44	5220	19.00	19.00	22.00
		48	5240	19.00	19.00	22.00
	802.11ax-HE40 MCS0	38	5190	19.00	19.00	22.00
		46	5230	19.00	19.00	22.00
	802.11ax-HE80 MCS0	42	5210	19.00	19.00	22.00
	802.11be-EHT20 MCS0	36	5180	19.00	19.00	22.00
		40	5200	19.00	19.00	22.00
		44	5220	19.00	19.00	22.00
		48	5240	19.00	19.00	22.00
802.11be-EHT40 MCS0	38	5190	19.00	19.00	22.00	
	46	5230	19.00	19.00	22.00	
802.11be-EHT80 MCS0	42	5210	19.00	19.00	22.00	



Burst Average Power (dBm)						
5.3GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
5.3GHz WLAN	802.11a 6Mbps	52	5260	19.50	19.50	22.50
		56	5280	20.00	20.00	23.00
		60	5300	20.00	20.00	23.00
		64	5320	20.00	20.00	23.00
	802.11n-HT20 MCS0	52	5260	18.00	18.00	21.00
		56	5280	18.00	18.00	21.00
		60	5300	18.00	18.00	21.00
		64	5320	18.00	18.00	21.00
	802.11n-HT40 MCS0	54	5270	18.50	18.50	21.50
		62	5310	18.50	18.50	21.50
	802.11ac-VHT20 MCS0	52	5260	18.50	18.50	21.50
		56	5280	18.00	18.00	21.00
		60	5300	18.00	18.00	21.00
		64	5320	18.00	18.00	21.00
	802.11ac-VHT40 MCS0	54	5270	18.50	18.50	21.50
		62	5310	18.50	18.50	21.50
	802.11ac-VHT80 MCS0	58	5290	18.50	18.50	21.50
	802.11ac-VHT160 MCS0	50	5250	18.50	18.50	21.50
	802.11ax-HE20 MCS0	52	5260	18.50	18.50	21.50
		56	5280	18.50	18.50	21.50
		60	5300	18.50	18.50	21.50
		64	5320	18.00	18.00	21.00
	802.11ax-HE40 MCS0	54	5270	18.50	18.50	21.50
		62	5310	18.50	18.50	21.50
	802.11ax-HE80 MCS0	58	5290	18.50	18.50	21.50
	802.11ax-HE160 MCS0	50	5250	18.50	18.50	21.50
	802.11be-EHT20 MCS0	52	5260	18.50	18.50	21.50
		56	5280	18.50	18.50	21.50
60		5300	18.50	18.50	21.50	
64		5320	18.50	18.50	21.50	
802.11be-EHT40 MCS0	54	5270	18.50	18.50	21.50	
	62	5310	18.50	18.50	21.50	
802.11be-EHT80 MCS0	58	5290	18.50	18.50	21.50	
802.11be-EHT160 MCS0	50	5250	19.00	19.00	22.00	



Burst Average Power (dBm)						
5.5GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
5.5GHz WLAN	802.11a 6Mbps	100	5500	19.50	19.50	22.50
		116	5580	19.00	19.00	22.00
		124	5620	19.00	19.00	22.00
		132	5660	19.00	19.00	22.00
		140	5700	19.00	19.00	22.00
		144	5720	19.00	19.00	22.00
	802.11n-HT20 MCS0	100	5500	17.00	17.00	20.00
		116	5580	17.00	17.00	20.00
		124	5620	17.00	17.00	20.00
		132	5660	17.00	17.00	20.00
		140	5700	17.00	17.00	20.00
		144	5720	17.00	17.00	20.00
	802.11n-HT40 MCS0	102	5510	17.50	17.50	20.50
		110	5550	17.50	17.50	20.50
		126	5630	17.00	17.00	20.00
		134	5670	17.50	17.50	20.50
		142	5710	17.00	17.00	20.00
	802.11ac-VHT20 MCS0	100	5500	17.00	17.00	20.00
		116	5580	17.00	17.00	20.00
		124	5620	17.00	17.00	20.00
		132	5660	17.00	17.00	20.00
		140	5700	17.00	17.00	20.00
	802.11ac-VHT40 MCS0	102	5510	17.50	17.50	20.50
		110	5550	17.50	17.50	20.50
		126	5630	17.00	17.00	20.00
		134	5670	17.50	17.50	20.50
		142	5710	17.00	17.00	20.00
	802.11ac-VHT80 MCS0	106	5530	17.50	17.50	20.50
		122	5610	17.00	17.00	20.00
		138	5690	17.50	17.50	20.50
802.11ac-VHT160 MCS0	114	5570	17.00	17.00	20.00	
802.11ax-HE20 MCS0	100	5500	17.00	17.00	20.00	
	116	5580	17.00	17.00	20.00	
	124	5620	17.00	17.00	20.00	
	132	5660	17.00	17.00	20.00	
	140	5700	17.00	17.00	20.00	
	144	5720	17.00	17.00	20.00	
802.11ax-HE40 MCS0	102	5510	17.50	17.50	20.50	
	110	5550	17.50	17.50	20.50	
	126	5630	17.00	17.00	20.00	
	134	5670	17.50	17.50	20.50	
	142	5710	17.00	17.00	20.00	
802.11ax-HE80 MCS0	106	5530	17.50	17.50	20.50	
	122	5610	17.00	17.00	20.00	
	138	5690	17.50	17.50	20.50	
802.11ax-HE160 MCS0	114	5570	17.00	17.00	20.00	
802.11be-EHT20 MCS0	100	5500	17.50	17.50	20.50	
	116	5580	17.00	17.00	20.00	
	124	5620	17.00	17.00	20.00	



		132	5660	17.00	17.00	20.00
		140	5700	17.00	17.00	20.00
		144	5720	17.00	17.00	20.00
	802.11be-EHT40 MCS0	102	5510	17.50	17.50	20.50
		110	5550	17.50	17.50	20.50
		126	5630	17.50	17.50	20.50
		134	5670	17.50	17.50	20.50
		142	5710	17.50	17.50	20.50
	802.11be-EHT80 MCS0	106	5530	17.50	17.50	20.50
		122	5610	17.00	17.00	20.00
		138	5690	17.50	17.50	20.50
	802.11be-EHT160 MCS0	114	5570	17.00	17.00	20.00

Burst Average Power (dBm)						
Transmit Antenna				SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
5.8GHz WLAN	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
	802.11a 6Mbps		149	5745	20.00	20.00
157			5785	20.00	20.00	23.00
165			5825	19.50	19.50	22.50
802.11n-HT20 MCS0		149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	15.50	15.50	18.50
802.11n-HT40 MCS0		151	5755	16.50	16.50	19.50
		159	5795	16.00	16.00	19.00
802.11ac-VHT20 MCS0		149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	15.50	15.50	18.50
802.11ac-VHT40 MCS0		151	5755	16.50	16.50	19.50
		159	5795	16.00	16.00	19.00
802.11ac-VHT80 MCS0		155	5775	16.00	16.00	19.00
802.11ax-HE20 MCS0		149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	15.50	15.50	18.50
802.11ax-HE40 MCS0		151	5755	16.50	16.50	19.50
		159	5795	16.50	16.50	19.50
802.11ax-HE80 MCS0		155	5775	16.50	16.50	19.50
802.11be-EHT20 MCS0		149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	15.50	15.50	18.50
802.11be-EHT40 MCS0		151	5755	16.50	16.50	19.50
		159	5795	16.50	16.50	19.50
802.11be-EHT80 MCS0		155	5775	16.50	16.50	19.50



Burst Average Power (dBm)						
	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
WIFI 6E	802.11a 6Mbps	1	5955	19.00	19.00	22.00
		57	6235	19.00	19.00	22.00
		113	6515	19.00	19.00	22.00
		173	6815	19.00	19.00	22.00
		229	7095	19.00	19.00	22.00
	802.11ax-HE20 MCS0	1	5955	18.00	18.00	21.00
		57	6235	18.00	18.00	21.00
		113	6515	18.00	18.00	21.00
		173	6815	18.00	18.00	21.00
		229	7095	18.00	18.00	21.00
	802.11ax-HE40 MCS0	3	5965	17.50	17.50	20.50
		59	6245	17.00	17.00	20.00
		107	6485	17.00	17.00	20.00
		171	6805	17.00	17.00	20.00
		227	7085	17.50	17.50	20.50
	802.11ax-HE80 MCS0	7	5985	16.50	16.50	19.50
		71	6305	16.50	16.50	19.50
		119	6545	16.50	16.50	19.50
		167	6785	16.50	16.50	19.50
		215	7025	16.00	16.00	19.00
	802.11ax-HE160 MCS0	15	6025	15.00	15.00	18.00
		47	6185	15.00	15.00	18.00
		111	6505	15.00	15.00	18.00
		143	6665	15.00	15.00	18.00
		207	6985	14.50	14.50	17.50
	802.11be-EHT20 MCS0	1	5955	18.00	18.00	21.00
		57	6235	18.00	18.00	21.00
		113	6515	18.00	18.00	21.00
		173	6815	18.00	18.00	21.00
		229	7095	18.00	18.00	21.00
	802.11be-EHT40 MCS0	3	5965	17.50	17.50	20.50
		59	6245	17.00	17.00	20.00
		107	6485	17.00	17.00	20.00
		171	6805	17.00	17.00	20.00
		227	7085	17.00	17.00	20.00
	802.11be-EHT80 MCS0	7	5985	16.50	16.50	19.50
		71	6305	16.50	16.50	19.50
		119	6545	16.50	16.50	19.50
		167	6785	16.00	16.00	19.00
		215	7025	16.00	16.00	19.00
	802.11be-EHT160 MCS0	15	6025	15.00	15.00	18.00
		47	6185	15.00	15.00	18.00
		111	6505	15.00	15.00	18.00
		143	6665	15.00	15.00	18.00
		207	6985	14.50	14.50	17.50
802.11be-EHT320 MCS0	31	6105	14.50	14.50	17.50	
	63	6265	15.00	15.00	18.00	
	95	6425	15.00	15.00	18.00	
	127	6585	15.00	15.00	18.00	
	159	6745	14.50	14.50	17.50	
	191	6905	14.50	14.50	17.5	





< Power index 2 >

<2.4GHz WLAN>

Burst Average Power (dBm)						
2.4GHz WLAN	Transmit Antenna			SISO Ant 16	SISO Ant 7	MIMO Ant 16+7
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
2.4GHz WLAN	802.11b 1Mbps	1	2412	9.00	9.00	12.00
		6	2437	9.00	9.00	12.00
		11	2462	9.00	9.00	12.00
	802.11g 6Mbps	1	2412	9.00	9.00	12.00
		6	2437	9.00	9.00	12.00
		11	2462	9.00	9.00	12.00
	802.11n-HT20 MCS0	1	2412	9.00	9.00	12.00
		6	2437	9.00	9.00	12.00
		11	2462	9.00	9.00	12.00
	802.11n-HT40 MCS0	3	2422	9.00	9.00	12.00
		6	2437	9.00	9.00	12.00
		9	2452	9.00	9.00	12.00
	802.11ax-HE20 MCS0	1	2412	9.00	9.00	12.00
		6	2437	9.00	9.00	12.00
		11	2462	9.00	9.00	12.00
	802.11ax-HE40 MCS0	3	2422	9.00	9.00	12.00
		6	2437	9.00	9.00	12.00
		9	2452	9.00	9.00	12.00
	802.11be-EHT20 MCS0	1	2412	9.00	9.00	12.00
		6	2437	9.00	9.00	12.00
		11	2462	9.00	9.00	12.00
	802.11be-EHT40 MCS0	3	2422	9.00	9.00	12.00
		6	2437	9.00	9.00	12.00
		9	2452	9.00	9.00	12.00



<5GHz WLAN>

Burst Average Power (dBm)						
5.2GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
	802.11a 6Mbps	36	5180	12.00	12.00	15.00
		40	5200	12.00	12.00	15.00
		44	5220	12.00	12.00	15.00
		48	5240	12.00	12.00	15.00
	802.11n-HT20 MCS0	36	5180	12.00	12.00	15.00
		40	5200	12.00	12.00	15.00
		44	5220	12.00	12.00	15.00
		48	5240	12.00	12.00	15.00
	802.11n-HT40 MCS0	38	5190	12.00	12.00	15.00
		46	5230	12.00	12.00	15.00
	802.11ac-VHT20 MCS0	36	5180	12.00	12.00	15.00
		40	5200	12.00	12.00	15.00
		44	5220	12.00	12.00	15.00
		48	5240	12.00	12.00	15.00
	802.11ac-VHT40 MCS0	38	5190	12.00	12.00	15.00
		46	5230	12.00	12.00	15.00
	802.11ac-VHT80 MCS0	42	5210	12.00	12.00	15.00
	802.11ax-HE20 MCS0	36	5180	12.00	12.00	15.00
		40	5200	12.00	12.00	15.00
		44	5220	12.00	12.00	15.00
48		5240	12.00	12.00	15.00	
802.11ax-HE40 MCS0	38	5190	12.00	12.00	15.00	
	46	5230	12.00	12.00	15.00	
802.11ax-HE80 MCS0	42	5210	12.00	12.00	15.00	
802.11be-EHT20 MCS0	36	5180	12.00	12.00	15.00	
	40	5200	12.00	12.00	15.00	
	44	5220	12.00	12.00	15.00	
	48	5240	12.00	12.00	15.00	
802.11be-EHT40 MCS0	38	5190	12.00	12.00	15.00	
	46	5230	12.00	12.00	15.00	
802.11be-EHT80 MCS0	42	5210	12.00	12.00	15.00	



Burst Average Power (dBm)						
5.3GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
5.3GHz WLAN	802.11a 6Mbps	52	5260	12.00	12.00	15.00
		56	5280	12.00	12.00	15.00
		60	5300	12.00	12.00	15.00
		64	5320	12.00	12.00	15.00
	802.11n-HT20 MCS0	52	5260	12.00	12.00	15.00
		56	5280	12.00	12.00	15.00
		60	5300	12.00	12.00	15.00
		64	5320	12.00	12.00	15.00
	802.11n-HT40 MCS0	54	5270	12.00	12.00	15.00
		62	5310	12.00	12.00	15.00
	802.11ac-VHT20 MCS0	52	5260	12.00	12.00	15.00
		56	5280	12.00	12.00	15.00
		60	5300	12.00	12.00	15.00
		64	5320	12.00	12.00	15.00
	802.11ac-VHT40 MCS0	54	5270	12.00	12.00	15.00
		62	5310	12.00	12.00	15.00
	802.11ac-VHT80 MCS0	58	5290	12.00	12.00	15.00
	802.11ac-VHT160 MCS0	50	5250	12.00	12.00	15.00
	802.11ax-HE20 MCS0	52	5260	12.00	12.00	15.00
		56	5280	12.00	12.00	15.00
		60	5300	12.00	12.00	15.00
		64	5320	12.00	12.00	15.00
	802.11ax-HE40 MCS0	54	5270	12.00	12.00	15.00
		62	5310	12.00	12.00	15.00
	802.11ax-HE80 MCS0	58	5290	12.00	12.00	15.00
	802.11ax-HE160 MCS0	50	5250	12.00	12.00	15.00
	802.11be-EHT20 MCS0	52	5260	12.00	12.00	15.00
		56	5280	12.00	12.00	15.00
60		5300	12.00	12.00	15.00	
64		5320	12.00	12.00	15.00	
802.11be-EHT40 MCS0	54	5270	12.00	12.00	15.00	
	62	5310	12.00	12.00	15.00	
802.11be-EHT80 MCS0	58	5290	12.00	12.00	15.00	
802.11be-EHT160 MCS0	50	5250	12.00	12.00	15.00	



Burst Average Power (dBm)						
5.5GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
5.5GHz WLAN	802.11a 6Mbps	100	5500	11.50	11.50	14.50
		116	5580	11.50	11.50	14.50
		124	5620	11.50	11.50	14.50
		132	5660	11.50	11.50	14.50
		140	5700	11.50	11.50	14.50
		144	5720	11.50	11.50	14.50
	802.11n-HT20 MCS0	100	5500	11.50	11.50	14.50
		116	5580	11.50	11.50	14.50
		124	5620	11.50	11.50	14.50
		132	5660	11.50	11.50	14.50
		140	5700	11.50	11.50	14.50
	802.11n-HT40 MCS0	102	5510	11.50	11.50	14.50
		110	5550	11.50	11.50	14.50
		126	5630	11.50	11.50	14.50
		134	5670	11.50	11.50	14.50
	802.11ac-VHT20 MCS0	100	5500	11.50	11.50	14.50
		116	5580	11.50	11.50	14.50
		124	5620	11.50	11.50	14.50
		132	5660	11.50	11.50	14.50
		140	5700	11.50	11.50	14.50
	802.11ac-VHT40 MCS0	102	5510	11.50	11.50	14.50
		110	5550	11.50	11.50	14.50
		126	5630	11.50	11.50	14.50
		134	5670	11.50	11.50	14.50
	802.11ac-VHT80 MCS0	106	5530	11.50	11.50	14.50
		122	5610	11.50	11.50	14.50
		138	5690	11.50	11.50	14.50
	802.11ac-VHT160 MCS0	114	5570	11.50	11.50	14.50
	802.11ax-HE20 MCS0	100	5500	11.50	11.50	14.50
		116	5580	11.50	11.50	14.50
		124	5620	11.50	11.50	14.50
		132	5660	11.50	11.50	14.50
		140	5700	11.50	11.50	14.50
	802.11ax-HE40 MCS0	102	5510	11.50	11.50	14.50
		110	5550	11.50	11.50	14.50
		126	5630	11.50	11.50	14.50
		134	5670	11.50	11.50	14.50
	802.11ax-HE80 MCS0	106	5530	11.50	11.50	14.50
		122	5610	11.50	11.50	14.50
		138	5690	11.50	11.50	14.50
	802.11ax-HE160 MCS0	114	5570	11.50	11.50	14.50
	802.11be-EHT20 MCS0	100	5500	11.50	11.50	14.50
		116	5580	11.50	11.50	14.50
		124	5620	11.50	11.50	14.50
		132	5660	11.50	11.50	14.50
		140	5700	11.50	11.50	14.50
	144	5720	11.50	11.50	14.50	



	802.11be-EHT40 MCS0	102	5510	11.50	11.50	14.50
		110	5550	11.50	11.50	14.50
		126	5630	11.50	11.50	14.50
		134	5670	11.50	11.50	14.50
		142	5710	11.50	11.50	14.50
	802.11be-EHT80 MCS0	106	5530	11.50	11.50	14.50
		122	5610	11.50	11.50	14.50
		138	5690	11.50	11.50	14.50
	802.11be-EHT160 MCS0	114	5570	11.50	11.50	14.50

Burst Average Power (dBm)						
Transmit Antenna				SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
5.8GHz WLAN	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
	802.11a 6Mbps		149	5745	11.00	11.00
157			5785	11.00	11.00	14.00
165			5825	11.00	11.00	14.00
802.11n-HT20 MCS0		149	5745	11.00	11.00	14.00
		157	5785	11.00	11.00	14.00
		165	5825	11.00	11.00	14.00
802.11n-HT40 MCS0		151	5755	11.00	11.00	14.00
		159	5795	11.00	11.00	14.00
802.11ac-VHT20 MCS0		149	5745	11.00	11.00	14.00
		157	5785	11.00	11.00	14.00
		165	5825	11.00	11.00	14.00
802.11ac-VHT40 MCS0		151	5755	11.00	11.00	14.00
		159	5795	11.00	11.00	14.00
802.11ac-VHT80 MCS0		155	5775	11.00	11.00	14.00
802.11ax-HE20 MCS0		149	5745	11.00	11.00	14.00
		157	5785	11.00	11.00	14.00
		165	5825	11.00	11.00	14.00
802.11ax-HE40 MCS0		151	5755	11.00	11.00	14.00
		159	5795	11.00	11.00	14.00
802.11ax-HE80 MCS0		155	5775	11.00	11.00	14.00
802.11be-EHT20 MCS0		149	5745	11.00	11.00	14.00
		157	5785	11.00	11.00	14.00
		165	5825	11.00	11.00	14.00
802.11be-EHT40 MCS0		151	5755	11.00	11.00	14.00
		159	5795	11.00	11.00	14.00
802.11be-EHT80 MCS0		155	5775	11.00	11.00	14.00



Burst Average Power (dBm)						
Transmit Antenna				SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
WIFI 6E	802.11a 6Mbps	1	5955	10.00	10.00	13.00
		57	6235	10.00	10.00	13.00
		113	6515	11.00	11.00	14.00
		173	6815	11.00	11.00	14.00
		229	7095	11.00	11.00	14.00
	802.11ax-HE20 MCS0	1	5955	10.00	10.00	13.00
		57	6235	10.00	10.00	13.00
		113	6515	11.00	11.00	14.00
		173	6815	11.00	11.00	14.00
		229	7095	11.00	11.00	14.00
	802.11ax-HE40 MCS0	3	5965	10.00	10.00	13.00
		59	6245	10.00	10.00	13.00
		107	6485	11.00	11.00	14.00
		171	6805	11.00	11.00	14.00
		227	7085	11.00	11.00	14.00
	802.11ax-HE80 MCS0	7	5985	10.00	10.00	13.00
		71	6305	10.00	10.00	13.00
		119	6545	11.00	11.00	14.00
		167	6785	11.00	11.00	14.00
		215	7025	11.00	11.00	14.00
	802.11ax-HE160 MCS0	15	6025	10.00	10.00	13.00
		47	6185	10.00	10.00	13.00
		111	6505	11.00	11.00	14.00
		143	6665	11.00	11.00	14.00
		207	6985	11.00	11.00	14.00
	802.11be-EHT20 MCS0	1	5955	10.00	10.00	13.00
		57	6235	10.00	10.00	13.00
		113	6515	11.00	11.00	14.00
		173	6815	11.00	11.00	14.00
		229	7095	11.00	11.00	14.00
	802.11be-EHT40 MCS0	3	5965	10.00	10.00	13.00
		59	6245	10.00	10.00	13.00
		107	6485	11.00	11.00	14.00
		171	6805	11.00	11.00	14.00
		227	7085	11.00	11.00	14.00
	802.11be-EHT80 MCS0	7	5985	10.00	10.00	13.00
		71	6305	10.00	10.00	13.00
		119	6545	11.00	11.00	14.00
		167	6785	11.00	11.00	14.00
		215	7025	11.00	11.00	14.00
	802.11be-EHT160 MCS0	15	6025	10.00	10.00	13.00
		47	6185	10.00	10.00	13.00
		111	6505	11.00	11.00	14.00
		143	6665	11.00	11.00	14.00
		207	6985	11.00	11.00	14.00
	802.11be-EHT320 MCS0	31	6105	10.00	10.00	13.00
		63	6265	10.00	10.00	13.00
		95	6425	10.00	10.00	13.00
		127	6585	11.00	11.00	14.00
		159	6745	11.00	11.00	14.00
		191	6905	11.00	11.00	14.00



< Power index 3 >

<2.4GHz WLAN>

Burst Average Power (dBm)						
2.4GHz WLAN	Transmit Antenna			SISO Ant 16	SISO Ant 7	MIMO Ant 16+7
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
	802.11b 1Mbps	1	2412	7.00	7.00	10.00
		6	2437	7.00	7.00	10.00
		11	2462	7.00	7.00	10.00
	802.11g 6Mbps	1	2412	7.00	7.00	10.00
		6	2437	7.00	7.00	10.00
		11	2462	7.00	7.00	10.00
	802.11n-HT20 MCS0	1	2412	7.00	7.00	10.00
		6	2437	7.00	7.00	10.00
		11	2462	7.00	7.00	10.00
	802.11n-HT40 MCS0	3	2422	7.00	7.00	10.00
		6	2437	7.00	7.00	10.00
		9	2452	7.00	7.00	10.00
	802.11ax-HE20 MCS0	1	2412	7.00	7.00	10.00
		6	2437	7.00	7.00	10.00
		11	2462	7.00	7.00	10.00
	802.11ax-HE40 MCS0	3	2422	7.00	7.00	10.00
		6	2437	7.00	7.00	10.00
		9	2452	7.00	7.00	10.00
	802.11be-EHT20 MCS0	1	2412	7.00	7.00	10.00
		6	2437	7.00	7.00	10.00
		11	2462	7.00	7.00	10.00
	802.11be-EHT40 MCS0	3	2422	7.00	7.00	10.00
		6	2437	7.00	7.00	10.00
		9	2452	7.00	7.00	10.00



<5GHz WLAN>

Burst Average Power (dBm)						
5.2GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
	802.11a 6Mbps	36	5180	9.00	9.00	12.00
		40	5200	9.00	9.00	12.00
		44	5220	9.00	9.00	12.00
		48	5240	9.00	9.00	12.00
	802.11n-HT20 MCS0	36	5180	9.00	9.00	12.00
		40	5200	9.00	9.00	12.00
		44	5220	9.00	9.00	12.00
	802.11n-HT40 MCS0	38	5190	9.00	9.00	12.00
		46	5230	9.00	9.00	12.00
	802.11ac-VHT20 MCS0	36	5180	9.00	9.00	12.00
		40	5200	9.00	9.00	12.00
		44	5220	9.00	9.00	12.00
		48	5240	9.00	9.00	12.00
	802.11ac-VHT40 MCS0	38	5190	9.00	9.00	12.00
		46	5230	9.00	9.00	12.00
	802.11ac-VHT80 MCS0	42	5210	9.00	9.00	12.00
	802.11ax-HE20 MCS0	36	5180	9.00	9.00	12.00
		40	5200	9.00	9.00	12.00
		44	5220	9.00	9.00	12.00
		48	5240	9.00	9.00	12.00
802.11ax-HE40 MCS0	38	5190	9.00	9.00	12.00	
	46	5230	9.00	9.00	12.00	
802.11ax-HE80 MCS0	42	5210	9.00	9.00	12.00	
802.11be-EHT20 MCS0	36	5180	9.00	9.00	12.00	
	40	5200	9.00	9.00	12.00	
	44	5220	9.00	9.00	12.00	
	48	5240	9.00	9.00	12.00	
802.11be-EHT40 MCS0	38	5190	9.00	9.00	12.00	
	46	5230	9.00	9.00	12.00	
802.11be-EHT80 MCS0	42	5210	9.00	9.00	12.00	





Burst Average Power (dBm)						
5.3GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
5.3GHz WLAN	802.11a 6Mbps	52	5260	9.00	9.00	12.00
		56	5280	9.00	9.00	12.00
		60	5300	9.00	9.00	12.00
		64	5320	9.00	9.00	12.00
	802.11n-HT20 MCS0	52	5260	9.00	9.00	12.00
		56	5280	9.00	9.00	12.00
		60	5300	9.00	9.00	12.00
		64	5320	9.00	9.00	12.00
	802.11n-HT40 MCS0	54	5270	9.00	9.00	12.00
		62	5310	9.00	9.00	12.00
	802.11ac-VHT20 MCS0	52	5260	9.00	9.00	12.00
		56	5280	9.00	9.00	12.00
		60	5300	9.00	9.00	12.00
		64	5320	9.00	9.00	12.00
	802.11ac-VHT40 MCS0	54	5270	9.00	9.00	12.00
		62	5310	9.00	9.00	12.00
	802.11ac-VHT80 MCS0	58	5290	9.00	9.00	12.00
	802.11ac-VHT160 MCS0	50	5250	9.00	9.00	12.00
	802.11ax-HE20 MCS0	52	5260	9.00	9.00	12.00
		56	5280	9.00	9.00	12.00
		60	5300	9.00	9.00	12.00
		64	5320	9.00	9.00	12.00
	802.11ax-HE40 MCS0	54	5270	9.00	9.00	12.00
		62	5310	9.00	9.00	12.00
	802.11ax-HE80 MCS0	58	5290	9.00	9.00	12.00
	802.11ax-HE160 MCS0	50	5250	9.00	9.00	12.00
	802.11be-EHT20 MCS0	52	5260	9.00	9.00	12.00
		56	5280	9.00	9.00	12.00
60		5300	9.00	9.00	12.00	
64		5320	9.00	9.00	12.00	
802.11be-EHT40 MCS0	54	5270	9.00	9.00	12.00	
	62	5310	9.00	9.00	12.00	
802.11be-EHT80 MCS0	58	5290	9.00	9.00	12.00	
802.11be-EHT160 MCS0	50	5250	9.00	9.00	12.00	



Burst Average Power (dBm)						
5.5GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
5.5GHz WLAN	802.11a 6Mbps	100	5500	8.50	8.50	11.50
		116	5580	8.50	8.50	11.50
		124	5620	8.50	8.50	11.50
		132	5660	8.50	8.50	11.50
		140	5700	8.50	8.50	11.50
		144	5720	8.50	8.50	11.50
	802.11n-HT20 MCS0	100	5500	8.50	8.50	11.50
		116	5580	8.50	8.50	11.50
		124	5620	8.50	8.50	11.50
		132	5660	8.50	8.50	11.50
		140	5700	8.50	8.50	11.50
		144	5720	8.50	8.50	11.50
	802.11n-HT40 MCS0	102	5510	8.50	8.50	11.50
		110	5550	8.50	8.50	11.50
		126	5630	8.50	8.50	11.50
		134	5670	8.50	8.50	11.50
		142	5710	8.50	8.50	11.50
	802.11ac-VHT20 MCS0	100	5500	8.50	8.50	11.50
		116	5580	8.50	8.50	11.50
		124	5620	8.50	8.50	11.50
		132	5660	8.50	8.50	11.50
		140	5700	8.50	8.50	11.50
		144	5720	8.50	8.50	11.50
	802.11ac-VHT40 MCS0	102	5510	8.50	8.50	11.50
		110	5550	8.50	8.50	11.50
		126	5630	8.50	8.50	11.50
		134	5670	8.50	8.50	11.50
		142	5710	8.50	8.50	11.50
	802.11ac-VHT80 MCS0	106	5530	8.50	8.50	11.50
		122	5610	8.50	8.50	11.50
		138	5690	8.50	8.50	11.50
	802.11ac-VHT160 MCS0	114	5570	8.50	8.50	11.50
	802.11ax-HE20 MCS0	100	5500	8.50	8.50	11.50
		116	5580	8.50	8.50	11.50
		124	5620	8.50	8.50	11.50
		132	5660	8.50	8.50	11.50
		140	5700	8.50	8.50	11.50
		144	5720	8.50	8.50	11.50
	802.11ax-HE40 MCS0	102	5510	8.50	8.50	11.50
		110	5550	8.50	8.50	11.50
		126	5630	8.50	8.50	11.50
		134	5670	8.50	8.50	11.50
142		5710	8.50	8.50	11.50	
802.11ax-HE80 MCS0	106	5530	8.50	8.50	11.50	
	122	5610	8.50	8.50	11.50	
	138	5690	8.50	8.50	11.50	
802.11ax-HE160 MCS0	114	5570	8.50	8.50	11.50	
802.11be-EHT20 MCS0	100	5500	8.50	8.50	11.50	
	116	5580	8.50	8.50	11.50	



		124	5620	8.50	8.50	11.50
		132	5660	8.50	8.50	11.50
		140	5700	8.50	8.50	11.50
		144	5720	8.50	8.50	11.50
	802.11be-EHT40 MCS0	102	5510	8.50	8.50	11.50
		110	5550	8.50	8.50	11.50
		126	5630	8.50	8.50	11.50
		134	5670	8.50	8.50	11.50
		142	5710	8.50	8.50	11.50
	802.11be-EHT80 MCS0	106	5530	8.50	8.50	11.50
		122	5610	8.50	8.50	11.50
		138	5690	8.50	8.50	11.50
	802.11be-EHT160 MCS0	114	5570	8.50	8.50	11.50

Burst Average Power (dBm)						
Transmit Antenna				SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
5.8GHz WLAN	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
	802.11a 6Mbps		149	5745	9.50	9.50
157			5785	9.50	9.50	12.50
165			5825	9.50	9.50	12.50
802.11n-HT20 MCS0		149	5745	9.50	9.50	12.50
		157	5785	9.50	9.50	12.50
		165	5825	9.50	9.50	12.50
802.11n-HT40 MCS0		151	5755	9.50	9.50	12.50
		159	5795	9.50	9.50	12.50
802.11ac-VHT20 MCS0		149	5745	9.50	9.50	12.50
		157	5785	9.50	9.50	12.50
		165	5825	9.50	9.50	12.50
802.11ac-VHT40 MCS0		151	5755	9.50	9.50	12.50
		159	5795	9.50	9.50	12.50
802.11ac-VHT80 MCS0		155	5775	9.50	9.50	12.50
802.11ax-HE20 MCS0		149	5745	9.50	9.50	12.50
		157	5785	9.50	9.50	12.50
		165	5825	9.50	9.50	12.50
802.11ax-HE40 MCS0		151	5755	9.50	9.50	12.50
		159	5795	9.50	9.50	12.50
802.11ax-HE80 MCS0		155	5775	9.50	9.50	12.50
802.11be-EHT20 MCS0		149	5745	9.50	9.50	12.50
		157	5785	9.50	9.50	12.50
		165	5825	9.50	9.50	12.50
802.11be-EHT40 MCS0		151	5755	9.50	9.50	12.50
		159	5795	9.50	9.50	12.50
802.11be-EHT80 MCS0		155	5775	9.50	9.50	12.50



Burst Average Power (dBm)						
	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
WIFI 6E	802.11a 6Mbps	1	5955	10.00	10.00	13.00
		57	6235	10.00	10.00	13.00
		113	6515	11.00	11.00	14.00
		173	6815	11.00	11.00	14.00
		229	7095	11.00	11.00	14.00
	802.11ax-HE20 MCS0	1	5955	10.00	10.00	13.00
		57	6235	10.00	10.00	13.00
		113	6515	11.00	11.00	14.00
		173	6815	11.00	11.00	14.00
		229	7095	11.00	11.00	14.00
	802.11ax-HE40 MCS0	3	5965	10.00	10.00	13.00
		59	6245	10.00	10.00	13.00
		107	6485	11.00	11.00	14.00
		171	6805	11.00	11.00	14.00
		227	7085	11.00	11.00	14.00
	802.11ax-HE80 MCS0	7	5985	10.00	10.00	13.00
		71	6305	10.00	10.00	13.00
		119	6545	11.00	11.00	14.00
		167	6785	11.00	11.00	14.00
		215	7025	11.00	11.00	14.00
	802.11ax-HE160 MCS0	15	6025	10.00	10.00	13.00
		47	6185	10.00	10.00	13.00
		111	6505	11.00	11.00	14.00
		143	6665	11.00	11.00	14.00
		207	6985	11.00	11.00	14.00
	802.11be-EHT20 MCS0	1	5955	10.00	10.00	13.00
		57	6235	10.00	10.00	13.00
		113	6515	11.00	11.00	14.00
		173	6815	11.00	11.00	14.00
		229	7095	11.00	11.00	14.00
	802.11be-EHT40 MCS0	3	5965	10.00	10.00	13.00
		59	6245	10.00	10.00	13.00
		107	6485	11.00	11.00	14.00
		171	6805	11.00	11.00	14.00
		227	7085	11.00	11.00	14.00
	802.11be-EHT80 MCS0	7	5985	10.00	10.00	13.00
		71	6305	10.00	10.00	13.00
		119	6545	11.00	11.00	14.00
		167	6785	11.00	11.00	14.00
		215	7025	11.00	11.00	14.00
	802.11be-EHT160 MCS0	15	6025	10.00	10.00	13.00
		47	6185	10.00	10.00	13.00
		111	6505	11.00	11.00	14.00
		143	6665	11.00	11.00	14.00
		207	6985	11.00	11.00	14.00
802.11be-EHT320 MCS0	31	6105	10.00	10.00	13.00	
	63	6265	10.00	10.00	13.00	
	95	6425	10.00	10.00	13.00	
	127	6585	11.00	11.00	14.00	
	159	6745	11.00	11.00	14.00	
		191	6905	11.00	11.00	14.00



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<2.4GHz WLAN>

Burst Average Power (dBm)						
2.4GHz WLAN	Transmit Antenna			SISO Ant 16	SISO Ant 7	MIMO Ant 16+7
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
2.4GHz WLAN	802.11b 1Mbps	1	2412	16.50	16.50	19.50
		6	2437	16.50	16.50	19.50
		11	2462	16.50	16.50	19.50
	802.11g 6Mbps	1	2412	16.50	16.50	19.50
		6	2437	16.50	16.50	19.50
		11	2462	16.50	16.50	19.50
	802.11n-HT20 MCS0	1	2412	16.50	16.50	19.50
		6	2437	16.50	16.50	19.50
		11	2462	16.50	16.50	19.50
	802.11n-HT40 MCS0	3	2422	16.50	16.50	19.50
		6	2437	16.50	16.50	19.50
		9	2452	16.50	16.50	19.50
	802.11ax-HE20 MCS0	1	2412	16.50	16.50	19.50
		6	2437	16.50	16.50	19.50
		11	2462	16.50	16.50	19.50
	802.11ax-HE40 MCS0	3	2422	16.50	16.50	19.50
		6	2437	16.50	16.50	19.50
		9	2452	16.50	16.50	19.50
	802.11be-EHT20 MCS0	1	2412	16.50	16.50	19.50
		6	2437	16.50	16.50	19.50
		11	2462	16.50	16.50	19.50
	802.11be-EHT40 MCS0	3	2422	16.50	16.50	19.50
		6	2437	16.50	16.50	19.50
		9	2452	16.50	16.50	19.50



<5GHz WLAN>

Burst Average Power (dBm)						
5.2GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
5.2GHz WLAN	802.11a 6Mbps	36	5180	19.50	19.50	22.50
		40	5200	19.50	19.50	22.50
		44	5220	19.50	19.50	22.50
		48	5240	19.50	19.50	22.50
	802.11n-HT20 MCS0	36	5180	18.50	18.50	21.50
		40	5200	19.00	19.00	22.00
		44	5220	18.50	18.50	21.50
		48	5240	19.00	19.00	22.00
	802.11n-HT40 MCS0	38	5190	19.00	19.00	22.00
		46	5230	19.00	19.00	22.00
	802.11ac-VHT20 MCS0	36	5180	19.00	19.00	22.00
		40	5200	19.00	19.00	22.00
		44	5220	18.50	18.50	21.50
		48	5240	19.00	19.00	22.00
	802.11ac-VHT40 MCS0	38	5190	19.00	19.00	22.00
		46	5230	19.00	19.00	22.00
	802.11ac-VHT80 MCS0	42	5210	18.50	18.50	21.50
	802.11ax-HE20 MCS0	36	5180	19.00	19.00	22.00
		40	5200	19.00	19.00	22.00
		44	5220	19.00	19.00	22.00
		48	5240	19.00	19.00	22.00
	802.11ax-HE40 MCS0	38	5190	19.00	19.00	22.00
		46	5230	19.00	19.00	22.00
	802.11ax-HE80 MCS0	42	5210	19.00	19.00	22.00
	802.11be-EHT20 MCS0	36	5180	19.00	19.00	22.00
		40	5200	19.00	19.00	22.00
		44	5220	19.00	19.00	22.00
		48	5240	19.00	19.00	22.00
802.11be-EHT40 MCS0	38	5190	19.00	19.00	22.00	
	46	5230	19.00	19.00	22.00	
802.11be-EHT80 MCS0	42	5210	19.00	19.00	22.00	



Burst Average Power (dBm)						
5.8GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
802.11a 6Mbps		149	5745	20.00	20.00	23.00
		157	5785	20.00	20.00	23.00
		165	5825	19.50	19.50	22.50
802.11n-HT20 MCS0		149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	15.50	15.50	18.50
802.11n-HT40 MCS0		151	5755	16.50	16.50	19.50
		159	5795	16.00	16.00	19.00
802.11ac-VHT20 MCS0		149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	15.50	15.50	18.50
802.11ac-VHT40 MCS0		151	5755	16.50	16.50	19.50
		159	5795	16.00	16.00	19.00
802.11ac-VHT80 MCS0		155	5775	16.00	16.00	19.00
802.11ax-HE20 MCS0		149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	15.50	15.50	18.50
802.11ax-HE40 MCS0		151	5755	16.50	16.50	19.50
		159	5795	16.50	16.50	19.50
802.11ax-HE80 MCS0		155	5775	16.50	16.50	19.50
802.11be-EHT20 MCS0		149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	15.50	15.50	18.50
802.11be-EHT40 MCS0		151	5755	16.50	16.50	19.50
		159	5795	16.50	16.50	19.50
802.11be-EHT80 MCS0		155	5775	16.50	16.50	19.50



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<2.4GHz WLAN>

Burst Average Power (dBm)						
2.4GHz WLAN	Transmit Antenna			SISO Ant 16	SISO Ant 7	MIMO Ant 16+7
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
	802.11b 1Mbps	1	2412	14.50	14.50	17.50
		6	2437	14.50	14.50	17.50
		11	2462	14.50	14.50	17.50
	802.11g 6Mbps	1	2412	14.50	14.50	17.50
		6	2437	14.50	14.50	17.50
		11	2462	14.50	14.50	17.50
	802.11n-HT20 MCS0	1	2412	14.50	14.50	17.50
		6	2437	14.50	14.50	17.50
		11	2462	14.50	14.50	17.50
	802.11n-HT40 MCS0	3	2422	14.50	14.50	17.50
		6	2437	14.50	14.50	17.50
		9	2452	14.50	14.50	17.50
	802.11ax-HE20 MCS0	1	2412	14.50	14.50	17.50
		6	2437	14.50	14.50	17.50
		11	2462	14.50	14.50	17.50
	802.11ax-HE40 MCS0	3	2422	14.50	14.50	17.50
		6	2437	14.50	14.50	17.50
		9	2452	14.50	14.50	17.50
	802.11be-EHT20 MCS0	1	2412	14.50	14.50	17.50
		6	2437	14.50	14.50	17.50
		11	2462	14.50	14.50	17.50
	802.11be-EHT40 MCS0	3	2422	14.50	14.50	17.50
		6	2437	14.50	14.50	17.50
		9	2452	14.50	14.50	17.50





<5GHz WLAN>

Burst Average Power (dBm)						
5.2GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
5.2GHz WLAN	802.11a 6Mbps	36	5180	19.50	19.50	22.50
		40	5200	19.50	19.50	22.50
		44	5220	19.50	19.50	22.50
		48	5240	19.50	19.50	22.50
	802.11n-HT20 MCS0	36	5180	18.50	18.50	21.50
		40	5200	19.00	19.00	22.00
		44	5220	18.50	18.50	21.50
		48	5240	19.00	19.00	22.00
	802.11n-HT40 MCS0	38	5190	19.00	19.00	22.00
		46	5230	19.00	19.00	22.00
	802.11ac-VHT20 MCS0	36	5180	19.00	19.00	22.00
		40	5200	19.00	19.00	22.00
		44	5220	18.50	18.50	21.50
		48	5240	19.00	19.00	22.00
	802.11ac-VHT40 MCS0	38	5190	19.00	19.00	22.00
		46	5230	19.00	19.00	22.00
	802.11ac-VHT80 MCS0	42	5210	18.50	18.50	21.50
	802.11ax-HE20 MCS0	36	5180	19.00	19.00	22.00
		40	5200	19.00	19.00	22.00
		44	5220	19.00	19.00	22.00
		48	5240	19.00	19.00	22.00
	802.11ax-HE40 MCS0	38	5190	19.00	19.00	22.00
		46	5230	19.00	19.00	22.00
	802.11ax-HE80 MCS0	42	5210	19.00	19.00	22.00
	802.11be-EHT20 MCS0	36	5180	19.00	19.00	22.00
		40	5200	19.00	19.00	22.00
		44	5220	19.00	19.00	22.00
		48	5240	19.00	19.00	22.00
802.11be-EHT40 MCS0	38	5190	19.00	19.00	22.00	
	46	5230	19.00	19.00	22.00	
802.11be-EHT80 MCS0	42	5210	19.00	19.00	22.00	



Burst Average Power (dBm)						
5.8GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
802.11a 6Mbps		149	5745	19.50	19.50	22.50
		157	5785	19.50	19.50	22.50
		165	5825	19.50	19.50	22.50
802.11n-HT20 MCS0		149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	15.50	15.50	18.50
802.11n-HT40 MCS0		151	5755	16.50	16.50	19.50
		159	5795	16.00	16.00	19.00
802.11ac-VHT20 MCS0		149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	15.50	15.50	18.50
802.11ac-VHT40 MCS0		151	5755	16.50	16.50	19.50
		159	5795	16.00	16.00	19.00
802.11ac-VHT80 MCS0		155	5775	16.00	16.00	19.00
802.11ax-HE20 MCS0		149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	15.50	15.50	18.50
802.11ax-HE40 MCS0		151	5755	16.50	16.50	19.50
		159	5795	16.50	16.50	19.50
802.11ax-HE80 MCS0		155	5775	16.50	16.50	19.50
802.11be-EHT20 MCS0		149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	15.50	15.50	18.50
802.11be-EHT40 MCS0		151	5755	16.50	16.50	19.50
		159	5795	16.50	16.50	19.50
802.11be-EHT80 MCS0		155	5775	16.50	16.50	19.50



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<2.4GHz WLAN>

Burst Average Power (dBm)						
2.4GHz WLAN	Transmit Antenna			SISO Ant 16	SISO Ant 7	MIMO Ant 16+7
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
2.4GHz WLAN	802.11b 1Mbps	1	2412	17.50	17.50	20.50
		6	2437	17.50	17.50	20.50
		11	2462	17.50	17.50	20.50
	802.11g 6Mbps	1	2412	17.50	17.50	20.50
		6	2437	17.50	17.50	20.50
		11	2462	17.50	17.50	20.50
	802.11n-HT20 MCS0	1	2412	17.50	17.50	20.50
		6	2437	17.50	17.50	20.50
		11	2462	17.50	17.50	20.50
	802.11n-HT40 MCS0	3	2422	17.50	17.50	20.50
		6	2437	17.00	17.00	20.00
		9	2452	17.00	17.00	20.00
	802.11ax-HE20 MCS0	1	2412	17.50	17.50	20.50
		6	2437	17.50	17.50	20.50
		11	2462	17.50	17.50	20.50
	802.11ax-HE40 MCS0	3	2422	17.50	17.50	20.50
		6	2437	17.00	17.00	20.00
		9	2452	17.50	17.50	20.50
	802.11be-EHT20 MCS0	1	2412	17.50	17.50	20.50
		6	2437	17.50	17.50	20.50
		11	2462	17.50	17.50	20.50
	802.11be-EHT40 MCS0	3	2422	17.50	17.50	20.50
		6	2437	17.00	17.00	20.00
		9	2452	17.50	17.50	20.50



<5GHz WLAN>

Burst Average Power (dBm)						
5.2GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
	802.11a 6Mbps	36	5180	19.50	19.50	22.50
		40	5200	19.50	19.50	22.50
		44	5220	19.50	19.50	22.50
		48	5240	19.50	19.50	22.50
	802.11n-HT20 MCS0	36	5180	18.50	18.50	21.50
		40	5200	19.00	19.00	22.00
		44	5220	18.50	18.50	21.50
		48	5240	19.00	19.00	22.00
	802.11n-HT40 MCS0	38	5190	19.00	19.00	22.00
		46	5230	19.00	19.00	22.00
	802.11ac-VHT20 MCS0	36	5180	19.00	19.00	22.00
		40	5200	19.00	19.00	22.00
		44	5220	18.50	18.50	21.50
		48	5240	19.00	19.00	22.00
	802.11ac-VHT40 MCS0	38	5190	19.00	19.00	22.00
		46	5230	19.00	19.00	22.00
	802.11ac-VHT80 MCS0	42	5210	18.50	18.50	21.50
	802.11ax-HE20 MCS0	36	5180	19.00	19.00	22.00
		40	5200	19.00	19.00	22.00
		44	5220	19.00	19.00	22.00
48		5240	19.00	19.00	22.00	
802.11ax-HE40 MCS0	38	5190	19.00	19.00	22.00	
	46	5230	19.00	19.00	22.00	
802.11ax-HE80 MCS0	42	5210	19.00	19.00	22.00	
802.11be-EHT20 MCS0	36	5180	19.00	19.00	22.00	
	40	5200	19.00	19.00	22.00	
	44	5220	19.00	19.00	22.00	
	48	5240	19.00	19.00	22.00	
802.11be-EHT40 MCS0	38	5190	19.00	19.00	22.00	
	46	5230	19.00	19.00	22.00	
802.11be-EHT80 MCS0	42	5210	19.00	19.00	22.00	



Burst Average Power (dBm)						
5.3GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
5.3GHz WLAN	802.11a 6Mbps	52	5260	19.00	19.00	22.00
		56	5280	19.00	19.00	22.00
		60	5300	19.00	19.00	22.00
		64	5320	19.00	19.00	22.00
	802.11n-HT20 MCS0	52	5260	18.00	18.00	21.00
		56	5280	18.00	18.00	21.00
		60	5300	18.00	18.00	21.00
		64	5320	18.00	18.00	21.00
	802.11n-HT40 MCS0	54	5270	18.50	18.50	21.50
		62	5310	18.00	18.00	21.00
	802.11ac-VHT20 MCS0	52	5260	18.50	18.50	21.50
		56	5280	18.00	18.00	21.00
		60	5300	18.00	18.00	21.00
		64	5320	18.00	18.00	21.00
	802.11ac-VHT40 MCS0	54	5270	18.50	18.50	21.50
		62	5310	18.00	18.00	21.00
	802.11ac-VHT80 MCS0	58	5290	17.00	17.00	20.00
	802.11ac-VHT160 MCS0	50	5250	14.50	14.50	17.50
	802.11ax-HE20 MCS0	52	5260	18.50	18.50	21.50
		56	5280	18.50	18.50	21.50
		60	5300	18.50	18.50	21.50
		64	5320	18.00	18.00	21.00
	802.11ax-HE40 MCS0	54	5270	18.50	18.50	21.50
		62	5310	18.00	18.00	21.00
	802.11ax-HE80 MCS0	58	5290	17.00	17.00	20.00
	802.11ax-HE160 MCS0	50	5250	14.50	14.50	17.50
	802.11be-EHT20 MCS0	52	5260	18.50	18.50	21.50
		56	5280	18.50	18.50	21.50
60		5300	18.50	18.50	21.50	
64		5320	18.50	18.50	21.50	
802.11be-EHT40 MCS0	54	5270	18.50	18.50	21.50	
	62	5310	18.00	18.00	21.00	
802.11be-EHT80 MCS0	58	5290	17.50	17.50	20.50	
802.11be-EHT160 MCS0	50	5250	14.50	14.50	17.50	



Burst Average Power (dBm)						
5.5GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
802.11a 6Mbps		100	5500	18.50	18.50	21.50
		116	5580	18.50	18.50	21.50
		124	5620	18.50	18.50	21.50
		132	5660	18.50	18.50	21.50
		140	5700	18.50	18.50	21.50
802.11n-HT20 MCS0		144	5720	18.50	18.50	21.50
		100	5500	17.00	17.00	20.00
		116	5580	17.00	17.00	20.00
		124	5620	17.00	17.00	20.00
		132	5660	17.00	17.00	20.00
802.11n-HT40 MCS0		140	5700	17.00	17.00	20.00
		102	5510	17.50	17.50	20.50
		110	5550	17.50	17.50	20.50
		126	5630	17.00	17.00	20.00
		134	5670	17.50	17.50	20.50
802.11ac-VHT20 MCS0		142	5710	17.00	17.00	20.00
		100	5500	17.00	17.00	20.00
		116	5580	17.00	17.00	20.00
		124	5620	17.00	17.00	20.00
		132	5660	17.00	17.00	20.00
802.11ac-VHT40 MCS0		140	5700	17.00	17.00	20.00
		144	5720	17.00	17.00	20.00
		102	5510	17.50	17.50	20.50
		110	5550	17.50	17.50	20.50
		126	5630	17.00	17.00	20.00
802.11ac-VHT80 MCS0		134	5670	17.50	17.50	20.50
		142	5710	17.00	17.00	20.00
		106	5530	17.50	17.50	20.50
		122	5610	17.00	17.00	20.00
802.11ac-VHT160 MCS0		138	5690	17.50	17.50	20.50
		114	5570	17.00	17.00	20.00
		100	5500	17.00	17.00	20.00
802.11ax-HE20 MCS0		116	5580	17.00	17.00	20.00
		124	5620	17.00	17.00	20.00
		132	5660	17.00	17.00	20.00
		140	5700	17.00	17.00	20.00
		144	5720	17.00	17.00	20.00
802.11ax-HE40 MCS0		102	5510	17.50	17.50	20.50
		110	5550	17.50	17.50	20.50
		126	5630	17.00	17.00	20.00
		134	5670	17.50	17.50	20.50
		142	5710	17.00	17.00	20.00
802.11ax-HE80 MCS0		106	5530	17.50	17.50	20.50
		122	5610	17.00	17.00	20.00
		138	5690	17.50	17.50	20.50
802.11ax-HE160 MCS0		114	5570	17.00	17.00	20.00
802.11be-EHT20 MCS0		100	5500	17.50	17.50	20.50
		116	5580	17.00	17.00	20.00
		124	5620	17.00	17.00	20.00
		132	5660	17.00	17.00	20.00



		140	5700	17.00	17.00	20.00
		144	5720	17.00	17.00	20.00
	802.11be-EHT40 MCS0	102	5510	17.50	17.50	20.50
		110	5550	17.50	17.50	20.50
		126	5630	17.50	17.50	20.50
		134	5670	17.50	17.50	20.50
		142	5710	17.50	17.50	20.50
		106	5530	17.50	17.50	20.50
	802.11be-EHT80 MCS0	122	5610	17.00	17.00	20.00
		138	5690	17.50	17.50	20.50
		114	5570	17.00	17.00	20.00
	802.11be-EHT160 MCS0					

Burst Average Power (dBm)						
	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
5.8GHz WLAN	802.11a 6Mbps	149	5745	20.00	20.00	23.00
		157	5785	20.00	20.00	23.00
		165	5825	19.50	19.50	22.50
	802.11n-HT20 MCS0	149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	15.50	15.50	18.50
	802.11n-HT40 MCS0	151	5755	16.50	16.50	19.50
		159	5795	16.00	16.00	19.00
	802.11ac-VHT20 MCS0	149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	15.50	15.50	18.50
	802.11ac-VHT40 MCS0	151	5755	16.50	16.50	19.50
		159	5795	16.00	16.00	19.00
	802.11ac-VHT80 MCS0	155	5775	16.00	16.00	19.00
	802.11ax-HE20 MCS0	149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	15.50	15.50	18.50
	802.11ax-HE40 MCS0	151	5755	16.50	16.50	19.50
		159	5795	16.50	16.50	19.50
	802.11ax-HE80 MCS0	155	5775	16.50	16.50	19.50
	802.11be-EHT20 MCS0	149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	15.50	15.50	18.50
	802.11be-EHT40 MCS0	151	5755	16.50	16.50	19.50
		159	5795	16.50	16.50	19.50
	802.11be-EHT80 MCS0	155	5775	16.50	16.50	19.50



Burst Average Power (dBm)						
Transmit Antenna				SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
WIFI 6E	802.11a 6Mbps	1	5955	10.00	10.00	13.00
		57	6235	10.00	10.00	13.00
		113	6515	11.00	11.00	14.00
		173	6815	11.00	11.00	14.00
		229	7095	11.00	11.00	14.00
	802.11ax-HE20 MCS0	1	5955	10.00	10.00	13.00
		57	6235	10.00	10.00	13.00
		113	6515	11.00	11.00	14.00
		173	6815	11.00	11.00	14.00
		229	7095	11.00	11.00	14.00
	802.11ax-HE40 MCS0	3	5965	10.00	10.00	13.00
		59	6245	10.00	10.00	13.00
		107	6485	11.00	11.00	14.00
		171	6805	11.00	11.00	14.00
		227	7085	11.00	11.00	14.00
	802.11ax-HE80 MCS0	7	5985	10.00	10.00	13.00
		71	6305	10.00	10.00	13.00
		119	6545	11.00	11.00	14.00
		167	6785	11.00	11.00	14.00
		215	7025	11.00	11.00	14.00
	802.11ax-HE160 MCS0	15	6025	10.00	10.00	13.00
		47	6185	10.00	10.00	13.00
		111	6505	11.00	11.00	14.00
		143	6665	11.00	11.00	14.00
		207	6985	11.00	11.00	14.00
	802.11be-EHT20 MCS0	1	5955	10.00	10.00	13.00
		57	6235	10.00	10.00	13.00
		113	6515	11.00	11.00	14.00
		173	6815	11.00	11.00	14.00
		229	7095	11.00	11.00	14.00
	802.11be-EHT40 MCS0	3	5965	10.00	10.00	13.00
		59	6245	10.00	10.00	13.00
		107	6485	11.00	11.00	14.00
		171	6805	11.00	11.00	14.00
		227	7085	11.00	11.00	14.00
	802.11be-EHT80 MCS0	7	5985	10.00	10.00	13.00
		71	6305	10.00	10.00	13.00
		119	6545	11.00	11.00	14.00
		167	6785	11.00	11.00	14.00
		215	7025	11.00	11.00	14.00
	802.11be-EHT160 MCS0	15	6025	10.00	10.00	13.00
		47	6185	10.00	10.00	13.00
		111	6505	11.00	11.00	14.00
		143	6665	11.00	11.00	14.00
		207	6985	11.00	11.00	14.00
	802.11be-EHT320 MCS0	31	6105	10.00	10.00	13.00
		63	6265	10.00	10.00	13.00
		95	6425	10.00	10.00	13.00
		127	6585	11.00	11.00	14.00
		159	6745	11.00	11.00	14.00
		191	6905	11.00	11.00	14.00





< Power index 7 >

<2.4GHz WLAN>

Burst Average Power (dBm)						
2.4GHz WLAN	Transmit Antenna			SISO Ant 16	SISO Ant 7	MIMO Ant 16+7
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
2.4GHz WLAN	802.11b 1Mbps	1	2412	17.50	17.50	20.50
		6	2437	17.50	17.50	20.50
		11	2462	17.50	17.50	20.50
	802.11g 6Mbps	1	2412	17.50	17.50	20.50
		6	2437	17.50	17.50	20.50
		11	2462	17.50	17.50	20.50
	802.11n-HT20 MCS0	1	2412	17.50	17.50	20.50
		6	2437	17.50	17.50	20.50
		11	2462	17.50	17.50	20.50
	802.11n-HT40 MCS0	3	2422	17.50	17.50	20.50
		6	2437	17.00	17.00	20.00
		9	2452	17.00	17.00	20.00
	802.11ax-HE20 MCS0	1	2412	17.50	17.50	20.50
		6	2437	17.50	17.50	20.50
		11	2462	17.50	17.50	20.50
	802.11ax-HE40 MCS0	3	2422	17.50	17.50	20.50
		6	2437	17.00	17.00	20.00
		9	2452	17.50	17.50	20.50
	802.11be-EHT20 MCS0	1	2412	17.50	17.50	20.50
		6	2437	17.50	17.50	20.50
		11	2462	17.50	17.50	20.50
	802.11be-EHT40 MCS0	3	2422	17.50	17.50	20.50
		6	2437	17.00	17.00	20.00
		9	2452	17.50	17.50	20.50



<5GHz WLAN>

Burst Average Power (dBm)						
5.2GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
	802.11a 6Mbps	36	5180	19.50	19.50	22.50
		40	5200	19.50	19.50	22.50
		44	5220	19.50	19.50	22.50
		48	5240	19.50	19.50	22.50
	802.11n-HT20 MCS0	36	5180	18.50	18.50	21.50
		40	5200	19.00	19.00	22.00
		44	5220	18.50	18.50	21.50
		48	5240	19.00	19.00	22.00
	802.11n-HT40 MCS0	38	5190	19.00	19.00	22.00
		46	5230	19.00	19.00	22.00
	802.11ac-VHT20 MCS0	36	5180	19.00	19.00	22.00
		40	5200	19.00	19.00	22.00
		44	5220	18.50	18.50	21.50
		48	5240	19.00	19.00	22.00
	802.11ac-VHT40 MCS0	38	5190	19.00	19.00	22.00
		46	5230	19.00	19.00	22.00
	802.11ac-VHT80 MCS0	42	5210	18.50	18.50	21.50
	802.11ax-HE20 MCS0	36	5180	19.00	19.00	22.00
		40	5200	19.00	19.00	22.00
		44	5220	19.00	19.00	22.00
48		5240	19.00	19.00	22.00	
802.11ax-HE40 MCS0	38	5190	19.00	19.00	22.00	
	46	5230	19.00	19.00	22.00	
802.11ax-HE80 MCS0	42	5210	19.00	19.00	22.00	
802.11be-EHT20 MCS0	36	5180	19.00	19.00	22.00	
	40	5200	19.00	19.00	22.00	
	44	5220	19.00	19.00	22.00	
	48	5240	19.00	19.00	22.00	
802.11be-EHT40 MCS0	38	5190	19.00	19.00	22.00	
	46	5230	19.00	19.00	22.00	
802.11be-EHT80 MCS0	42	5210	19.00	19.00	22.00	



Burst Average Power (dBm)						
5.3GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
5.3GHz WLAN	802.11a 6Mbps	52	5260	19.50	19.50	22.50
		56	5280	19.50	19.50	22.50
		60	5300	19.50	19.50	22.50
		64	5320	19.50	19.50	22.50
	802.11n-HT20 MCS0	52	5260	18.00	18.00	21.00
		56	5280	18.00	18.00	21.00
		60	5300	18.00	18.00	21.00
		64	5320	18.00	18.00	21.00
	802.11n-HT40 MCS0	54	5270	18.50	18.50	21.50
		62	5310	18.50	18.50	21.50
	802.11ac-VHT20 MCS0	52	5260	18.50	18.50	21.50
		56	5280	18.00	18.00	21.00
		60	5300	18.00	18.00	21.00
		64	5320	18.00	18.00	21.00
	802.11ac-VHT40 MCS0	54	5270	18.50	18.50	21.50
		62	5310	18.50	18.50	21.50
	802.11ac-VHT80 MCS0	58	5290	18.50	18.50	21.50
	802.11ac-VHT160 MCS0	50	5250	18.50	18.50	21.50
	802.11ax-HE20 MCS0	52	5260	18.50	18.50	21.50
		56	5280	18.50	18.50	21.50
		60	5300	18.50	18.50	21.50
		64	5320	18.00	18.00	21.00
	802.11ax-HE40 MCS0	54	5270	18.50	18.50	21.50
		62	5310	18.50	18.50	21.50
	802.11ax-HE80 MCS0	58	5290	18.50	18.50	21.50
	802.11ax-HE160 MCS0	50	5250	18.50	18.50	21.50
	802.11be-EHT20 MCS0	52	5260	18.50	18.50	21.50
		56	5280	18.50	18.50	21.50
60		5300	18.50	18.50	21.50	
64		5320	18.50	18.50	21.50	
802.11be-EHT40 MCS0	54	5270	18.50	18.50	21.50	
	62	5310	18.50	18.50	21.50	
802.11be-EHT80 MCS0	58	5290	18.50	18.50	21.50	
802.11be-EHT160 MCS0	50	5250	19.00	19.00	22.00	



Burst Average Power (dBm)						
5.5GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
802.11a 6Mbps		100	5500	18.50	18.50	21.50
		116	5580	18.50	18.50	21.50
		124	5620	18.50	18.50	21.50
		132	5660	18.50	18.50	21.50
		140	5700	18.50	18.50	21.50
802.11n-HT20 MCS0		144	5720	18.50	18.50	21.50
		100	5500	17.00	17.00	20.00
		116	5580	17.00	17.00	20.00
		124	5620	17.00	17.00	20.00
		132	5660	17.00	17.00	20.00
802.11n-HT40 MCS0		140	5700	17.00	17.00	20.00
		102	5510	17.50	17.50	20.50
		110	5550	17.50	17.50	20.50
		126	5630	17.00	17.00	20.00
		134	5670	17.50	17.50	20.50
802.11ac-VHT20 MCS0		142	5710	17.00	17.00	20.00
		100	5500	17.00	17.00	20.00
		116	5580	17.00	17.00	20.00
		124	5620	17.00	17.00	20.00
		132	5660	17.00	17.00	20.00
802.11ac-VHT40 MCS0		140	5700	17.00	17.00	20.00
		102	5510	17.50	17.50	20.50
		110	5550	17.50	17.50	20.50
		126	5630	17.00	17.00	20.00
		134	5670	17.50	17.50	20.50
802.11ac-VHT80 MCS0		142	5710	17.00	17.00	20.00
		106	5530	17.50	17.50	20.50
		122	5610	17.00	17.00	20.00
802.11ac-VHT160 MCS0		138	5690	17.50	17.50	20.50
		114	5570	17.00	17.00	20.00
802.11ax-HE20 MCS0		100	5500	17.00	17.00	20.00
		116	5580	17.00	17.00	20.00
		124	5620	17.00	17.00	20.00
		132	5660	17.00	17.00	20.00
		140	5700	17.00	17.00	20.00
802.11ax-HE40 MCS0		144	5720	17.00	17.00	20.00
		102	5510	17.50	17.50	20.50
		110	5550	17.50	17.50	20.50
		126	5630	17.00	17.00	20.00
		134	5670	17.50	17.50	20.50
802.11ax-HE80 MCS0		142	5710	17.00	17.00	20.00
		106	5530	17.50	17.50	20.50
		122	5610	17.00	17.00	20.00
802.11ax-HE160 MCS0		138	5690	17.50	17.50	20.50
		114	5570	17.00	17.00	20.00
802.11be-EHT20 MCS0		100	5500	17.50	17.50	20.50
		116	5580	17.00	17.00	20.00
		124	5620	17.00	17.00	20.00
		132	5660	17.00	17.00	20.00



		140	5700	17.00	17.00	20.00
		144	5720	17.00	17.00	20.00
	802.11be-EHT40 MCS0	102	5510	17.50	17.50	20.50
		110	5550	17.50	17.50	20.50
		126	5630	17.50	17.50	20.50
		134	5670	17.50	17.50	20.50
		142	5710	17.50	17.50	20.50
		106	5530	17.50	17.50	20.50
	802.11be-EHT80 MCS0	122	5610	17.00	17.00	20.00
		138	5690	17.50	17.50	20.50
		114	5570	17.00	17.00	20.00
	802.11be-EHT160 MCS0					

Burst Average Power (dBm)						
Transmit Antenna				SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
5.8GHz WLAN	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
	802.11a 6Mbps		149	5745	19.50	19.50
157			5785	19.50	19.50	22.50
165			5825	19.50	19.50	22.50
802.11n-HT20 MCS0		149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	15.50	15.50	18.50
802.11n-HT40 MCS0		151	5755	16.50	16.50	19.50
		159	5795	16.00	16.00	19.00
802.11ac-VHT20 MCS0		149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	15.50	15.50	18.50
802.11ac-VHT40 MCS0		151	5755	16.50	16.50	19.50
		159	5795	16.00	16.00	19.00
802.11ac-VHT80 MCS0		155	5775	16.00	16.00	19.00
802.11ax-HE20 MCS0		149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	15.50	15.50	18.50
802.11ax-HE40 MCS0		151	5755	16.50	16.50	19.50
		159	5795	16.50	16.50	19.50
802.11ax-HE80 MCS0		155	5775	16.50	16.50	19.50
802.11be-EHT20 MCS0		149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	15.50	15.50	18.50
802.11be-EHT40 MCS0		151	5755	16.50	16.50	19.50
		159	5795	16.50	16.50	19.50
802.11be-EHT80 MCS0		155	5775	16.50	16.50	19.50



Burst Average Power (dBm)						
Transmit Antenna				SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
WIFI 6E	802.11a 6Mbps	1	5955	10.00	10.00	13.00
		57	6235	10.00	10.00	13.00
		113	6515	11.00	11.00	14.00
		173	6815	11.00	11.00	14.00
		229	7095	11.00	11.00	14.00
	802.11ax-HE20 MCS0	1	5955	10.00	10.00	13.00
		57	6235	10.00	10.00	13.00
		113	6515	11.00	11.00	14.00
		173	6815	11.00	11.00	14.00
		229	7095	11.00	11.00	14.00
	802.11ax-HE40 MCS0	3	5965	10.00	10.00	13.00
		59	6245	10.00	10.00	13.00
		107	6485	11.00	11.00	14.00
		171	6805	11.00	11.00	14.00
		227	7085	11.00	11.00	14.00
	802.11ax-HE80 MCS0	7	5985	10.00	10.00	13.00
		71	6305	10.00	10.00	13.00
		119	6545	11.00	11.00	14.00
		167	6785	11.00	11.00	14.00
		215	7025	11.00	11.00	14.00
	802.11ax-HE160 MCS0	15	6025	10.00	10.00	13.00
		47	6185	10.00	10.00	13.00
		111	6505	11.00	11.00	14.00
		143	6665	11.00	11.00	14.00
		207	6985	11.00	11.00	14.00
	802.11be-EHT20 MCS0	1	5955	10.00	10.00	13.00
		57	6235	10.00	10.00	13.00
		113	6515	11.00	11.00	14.00
		173	6815	11.00	11.00	14.00
		229	7095	11.00	11.00	14.00
	802.11be-EHT40 MCS0	3	5965	10.00	10.00	13.00
		59	6245	10.00	10.00	13.00
		107	6485	11.00	11.00	14.00
		171	6805	11.00	11.00	14.00
		227	7085	11.00	11.00	14.00
	802.11be-EHT80 MCS0	7	5985	10.00	10.00	13.00
		71	6305	10.00	10.00	13.00
		119	6545	11.00	11.00	14.00
		167	6785	11.00	11.00	14.00
		215	7025	11.00	11.00	14.00
	802.11be-EHT160 MCS0	15	6025	10.00	10.00	13.00
		47	6185	10.00	10.00	13.00
		111	6505	11.00	11.00	14.00
		143	6665	11.00	11.00	14.00
		207	6985	11.00	11.00	14.00
	802.11be-EHT320 MCS0	31	6105	10.00	10.00	13.00
		63	6265	10.00	10.00	13.00
		95	6425	10.00	10.00	13.00
		127	6585	11.00	11.00	14.00
		159	6745	11.00	11.00	14.00
191		6905	11.00	11.00	14.00	



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<2.4GHz WLAN>

Burst Average Power (dBm)						
2.4GHz WLAN	Transmit Antenna			SISO Ant 16	SISO Ant 7	MIMO Ant 16+7
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
	802.11b 1Mbps	1	2412	14.00	14.00	17.00
		6	2437	14.00	14.00	17.00
		11	2462	14.00	14.00	17.00
	802.11g 6Mbps	1	2412	14.00	14.00	17.00
		6	2437	14.00	14.00	17.00
		11	2462	14.00	14.00	17.00
	802.11n-HT20 MCS0	1	2412	14.00	14.00	17.00
		6	2437	14.00	14.00	17.00
		11	2462	14.00	14.00	17.00
	802.11n-HT40 MCS0	3	2422	14.00	14.00	17.00
		6	2437	14.00	14.00	17.00
		9	2452	14.00	14.00	17.00
	802.11ax-HE20 MCS0	1	2412	14.00	14.00	17.00
		6	2437	14.00	14.00	17.00
		11	2462	14.00	14.00	17.00
	802.11ax-HE40 MCS0	3	2422	14.00	14.00	17.00
		6	2437	14.00	14.00	17.00
		9	2452	14.00	14.00	17.00
	802.11be-EHT20 MCS0	1	2412	14.00	14.00	17.00
		6	2437	14.00	14.00	17.00
		11	2462	14.00	14.00	17.00
802.11be-EHT40 MCS0	3	2422	14.00	14.00	17.00	
	6	2437	14.00	14.00	17.00	
	9	2452	14.00	14.00	17.00	



<5GHz WLAN>

Burst Average Power (dBm)						
5.2GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
	802.11a 6Mbps	36	5180	16.50	16.50	19.50
		40	5200	16.50	16.50	19.50
		44	5220	16.50	16.50	19.50
		48	5240	16.50	16.50	19.50
	802.11n-HT20 MCS0	36	5180	16.50	16.50	19.50
		40	5200	16.50	16.50	19.50
		44	5220	16.50	16.50	19.50
		48	5240	16.50	16.50	19.50
	802.11n-HT40 MCS0	38	5190	16.50	16.50	19.50
		46	5230	16.50	16.50	19.50
	802.11ac-VHT20 MCS0	36	5180	16.50	16.50	19.50
		40	5200	16.50	16.50	19.50
		44	5220	16.50	16.50	19.50
		48	5240	16.50	16.50	19.50
	802.11ac-VHT40 MCS0	38	5190	16.50	16.50	19.50
		46	5230	16.50	16.50	19.50
	802.11ac-VHT80 MCS0	42	5210	15.50	15.50	18.50
	802.11ax-HE20 MCS0	36	5180	16.50	16.50	19.50
		40	5200	16.50	16.50	19.50
		44	5220	16.50	16.50	19.50
48		5240	16.50	16.50	19.50	
802.11ax-HE40 MCS0	38	5190	16.50	16.50	19.50	
	46	5230	16.50	16.50	19.50	
802.11ax-HE80 MCS0	42	5210	15.50	15.50	18.50	
802.11be-EHT20 MCS0	36	5180	16.50	16.50	19.50	
	40	5200	16.50	16.50	19.50	
	44	5220	16.50	16.50	19.50	
	48	5240	16.50	16.50	19.50	
802.11be-EHT40 MCS0	38	5190	16.50	16.50	19.50	
	46	5230	16.50	16.50	19.50	
802.11be-EHT80 MCS0	42	5210	16.00	16.00	19.00	





Burst Average Power (dBm)						
5.3GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
5.3GHz WLAN	802.11a 6Mbps	52	5260	16.50	16.50	19.50
		56	5280	16.50	16.50	19.50
		60	5300	16.50	16.50	19.50
		64	5320	16.50	16.50	19.50
	802.11n-HT20 MCS0	52	5260	16.50	16.50	19.50
		56	5280	16.50	16.50	19.50
		60	5300	16.50	16.50	19.50
		64	5320	16.50	16.50	19.50
	802.11n-HT40 MCS0	54	5270	16.50	16.50	19.50
		62	5310	16.50	16.50	19.50
	802.11ac-VHT20 MCS0	52	5260	16.50	16.50	19.50
		56	5280	16.50	16.50	19.50
		60	5300	16.50	16.50	19.50
		64	5320	16.50	16.50	19.50
	802.11ac-VHT40 MCS0	54	5270	16.50	16.50	19.50
		62	5310	16.50	16.50	19.50
	802.11ac-VHT80 MCS0	58	5290	16.50	16.50	19.50
	802.11ac-VHT160 MCS0	50	5250	14.50	14.50	17.50
	802.11ax-HE20 MCS0	52	5260	16.50	16.50	19.50
		56	5280	16.50	16.50	19.50
		60	5300	16.50	16.50	19.50
		64	5320	16.50	16.50	19.50
	802.11ax-HE40 MCS0	54	5270	16.50	16.50	19.50
		62	5310	16.50	16.50	19.50
	802.11ax-HE80 MCS0	58	5290	16.50	16.50	19.50
	802.11ax-HE160 MCS0	50	5250	14.50	14.50	17.50
	802.11be-EHT20 MCS0	52	5260	16.50	16.50	19.50
		56	5280	16.50	16.50	19.50
60		5300	16.50	16.50	19.50	
64		5320	16.50	16.50	19.50	
802.11be-EHT40 MCS0	54	5270	16.50	16.50	19.50	
	62	5310	16.50	16.50	19.50	
802.11be-EHT80 MCS0	58	5290	16.50	16.50	19.50	
802.11be-EHT160 MCS0	50	5250	14.50	14.50	17.50	



Burst Average Power (dBm)						
5.5GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
802.11a 6Mbps		100	5500	17.50	17.50	20.50
		116	5580	17.50	17.50	20.50
		124	5620	17.50	17.50	20.50
		132	5660	17.50	17.50	20.50
		144	5720	17.50	17.50	20.50
802.11n-HT20 MCS0		100	5500	17.00	17.00	20.00
		116	5580	17.00	17.00	20.00
		124	5620	17.00	17.00	20.00
		132	5660	17.00	17.00	20.00
		144	5720	17.00	17.00	20.00
802.11n-HT40 MCS0		102	5510	17.50	17.50	20.50
		110	5550	17.50	17.50	20.50
		126	5630	17.00	17.00	20.00
		134	5670	17.50	17.50	20.50
		142	5710	17.00	17.00	20.00
802.11ac-VHT20 MCS0		100	5500	17.00	17.00	20.00
		116	5580	17.00	17.00	20.00
		124	5620	17.00	17.00	20.00
		132	5660	17.00	17.00	20.00
		144	5720	17.00	17.00	20.00
802.11ac-VHT40 MCS0		102	5510	17.50	17.50	20.50
		110	5550	17.50	17.50	20.50
		126	5630	17.00	17.00	20.00
		134	5670	17.50	17.50	20.50
		142	5710	17.00	17.00	20.00
802.11ac-VHT80 MCS0		106	5530	17.50	17.50	20.50
		122	5610	17.00	17.00	20.00
		138	5690	17.50	17.50	20.50
802.11ac-VHT160 MCS0		114	5570	14.50	14.50	17.50
802.11ax-HE20 MCS0		100	5500	17.00	17.00	20.00
		116	5580	17.00	17.00	20.00
		124	5620	17.00	17.00	20.00
		132	5660	17.00	17.00	20.00
		144	5720	17.00	17.00	20.00
802.11ax-HE40 MCS0		102	5510	17.50	17.50	20.50
		110	5550	17.50	17.50	20.50
		126	5630	17.00	17.00	20.00
		134	5670	17.50	17.50	20.50
		142	5710	17.00	17.00	20.00
802.11ax-HE80 MCS0		106	5530	17.00	17.00	20.00
		122	5610	17.00	17.00	20.00
		138	5690	17.50	17.50	20.50
802.11ax-HE160 MCS0		114	5570	14.50	14.50	17.50
802.11be-EHT20 MCS0		100	5500	17.50	17.50	20.50
		116	5580	17.00	17.00	20.00
		124	5620	17.00	17.00	20.00
		132	5660	17.00	17.00	20.00
		144	5720	17.00	17.00	20.00
802.11be-EHT40 MCS0		102	5510	17.50	17.50	20.50
		110	5550	17.50	17.50	20.50
		126	5630	17.50	17.50	20.50



		134	5670	17.50	17.50	20.50
		142	5710	17.50	17.50	20.50
	802.11be-EHT80 MCS0	106	5530	17.00	17.00	20.00
		122	5610	17.00	17.00	20.00
		138	5690	17.50	17.50	20.50
	802.11be-EHT160 MCS0	114	5570	14.50	14.50	17.50

Burst Average Power (dBm)						
Transmit Antenna				SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
	5.8GHz WLAN	802.11a 6Mbps	149	5745	16.00	16.00
157			5785	16.00	16.00	19.00
165			5825	16.00	16.00	19.00
802.11n-HT20 MCS0		149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	16.00	16.00	19.00
802.11n-HT40 MCS0		151	5755	16.00	16.00	19.00
		159	5795	16.00	16.00	19.00
802.11ac-VHT20 MCS0		149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	16.00	16.00	19.00
802.11ac-VHT40 MCS0		151	5755	16.00	16.00	19.00
		159	5795	16.00	16.00	19.00
802.11ac-VHT80 MCS0		155	5775	16.00	16.00	19.00
802.11ax-HE20 MCS0		149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	16.00	16.00	19.00
802.11ax-HE40 MCS0		151	5755	16.00	16.00	19.00
		159	5795	16.00	16.00	19.00
802.11ax-HE80 MCS0		155	5775	16.00	16.00	19.00
802.11be-EHT20 MCS0		149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	16.00	16.00	19.00
802.11be-EHT40 MCS0		151	5755	16.00	16.00	19.00
		159	5795	16.00	16.00	19.00
802.11be-EHT80 MCS0		155	5775	16.00	16.00	19.00



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<2.4GHz WLAN>

Burst Average Power (dBm)						
2.4GHz WLAN	Transmit Antenna			SISO Ant 16	SISO Ant 7	MIMO Ant 16+7
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
	802.11b 1Mbps	1	2412	19.50	19.50	22.50
		6	2437	19.00	19.00	22.00
		11	2462	20.00	20.00	23.00
	802.11g 6Mbps	1	2412	19.00	19.00	22.00
		6	2437	19.00	19.00	22.00
		11	2462	19.50	19.50	22.50
	802.11n-HT20 MCS0	1	2412	18.00	18.00	21.00
		6	2437	18.00	18.00	21.00
		11	2462	18.50	18.50	21.50
	802.11n-HT40 MCS0	3	2422	17.50	17.50	20.50
		6	2437	17.00	17.00	20.00
		9	2452	17.00	17.00	20.00
	802.11ax-HE20 MCS0	1	2412	18.00	18.00	21.00
		6	2437	18.00	18.00	21.00
		11	2462	18.50	18.50	21.50
	802.11ax-HE40 MCS0	3	2422	17.50	17.50	20.50
		6	2437	17.00	17.00	20.00
		9	2452	17.50	17.50	20.50
	802.11be-EHT20 MCS0	1	2412	18.00	18.00	21.00
		6	2437	18.00	18.00	21.00
		11	2462	18.50	18.50	21.50
802.11be-EHT40 MCS0	3	2422	17.50	17.50	20.50	
	6	2437	17.00	17.00	20.00	
	9	2452	17.50	17.50	20.50	



<5GHz WLAN>

Burst Average Power (dBm)						
5.2GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
	802.11a 6Mbps	36	5180	18.50	18.50	21.50
		40	5200	18.50	18.50	21.50
		44	5220	18.50	18.50	21.50
		48	5240	18.50	18.50	21.50
	802.11n-HT20 MCS0	36	5180	18.50	18.50	21.50
		40	5200	19.00	19.00	22.00
		44	5220	18.50	18.50	21.50
	802.11n-HT40 MCS0	38	5190	17.50	17.50	20.50
		46	5230	19.00	19.00	22.00
	802.11ac-VHT20 MCS0	36	5180	19.00	19.00	22.00
		40	5200	19.00	19.00	22.00
		44	5220	18.50	18.50	21.50
		48	5240	19.00	19.00	22.00
	802.11ac-VHT40 MCS0	38	5190	17.50	17.50	20.50
		46	5230	19.00	19.00	22.00
	802.11ac-VHT80 MCS0	42	5210	15.50	15.50	18.50
	802.11ax-HE20 MCS0	36	5180	19.00	19.00	22.00
		40	5200	19.00	19.00	22.00
		44	5220	19.00	19.00	22.00
		48	5240	19.00	19.00	22.00
802.11ax-HE40 MCS0	38	5190	17.50	17.50	20.50	
	46	5230	19.00	19.00	22.00	
802.11ax-HE80 MCS0	42	5210	15.50	15.50	18.50	
802.11be-EHT20 MCS0	36	5180	19.00	19.00	22.00	
	40	5200	19.00	19.00	22.00	
	44	5220	19.00	19.00	22.00	
	48	5240	19.00	19.00	22.00	
802.11be-EHT40 MCS0	38	5190	17.00	17.00	20.00	
	46	5230	19.00	19.00	22.00	
802.11be-EHT80 MCS0	42	5210	16.00	16.00	19.00	



Burst Average Power (dBm)						
5.3GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
5.3GHz WLAN	802.11a 6Mbps	52	5260	19.00	19.00	22.00
		56	5280	19.00	19.00	22.00
		60	5300	19.00	19.00	22.00
		64	5320	19.00	19.00	22.00
	802.11n-HT20 MCS0	52	5260	18.00	18.00	21.00
		56	5280	18.00	18.00	21.00
		60	5300	18.00	18.00	21.00
		64	5320	18.00	18.00	21.00
	802.11n-HT40 MCS0	54	5270	18.50	18.50	21.50
		62	5310	18.00	18.00	21.00
	802.11ac-VHT20 MCS0	52	5260	18.50	18.50	21.50
		56	5280	18.00	18.00	21.00
		60	5300	18.00	18.00	21.00
		64	5320	18.00	18.00	21.00
	802.11ac-VHT40 MCS0	54	5270	18.50	18.50	21.50
		62	5310	18.00	18.00	21.00
	802.11ac-VHT80 MCS0	58	5290	17.00	17.00	20.00
	802.11ac-VHT160 MCS0	50	5250	14.50	14.50	17.50
	802.11ax-HE20 MCS0	52	5260	18.50	18.50	21.50
		56	5280	18.50	18.50	21.50
		60	5300	18.50	18.50	21.50
		64	5320	18.00	18.00	21.00
	802.11ax-HE40 MCS0	54	5270	18.50	18.50	21.50
		62	5310	18.00	18.00	21.00
	802.11ax-HE80 MCS0	58	5290	17.00	17.00	20.00
	802.11ax-HE160 MCS0	50	5250	14.50	14.50	17.50
	802.11be-EHT20 MCS0	52	5260	18.50	18.50	21.50
		56	5280	18.50	18.50	21.50
60		5300	18.50	18.50	21.50	
64		5320	18.50	18.50	21.50	
802.11be-EHT40 MCS0	54	5270	18.50	18.50	21.50	
	62	5310	18.00	18.00	21.00	
802.11be-EHT80 MCS0	58	5290	17.50	17.50	20.50	
802.11be-EHT160 MCS0	50	5250	14.50	14.50	17.50	



Burst Average Power (dBm)						
5.5GHz WLAN	Transmit Antenna			SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
802.11a 6Mbps		100	5500	18.50	18.50	21.50
		116	5580	18.50	18.50	21.50
		124	5620	18.50	18.50	21.50
		132	5660	18.50	18.50	21.50
		144	5720	18.50	18.50	21.50
802.11n-HT20 MCS0		100	5500	17.00	17.00	20.00
		116	5580	17.00	17.00	20.00
		124	5620	17.00	17.00	20.00
		132	5660	17.00	17.00	20.00
		144	5720	17.00	17.00	20.00
802.11n-HT40 MCS0		102	5510	17.50	17.50	20.50
		110	5550	17.50	17.50	20.50
		126	5630	17.00	17.00	20.00
		134	5670	17.50	17.50	20.50
		142	5710	17.00	17.00	20.00
802.11ac-VHT20 MCS0		100	5500	17.00	17.00	20.00
		116	5580	17.00	17.00	20.00
		124	5620	17.00	17.00	20.00
		132	5660	17.00	17.00	20.00
		144	5720	17.00	17.00	20.00
802.11ac-VHT40 MCS0		102	5510	17.50	17.50	20.50
		110	5550	17.50	17.50	20.50
		126	5630	17.00	17.00	20.00
		134	5670	17.50	17.50	20.50
		142	5710	17.00	17.00	20.00
802.11ac-VHT80 MCS0		106	5530	17.50	17.50	20.50
		122	5610	17.00	17.00	20.00
		138	5690	17.50	17.50	20.50
802.11ac-VHT160 MCS0		114	5570	17.00	17.00	20.00
802.11ax-HE20 MCS0		100	5500	17.00	17.00	20.00
		116	5580	17.00	17.00	20.00
		124	5620	17.00	17.00	20.00
		132	5660	17.00	17.00	20.00
		144	5720	17.00	17.00	20.00
802.11ax-HE40 MCS0		102	5510	17.50	17.50	20.50
		110	5550	17.50	17.50	20.50
		126	5630	17.00	17.00	20.00
		134	5670	17.50	17.50	20.50
		142	5710	17.00	17.00	20.00
802.11ax-HE80 MCS0		106	5530	17.50	17.50	20.50
		122	5610	17.00	17.00	20.00
		138	5690	17.50	17.50	20.50
802.11ax-HE160 MCS0		114	5570	17.00	17.00	20.00
802.11be-EHT20 MCS0		100	5500	17.50	17.50	20.50
		116	5580	17.00	17.00	20.00
		124	5620	17.00	17.00	20.00
		132	5660	17.00	17.00	20.00
		144	5720	17.00	17.00	20.00
802.11be-EHT40 MCS0		102	5510	17.50	17.50	20.50
		110	5550	17.50	17.50	20.50
		126	5630	17.50	17.50	20.50



		134	5670	17.50	17.50	20.50
		142	5710	17.50	17.50	20.50
	802.11be-EHT80 MCS0	106	5530	17.50	17.50	20.50
		122	5610	17.00	17.00	20.00
		138	5690	17.50	17.50	20.50
	802.11be-EHT160 MCS0	114	5570	17.00	17.00	20.00

Burst Average Power (dBm)						
Transmit Antenna				SISO Ant 6	SISO Ant 17	MIMO Ant 6+17
5.8GHz WLAN	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	Tune-Up Limit
	802.11a 6Mbps		149	5745	20.00	20.00
157			5785	20.00	20.00	23.00
165			5825	19.50	19.50	22.50
802.11n-HT20 MCS0		149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	15.50	15.50	18.50
802.11n-HT40 MCS0		151	5755	16.50	16.50	19.50
		159	5795	16.00	16.00	19.00
802.11ac-VHT20 MCS0		149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	15.50	15.50	18.50
802.11ac-VHT40 MCS0		151	5755	16.50	16.50	19.50
		159	5795	16.00	16.00	19.00
802.11ac-VHT80 MCS0		155	5775	16.00	16.00	19.00
802.11ax-HE20 MCS0		149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	15.50	15.50	18.50
802.11ax-HE40 MCS0		151	5755	16.50	16.50	19.50
		159	5795	16.50	16.50	19.50
802.11ax-HE80 MCS0		155	5775	16.50	16.50	19.50
802.11be-EHT20 MCS0		149	5745	16.00	16.00	19.00
		157	5785	16.00	16.00	19.00
		165	5825	15.50	15.50	18.50
802.11be-EHT40 MCS0		151	5755	16.50	16.50	19.50
		159	5795	16.50	16.50	19.50
802.11be-EHT80 MCS0		155	5775	16.50	16.50	19.50





**<Bluetooth>**

**General Note:**

- The device implements the power management for BT SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity). The control logic about the power management decision is provided in the operational description. For each exposure condition and simultaneous transmission configuration, SAR was tested according to the associated power table

- Power Index 1: Default Power
- Power Index 2: Receiver on, WLAN Non DBS
- Power Index 3: Receiver on, WLAN DBS
- Power Index 4: Hotspot on, WLAN Non DBS
- Power Index 5: Hotspot on, WLAN DBS
- Power Index 6: WWAN P-sensor on, WLAN Non DBS
- Power Index 7: WWAN P-sensor on, WLAN DBS

**<Power Index 1>**

Burst Average Power (dBm)					
Transmit Antenna			SISO Ant 16	SISO Ant 7	
Bluetooth	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit
	BR / EDR 1Mbps	0	2402	16.50	16.50
		39	2441	16.50	16.50
		78	2480	16.50	16.50
	BR / EDR 2Mbps	0	2402	14.00	14.00
		39	2441	14.00	14.00
		78	2480	14.00	14.00
	BR / EDR 3Mbps	0	2402	14.00	14.00
		39	2441	14.00	14.00
		78	2480	14.00	14.00
	LE 1Mbps	0	2402	8.50	8.50
		19	2440	8.50	8.50
		39	2480	8.50	8.50
	LE 2Mbps	0	2402	8.50	8.50
		19	2440	8.50	8.50
		39	2480	8.50	8.50



<Power Index 2>

Burst Average Power (dBm)					
Transmit Antenna				SISO Ant 16	SISO Ant 7
Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	
Bluetooth	BR / EDR 1Mbps	0	2402	8.50	8.50
		39	2441	8.50	8.50
		78	2480	8.50	8.50
	BR / EDR 2Mbps	0	2402	8.50	8.50
		39	2441	8.50	8.50
		78	2480	8.50	8.50
	BR / EDR 3Mbps	0	2402	8.50	8.50
		39	2441	8.50	8.50
		78	2480	8.50	8.50
	LE 1Mbps	0	2402	8.50	8.50
		19	2440	8.50	8.50
		39	2480	8.50	8.50
	LE 2Mbps	0	2402	8.50	8.50
		19	2440	8.50	8.50
		39	2480	8.50	8.50

<Power Index 3>

Burst Average Power (dBm)					
Transmit Antenna				SISO Ant 16	SISO Ant 7
Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit	
Bluetooth	BR / EDR 1Mbps	0	2402	8.50	8.50
		39	2441	8.50	8.50
		78	2480	8.50	8.50
	BR / EDR 2Mbps	0	2402	8.50	8.50
		39	2441	8.50	8.50
		78	2480	8.50	8.50
	BR / EDR 3Mbps	0	2402	8.50	8.50
		39	2441	8.50	8.50
		78	2480	8.50	8.50
	LE 1Mbps	0	2402	8.50	8.50
		19	2440	8.50	8.50
		39	2480	8.50	8.50
	LE 2Mbps	0	2402	8.50	8.50
		19	2440	8.50	8.50
		39	2480	8.50	8.50



<Power Index 4 / Power Index 5 / Power Index 6 / Power Index 7>

Burst Average Power (dBm)					
Transmit Antenna				SISO Ant 16	SISO Ant 7
Bluetooth	Mode	Channel	Frequency (MHz)	Tune-Up Limit	Tune-Up Limit
	BR / EDR 1Mbps	0	2402	16.50	16.50
		39	2441	16.50	16.50
		78	2480	16.50	16.50
	BR / EDR 2Mbps	0	2402	14.00	14.00
		39	2441	14.00	14.00
		78	2480	14.00	14.00
	BR / EDR 3Mbps	0	2402	14.00	14.00
		39	2441	14.00	14.00
		78	2480	14.00	14.00
	LE 1Mbps	0	2402	8.50	8.50
		19	2440	8.50	8.50
		39	2480	8.50	8.50
	LE 2Mbps	0	2402	8.50	8.50
		19	2440	8.50	8.50
39		2480	8.50	8.50	



**2.3 General LTE SAR Test and Reporting Considerations**

Summarized necessary items addressed in KDB 941225 D05 v02r05																																																																										
FCC ID	2AFZZPN8EG																																																																									
Equipment Name	Mobile Phone																																																																									
Operating Frequency Range of each LTE transmission band	LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 42: 3550 MHz ~ 3600 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz																																																																									
Channel Bandwidth	LTE Band 2: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 4: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 5: 1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 12: 1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 13: 5MHz, 10MHz LTE Band 17: 5MHz, 10MHz LTE Band 25: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 26: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 42: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 48: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 66: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz																																																																									
uplink modulations used	QPSK / 16QAM / 64QAM / 256QAM																																																																									
LTE Voice / Data requirements	Data only																																																																									
LTE MPR permanently built-in by design	<p align="center"><b>Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3</b></p> <table border="1"> <thead> <tr> <th rowspan="2">Modulation</th> <th colspan="6">Channel bandwidth / Transmission bandwidth (N<sub>RB</sub>)</th> <th rowspan="2">MPR (dB)</th> </tr> <tr> <th>1.4 MHz</th> <th>3.0 MHz</th> <th>5 MHz</th> <th>10 MHz</th> <th>15 MHz</th> <th>20 MHz</th> </tr> </thead> <tbody> <tr> <td>QPSK</td> <td>&gt; 5</td> <td>&gt; 4</td> <td>&gt; 8</td> <td>&gt; 12</td> <td>&gt; 16</td> <td>&gt; 18</td> <td>≤ 1</td> </tr> <tr> <td>16 QAM</td> <td>≤ 5</td> <td>≤ 4</td> <td>≤ 8</td> <td>≤ 12</td> <td>≤ 16</td> <td>≤ 18</td> <td>≤ 1</td> </tr> <tr> <td>64 QAM</td> <td>&gt; 5</td> <td>&gt; 4</td> <td>&gt; 8</td> <td>&gt; 12</td> <td>&gt; 16</td> <td>&gt; 18</td> <td>≤ 2</td> </tr> <tr> <td>256 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>256 QAM</td> <td>&gt; 5</td> <td>&gt; 4</td> <td>&gt; 8</td> <td>&gt; 12</td> <td>&gt; 16</td> <td>&gt; 18</td> <td>≤ 3</td> </tr> <tr> <td>256 QAM</td> <td colspan="6" style="text-align: center;">≥ 1</td> <td>≤ 5</td> </tr> </tbody> </table>												Modulation	Channel bandwidth / Transmission bandwidth (N <sub>RB</sub> )						MPR (dB)	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1	16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1	64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2	256 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2	256 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3	256 QAM	≥ 1						≤ 5
Modulation	Channel bandwidth / Transmission bandwidth (N <sub>RB</sub> )						MPR (dB)																																																																			
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz																																																																				
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1																																																																			
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1																																																																			
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2																																																																			
256 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2																																																																			
256 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.																																																																									
LTE Carrier Aggregation Combinations	Inter-Band and Intra-Band possible combinations and the detail power measurement please referred to section 13																																																																									
LTE Carrier Aggregation Additional Information	This device supports maximum of 3 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	20525	836.5		
H	20643	848.3	20635	847.5	20625	846.5	20600	844				
LTE Band 7												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510				
M	21100	2535	21100	2535	21100	2535	21100	2535				
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560				
LTE Band 12												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	23017	699.7	23025	700.5	23035	701.5	23060	704				
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5				
H	23173	715.3	23165	714.5	23155	713.5	23130	711				
LTE Band 13												
	Bandwidth 5 MHz				Bandwidth 10 MHz							
	Channel #		Freq.(MHz)		Channel #		Freq.(MHz)					
L	23205		779.5		23230		782					
M	23230		782									
H	23255		784.5									
LTE Band 17												
	Bandwidth 5 MHz				Bandwidth 10 MHz							
	Channel #		Freq.(MHz)		Channel #		Freq. (MHz)					
L	23755		706.5		23780		709					
M	23790		710		23790		710					
H	23825		713.5		23800		711					
LTE Band 25												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26047	1850.7	26055	1851.5	26065	1852.5	26090	1855	26115	1857.5	26140	1860
M	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880
H	26683	1914.3	26675	1913.5	26665	1912.5	26640	1910	26615	1907.5	26590	1905
LTE Band 26												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz			
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26697	814.7	26705	815.5	26715	816.5	26740	819	26765	821.5		
M	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5		
H	27033	848.3	27025	847.5	27015	846.5	26990	844	26965	841.5		
LTE Band 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)		
L	39675	2498.5	39700	2501	39725	2503.5	39750	2506				
L	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5				
M	40620	2593	40620	2593	40620	2593	40620	2593				
H	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5				
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680				
LTE Band 42												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)		
L	43315	3552.5	43140	3555	43165	3557.5	43190	3560				
M	43340	3575	43340	3575	43340	3575	43340	3575				
H	43565	3597.5	43540	3595	43515	3592.5	43490	3590				
LTE Band 48												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)		
L	55265	3552.5	55290	3555	55315	3557.5	55340	3560				
L	55810	3607	55815	3607.5	55820	3608	55830	3609				
M	56170	3643	56165	3642.5	56160	3642	56150	3641				
H	56715	3697.5	56690	3695	56665	3692.5	56640	3690				
LTE Band 66												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	131979	1710.7	131987	1711.5	131997	1712.5	132022	1715	132047	1717.5	132072	1720
M	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745
H	132665	1779.3	132657	1778.5	132647	1777.5	132622	1775	132597	1772.5	132572	1770



**2.4 General 5G NR SAR Test and Reporting Considerations**

5G NR Information								
FCC ID	2AFZZPN8EG							
Equipment Name	Mobile Phone							
Operating Frequency Range of each 5G NR transmission band	5G NR n2: 1850 MHz ~ 1910 MHz 5G NR n5: 824 MHz ~ 849 MHz 5G NR n7: 2500 MHz ~ 2570 MHz 5G NR n12: 699 MHz ~ 716 MHz 5G NR n25: 1850 MHz ~ 1915 MHz 5G NR n26 : 814 MHz ~ 849 MHz 5G NR n38: 2570 MHz ~ 2620 MHz 5G NR n41: 2496 MHz ~ 2690 MHz 5G NR n48 : 3550 MHz ~ 3700 MHz 5G NR n66: 1710 MHz ~ 1780 MHz 5G NR n77: 3700 MHz ~ 3980 MHz, 3450MHz ~ 3550MHz 5G NR n78: 3700 MHz ~ 3800 MHz, 3450MHz ~ 3550MHz							
Channel Bandwidth	5G NR n2: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n5: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n7: 5MHz, 10MHz, 15MHz, 20MHz, 25 MHz, 30MHz, 40MHz, 50MHz 5G NR n12: 5MHz, 10MHz, 15MHz 5G NR n25: 5MHz, 10MHz, 15MHz, 20MHz, 25 MHz 30MHz, 40MHz 5G NR n26: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n38: 5MHz, 10MHz, 15MHz, 20MHz, 25 MHz, 30MHz, 40MHz 5G NR n41: 10MHz, 15MHz, 20MHz, 30MHz, 40MHz, 50MHz, 60MHz, 80MHz, 90MHz, 100MHz 5G NR n48: 10MHz, 15MHz, 20MHz, 40MHz 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 5G NR n78: 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 n5	LTE B7							
LTE Anchor Bands for n7	LTE B5/4/66							
LTE Anchor Bands for n38	LTE B4/66							
LTE Anchor Bands for n41	LTE B4//66							
LTE Anchor Bands for n66	LTE B2/4							
LTE Anchor Bands for n78	LTE B2/4/5/7/38/41/66							
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	371000	1855	371500	1857.5	372000	1860	
M	376000	376000	1880	376000	1880	376000	1880	
H	381500	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	165800	829	166300	831.5	166800	834	
M	167300	167300	836.5	167300	836.5	167300	836.5	
H	169300	168800	844	168300	841.5	167800	839	



NR Band 7

Table with 16 columns: Bandwidth (5MHz, 10MHz, 15MHz, 20MHz, 25MHz, 30MHz, 40MHz, 50MHz), Ch. #, Freq. (MHz). Rows L, N, H.

NR Band 12

Table with 8 columns: Bandwidth (5MHz, 10MHz, 15MHz), Ch. #, Freq. (MHz). Rows L, N, H.

NR Band 25

Table with 14 columns: Bandwidth (5MHz, 10MHz, 15MHz, 20MHz, 25MHz, 30MHz, 40MHz), Ch. #, Freq. (MHz). Rows L, N, H.

NR Band 26

Table with 8 columns: Bandwidth (5MHz, 10MHz, 15MHz, 20MHz), Ch. #, Freq. (MHz). Rows L, N, H.

NR Band 38

Table with 14 columns: Bandwidth (5MHz, 10MHz, 15MHz, 20MHz, 25MHz, 30MHz, 40MHz), Ch. #, Freq. (MHz). Rows L, N, H.

NR Band 41

Table with 18 columns: Bandwidth (10MHz, 15MHz, 20MHz, 30MHz, 40MHz, 50MHz, 60MHz, 80MHz, 90MHz, 100MHz), Ch. #, Freq. (MHz). Rows L, N, H.

NR Band 48

Table with 8 columns: Bandwidth (10MHz, 15MHz, 20MHz, 40MHz), Ch. #, Freq. (MHz). Rows L, N, H.

NR Band 66

Table with 14 columns: Bandwidth (5MHz, 10MHz, 15MHz, 20MHz, 25MHz, 30MHz, 40MHz), Ch. #, Freq. (MHz). Rows L, N, H.

NR Band 77

Table with 18 columns: Bandwidth (10MHz, 15MHz, 20MHz, 25MHz, 30MHz, 40MHz, 50MHz, 60MHz, 70MHz, 80MHz, 90MHz, 100MHz), Ch. #, Freq. (MHz). Rows L, M, H.

NR Band 78

Table with 18 columns: Bandwidth (10MHz, 15MHz, 20MHz, 25MHz, 30MHz, 40MHz, 50MHz, 60MHz, 70MHz, 80MHz, 90MHz, 100MHz), Ch. #, Freq. (MHz). Rows L, M, H.

NR Band 77/78(3450MHz ~ 3550MHz)

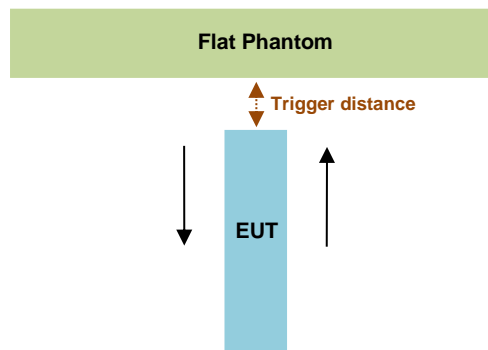
Table with 18 columns: Bandwidth (10MHz, 15MHz, 20MHz, 25MHz, 30MHz, 40MHz, 50MHz, 60MHz, 70MHz, 80MHz, 90MHz, 100MHz), Ch. #, Freq. (MHz). Rows L, M, H.



### 3. Proximity Sensor Triggering Test

#### <Proximity Sensor Triggering Distance>

1. Proximity sensor triggering distance testing was performed according and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed and the tissue-equivalent medium for highest frequency (4200MHz) and lowest (835MHz) frequency was used for proximity sensor triggering testing.
2. Capacitive proximity sensors placed coincident with antenna elements at the top and bottom ends of the phone are utilized to determine when the device comes in proximity of the user's body or finger or hand at the front or back or bottom or left or right or top side of the device. There is no need to do sensor coverage testing for the proximity sensor is designed to support sufficient detection range and sensitivity to cover regions of the sensors in all applicable directions since the proximity sensor entirely covers the antenna.
3. The sensors can use to detect the proximity of the user's body or handheld states at the front or back or bottom or left or right or top side or bottom side of the device use a detection threshold distance. When front/back/left/ right /top/bottom sides of body or handheld condition is detected reduced power will be active. The trigger distance shown in the sections below.



Ant 0/1/9 Proximity Trigger Distance						
Position	Front		Back		Left Side	
Position	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	6	6	6	6	6	6

Ant 3/8 Proximity Trigger Distance								
Position	Front		Back		Left Side		Top Side	
Position	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	6	6	6	6	6	6	6	6

Ant 4/6 Proximity Trigger Distance								
Position	Front		Back		Right Side		Top Side	
Position	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	6	6	6	6	6	6	6	6



### 4. TA-SAR feature for RF Exposure compliance

The FCC RF exposure limit is based on time-averaged RF exposure. SAR regulatory specifications are defined over certain measurement duration allowing for time-averaging. The MediaTek TA-SAR (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.

This report shows SAR characterization of sub6GHz. The characterization is achieved by determination of P<sub>limit</sub>. In the case of sub6GHz, power is measured by antenna connection port power. P<sub>limit</sub> is the power level that corresponds to the exposure design target. Design target is defined as SAR<sub>design</sub> target for sub6GHz.

\*P<sub>max</sub> is used for RF tune up procedure. The maximum allowed output power is equal to P<sub>max</sub> + device uncertainty.

\*\*All P<sub>limit</sub> power levels entered in the Table correspond to average power levels after accounting for duty cycle in the case TDD modulation schemes (for e.g., GSM & LTE TDD & NR TDD).

The max allowed output power is the P<sub>limit</sub> + device uncertainty, and if P<sub>limit</sub> is higher than P<sub>max</sub>, the device output power will be P<sub>max</sub> instead.

**<P<sub>limit</sub> for supported technologies and bands (P<sub>limit</sub> in EFS file)>**

P <sub>limit</sub>							
Band	Antenna	Duty Cycle %	Head ECI1	Hotspot ECI5	Body-worn ECI4	Extremity ECI3	P <sub>max</sub> *
GSM850**	Ant 1	50	19.0	19.0	25.4	23.0	23.0
GSM850**	Ant 0	50	28.9	27.1	30.2	24.0	24.0
GSM1900**	Ant 5	50	30.8	21.2	26.4	19.5	19.5
GSM1900**	Ant 2	50	18.0	18.0	26.9	21.0	21.0
WCDMA II	Ant 5	100	31.6	20.5	27.2	20.5	23.5
WCDMA II	Ant 2	100	17.5	17.5	26.5	24.0	24.0
WCDMA IV	Ant 5	100	30.6	21.7	27.3	22.7	23.7
WCDMA IV	Ant 2	100	17.5	17.5	26.4	24.0	24.0
WCDMA V	Ant 1	100	18.5	18.5	25.8	22.5	23.5
WCDMA V	Ant 0	100	29.6	26.7	29.6	24.0	24.0
LTE Band 4	Ant 3	100	16.2	16.2	26.9	20.2	24.2
LTE Band 4_Other PA	Ant 3	100	16.2	16.2	27.4	20.2	24.2
LTE Band 4	Ant 2	100	18.0	18.0	23.0	23.0	25.0
LTE Band 4_Other PA	Ant 2	100	16.0	16.0	21.0	21.0	23.0
LTE Band 4	Ant 5	100	30.4	22.2	26.9	22.7	24.2
LTE Band 4_Other PA	Ant 5	100	31.6	22.5	27.9	23.0	24.5
LTE Band 5	Ant 1	100	18.7	18.7	29.6	22.2	24.2
LTE Band 5_Other PA	Ant 1	100	18.5	18.5	29.6	22.0	24.0
LTE Band 5_Code 6	Ant 0	100	32.2	24.0	31.4	24.0	25.0
LTE Band 5_Other PA_Code 6	Ant 0	100	33.0	23.5	31.6	23.5	24.5
LTE Band 5_Code 1	Ant 0	100	30.8	24.0	30.0	24.0	25.0
LTE Band 5_Other PA_Code 1	Ant 0	100	28.9	23.5	29.9	23.5	24.5
LTE Band 5_Code 3	Ant 0	100	30.0	24.0	29.6	24.0	25.0
LTE Band 5_Other PA_Code 3	Ant 0	100	30.1	23.5	30.1	23.5	24.5
LTE Band 5_Code 4	Ant 0	100	31.0	24.0	30.0	24.0	25.0
LTE Band 5_Other PA_Code 4	Ant 0	100	30.6	23.5	34.2	23.5	24.5
LTE Band 7	Ant 3	100	15.7	15.7	26.5	19.7	24.2
LTE Band 7	Ant 2	100	16.0	16.0	19.5	19.5	25.0
LTE Band 7	Ant 5	100	29.5	19.2	26.8	19.2	24.2
LTE Band 7	Ant 4	100	16.0	16.0	27.4	19.5	22.5
LTE Band 12(17)_Other PA	Ant 1	100	21.0	21.0	27.8	23.5	23.5
LTE Band 12(17)_Other PA	Ant 0	100	29.8	28.3	29.5	24.0	24.0
LTE Band 25	Ant 3	100	16.5	16.5	28.6	19.5	23.5
LTE Band 25	Ant 2	100	18.5	18.5	22.5	22.5	24.0
LTE Band 25	Ant 5	100	30.3	20.5	27.4	20.5	23.5
LTE Band 25	Ant 4	100	17.0	17.0	28.2	22.0	22.0
LTE Band 26	Ant 1	100	18.7	18.7	26.2	24.2	24.2
LTE Band 26	Ant 0	100	29.3	26.7	29.9	25.0	25.0



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LTE Band 66	Ant 3	100	15.5	15.5	27.4	19.5	23.5
LTE Band 66_Other PA	Ant 3	100	16.0	16.0	27.9	20.0	24.0
LTE Band 66	Ant 2	100	16.5	16.5	25.9	24.0	24.0
LTE Band 66_Other PA	Ant 2	100	15.0	15.0	23.9	22.5	22.5
LTE Band 66	Ant 5	100	30.5	21.0	26.9	22.0	23.5
LTE Band 66_Other PA	Ant 5	100	31.1	21.5	27.8	22.5	24.0
LTE Band 66	Ant 4	100	21.5	21.5	32.7	21.5	22.0
LTE Band 66_Other PA	Ant 4	100	22.5	22.5	35.1	22.5	23.0
LTE Band 38**	Ant 3	63.3	16.5	16.5	26.4	20.5	22.2
LTE Band 38**	Ant 2	63.3	15.8	15.8	20.8	20.8	23.0
LTE Band 38**	Ant 5	63.3	30.4	19.5	26.7	19.5	22.2
LTE Band 38**	Ant 4	63.3	16.8	16.8	27.2	20.3	20.5
LTE Band 41**	Ant 3	63.3	16.5	16.5	26.5	20.5	22.2
LTE Band 41**	Ant 2	63.3	15.8	15.8	19.8	19.8	23.0
LTE Band 41**	Ant 5	63.3	30.7	19.5	27.0	19.5	22.2
LTE Band 41**	Ant 4	63.3	16.8	16.8	27.4	20.3	20.5
LTE Band 42**	Ant 6	63.3	14.8	14.8	28.4	17.8	23.0
LTE Band 42**	Ant 8	63.3	24.2	18.8	25.3	18.8	21.0
LTE Band 42**	Ant 7	63.3	13.8	13.8	16.3	16.3	22.0
LTE Band 42**	Ant 9	63.3	19.8	19.8	26.4	20.5	20.5
LTE Band 48**	Ant 6	63.3	14.3	14.3	28.9	17.3	21.0
LTE Band 48**	Ant 8	63.3	24.0	17.8	25.0	17.8	19.0
LTE Band 48**	Ant 7	63.3	12.8	12.8	16.8	16.8	20.0
LTE Band 48**	Ant 9	63.3	20.5	17.3	27.1	17.3	18.5
FR1 n5	Ant 1	100	19.5	19.5	25.8	21.5	24.0
FR1 n5_Other PA	Ant 1	100	19.5	19.5	25.5	21.5	24.0
FR1 n5	Ant 0	100	30.7	24.0	29.9	24.0	25.0
FR1 n5_Other PA	Ant 0	100	30.2	23.5	29.4	23.5	24.5
FR1 n26	Ant 1	100	19.5	19.5	25.8	21.5	24.0
FR1 n26	Ant 0	100	30.7	24.0	29.9	24.0	25.0
FR1 n12	Ant 1	100	21.5	21.5	27.4	23.0	23.0
FR1 n12	Ant 0	100	29.7	28.0	29.7	24.0	24.0
FR1 n25	Ant 3	100	17.5	17.5	28.9	19.5	23.5
FR1 n25	Ant 2	100	18.5	18.5	27.0	24.0	24.0
FR1 n25	Ant 5	100	29.9	21.5	26.9	21.5	23.5
FR1 n25	Ant 4	100	17.5	17.5	27.9	22.0	22.0
FR1 n66	Ant 3	100	16.5	16.5	27.5	19.5	23.5
FR1 n66_Other PA	Ant 3	100	17.0	17.0	27.7	20.0	24.0
FR1 n66	Ant 2	100	19.0	19.0	21.0	21.0	24.0
FR1 n66_Other PA	Ant 2	100	17.5	17.5	19.5	19.5	22.5
FR1 n66	Ant 5	100	29.4	22.0	27.0	22.5	23.5
FR1 n66_Other PA	Ant 5	100	30.5	22.5	27.8	23.0	24.0
FR1 n66	Ant 4	100	23.6	21.5	32.7	21.5	22.0
FR1 n66_Other PA	Ant 4	100	24.2	22.5	35.2	22.5	23.0
FR1 n7	Ant 3	100	15.7	15.7	26.9	19.7	24.2
FR1 n7	Ant 2	100	16.5	16.5	19.5	19.5	25.0
FR1 n7	Ant 5	100	27.9	19.2	27.0	19.2	24.2
FR1 n7	Ant 4	100	17.0	17.0	27.1	19.5	23.0
FR1 n38	Ant 3	100	16.2	16.2	26.2	20.7	24.2
FR1 n38	Ant 2	100	16.0	16.0	21.0	21.0	25.0
FR1 n38	Ant 5	100	28.1	19.7	26.6	19.7	24.2
FR1 n38	Ant 4	100	17.0	17.0	26.7	19.5	22.5
FR1 n41_PC3	Ant 3	100	15.5	15.5	26.5	19.5	23.0
FR1 n41_PC2**	Ant 3	50	15.5	15.5	26.4	19.5	23.0
FR1 n41_PC3	Ant 2	100	15.5	15.5	19.0	19.0	23.5
FR1 n41_PC2**	Ant 2	50	15.5	15.5	19.0	19.0	23.5

FR1 n41_PC3	Ant 5	100	28.1	18.5	25.8	18.5	22.5
FR1 n41_PC2**	Ant 5	50	27.7	18.5	25.9	18.5	22.5
FR1 n41_PC3	Ant 4	100	14.5	14.5	26.9	18.5	21.0
FR1 n41_PC2**	Ant 4	50	14.5	14.5	26.6	18.5	21.0
FR1 n48	Ant 6	100	13.3	13.3	28.6	16.8	23.3
FR1 n48	Ant 8	100	24.1	19.5	26.3	21.0	21.0
FR1 n48	Ant 7	100	13.0	13.0	15.5	15.5	22.0
FR1 n48	Ant 9	100	19.5	18.5	26.8	18.5	20.5
FR1 n77_PC3	Ant 6	100	14.5	14.5	27.3	15.5	22.5
FR1 n77_PC2**	Ant 6	50	14.5	14.5	26.4	15.5	22.5
FR1 n77_PC3	Ant 8	100	23.5	18.0	24.7	18.0	21.0
FR1 n77_PC2**	Ant 8	50	23.8	18.0	23.9	18.0	21.0
FR1 n77_PC3	Ant 7	100	13.0	13.0	15.5	15.5	21.5
FR1 n77_PC2**	Ant 7	50	13.0	13.0	15.5	15.5	21.5
FR1 n77_PC3	Ant 9	100	17.0	15.0	19.5	15.5	20.5
FR1 n77_PC2**	Ant 9	50	17.0	15.0	19.5	15.5	20.5
FR1 n78_PC3	Ant 6	100	14.5	14.5	27.7	16.5	23.5
FR1 n78_PC2**	Ant 6	50	14.5	14.5	27.1	16.5	23.5
FR1 n78_PC3	Ant 8	100	23.5	18.0	24.6	18.0	22.0
FR1 n78_PC2**	Ant 8	50	23.3	18.0	23.8	18.0	22.0
FR1 n78_PC3	Ant 7	100	14.0	14.0	16.0	16.0	23.0
FR1 n78_PC2**	Ant 7	50	14.0	14.0	16.0	16.0	23.0
FR1 n78_PC3	Ant 9	100	17.0	17.0	25.9	19.0	21.5
FR1 n78_PC2**	Ant 9	50	17.0	17.0	25.2	19.0	21.5

### **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 (手機適用法規,非手機請
- 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. RF Exposure Limits

6.1 Uncontrolled Environment

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

6.2 Controlled Environment

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

Limits for Occupational/Controlled Exposure (W/kg)

Table with 3 columns: Whole-Body, Partial-Body, Hands, Wrists, Feet and Ankles. Values: 0.4, 8.0, 20.0

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

Table with 3 columns: Whole-Body, Partial-Body, Hands, Wrists, Feet and Ankles. Values: 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.



**6.3 RF Exposure limit for above 6GHz**

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

Peak Spatially Averaged Power Density was evaluated over a circular area of 4cm<sup>2</sup> 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 <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

## **7. Specific Absorption Rate (SAR)**

### **7.1 Introduction**

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

### **7.2 SAR Definition**

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

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

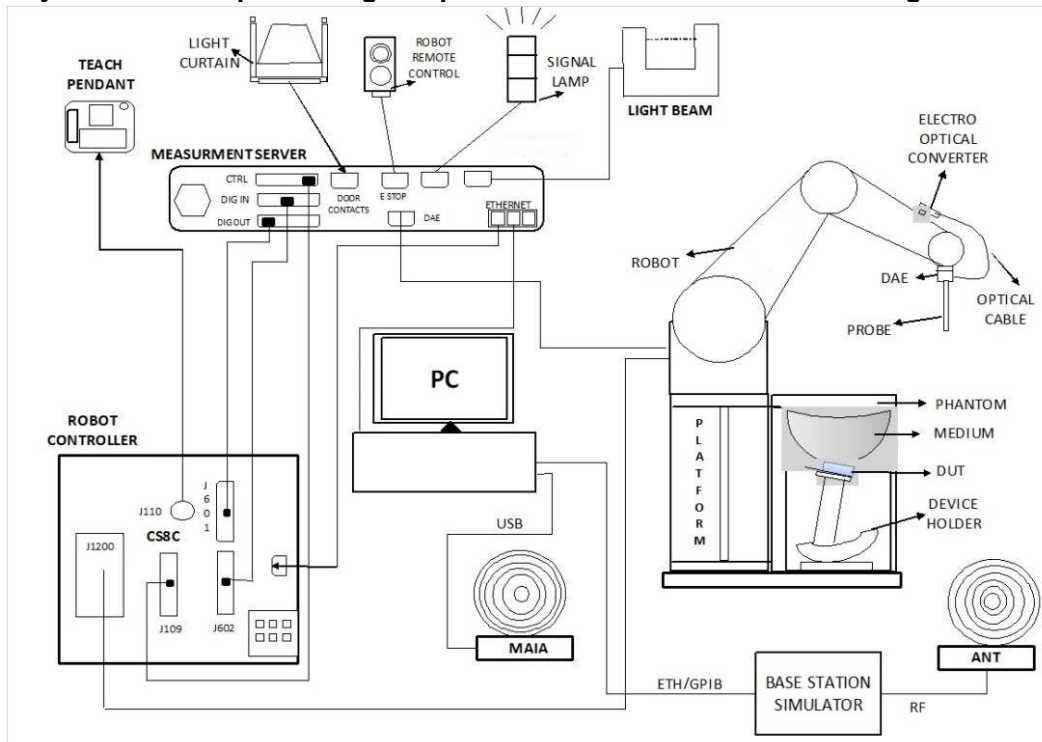
SAR is expressed in units of Watts per kilogram (W/kg)

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

Where:  $\sigma$  is the conductivity of the tissue,  $\rho$  is the mass density of the tissue and E is the RMS electrical field strength.

## 8. System Description and Setup

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



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

### 8.1 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.


Laboratory	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	SAR18-HY	SAR21-HY
	SAR04-HY	SAR05-HY	SAR11-HY	SAR12-HY	SAR16-HY	SAR19-HY	SAR22-HY
	SAR06-HY	SAR10-HY	SAR13-HY	SAR14-HY	SAR17-HY	SAR20-HY	




**8.2 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>**

<b>Construction</b>	Symmetric design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
<b>Frequency</b>	4 MHz – 4 GHz; Linearity: $\pm 0.2$ dB (30 MHz – 4 GHz)	
<b>Directivity</b>	$\pm 0.2$ dB in TSL (rotation around probe axis) $\pm 0.3$ dB in TSL (rotation normal to probe axis)	
<b>Dynamic Range</b>	5 $\mu$ W/g – >100 mW/g; Linearity: $\pm 0.2$ dB	
<b>Dimensions</b>	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	

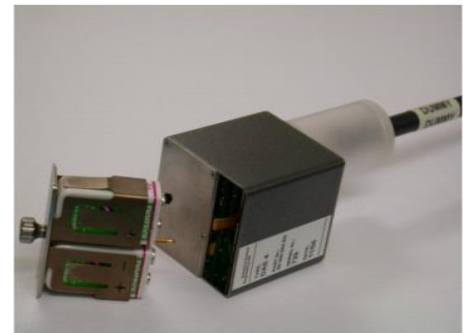
**<EX3DV4 Probe>**

<b>Construction</b>	Symmetric design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
<b>Frequency</b>	4 MHz – >6 GHz Linearity: $\pm 0.2$ dB (30 MHz – 6 GHz)	
<b>Directivity</b>	$\pm 0.3$ dB in TSL (rotation around probe axis) $\pm 0.5$ dB in TSL (rotation normal to probe axis)	
<b>Dynamic Range</b>	10 $\mu$ W/g – >100 mW/g Linearity: $\pm 0.2$ dB (noise: typically <1 $\mu$ W/g)	
<b>Dimensions</b>	Overall length: 337 mm (tip: 20 mm) Tip diameter: 2.5 mm (body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	

**8.3 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**

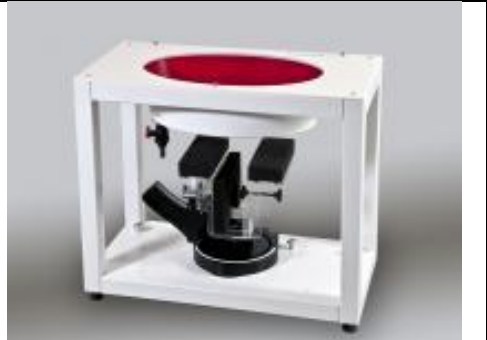
**8.4 Phantom**

**<SAM Twin Phantom>**

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

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

**<ELI Phantom>**

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

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

### **8.5 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

## **9. Measurement Procedures**

The measurement procedures are as follows:

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

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

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

### **9.1 Spatial Peak SAR Evaluation**

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

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

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

- (a) Extraction of the measured data (grid and values) from the Zoom Scan
- (b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
- (c) Generation of a high-resolution mesh within the measured volume
- (d) Interpolation of all measured values from the measurement grid to the high-resolution grid
- (e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
- (f) Calculation of the averaged SAR within masses of 1g and 10g

**9.2 Power Reference Measurement**

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

**9.3 Area Scan**

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

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

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

**9.4 Zoom Scan**

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

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

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

**9.5 Volume Scan Procedures**

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

**9.6 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.



### 10. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit <sup>(2)</sup>	D750V3	1012	Aug. 18, 2021	Aug. 15, 2024
SPEAG	750MHz System Validation Kit <sup>(2)</sup>	D750V3	1107	Jun. 22, 2022	Jun. 20, 2024
SPEAG	750MHz System Validation Kit <sup>(2)</sup>	D750V3	1117	Mar. 24, 2022	Mar. 21, 2025
SPEAG	835MHz System Validation Kit <sup>(2)</sup>	D835V2	499	Aug. 18, 2021	Aug. 15, 2024
SPEAG	835MHz System Validation Kit <sup>(2)</sup>	D835V2	4d060	Mar. 24, 2022	Mar. 21, 2025
SPEAG	835MHz System Validation Kit <sup>(2)</sup>	D835V2	4d167	Nov. 24, 2022	Nov. 22, 2024
SPEAG	1750MHz System Validation Kit <sup>(2)</sup>	D1750V2	1068	Nov. 21, 2022	Nov. 18, 2025
SPEAG	1750MHz System Validation Kit <sup>(2)</sup>	D1750V2	1112	Jun. 22, 2022	Jun. 19, 2025
SPEAG	1900MHz System Validation Kit <sup>(2)</sup>	D1900V2	5d041	Aug. 19, 2021	Aug. 16, 2024
SPEAG	1900MHz System Validation Kit <sup>(2)</sup>	D1900V2	5d093	Mar. 25, 2022	Mar. 22, 2025
SPEAG	1900MHz System Validation Kit <sup>(2)</sup>	D1900V2	5d185	Jun. 17, 2022	Jun. 14, 2025
SPEAG	2450MHz System Validation Kit <sup>(2)</sup>	D2450V2	736	Aug. 17, 2021	Aug. 14, 2024
SPEAG	2450MHz System Validation Kit <sup>(2)</sup>	D2450V2	929	Nov. 21, 2022	Nov. 18, 2025
SPEAG	2600MHz System Validation Kit <sup>(2)</sup>	D2600V2	1008	Aug. 17, 2021	Aug. 14, 2024
SPEAG	2600MHz System Validation Kit <sup>(2)</sup>	D2600V2	1078	Jun. 23, 2022	Jun. 20, 2025
SPEAG	3500MHz System Validation Kit <sup>(2)</sup>	D3500V2	1014	Jan. 17, 2022	Jan. 14, 2025
SPEAG	3700MHz System Validation Kit <sup>(2)</sup>	D3700V2	1006	Jun. 20, 2022	Jun. 18, 2024
SPEAG	3700MHz System Validation Kit <sup>(2)</sup>	D3700V2	1022	Jul. 14, 2021	Jul. 11, 2024
SPEAG	3900MHz System Validation Kit <sup>(2)</sup>	D3900V2	1017	Apr. 22, 2022	Apr. 19, 2025
SPEAG	5GHz System Validation Kit	D5GHzV2	1006	May. 25, 2023	May. 23, 2025
SPEAG	5GHz System Validation Kit	D5GHzV2	1128	Feb. 22, 2023	Feb. 20, 2025
SPEAG	5GHz System Validation Kit	D5GHzV2	1171	Apr. 19, 2024	Apr. 16, 2027
SPEAG	6500MHz System Validation Kit	D6.5GHzV2	1083	Oct. 20, 2023	Oct. 19, 2024
SPEAG	13MHz System Validation Kit	CLA13	1022	Sep. 01, 2022	Aug. 30, 2024
SPEAG	5G Verification Source	10GHz	1020	Jan. 18, 2024	Jan. 17, 2025
SPEAG	EUMmWV Probe Tip Protection	EUMmWV4	9441	Nov. 17, 2023	Nov. 16, 2024
SPEAG	Data Acquisition Electronics	DAE4	316	Jan. 18, 2024	Jan. 17, 2025
SPEAG	Data Acquisition Electronics	DAE4	376	Sep. 14, 2023	Sep. 13, 2024
SPEAG	Data Acquisition Electronics	DAE4	699	Feb. 13, 2024	Feb. 12, 2025
SPEAG	Data Acquisition Electronics	DAE4	1424	Dec. 07, 2023	Dec. 06, 2024
SPEAG	Data Acquisition Electronics	DAE4	1647	Dec. 27, 2023	Dec. 26, 2024
SPEAG	Data Acquisition Electronics	DAE4	1694	Nov. 17, 2023	Nov. 16, 2024
SPEAG	Data Acquisition Electronics	DAE4	1697	Nov. 20, 2023	Nov. 19, 2024
SPEAG	Data Acquisition Electronics	DAE4	1776	Feb. 13, 2024	Feb. 12, 2025
SPEAG	Dosimetric E-Field Probe	EX3DV4	3728	Mar. 20, 2024	Mar. 19, 2025
SPEAG	Dosimetric E-Field Probe	EX3DV4	3931	Oct. 24, 2023	Oct. 23, 2024
SPEAG	Dosimetric E-Field Probe	EX3DV4	3976	Jan. 22, 2024	Jan. 21, 2025
SPEAG	Dosimetric E-Field Probe	EX3DV4	7590	Mar. 19, 2024	Mar. 18, 2025
SPEAG	Dosimetric E-Field Probe	EX3DV4	7625	Dec. 14, 2023	Dec. 13, 2024
SPEAG	Dosimetric E-Field Probe	EX3DV4	7793	Mar. 01, 2024	Feb. 28, 2025
SPEAG	Dosimetric E-Field Probe	EX3DV4	7814	May. 30, 2023	May. 29, 2024
Testo	Hygro meter	608-H1	45196600	Nov. 02, 2023	Nov. 01, 2024
Anritsu	Radio Communication Analyzer	MT8821C	6201341950	Nov. 13, 2023	Nov. 12, 2024
Keysight	5G Wireless Test Platform	E7515B	MY58300712	Apr. 22, 2024	Apr. 21, 2025
R&S	BT Base Station	CBT	101136	Oct. 22, 2023	Oct. 21, 2024
SPEAG	Device Holder	N/A	N/A	N/A	N/A
Anritsu	Signal Generator	MG3710A	6201502524	Sep. 27, 2023	Sep. 26, 2024
Keysight	ENA Network Analyzer	E5071C	MY46104758	Oct. 30, 2023	Oct. 29, 2024
SPEAG	Dielectric Probe Kit	DAK-3.5	1126	Sep. 19, 2023	Sep. 18, 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	ZVE-8G+	6418	Oct. 16, 2023	Oct. 15, 2024
ATM	Dual Directional Coupler	C122H-10	P610410z-02	Note 1	
Warison	Directional Coupler	WCOU-10-50S-10	WR889BMC4B1	Note 1	
Woken	Attenuator 1	WK0602-XX	N/A	Note 1	
PE	Attenuator 2	PE7005-10	N/A	Note 1	
PE	Attenuator 3	PE7005- 3	N/A	Note 1	

**General Note:**

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.





### 11. System Verification

#### 11.1 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 <sub>r</sub> )	Conductivity Target (σ)	Permittivity Target (ε <sub>r</sub> )	Delta (σ) (%)	Delta (ε <sub>r</sub> ) (%)	Limit (%)	Date
750	22.1	0.899	41.825	0.89	41.90	1.01	-0.18	±5	2024/5/6
750	22.9	0.886	42.132	0.89	41.90	-0.45	0.55	±5	2024/5/9
750	22.9	0.893	41.994	0.89	41.90	0.34	0.22	±5	2024/5/9
835	22.3	0.922	42.837	0.90	41.50	2.44	3.22	±5	2024/5/2
835	22.3	0.923	42.617	0.90	41.50	2.56	2.69	±5	2024/5/3
835	22.4	0.921	41.899	0.90	41.50	2.33	0.96	±5	2024/5/7
835	22.9	0.927	41.698	0.90	41.50	3.00	0.48	±5	2024/5/9
1750	22.4	1.370	40.487	1.37	40.10	0.00	0.97	±5	2024/5/4
1750	22.1	1.368	40.377	1.37	40.10	-0.15	0.69	±5	2024/5/6
1900	22.3	1.418	40.648	1.40	40.00	1.29	1.62	±5	2024/5/3
1900	22.8	1.432	39.042	1.40	40.00	2.29	-2.40	±5	2024/5/8
2600	22.1	2.020	38.365	1.96	39.00	3.06	-1.63	±5	2024/5/1
2600	22.5	1.997	38.213	1.96	39.00	1.89	-2.02	±5	2024/5/5
2600	22.8	2.012	38.657	1.96	39.00	2.65	-0.88	±5	2024/5/8
3500	22.4	2.991	37.340	2.91	37.90	2.78	-1.48	±5	2024/5/6
3500	22.1	2.914	37.948	2.91	37.90	0.14	0.13	±5	2024/5/10
3500	22.5	2.962	38.413	2.91	37.90	1.79	1.35	±5	2024/5/13
3700	22.4	3.179	37.041	3.12	37.70	1.89	-1.75	±5	2024/5/6
3700	22.1	3.119	37.718	3.12	37.70	-0.03	0.05	±5	2024/5/10
3900	22.1	3.324	37.487	3.33	37.51	-0.18	-0.06	±5	2024/5/10
750	22.1	0.897	42.559	0.89	41.90	0.79	1.57	±5	2024/5/1
750	22.9	0.886	42.132	0.89	41.90	-0.45	0.55	±5	2024/5/9
750	22.9	0.893	41.994	0.89	41.90	0.34	0.22	±5	2024/5/9
835	22.1	0.932	42.263	0.90	41.50	3.56	1.84	±5	2024/5/1
835	22.3	0.923	42.617	0.90	41.50	2.56	2.69	±5	2024/5/3
835	22.8	0.917	42.548	0.90	41.50	1.89	2.53	±5	2024/5/8
835	22.9	0.920	41.836	0.90	41.50	2.22	0.81	±5	2024/5/9
835	22.9	0.927	41.698	0.90	41.50	3.00	0.48	±5	2024/5/9
1750	22.2	1.369	40.486	1.37	40.10	-0.07	0.96	±5	2024/5/2
1750	22.4	1.358	39.891	1.37	40.10	-0.88	-0.52	±5	2024/5/7
1750	22.8	1.367	40.352	1.37	40.10	-0.22	0.63	±5	2024/5/8
1900	22.2	1.446	38.938	1.40	40.00	3.29	-2.65	±5	2024/5/2
1900	22.3	1.418	40.648	1.40	40.00	1.29	1.62	±5	2024/5/3
1900	22.4	1.424	39.788	1.40	40.00	1.71	-0.53	±5	2024/5/7
2600	22.3	1.952	38.337	1.96	39.00	-0.41	-1.70	±5	2024/5/3
2600	22.5	1.997	38.213	1.96	39.00	1.89	-2.02	±5	2024/5/5
3500	22.6	2.890	37.905	2.91	37.90	-0.69	0.01	±5	2024/5/6
3500	22.3	2.983	37.223	2.91	37.90	2.51	-1.79	±5	2024/5/7
3500	22.1	2.914	37.948	2.91	37.90	0.14	0.13	±5	2024/5/10
3700	22.4	3.184	37.320	3.12	37.70	2.05	-1.01	±5	2024/5/4
3700	22.6	3.094	37.675	3.12	37.70	-0.83	-0.07	±5	2024/5/6
3700	22.3	3.171	36.924	3.12	37.70	1.63	-2.06	±5	2024/5/7



3700	22.1	3.119	37.718	3.12	37.70	-0.03	0.05	±5	2024/5/10
3900	22.4	3.281	37.271	3.33	37.51	-1.47	-0.64	±5	2024/5/8
3900	22.1	3.324	37.487	3.33	37.51	-0.18	-0.06	±5	2024/5/10
750	22.1	0.888	42.879	0.89	41.90	-0.22	2.34	±5	2024/5/1
750	22.9	0.893	41.994	0.89	41.90	0.34	0.22	±5	2024/5/9
835	22.1	0.921	42.583	0.90	41.50	2.33	2.61	±5	2024/5/1
835	22.9	0.927	41.698	0.90	41.50	3.00	0.48	±5	2024/5/9
1750	22.3	1.364	40.527	1.37	40.10	-0.44	1.06	±5	2024/5/3
1750	22.6	1.361	40.417	1.37	40.10	-0.66	0.79	±5	2024/5/7
1900	22.2	1.444	39.089	1.40	40.00	3.14	-2.28	±5	2024/5/2
1900	22.3	1.441	38.979	1.40	40.00	2.93	-2.55	±5	2024/5/3
2600	22.2	1.929	38.243	1.96	39.00	-1.58	-1.94	±5	2024/5/4
2600	22.3	1.952	39.118	1.96	39.00	-0.41	0.30	±5	2024/5/5
3500	22.6	2.890	37.905	2.91	37.90	-0.69	0.01	±5	2024/5/6
3500	22.4	2.991	37.340	2.91	37.90	2.78	-1.48	±5	2024/5/6
3500	22.1	2.914	37.948	2.91	37.90	0.14	0.13	±5	2024/5/10
3700	22.6	3.094	37.675	3.12	37.70	-0.83	-0.07	±5	2024/5/6
3700	22.4	3.179	37.041	3.12	37.70	1.89	-1.75	±5	2024/5/6
3700	22.4	3.108	37.516	3.12	37.70	-0.38	-0.49	±5	2024/5/8
3700	22.1	3.119	37.718	3.12	37.70	-0.03	0.05	±5	2024/5/10
3900	22.4	3.281	37.271	3.33	37.51	-1.47	-0.64	±5	2024/5/8
3900	22.1	3.324	37.487	3.33	37.51	-0.18	-0.06	±5	2024/5/10
13	22.2	0.728	54.700	0.75	55.00	-2.93	-0.55	±5	2024/5/13
2450	22.7	1.850	39.100	1.80	39.20	2.78	-0.26	±5	2024/5/10
2450	22.6	1.830	39.700	1.80	39.20	1.67	1.28	±5	2024/5/11
2450	22.3	1.770	39.800	1.80	39.20	-1.67	1.53	±5	2024/5/13
2450	22.7	1.770	39.100	1.80	39.20	-1.67	-0.26	±5	2024/5/20
5250	22.6	4.560	35.300	4.71	35.95	-3.18	-1.81	±5	2024/5/11
5250	22.8	4.670	35.700	4.71	35.95	-0.85	-0.70	±5	2024/5/11
5250	22.8	4.760	36.900	4.71	35.95	1.06	2.64	±5	2024/5/21
5600	22.6	4.950	34.700	5.07	35.50	-2.37	-2.25	±5	2024/5/11
5600	22.8	5.070	35.100	5.07	35.50	0.00	-1.13	±5	2024/5/11
5600	22.8	5.140	36.400	5.07	35.50	1.38	2.54	±5	2024/5/21
5750	22.6	5.130	34.300	5.22	35.35	-1.72	-2.97	±5	2024/5/11
5800	22.8	5.310	34.800	5.27	35.30	0.76	-1.42	±5	2024/5/11
5800	22.8	5.350	36.200	5.27	35.30	1.52	2.55	±5	2024/5/21
6500	22.7	6.120	35.000	6.07	34.50	0.82	1.45	±5	2024/5/10
6500	22.6	6.150	34.900	6.07	34.50	1.32	1.16	±5	2024/5/11
6500	22.5	6.140	34.400	6.07	34.50	1.15	-0.29	±5	2024/5/12



**11.2 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.

Date	Frequency (MHz)	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)	Test Site
2024/5/6	750	50	D750V3-1117	EX3DV4 - SN7625	DAE4 Sn1694	0.409	8.520	8.18	-3.99	0.272	5.600	5.44	-2.86	SAR-12
2024/5/9	750	50	D750V3-1012	EX3DV4 - SN7625	DAE4 Sn1694	0.403	8.560	8.06	-5.84	0.268	5.560	5.36	-3.60	SAR-12
2024/5/9	750	50	D750V3-1117	EX3DV4 - SN3728	DAE4 Sn699	0.409	8.520	8.18	-3.99	0.271	5.600	5.42	-3.21	SAR-09
2024/5/2	835	50	D835V2-499	EX3DV4 - SN7625	DAE4 Sn1694	0.465	9.680	9.3	-3.93	0.302	6.280	6.04	-3.82	SAR-12
2024/5/3	835	250	D835V2-4d167	EX3DV4 - SN7625	DAE4 Sn1694	2.440	9.800	9.76	-0.41	1.580	6.380	6.32	-0.94	SAR-12
2024/5/7	835	250	D835V2-4d167	EX3DV4 - SN7625	DAE4 Sn1694	2.440	9.800	9.76	-0.41	1.570	6.380	6.28	-1.57	SAR-12
2024/5/9	835	50	D835V2-4d060	EX3DV4 - SN3728	DAE4 Sn699	0.460	9.730	9.2	-5.45	0.303	6.390	6.06	-5.16	SAR-09
2024/5/4	1750	50	D1750V2-1068	EX3DV4 - SN7625	DAE4 Sn1694	1.680	36.700	33.6	-8.45	0.885	19.300	17.7	-8.29	SAR-12
2024/5/6	1750	250	D1750V2-1112	EX3DV4 - SN7625	DAE4 Sn1694	8.380	36.900	33.52	-9.16	4.420	19.400	17.68	-8.87	SAR-12
2024/5/3	1900	250	D1900V2-5d041	EX3DV4 - SN7625	DAE4 Sn1694	9.330	40.600	37.32	-8.08	4.930	21.100	19.72	-6.54	SAR-12
2024/5/8	1900	50	D1900V2-5d185	EX3DV4 - SN7625	DAE4 Sn1694	1.800	39.000	36	-7.69	0.931	20.400	18.62	-8.73	SAR-12
2024/5/1	2600	50	D2600V2-1078	EX3DV4 - SN7625	DAE4 Sn1694	2.850	55.400	57	2.89	1.280	24.900	25.6	2.81	SAR-12
2024/5/5	2600	50	D2600V2-1078	EX3DV4 - SN7625	DAE4 Sn1694	2.820	55.400	56.4	1.81	1.270	24.900	25.4	2.01	SAR-12
2024/5/8	2600	50	D2600V2-1078	EX3DV4 - SN7625	DAE4 Sn1694	2.840	55.400	56.8	2.53	1.280	24.900	25.6	2.81	SAR-12
2024/5/6	3500	50	D3500V2-1014	EX3DV4 - SN3728	DAE4 Sn699	3.540	67.200	70.8	5.36	1.320	25.100	26.4	5.18	SAR-09
2024/5/10	3500	100	D3500V2-1014	EX3DV4 - SN7625	DAE4 Sn1694	6.550	67.200	65.5	-2.53	2.440	25.100	24.4	-2.79	SAR-12
2024/5/13	3500	50	D3500V2-1014	EX3DV4 - SN7793	DAE4 Sn1647	3.490	67.200	69.8	3.87	1.300	25.100	26	3.59	SAR-08
2024/5/6	3700	50	D3700V2-1022	EX3DV4 - SN3728	DAE4 Sn699	3.430	68.200	68.6	0.59	1.250	24.700	25	1.21	SAR-09
2024/5/10	3700	100	D3700V2-1006	EX3DV4 - SN7625	DAE4 Sn1694	6.870	65.600	68.7	4.73	2.470	23.700	24.7	4.22	SAR-12
2024/5/10	3900	100	D3900V2-1017-3900	EX3DV4 - SN7625	DAE4 Sn1694	7.080	68.700	70.8	3.06	2.440	23.900	24.4	2.09	SAR-12
2024/5/1	750	250	D750V3-1107	EX3DV4 - SN3728	DAE4 Sn699	2.230	8.540	8.92	4.45	1.490	5.570	5.96	7.00	SAR-09
2024/5/9	750	50	D750V3-1012	EX3DV4 - SN7625	DAE4 Sn1694	0.403	8.560	8.06	-5.84	0.268	5.560	5.36	-3.60	SAR-12
2024/5/9	750	50	D750V3-1117	EX3DV4 - SN3728	DAE4 Sn699	0.409	8.520	8.18	-3.99	0.271	5.600	5.42	-3.21	SAR-09
2024/5/1	835	250	D835V2-4d167	EX3DV4 - SN3728	DAE4 Sn699	2.550	9.800	10.2	4.08	1.680	6.380	6.72	5.33	SAR-09
2024/5/3	835	250	D835V2-4d167	EX3DV4 - SN7625	DAE4 Sn1694	2.440	9.800	9.76	-0.41	1.580	6.380	6.32	-0.94	SAR-12
2024/5/8	835	250	D835V2-4d167	EX3DV4 - SN7625	DAE4 Sn1694	2.660	9.800	10.64	8.57	1.720	6.380	6.88	7.84	SAR-12
2024/5/9	835	250	D835V2-4d167	EX3DV4 - SN7625	DAE4 Sn1694	2.430	9.800	9.72	-0.82	1.570	6.380	6.28	-1.57	SAR-12
2024/5/9	835	50	D835V2-4d060	EX3DV4 - SN3728	DAE4 Sn699	0.460	9.730	9.2	-5.45	0.303	6.390	6.06	-5.16	SAR-09
2024/5/2	1750	50	D1750V2-1112	EX3DV4 - SN3728	DAE4 Sn699	1.810	36.900	36.2	-1.90	0.962	19.400	19.24	-0.82	SAR-09
2024/5/7	1750	50	D1750V2-1068	EX3DV4 - SN7625	DAE4 Sn1694	1.670	36.700	33.4	-8.99	0.878	19.300	17.56	-9.02	SAR-12
2024/5/8	1750	50	D1750V2-1068	EX3DV4 - SN3728	DAE4 Sn699	1.710	36.700	34.2	-6.81	0.925	19.300	18.5	-4.15	SAR-09
2024/5/2	1900	50	D1900V2-5d093	EX3DV4 - SN3728	DAE4 Sn699	2.030	39.900	40.6	1.75	1.050	20.700	21	1.45	SAR-09
2024/5/3	1900	250	D1900V2-5d041	EX3DV4 - SN7625	DAE4 Sn1694	9.330	40.600	37.32	-8.08	4.930	21.100	19.72	-6.54	SAR-12
2024/5/7	1900	250	D1900V2-5d041	EX3DV4 - SN7625	DAE4 Sn1694	10.100	40.600	40.4	-0.49	5.280	21.100	21.12	0.09	SAR-12
2024/5/3	2600	250	D2600V2-1008	EX3DV4 - SN3728	DAE4 Sn699	14.400	58.000	57.6	-0.69	6.330	25.800	25.32	-1.86	SAR-09
2024/5/5	2600	50	D2600V2-1078	EX3DV4 - SN7625	DAE4 Sn1694	2.820	55.400	56.4	1.81	1.270	24.900	25.4	2.01	SAR-12
2024/5/6	3500	50	D3500V2-1014	EX3DV4 - SN7793	DAE4 Sn1647	3.410	67.200	68.2	1.49	1.270	25.100	25.4	1.20	SAR-08
2024/5/7	3500	50	D3500V2-1014	EX3DV4 - SN3728	DAE4 Sn699	3.530	67.200	70.6	5.06	1.310	25.100	26.2	4.38	SAR-09
2024/5/10	3500	100	D3500V2-1014	EX3DV4 - SN7625	DAE4 Sn1694	6.550	67.200	65.5	-2.53	2.440	25.100	24.4	-2.79	SAR-12
2024/5/4	3700	50	D3700V2-1022	EX3DV4 - SN3728	DAE4 Sn699	3.440	68.200	68.8	0.88	1.250	24.700	25	1.21	SAR-09
2024/5/6	3700	50	D3700V2-1006	EX3DV4 - SN7793	DAE4 Sn1647	3.500	65.600	70	6.71	1.300	23.700	26	9.70	SAR-08
2024/5/7	3700	50	D3700V2-1022	EX3DV4 - SN3728	DAE4 Sn699	3.430	68.200	68.6	0.59	1.250	24.700	25	1.21	SAR-09
2024/5/10	3700	100	D3700V2-1006	EX3DV4 - SN7625	DAE4 Sn1694	6.870	65.600	68.7	4.73	2.470	23.700	24.7	4.22	SAR-12
2024/5/8	3900	50	D3900V2-1017-3900	EX3DV4 - SN3976	DAE4 Sn1697	3.160	68.700	63.2	-8.01	1.120	23.900	22.4	-6.28	SAR-13
2024/5/10	3900	100	D3900V2-1017-3900	EX3DV4 - SN7625	DAE4 Sn1694	7.080	68.700	70.8	3.06	2.440	23.900	24.4	2.09	SAR-12
2024/5/1	750	50	D750V3-1107	EX3DV4 - SN7793	DAE4 Sn1647	0.410	8.540	8.2	-3.98	0.277	5.570	5.54	-0.54	SAR-08
2024/5/9	750	50	D750V3-1117	EX3DV4 - SN3728	DAE4 Sn699	0.409	8.520	8.18	-3.99	0.271	5.600	5.42	-3.21	SAR-09
2024/5/1	835	50	D835V2-4d167	EX3DV4 - SN7793	DAE4 Sn1647	0.501	9.800	10.02	2.24	0.337	6.380	6.74	5.64	SAR-08

2024/5/9	835	50	D835V2-4d060	EX3DV4 - SN3728	DAE4 Sn699	0.460	9.730	9.2	-5.45	0.303	6.390	6.06	-5.16	SAR-09
2024/5/3	1750	50	D1750V2-1112	EX3DV4 - SN7793	DAE4 Sn1647	1.930	36.900	38.6	4.61	1.010	19.400	20.2	4.12	SAR-08
2024/5/7	1750	50	D1750V2-1112	EX3DV4 - SN7793	DAE4 Sn1647	1.930	36.900	38.6	4.61	1.010	19.400	20.2	4.12	SAR-08
2024/5/2	1900	50	D1900V2-5d185	EX3DV4 - SN7793	DAE4 Sn1647	2.000	39.000	40	2.56	1.040	20.400	20.8	1.96	SAR-08
2024/5/3	1900	250	D1900V2-5d185	EX3DV4 - SN7793	DAE4 Sn1647	10.400	39.000	41.6	6.67	5.510	20.400	22.04	8.04	SAR-08
2024/5/4	2600	50	D2600V2-1078	EX3DV4 - SN7793	DAE4 Sn1647	2.790	55.400	55.8	0.72	1.260	24.900	25.2	1.20	SAR-08
2024/5/5	2600	50	D2600V2-1078	EX3DV4 - SN7793	DAE4 Sn1647	2.940	55.400	58.8	6.14	1.290	24.900	25.8	3.61	SAR-08
2024/5/6	3500	50	D3500V2-1014	EX3DV4 - SN7793	DAE4 Sn1647	3.410	67.200	68.2	1.49	1.270	25.100	25.4	1.20	SAR-08
2024/5/6	3500	50	D3500V2-1014	EX3DV4 - SN3728	DAE4 Sn699	3.540	67.200	70.8	5.36	1.320	25.100	26.4	5.18	SAR-09
2024/5/10	3500	100	D3500V2-1014	EX3DV4 - SN7625	DAE4 Sn1694	6.550	67.200	65.5	-2.53	2.440	25.100	24.4	-2.79	SAR-12
2024/5/6	3700	50	D3700V2-1006	EX3DV4 - SN7793	DAE4 Sn1647	3.500	65.600	70	6.71	1.300	23.700	26	9.70	SAR-08
2024/5/6	3700	50	D3700V2-1022	EX3DV4 - SN3728	DAE4 Sn699	3.430	68.200	68.6	0.59	1.250	24.700	25	1.21	SAR-09
2024/5/8	3700	50	D3700V2-1022	EX3DV4 - SN3976	DAE4 Sn1697	3.310	68.200	66.2	-2.93	1.220	24.700	24.4	-1.21	SAR-13
2024/5/10	3700	100	D3700V2-1006	EX3DV4 - SN7625	DAE4 Sn1694	6.870	65.600	68.7	4.73	2.470	23.700	24.7	4.22	SAR-12
2024/5/8	3900	50	D3900V2-1017-3900	EX3DV4 - SN3976	DAE4 Sn1697	3.160	68.700	63.2	-8.01	1.120	23.900	22.4	-6.28	SAR-13
2024/5/10	3900	100	D3900V2-1017-3900	EX3DV4 - SN7625	DAE4 Sn1694	7.080	68.700	70.8	3.06	2.440	23.900	24.4	2.09	SAR-12
2024/5/13	13	1000	CLA13-1022	EX3DV4 - SN3931	DAE4 Sn376	0.505	0.560	0.505	-9.82	0.317	0.349	0.317	-9.43	SAR-14
2024/5/10	2450	50	D2450V2-736	EX3DV4 - SN7590	DAE4 Sn1776	2.590	54.200	51.8	-4.43	1.220	25.300	24.4	-3.56	SAR-15
2024/5/11	2450	50	D2450V2-929	EX3DV4 - SN7814	DAE4 Sn316	2.560	52.400	51.2	-2.29	1.220	24.700	24.4	-1.21	SAR-16
2024/5/13	2450	50	D2450V2-736	EX3DV4 - SN7590	DAE4 Sn1776	2.500	54.200	50	-7.75	1.180	25.300	23.6	-6.72	SAR-15
2024/5/20	2450	50	D2450V2-736	EX3DV4 - SN7590	DAE4 Sn1776	2.530	54.200	50.6	-6.64	1.200	25.300	24	-5.14	SAR-15
2024/5/11	5250	100	D5GHzV2-1171-5250	EX3DV4 - SN7814	DAE4 Sn316	7.780	78.700	77.8	-1.14	2.280	22.700	22.8	0.44	SAR-16
2024/5/11	5250	50	D5GHzV2-1006-5250	EX3DV4 - SN7590	DAE4 Sn1776	4.310	81.200	86.2	6.16	1.220	23.200	24.4	5.17	SAR-15
2024/5/21	5250	50	D5GHzV2-1171-5250	EX3DV4 - SN7590	DAE4 Sn1776	3.730	78.700	74.6	-5.21	1.090	22.700	21.8	-3.96	SAR-15
2024/5/11	5600	100	D5GHzV2-1171-5600	EX3DV4 - SN7814	DAE4 Sn316	8.710	81.400	87.1	7.00	2.520	23.400	25.2	7.69	SAR-16
2024/5/11	5600	50	D5GHzV2-1006-5600	EX3DV4 - SN7590	DAE4 Sn1776	4.260	84.700	85.2	0.59	1.220	24.200	24.4	0.83	SAR-15
2024/5/21	5600	50	D5GHzV2-1171-5600	EX3DV4 - SN7590	DAE4 Sn1776	4.120	81.400	82.4	1.23	1.190	23.400	23.8	1.71	SAR-15
2024/5/11	5750	100	D5GHzV2-1171-5750	EX3DV4 - SN7814	DAE4 Sn316	8.010	80.400	80.1	-0.37	2.310	22.800	23.1	1.32	SAR-16
2024/5/11	5800	50	D5GHzV2-1128-5800	EX3DV4 - SN7590	DAE4 Sn1776	4.280	78.700	85.6	8.77	1.180	22.200	23.6	6.31	SAR-15
2024/5/21	5800	50	D5GHzV2-1128-5800	EX3DV4 - SN7590	DAE4 Sn1776	3.680	78.700	73.6	-6.48	1.060	22.200	21.2	-4.50	SAR-15
2024/5/10	6500	100	D6.5GHzV2-1083	EX3DV4 - SN7590	DAE4 Sn1776	31.900	292.000	319	9.25	5.940	54.000	59.4	10.00	SAR-15
2024/5/11	6500	100	D6.5GHzV2-1083	EX3DV4 - SN7814	DAE4 Sn316	30.500	292.000	305	4.45	5.680	54.000	56.8	5.19	SAR-16
2024/5/12	6500	100	D6.5GHzV2-1083	EX3DV4 - SN7590	DAE4 Sn1776	30.900	292.000	309	5.82	5.740	54.000	57.4	6.30	SAR-15

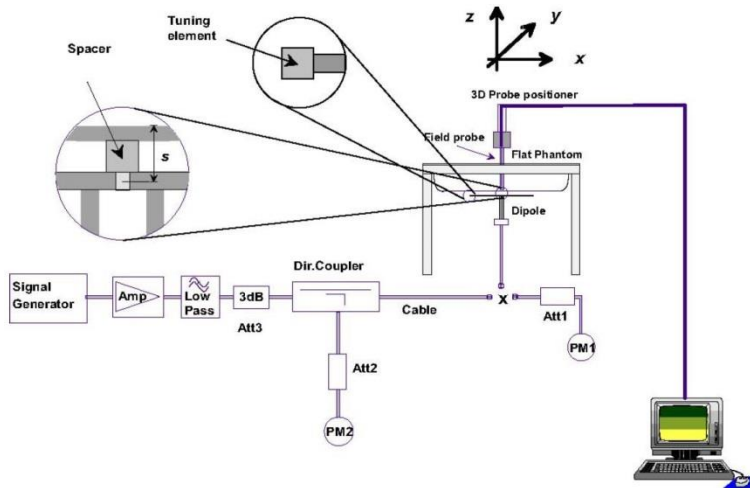


Fig 8.3.1 System Performance Check Setup

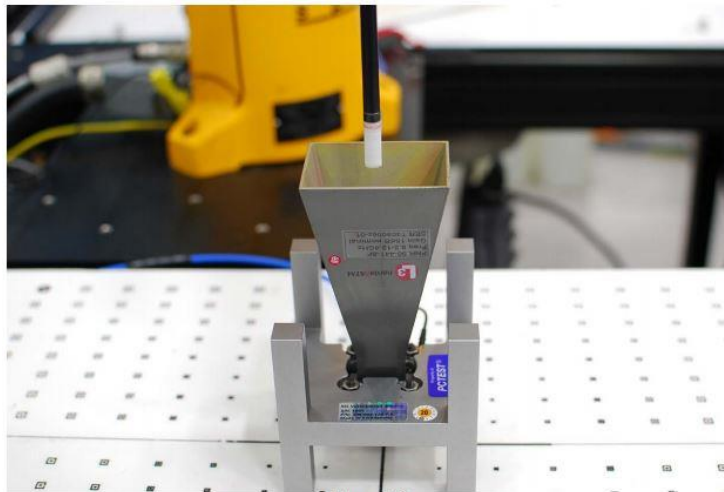


Fig 8.3.2 Setup Photo

**11.3 PD System Performance Check Results**

The system was verified to be within  $\pm 0.66$  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 <sup>2</sup> (W/m <sup>2</sup> )	Targeted 4 cm <sup>2</sup> (W/m <sup>2</sup> )	Deviation (dB)	Date
SAR13	10G	10GHz_1020	9441	1424	10	62	55.8	0.46	2024/5/13



**Figure 4-3**  
System Verification Setup Photo

**System Performance Check Setup**

## 12. RF Exposure Positions

### 12.1 Ear and handset reference point

Figure 9.1.1 shows the front, back, and side views of the SAM phantom. The center-of-mouth reference point is labeled “M,” the left ear reference point (ERP) is marked “LE,” and the right ERP is marked “RE.” Each ERP is 15 mm along the B-M (back-mouth) line behind the entrance-to-ear-canal (EEC) point, as shown in Figure 9.1.2 The Reference Plane is defined as passing through the two ear reference points and point M. The line N-F (neck-front), also called the reference pivoting line, is normal to the Reference Plane and perpendicular to both a line passing through RE and LE and the B-M line (see Figure 9.1.3). Both N-F and B-M lines should be marked on the exterior of the phantom shell to facilitate handset positioning. Posterior to the N-F line the ear shape is a flat surface with 6 mm thickness at each ERP, and forward of the N-F line the ear is truncated, as illustrated in Figure 9.1.2. The ear truncation is introduced to preclude the ear lobe from interfering with handset tilt, which could lead to unstable positioning at the cheek.

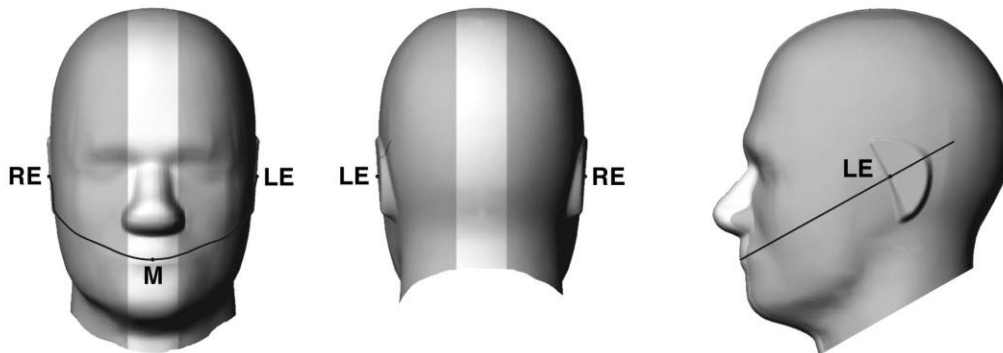


Fig 9.1.1 Front, back, and side views of SAM twin phantom



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

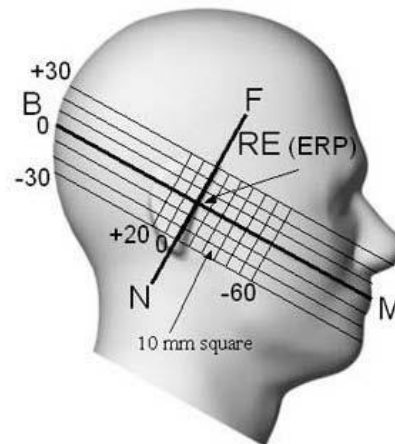


Fig 9.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

**12.2 Definition of the cheek position**

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. Define two imaginary lines on the handset—the vertical centerline and the horizontal line. The vertical centerline passes through two points on the front side of the handset—the midpoint of the width  $w_t$  of the handset at the level of the acoustic output (point A in Figure 9.2.1 and Figure 9.2.2), and the midpoint of the width  $w_b$  of the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output (see Figure 9.2.1). The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset (see Figure 9.2.2), especially for clamshell handsets, handsets with flip covers, and other irregularly-shaped handsets.
3. Position the handset close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 9.2.3), such that the plane defined by the vertical centerline and the horizontal line of the handset is approximately parallel to the sagittal plane of the phantom.
4. Translate the handset towards the phantom along the line passing through RE and LE until handset point A touches the pinna at the ERP.
5. While maintaining the handset in this plane, rotate it around the LE-RE line until the vertical centerline is in the plane normal to the plane containing B-M and N-F lines, i.e., the Reference Plane.
6. Rotate the handset around the vertical centerline until the handset (horizontal line) is parallel to the N-F line.
7. While maintaining the vertical centerline in the Reference Plane, keeping point A on the line passing through RE and LE, and maintaining the handset contact with the pinna, rotate the handset about the N-F line until any point on the handset is in contact with a phantom point below the pinna on the cheek. See Figure 9.2.3. The actual rotation angles should be documented in the test report.

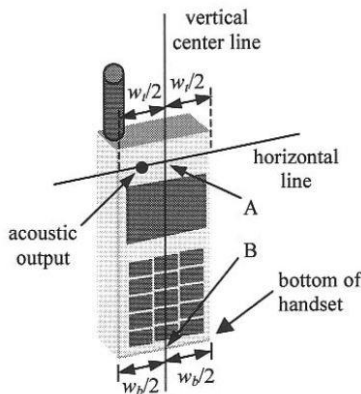


Fig 9.2.1 Handset vertical and horizontal reference lines— “fixed case”

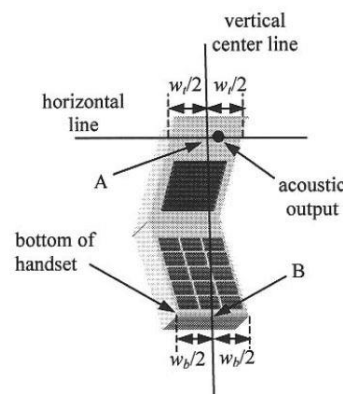


Fig 9.2.2 Handset vertical and horizontal reference lines— “clam-shell case”

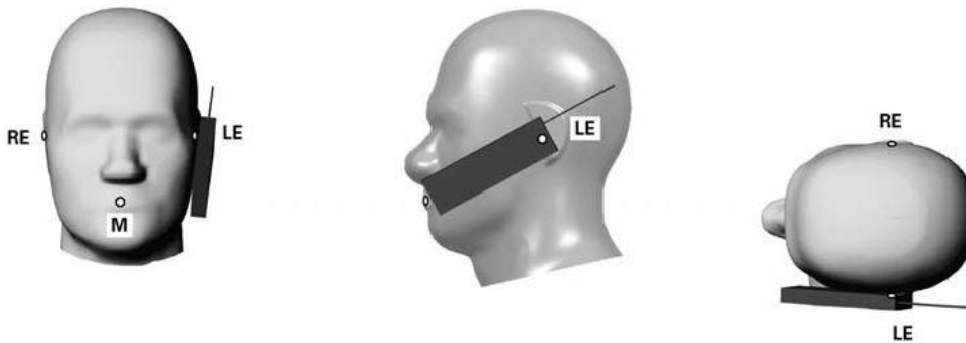


Fig 9.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

**12.3 Definition of the tilt position**

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. While maintaining the orientation of the handset, move the handset away from the pinna along the line passing through RE and LE far enough to allow a rotation of the handset away from the cheek by 15°.
3. Rotate the handset around the horizontal line by 15°.
4. While maintaining the orientation of the handset, move the handset towards the phantom on the line passing through RE and LE until any part of the handset touches the ear. The tilt position is obtained when the contact point is on the pinna. See Figure 9.3.1. If contact occurs at any location other than the pinna, e.g., the antenna at the back of the phantom head, the angle of the handset should be reduced. In this case, the tilt position is obtained if any point on the handset is in contact with the pinna and a second point

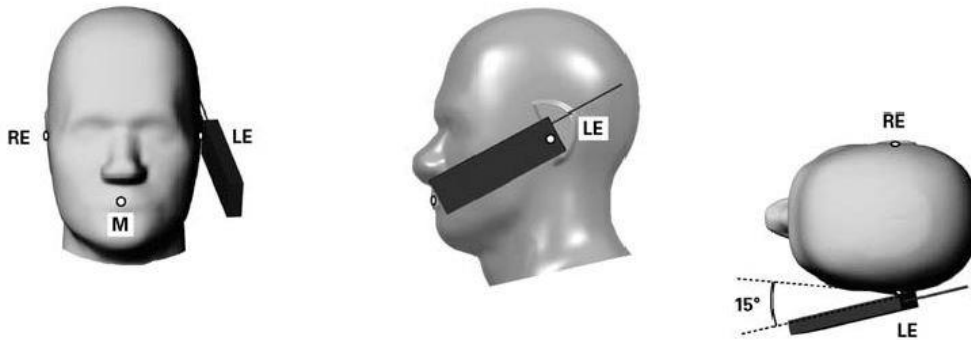


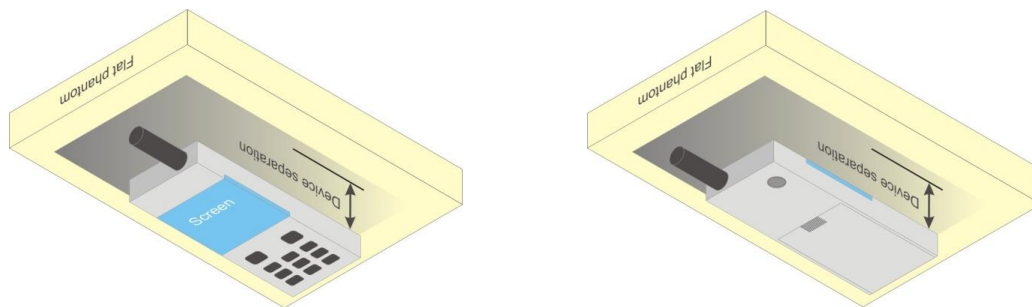
Fig 9.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.



**12.4 Body Worn Accessory**

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

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



**Fig 9.4 Body Worn Position**

**12.5 Product Specific Exposure**

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

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



## **12.6 Wireless Router**

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 v02r01 where SAR test considerations for handsets (L x W  $\geq$  9 cm x 5 cm) are based on a composite test separation distance of 10mm from the front, back and edges of the device containing transmitting antennas within 2.5cm of their edges, determined from general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WIFI transmitter according to FCC KDB Publication 447498 D01v06 publication procedures. The "Portable Hotspot" feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.



### **13. DL/UL carrier aggregation**

#### **<Power verification when LTE Carrier Aggregation Active>**

##### **General Note:**

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

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



<Two Carrier power verification>

CA List	PCC									SCC					Power	
	LTE	BW	BW	UL	UL	Mod.	UL#	UL	DL Antenna Configuration	LTE	BW	DL	DL	DL Antenna Configuration	With CA	Without CA
	Band	Ant	(MHz)	Freq. (MHz)			Channel	RB		Offset	Band	(MHz)	Freq. (MHz)		Channel	Tx. Power (dBm)
CA_26A-38A	Band 26	ANT0	15M	831.5	26865	QPSK	1	0		Band 38	20M	2595	38000	4x4MIMO	24.87	25.03
	Band 26	ANT1	15M	831.5	26865	QPSK	1	0		Band 38	20M	2595	38000	4x4MIMO	24.31	24.47
	Band 38	ANT2	20M	2595	38000	QPSK	1	0	4x4MIMO	Band 26	15M	831.5	26865		25.51	25.59
	Band 38	ANT3	20M	2595	38000	QPSK	1	0	4x4MIMO	Band 26	15M	831.5	26865		24.26	24.35
	Band 38	ANT5	20M	2595	38000	QPSK	1	0	4x4MIMO	Band 26	15M	831.5	26865		24.70	24.74
	Band 38	ANT4	20M	2595	38000	QPSK	1	0	4x4MIMO	Band 26	15M	831.5	26865		22.24	22.35
CA_26A-41A	Band 26	ANT0	15M	831.5	26865	QPSK	1	0		Band 41	20M	2593	40620	4x4MIMO	24.86	25.03
	Band 26	ANT1	15M	831.5	26865	QPSK	1	0		Band 41	20M	2593	40620	4x4MIMO	24.46	24.47
	Band 41	ANT2	20M	2593	40620	QPSK	1	0	4x4MIMO	Band 26	15M	876.5	8865		25.33	25.53
	Band 41	ANT3	20M	2593	40620	QPSK	1	0	4x4MIMO	Band 26	15M	876.5	8865		24.46	24.52
	Band 41	ANT5	20M	2593	40620	QPSK	1	0	4x4MIMO	Band 26	15M	876.5	8865		24.81	24.99
	Band 41	ANT4	20M	2593	40620	QPSK	1	0	4x4MIMO	Band 26	15M	876.5	8865		22.41	22.50
CA_2A-2A	Band 2	ANT2	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 2	5M	1987.5	1175	4x4MIMO	24.04	24.10
	Band 2	ANT3	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 2	5M	1987.5	1175	4x4MIMO	23.35	23.37
	Band 2	ANT5	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 2	5M	1987.5	1175	4x4MIMO	23.39	23.60
	Band 2	ANT4	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 2	5M	1987.5	1175	4x4MIMO	21.63	21.85
CA_2A-26A	Band 2	ANT2	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 26	15M	831.5	26865		23.89	24.10
	Band 2	ANT3	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 26	15M	831.5	26865		23.22	23.37
	Band 2	ANT5	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 26	15M	831.5	26865		23.56	23.60
	Band 2	ANT4	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 26	15M	831.5	26865		21.76	21.85
	Band 26	ANT0	15M	831.5	26865	QPSK	1	0		Band 2	20M	1960	900	4x4MIMO	24.88	25.03
	Band 26	ANT1	15M	831.5	26865	QPSK	1	0		Band 2	20M	1960	900	4x4MIMO	24.34	24.47
CA_2C	Band 2	ANT2	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 2	20M	1979.8	1098	4x4MIMO	23.89	24.10
	Band 2	ANT3	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 2	20M	1979.8	1098	4x4MIMO	23.17	23.37
	Band 2	ANT5	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 2	20M	1979.8	1098	4x4MIMO	23.50	23.60
	Band 2	ANT4	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 2	20M	1979.8	1098	4x4MIMO	21.77	21.85
CA_38C	Band 38	ANT2	20M	2580	37850	QPSK	1	0	4x4MIMO	Band 38	20M	2599.8	38048	4x4MIMO	25.55	25.59
	Band 38	ANT3	20M	2580	37850	QPSK	1	0	4x4MIMO	Band 38	20M	2599.8	38048	4x4MIMO	24.28	24.35
	Band 38	ANT5	20M	2580	37850	QPSK	1	0	4x4MIMO	Band 38	20M	2599.8	38048	4x4MIMO	24.66	24.74
	Band 38	ANT4	20M	2580	37850	QPSK	1	0	4x4MIMO	Band 38	20M	2599.8	38048	4x4MIMO	22.30	22.35
CA_41C	Band 41	ANT2	20M	2593	40620	QPSK	1	0	4x4MIMO	Band 41	20M	2612.8	40818	4x4MIMO	25.51	25.53
	Band 41	ANT3	20M	2593	40620	QPSK	1	0	4x4MIMO	Band 41	20M	2612.8	40818	4x4MIMO	24.31	24.52
	Band 41	ANT5	20M	2593	40620	QPSK	1	0	4x4MIMO	Band 41	20M	2612.8	40818	4x4MIMO	24.87	24.99
	Band 41	ANT4	20M	2593	40620	QPSK	1	0	4x4MIMO	Band 41	20M	2612.8	40818	4x4MIMO	22.48	22.50
CA_66C	Band 66	ANT2	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	20M	2164.8	66984	4x4MIMO	24.11	24.13
	Band 66	ANT3	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	20M	2164.8	66984	4x4MIMO	23.38	23.48
	Band 66	ANT5	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	20M	2164.8	66984	4x4MIMO	23.68	23.69
	Band 66	ANT4	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	20M	2164.8	66984	4x4MIMO	21.59	21.79
CA_7A-26A	Band 7	ANT2	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 26	15M	876.5	8865		25.44	25.51
	Band 7	ANT3	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 26	15M	876.5	8865		24.60	24.70
	Band 7	ANT5	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 26	15M	876.5	8865		24.98	25.14
	Band 7	ANT4	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 26	15M	876.5	8865		22.49	22.59
	Band 26	ANT0	15M	831.5	26865	QPSK	1	0		Band 7	20M	2655	3100	4x4MIMO	24.85	25.03
	Band 26	ANT1	15M	831.5	26865	QPSK	1	0		Band 7	20M	2655	3100	4x4MIMO	24.29	24.47
CA_66B	Band 66	ANT2	15M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	5M	2164.3	66979	4x4MIMO	23.99	24.13
	Band 66	ANT3	15M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	5M	2164.3	66979	4x4MIMO	23.40	23.48
	Band 66	ANT5	15M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	5M	2164.3	66979	4x4MIMO	23.54	23.69
	Band 66	ANT4	15M	1745	132322	QPSK	1	0	4x4MIMO	Band 66	5M	2164.3	66979	4x4MIMO	21.67	21.79
CA_2A-38A	Band 2	ANT2	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 38	20M	2595	38000	4x4MIMO	24.03	24.10
	Band 2	ANT3	20M	1880	18900	QPSK	1	0	4x4MIMO	Band 38	20M	2595	38000	4x4MIMO	23.22	23.37







**FCC SAR TEST REPORT**

**Report No. : FA442005B**

	Band 5	ANT1	10M	836.5	20525	QPSK	1	0		Band 66	20M	2155	66886	4x4MIMO	Band 7	20M	2655	3100	4x4MIMO	24.22	24.38
	Band 7	ANT2	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 5	10M	881.5	2525		Band 66	20M	2155	66886	4x4MIMO	25.47	25.51
	Band 7	ANT3	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 5	10M	881.5	2525		Band 66	20M	2155	66886	4x4MIMO	24.51	24.70
	Band 7	ANT5	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 5	10M	881.5	2525		Band 66	20M	2155	66886	4x4MIMO	25.08	25.14
	Band 7	ANT4	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 5	10M	881.5	2525		Band 66	20M	2155	66886	4x4MIMO	22.42	22.59
	Band 66	ANT2	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 7	20M	2655	3100	4x4MIMO	Band 5	10M	881.5	2525		24.00	24.13
	Band 66	ANT3	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 7	20M	2655	3100	4x4MIMO	Band 5	10M	881.5	2525		23.29	23.48
	Band 66	ANT5	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 7	20M	2655	3100	4x4MIMO	Band 5	10M	881.5	2525		23.63	23.69
	Band 66	ANT4	20M	1745	132322	QPSK	1	0	4x4MIMO	Band 7	20M	2655	3100	4x4MIMO	Band 5	10M	881.5	2525		21.73	21.79
CA_5A-7A-7A	Band 5	ANT0	10M	836.5	20525	QPSK	1	0		Band 7	20M	2655	3100	4x4MIMO	Band 7	5M	2687.5	3425	4x4MIMO	24.98	25.05
	Band 5	ANT1	10M	836.5	20525	QPSK	1	0		Band 7	20M	2655	3100	4x4MIMO	Band 7	5M	2687.5	3425	4x4MIMO	24.18	24.38
	Band 7	ANT2	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	5M	2687.5	3425	4x4MIMO	Band 5	10M	881.5	2525		25.32	25.51
	Band 7	ANT3	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	5M	2687.5	3425	4x4MIMO	Band 5	10M	881.5	2525		24.52	24.70
	Band 7	ANT5	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	5M	2687.5	3425	4x4MIMO	Band 5	10M	881.5	2525		24.94	25.14
	Band 7	ANT4	20M	2535	21100	QPSK	1	0	4x4MIMO	Band 7	5M	2687.5	3425	4x4MIMO	Band 5	10M	881.5	2525		22.41	22.59

**<LTE Uplink carrier aggregation>**

2CC Uplink Carrier Aggregation	
Number	Combination
1	CA_7C
2	CA_38C

**<Intra-band>**

**General Note:**

- i. The device supports intra-band uplink carrier aggregation with a maximum of two 20MHz component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre 3GPP requirement.
- ii. According TCB workshop, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.
- iii. Uplink CA is only operating with power class3, and additional SAR measurement for LTE UL CA whit other DL CA combinations active were not required since the maximum output power for this configuration was not > 0.25dB higher than the maximum output power for UL CA active.
- iv. For Intra-band, contiguous CA, the channels selected to perform the uplink power measurement must satisfy 3GPP channel spacing (5.4.1A of 3GPP TS 36.521 or equivalent) and channel bandwidth (5.4.2A) requirements.

CA_7C_Ant2_DSI 0_Main PA										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20850	21048	QPSK	1	99	1	0	2	0	24.84	25.70
21100	21298	QPSK	1	99	1	0	2	0	24.93	25.70
21350	21152	QPSK	1	0	1	99	2	0	24.89	25.70

CA_7C_Ant2_DSI 1/5_Main PA										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20850	21048	QPSK	1	99	1	0	2	0	16.39	16.70
21100	21298	QPSK	1	99	1	0	2	0	16.58	16.70
21350	21152	QPSK	1	0	1	99	2	0	16.42	16.70

CA_7C_Ant2_DSI 3/4_Main PA										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20850	21048	QPSK	1	99	1	0	2	0	19.62	20.20
21100	21298	QPSK	1	99	1	0	2	0	19.77	20.20
21350	21152	QPSK	1	0	1	99	2	0	19.68	20.20





CA_7C_Ant3_DSI 0/4_Main PA										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20850	21048	QPSK	1	99	1	0	2	0	23.40	24.70
21100	21298	QPSK	1	99	1	0	2	0	23.48	24.70
21350	21152	QPSK	1	0	1	99	2	0	23.50	24.70

CA_7C_Ant3_DSI 1/5_Main PA										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20850	21048	QPSK	1	99	1	0	2	0	15.19	16.20
21100	21298	QPSK	1	99	1	0	2	0	15.28	16.20
21350	21152	QPSK	1	0	1	99	2	0	15.30	16.20

CA_7C_Ant3_DSI 3_Main PA										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20850	21048	QPSK	1	99	1	0	2	0	19.33	20.20
21100	21298	QPSK	1	99	1	0	2	0	19.21	20.20
21350	21152	QPSK	1	0	1	99	2	0	19.24	20.20

CA_7C_Ant4_DSI 0/4_Main PA										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20850	21048	QPSK	1	99	1	0	2	0	20.72	22.00
21100	21298	QPSK	1	99	1	0	2	0	20.77	22.00
21350	21152	QPSK	1	0	1	99	2	0	20.69	22.00

CA_7C_Ant4_DSI 1/5_Main PA										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20850	21048	QPSK	1	99	1	0	2	0	14.26	15.50
21100	21298	QPSK	1	99	1	0	2	0	14.39	15.50
21350	21152	QPSK	1	0	1	99	2	0	14.33	15.50

CA_7C_Ant4_DSI 3_Main PA										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20850	21048	QPSK	1	99	1	0	2	0	18.17	19.00
21100	21298	QPSK	1	99	1	0	2	0	18.34	19.00
21350	21152	QPSK	1	0	1	99	2	0	18.25	19.00



CA_7C_Ant5_DSI 0/1/4_Main PA										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20850	21048	QPSK	1	99	1	0	2	0	24.16	25.70
21100	21298	QPSK	1	99	1	0	2	0	24.19	25.70
21350	21152	QPSK	1	0	1	99	2	0	24.26	25.70

CA_7C_Ant5_DSI 3/5_Main PA										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20850	21048	QPSK	1	99	1	0	2	0	19.29	20.70
21100	21298	QPSK	1	99	1	0	2	0	19.26	20.70
21350	21152	QPSK	1	0	1	99	2	0	19.23	20.70

CA_38C_Ant2_DSI 0_Main PA										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
37850	38048	QPSK	1	99	1	0	2	0	24.12	24.70
37901	38099	QPSK	1	99	1	0	2	0	24.28	24.70
38150	37952	QPSK	1	0	1	99	2	0	24.23	24.70

CA_38C_Ant2_DSI 1/5_Main PA										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
37850	38048	QPSK	1	99	1	0	2	0	17.08	17.50
37901	38099	QPSK	1	99	1	0	2	0	17.17	17.50
38150	37952	QPSK	1	0	1	99	2	0	17.15	17.50

CA_38C_Ant2_DSI 3/4_Main PA										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
37850	38048	QPSK	1	99	1	0	2	0	22.26	22.50
37901	38099	QPSK	1	99	1	0	2	0	22.32	22.50
38150	37952	QPSK	1	0	1	99	2	0	22.19	22.50

CA_38C_Ant3_DSI 0/4_Main PA										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
37850	38048	QPSK	1	99	1	0	2	0	23.19	24.70
37901	38099	QPSK	1	99	1	0	2	0	23.36	24.70
38150	37952	QPSK	1	0	1	99	2	0	23.22	24.70



CA_38C_Ant3_DSI 1/5_Main PA										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
37850	38048	QPSK	1	99	1	0	2	0	17.82	19.00
37901	38099	QPSK	1	99	1	0	2	0	17.98	19.00
38150	37952	QPSK	1	0	1	99	2	0	17.91	19.00

CA_38C_Ant3_DSI 3_Main PA										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
37850	38048	QPSK	1	99	1	0	2	0	22.05	23.00
37901	38099	QPSK	1	99	1	0	2	0	22.01	23.00
38150	37952	QPSK	1	0	1	99	2	0	21.94	23.00

CA_38C_Ant4_DSI 0_Main PA										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
37850	38048	QPSK	1	99	1	0	2	0	21.01	22.50
37901	38099	QPSK	1	99	1	0	2	0	21.10	22.50
38150	37952	QPSK	1	0	1	99	2	0	21.13	22.50

CA_38C_Ant4_DSI 1/5_Main PA										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
37850	38048	QPSK	1	99	1	0	2	0	17.64	19.00
37901	38099	QPSK	1	99	1	0	2	0	17.77	19.00
38150	37952	QPSK	1	0	1	99	2	0	17.69	19.00



CA_38C_Ant4_DSI 3/4_Main PA										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
37850	38048	QPSK	1	99	1	0	2	0	21.19	22.50
37901	38099	QPSK	1	99	1	0	2	0	21.13	22.50
38150	37952	QPSK	1	0	1	99	2	0	21.08	22.50

CA_38C_Ant5_DSI 0/1/4_Main PA										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
37850	38048	QPSK	1	99	1	0	2	0	23.74	24.70
37901	38099	QPSK	1	99	1	0	2	0	23.86	24.70
38150	37952	QPSK	1	0	1	99	2	0	23.79	24.70

CA_38C_Ant5_DSI 3/5_Main PA										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
37850	38048	QPSK	1	99	1	0	2	0	21.49	22.00
37901	38099	QPSK	1	99	1	0	2	0	21.46	22.00
38150	37952	QPSK	1	0	1	99	2	0	21.38	22.00

### 14. RF Exposure position consideration

Distance of the Antenna to the EUT surface/edge						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
WWAN Ant 0	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	>25mm	≤ 25mm
WWAN Ant 1	≤ 25mm	≤ 25mm	>25mm	>25mm	>25mm	≤ 25mm
WWAN Ant 2	≤ 25mm	≤ 25mm	>25mm	>25mm	≤ 25mm	>25mm
WWAN Ant 3	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	>25mm	≤ 25mm
WWAN Ant 4	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	≤ 25mm
WWAN Ant 5	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	≤ 25mm	>25mm
WWAN Ant 6	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	>25mm
WWAN Ant 7	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	>25mm
WWAN Ant 8	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	>25mm	≤ 25mm
WWAN Ant 9	≤ 25mm	≤ 25mm	>25mm	>25mm	>25mm	≤ 25mm
BT&2.4GHz WLAN Ant 7	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	>25mm
BT&2.4GHz WLAN Ant 16	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	>25mm
5GHz WLAN Ant 6	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	>25mm
5GHz WLAN Ant 17	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	>25mm

Positions for SAR tests: Hotspot mode						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
WWAN Ant 0	Yes	Yes	No	Yes	No	Yes
WWAN Ant 1	Yes	Yes	No	No	No	Yes
WWAN Ant 2	Yes	Yes	No	No	Yes	No
WWAN Ant 3	Yes	Yes	Yes	No	No	Yes
WWAN Ant 4	Yes	Yes	Yes	No	Yes	Yes
WWAN Ant 5	Yes	Yes	No	Yes	Yes	No
WWAN Ant 6	Yes	Yes	Yes	No	Yes	No
WWAN Ant 7	Yes	Yes	Yes	No	Yes	No
WWAN Ant 8	Yes	Yes	Yes	No	No	Yes
WWAN Ant 9	Yes	Yes	No	No	No	Yes
BT&2.4GHz WLAN Ant 7	Yes	Yes	Yes	No	Yes	No
BT&2.4GHz WLAN Ant 16	Yes	Yes	Yes	No	Yes	No
5GHz WLAN Ant 6	Yes	Yes	Yes	No	Yes	No
5GHz WLAN Ant 17	Yes	Yes	Yes	No	Yes	No

**General Note:**

- Referring to KDB 941225 D06 v02r01, when the overall device length and width are ≥ 9cm\*5cm, the test distance is 10 mm. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25mm from that surface or edge.
- Detail antenna location refer to appendix G.



## 15. SAR Test Results

### General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
  - a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
  - b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
  - c. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)\*Tune-up Scaling Factor
  - d. For WLAN/Bluetooth: Reported SAR(W/kg)= Measured SAR(W/kg)\* Duty Cycle scaling factor \* Tune-up scaling factor
  - e. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The Reported TDD LTE SAR = measured SAR (W/kg)\* Tune-up Scaling Factor\* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
  - $\leq 0.8$  W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is  $\leq 100$  MHz
  - $\leq 0.6$  W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
  - $\leq 0.4$  W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is  $\geq 200$  MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is  $\geq 0.8$ W/kg.
4. Per KDB 648474 D04v01r03, when the reported SAR for a body-worn accessory measured without a headset connected to the handset is  $\leq 1.2$  W/kg, SAR testing with a headset connected to the handset is not required.
5. For 5.3GHz / 5.5GHz / 6GHz WLAN product specific SAR is necessary too, due to an overall diagonal dimension is  $> 16$ cm.
6. Per KDB 648474 D04v01r03, for additional accessories (batteries, NFC and wireless charging battery covers or similar accessory), need repeat SAR testing at the worst position (head, and body-worn, and hotspot), for each wireless mode and each band. In addition, for test cases where the measured SAR for a handset without the accessory is greater than 1.2 W/kg, these tests should be repeated with the additional accessories.

### GSM Note:

1. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. Therefore, the GPRS (4Tx slots) for GSM850/GSM1900 is considered as the primary mode.
2. Other configurations of GSM / GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is  $\leq \frac{1}{4}$  dB higher than the primary mode, SAR measurement is not required for the secondary mode.

### UMTS Note:

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

**LTE Note:**

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

**5G NR Note:**

1. Referencing the procedure in KDB 941225, the test procedures are outlined as below:
  - a. To start SAR test for the largest channel bandwidth for PI/2 BPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel. Also do SAR test for 50% RB allocation for PI/2 BPSK SAR testing using 1RB PI/2 BPSK allocation procedure
  - b. For PI/2 BPSK with 100% RB allocation, SAR test is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are  $\leq 0.8$  W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is  $> 1.45$  W/kg, the remaining required test channels must also be tested.
  - c. For higher modulation QPSK/16QAM/64QAM/256QAM, according to tune-up document the power level is not  $\frac{1}{2}$  dB higher than the same configuration in PI/2 BPSK, also reported SAR for the PI/2 BPSK configuration is less than 1.45 W/kg, QPSK/16QAM/64QAM/256QAM SAR testing are not required.
  - d. Smaller bandwidth output power for each RB allocation configuration for this device is not  $\frac{1}{2}$  dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is  $\leq 1.45$  W/kg, smaller bandwidth SAR testing is not required for this device
  - e. For 5G FR1 n5/n12/n41/n77, the maximum channel bandwidth does not support three non-overlapping channels in the frequency band, the middle channel of the group of overlapping channels were selected for testing.
  - f. Due to test setup limitations, SAR testing for NR was performed using Factory Test Mode software to establish the connection and perform SAR with 100% transmission. And only for TDD power class2 was performed using Factory Test Mode software to establish the connection and perform SAR with 50% transmission
  - g. SAR test for overlapping NR bands can be reduced if:
    - a. The maximum output power, including tolerance, for the smaller band is  $\leq$  the larger band to qualify for the SAR test exclusion.
    - b. The channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band.

**WLAN Note:**

1. Per KDB 248227 D01v02r02, for 2.4GHz 802.11g/n SAR testing is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is  $\leq 1.2$  W/kg.
2. Per KDB 248227 D01v02r02, WLAN5.2GHz SAR testing is not required when the WLAN5.3GHz band highest reported SAR for a test configuration is  $\leq 1.2$  W/kg, SAR is not required for WLAN5.2GHz band.
3. When the reported SAR of the test position is  $> 0.4$  W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is  $\leq 0.8$  W/kg or all required test position are tested.
4. For all positions / configurations, when the reported SAR is  $> 0.8$  W/kg, SAR is measured for these test positions / configurations on the subsequent next highest measured output power channel(s) until the reported SAR is  $\leq 1.2$  W/kg or all required channels are tested.
5. For determination of the scaling factor for report SAR of MIMO mode, if the hot spots are separated the scaling factors are individually determined from each transmit chain. If the hot spots are not spatially separated, the scaling factor is determined from the worst number of each transmit chain
6. Additional 2.4GHz SISO mode Ant 7 was using perform Sim-Tx analysis.
7. During SAR testing the WLAN transmission was verified using a spectrum analyzer.

**WLAN PD Note:**

1. The WiFi 6E PD was performed according 2020 TCB workshop RF Exposure 5G RFX Policies Interim Procedures.
2. First, evaluate SAR using 6-7 GHz parameters per IEC/IEEE 62209-1528:2020 and using highest SAR test configurations evaluate incident PD using the mmw near-field probe and total-field/power-density reconstruction method (2 mm closest meas. plane).
3. Per Interim Procedures. The power density results were scaled according to IEC 62479:2010 for the portion of the measurement uncertainty  $> 30\%$ . Total expanded uncertainty of 2.68 dB (85.4%) was used to determine the psPD measurement scaling factor
4. The manufacturer has confirmed that the devices tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
5. The WiFi 6E RF Exposure results are used for simultaneous transmission analysis with the other transmitters and total exposure ratio, the analysis can be found in this report section 16
6. For testing the WLAN6GHz of this DUT, the selection of test channel was based on FCC guidance, with five channels selection across the entire WLAN 6GHz bands. For UNII5 and UNII-7 band supporting standard AP mode and indoor client mode, the higher output mode was measured among the selected channels
7. Absorbed power density (APD) using a 4cm<sup>2</sup> averaging area is reported based on SAR measurements.
8. Power density was calculated by repeated E-field measurements on two measurement planes separated by  $\lambda/4$ .
9. The device was configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools.
10. The measurement procedure consists of measuring the PD<sub>inc</sub> at two different distances: 2 mm (compliance distance) and  $\lambda/5$ . The grid extents should be large enough to fully capture the transmitted energy. The grid step should be fine enough to demonstrate that the integrated Power Density iPD<sub>n</sub> fulfill the criterion described below. Since iPD ratio between the two distances is  $\geq -1$  dB, the grid step (0.0625) was sufficient for determining compliance at d=2mm.

$$10 \cdot \log_{10} \frac{iPD_n(2mm)}{iPD_n(\lambda/5)} \geq -1$$

**NFC Note:**

1. NFC mainly operate in hand-held extremity exposure conditions, therefore Standalone 10-g extremity SAR testing for NFC will be performed with active mode, with 100% duty cycle at 0mm separation distance.
2. NFC SAR is measured for all surface edges of the device with a transmitting antenna located within 25 mm.
3. NFC SAR test tissue-simulating liquid parameter: refer to IEC/IEEE 62209-1528 2020.





15.1 Head SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power State	Main PA / Other PA	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850_Ant 0	GPRS (4 Tx slots)	Right Cheek	0mm	DSI 1	Main PA	189	836.4	26.99	28.00	1.262	0.1	0.173	0.218
	GSM850_Ant 0	GPRS (4 Tx slots)	Right Tilted	0mm	DSI 1	Main PA	189	836.4	26.99	28.00	1.262	-0.18	0.096	0.121
	GSM850_Ant 0	GPRS (4 Tx slots)	Left Cheek	0mm	DSI 1	Main PA	189	836.4	26.99	28.00	1.262	0.07	0.239	0.302
	GSM850_Ant 0	GPRS (4 Tx slots)	Left Tilted	0mm	DSI 1	Main PA	189	836.4	26.99	28.00	1.262	0.12	0.143	0.180
	GSM850_Ant 1	GPRS (4 Tx slots)	Right Cheek	0mm	DSI 1	Main PA	189	836.4	22.31	23.50	1.315	0.08	0.492	0.647
	GSM850_Ant 1	GPRS (4 Tx slots)	Right Tilted	0mm	DSI 1	Main PA	189	836.4	22.31	23.50	1.315	0.01	0.098	0.129
	GSM850_Ant 1	GPRS (4 Tx slots)	Left Cheek	0mm	DSI 1	Main PA	189	836.4	22.31	23.50	1.315	0.03	0.659	0.867
01	GSM850_Ant 1	GPRS (4 Tx slots)	Left Cheek	0mm	DSI 1	Main PA	128	824.2	22.20	23.50	1.349	0.02	0.692	0.933
	GSM850_Ant 1	GPRS (4 Tx slots)	Left Cheek	0mm	DSI 1	Main PA	251	848.8	21.91	23.50	1.442	-0.08	0.609	0.878
	GSM850_Ant 1	GPRS (4 Tx slots)	Left Tilted	0mm	DSI 1	Main PA	189	836.4	22.31	23.50	1.315	-0.08	0.100	0.132
	GSM1900_Ant 2	GPRS (4 Tx slots)	Right Cheek	0mm	DSI 1	Main PA	512	1850.2	21.38	22.00	1.153	0.18	0.410	0.473
	GSM1900_Ant 2	GPRS (4 Tx slots)	Right Tilted	0mm	DSI 1	Main PA	512	1850.2	21.38	22.00	1.153	0.14	0.062	0.072
02	GSM1900_Ant 2	GPRS (4 Tx slots)	Left Cheek	0mm	DSI 1	Main PA	512	1850.2	21.38	22.00	1.153	-0.09	0.598	0.690
	GSM1900_Ant 2	GPRS (4 Tx slots)	Left Tilted	0mm	DSI 1	Main PA	512	1850.2	21.38	22.00	1.153	0.01	0.091	0.105
	GSM1900_Ant 5	GPRS (4 Tx slots)	Right Cheek	0mm	DSI 1	Main PA	661	1880	23.70	24.00	1.072	-0.06	0.060	0.064
	GSM1900_Ant 5	GPRS (4 Tx slots)	Right Tilted	0mm	DSI 1	Main PA	661	1880	23.70	24.00	1.072	-0.03	0.001	0.001
	GSM1900_Ant 5	GPRS (4 Tx slots)	Left Cheek	0mm	DSI 1	Main PA	661	1880	23.70	24.00	1.072	0.14	0.001	0.001
	GSM1900_Ant 5	GPRS (4 Tx slots)	Left Tilted	0mm	DSI 1	Main PA	661	1880	23.70	24.00	1.072	0.11	0.001	0.001



<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power State	Main PA / Other PA	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA II_Ant 2	RMC 12.2Kbps	Right Cheek	0mm	DSI 1	Main PA	9400	1880	17.72	18.50	1.197	0.06	0.606	0.725
	WCDMA II_Ant 2	RMC 12.2Kbps	Right Tilted	0mm	DSI 1	Main PA	9400	1880	17.72	18.50	1.197	0.13	0.084	0.101
	WCDMA II_Ant 2	RMC 12.2Kbps	Left Cheek	0mm	DSI 1	Main PA	9400	1880	17.72	18.50	1.197	0.12	0.679	0.813
03	WCDMA II_Ant 2	RMC 12.2Kbps	Left Cheek	0mm	DSI 1	Main PA	9262	1852.4	17.64	18.50	1.219	-0.13	0.706	0.861
	WCDMA II_Ant 2	RMC 12.2Kbps	Left Cheek	0mm	DSI 1	Main PA	9538	1907.6	17.59	18.50	1.233	0.18	0.483	0.596
	WCDMA II_Ant 2	RMC 12.2Kbps	Left Tilted	0mm	DSI 1	Main PA	9400	1880	17.72	18.50	1.197	0.16	0.093	0.111
	WCDMA II_Ant 5	RMC 12.2Kbps	Right Cheek	0mm	DSI 1	Main PA	9400	1880	23.69	25.00	1.352	-0.17	0.121	0.164
	WCDMA II_Ant 5	RMC 12.2Kbps	Right Tilted	0mm	DSI 1	Main PA	9400	1880	23.69	25.00	1.352	0.04	0.070	0.095
	WCDMA II_Ant 5	RMC 12.2Kbps	Left Cheek	0mm	DSI 1	Main PA	9400	1880	23.69	25.00	1.352	-0.04	0.122	0.165
	WCDMA II_Ant 5	RMC 12.2Kbps	Left Tilted	0mm	DSI 1	Main PA	9400	1880	23.69	25.00	1.352	-0.08	0.051	0.069
	WCDMA IV_Ant 2	RMC 12.2Kbps	Right Cheek	0mm	DSI 1	Main PA	1413	1732.6	17.82	18.50	1.169	-0.04	0.584	0.683
	WCDMA IV_Ant 2	RMC 12.2Kbps	Right Tilted	0mm	DSI 1	Main PA	1413	1732.6	17.82	18.50	1.169	-0.13	0.084	0.098
	WCDMA IV_Ant 2	RMC 12.2Kbps	Left Cheek	0mm	DSI 1	Main PA	1413	1732.6	17.82	18.50	1.169	0.06	0.700	0.819
	WCDMA IV_Ant 2	RMC 12.2Kbps	Left Cheek	0mm	DSI 1	Main PA	1312	1712.4	17.71	18.50	1.199	-0.03	0.590	0.708
04	WCDMA IV_Ant 2	RMC 12.2Kbps	Left Cheek	0mm	DSI 1	Main PA	1513	1752.6	17.79	18.50	1.178	-0.05	0.747	0.880
	WCDMA IV_Ant 2	RMC 12.2Kbps	Left Tilted	0mm	DSI 1	Main PA	1413	1732.6	17.82	18.50	1.169	0.08	0.138	0.161
	WCDMA IV_Ant 5	RMC 12.2Kbps	Right Cheek	0mm	DSI 1	Main PA	1413	1732.6	23.77	25.20	1.390	-0.08	0.119	0.165
	WCDMA IV_Ant 5	RMC 12.2Kbps	Right Tilted	0mm	DSI 1	Main PA	1413	1732.6	23.77	25.20	1.390	-0.04	0.062	0.086
	WCDMA IV_Ant 5	RMC 12.2Kbps	Left Cheek	0mm	DSI 1	Main PA	1413	1732.6	23.77	25.20	1.390	0.03	0.128	0.178
	WCDMA IV_Ant 5	RMC 12.2Kbps	Left Tilted	0mm	DSI 1	Main PA	1413	1732.6	23.77	25.20	1.390	0.17	0.050	0.069
	WCDMA V_Ant 0	RMC 12.2Kbps	Right Cheek	0mm	DSI 1	Main PA	4182	836.4	24.21	25.00	1.199	-0.15	0.179	0.215
	WCDMA V_Ant 0	RMC 12.2Kbps	Right Tilted	0mm	DSI 1	Main PA	4182	836.4	24.21	25.00	1.199	-0.15	0.096	0.115
	WCDMA V_Ant 0	RMC 12.2Kbps	Left Cheek	0mm	DSI 1	Main PA	4182	836.4	24.21	25.00	1.199	-0.02	0.290	0.348
	WCDMA V_Ant 0	RMC 12.2Kbps	Left Tilted	0mm	DSI 1	Main PA	4182	836.4	24.21	25.00	1.199	-0.08	0.155	0.186
	WCDMA V_Ant 1	RMC 12.2Kbps	Right Cheek	0mm	DSI 1	Main PA	4182	836.4	18.58	20.00	1.387	0.07	0.468	0.649
	WCDMA V_Ant 1	RMC 12.2Kbps	Right Tilted	0mm	DSI 1	Main PA	4182	836.4	18.58	20.00	1.387	0.01	0.081	0.112
	WCDMA V_Ant 1	RMC 12.2Kbps	Left Cheek	0mm	DSI 1	Main PA	4182	836.4	18.58	20.00	1.387	-0.15	0.641	0.889
	WCDMA V_Ant 1	RMC 12.2Kbps	Left Cheek	0mm	DSI 1	Main PA	4132	826.4	18.42	20.00	1.439	0.19	0.639	0.919
05	WCDMA V_Ant 1	RMC 12.2Kbps	Left Cheek	0mm	DSI 1	Main PA	4233	846.6	18.36	20.00	1.459	0.09	0.642	0.937
	WCDMA V_Ant 1	RMC 12.2Kbps	Left Tilted	0mm	DSI 1	Main PA	4182	836.4	18.58	20.00	1.387	-0.18	0.087	0.121



<LTE SAR>

Table with columns: Plot No., Band, BW (MHz), Modulation, RB Size, RB offset, Test Position, Gap (mm), Power State, Main PA / Other PA, code, 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). The table contains multiple rows of test data for various LTE bands and antenna configurations.



FCC SAR TEST REPORT

Report No. : FA442005B

Table with columns: LTE Band, Power, Modulation, Repetitions, Duty Cycle, Position, Distance, Frequency, Power Density, SAR, etc. Includes rows for bands 5, 7, and 7C.



FCC SAR TEST REPORT

Report No. : FA442005B

Table with columns: Band, Power, Modulation, Duty Cycle, Exposure Location, Distance, Frequency, PA Type, Frequency Range, SAR, etc. Rows include LTE Bands 7, 12, 13, and 25.





FCC SAR TEST REPORT

Report No. : FA442005B

Table with columns: Band, Modulation, Power, Frequency, Location, etc. Includes rows for LTE Band 41\_Ant 2, 3, 4 and 38C\_Ant 2, 3, 4 with various test parameters and results.







FCC SAR TEST REPORT

Report No. : FA442005B

Table with columns: Band, Antenna, Power, Modulation, Repetition, Duty Cycle, Position, Distance, Device, PA, Frequency, Power, SAR, etc. Includes rows for LTE Bands 42 and 48.



FCC SAR TEST REPORT

Report No. : FA442005B

Table with columns for LTE Band, Antenna, Modulation, Power, Location, Distance, Frequency, SAR values, etc. Includes a row with a highlighted value of 1.032.





FCC SAR TEST REPORT

Report No. : FA442005B

Table with 19 rows (18-20) and 18 columns. Columns include antenna ID, power, modulation, scan rate, tilt, location, distance, DSI, PA, code, E1, E2, E3, E4, E5, E6, E7, E8. Values vary by row, with some cells highlighted in green.





FCC SAR TEST REPORT

Report No. : FA442005B

Table with 18 columns: Antenna ID, Power, Modulation, Freq, Duty, Location, Antenna Size, Frequency, Power, Directionality, E1, E2, E3, E4, E5, E6, E7, E8. Contains multiple rows for antennas FR1 n38, FR1 n41, and FR1 n41\_HPUE, with some values highlighted in green.











**FCC SAR TEST REPORT**

**Report No. : FA442005B**

	FR1 n78_Ant 7	100M	QPSK	1	1	Left Cheek	0mm	DSI 1	Main PA	-	650000	3750	14.82	15.50	1.169	-0.05	0.393	0.460
	FR1 n78_Ant 7	100M	QPSK	135	69	Left Cheek	0mm	DSI 1	Main PA	-	650000	3750	14.77	15.50	1.183	-0.06	0.431	0.510
	FR1 n78_Ant 7	100M	QPSK	1	1	Left Tilted	0mm	DSI 1	Main PA	-	650000	3750	14.82	15.50	1.169	0.14	0.189	0.221
	FR1 n78_Ant 7	100M	QPSK	135	69	Left Tilted	0mm	DSI 1	Main PA	-	650000	3750	14.77	15.50	1.183	-0.17	0.202	0.239
	FR1 n78_HPUE_Ant 7	100M	QPSK	135	69	Left Cheek	0mm	DSI 1	Main PA	-	650000	3750	17.84	18.50	1.164	-0.05	0.424	0.494
	FR1 n78_Ant 7	100M	QPSK	1	1	Right Cheek	0mm	DSI 1	Main PA	-	633332	3499.98	14.84	15.50	1.164	0.08	0.115	0.134
	FR1 n78_Ant 7	100M	QPSK	135	69	Right Cheek	0mm	DSI 1	Main PA	-	633332	3499.98	14.82	15.50	1.169	0.01	0.130	0.152
	FR1 n78_Ant 7	100M	QPSK	1	1	Right Tilted	0mm	DSI 1	Main PA	-	633332	3499.98	14.84	15.50	1.164	0.03	0.077	0.090
	FR1 n78_Ant 7	100M	QPSK	135	69	Right Tilted	0mm	DSI 1	Main PA	-	633332	3499.98	14.82	15.50	1.169	-0.08	0.070	0.082
	FR1 n78_Ant 7	100M	QPSK	1	1	Left Cheek	0mm	DSI 1	Main PA	-	633332	3499.98	14.84	15.50	1.164	-0.08	0.506	0.589
27	FR1 n78_Ant 7	100M	QPSK	135	69	Left Cheek	0mm	DSI 1	Main PA	-	633332	3499.98	14.82	15.50	1.169	0.12	0.583	0.682
	FR1 n78_Ant 7	100M	QPSK	1	1	Left Tilted	0mm	DSI 1	Main PA	-	633332	3499.98	14.84	15.50	1.164	-0.18	0.197	0.229
	FR1 n78_Ant 7	100M	QPSK	135	69	Left Tilted	0mm	DSI 1	Main PA	-	633332	3499.98	14.82	15.50	1.169	0.1	0.214	0.250
	FR1 n78_HPUE_Ant 7	100M	QPSK	135	69	Left Cheek	0mm	DSI 1	Main PA	-	633332	3499.98	17.60	18.50	1.230	0.12	0.550	0.677
	FR1 n78_Ant 8	100M	QPSK	1	1	Right Cheek	0mm	DSI 1	Main PA	-	650000	3750	22.35	23.50	1.303	0.03	0.429	0.559
	FR1 n78_Ant 8	100M	QPSK	135	69	Right Cheek	0mm	DSI 1	Main PA	-	650000	3750	22.34	23.50	1.306	-0.09	0.414	0.541
	FR1 n78_Ant 8	100M	QPSK	1	1	Right Tilted	0mm	DSI 1	Main PA	-	650000	3750	22.35	23.50	1.303	-0.08	0.255	0.332
	FR1 n78_Ant 8	100M	QPSK	135	69	Right Tilted	0mm	DSI 1	Main PA	-	650000	3750	22.34	23.50	1.306	0.13	0.305	0.398
	FR1 n78_Ant 8	100M	QPSK	1	1	Left Cheek	0mm	DSI 1	Main PA	-	650000	3750	22.35	23.50	1.303	0.12	0.185	0.241
	FR1 n78_Ant 8	100M	QPSK	135	69	Left Cheek	0mm	DSI 1	Main PA	-	650000	3750	22.34	23.50	1.306	0.03	0.171	0.223
	FR1 n78_Ant 8	100M	QPSK	1	1	Left Tilted	0mm	DSI 1	Main PA	-	650000	3750	22.35	23.50	1.303	0.18	0.228	0.297
	FR1 n78_Ant 8	100M	QPSK	135	69	Left Tilted	0mm	DSI 1	Main PA	-	650000	3750	22.34	23.50	1.306	0.16	0.216	0.282
	FR1 n78_HPUE_Ant 8	100M	QPSK	1	1	Right Cheek	0mm	DSI 1	Main PA	-	650000	3750	25.05	26.50	1.396	-0.1	0.395	0.552
	FR1 n78_Ant 8	100M	QPSK	1	1	Right Cheek	0mm	DSI 1	Main PA	-	633332	3499.98	22.18	23.50	1.355	0.13	0.372	0.504
	FR1 n78_Ant 8	100M	QPSK	135	69	Right Cheek	0mm	DSI 1	Main PA	-	633332	3499.98	22.13	23.50	1.371	0.08	0.371	0.509
	FR1 n78_Ant 8	100M	QPSK	1	1	Right Tilted	0mm	DSI 1	Main PA	-	633332	3499.98	22.18	23.50	1.355	0.01	0.236	0.320
	FR1 n78_Ant 8	100M	QPSK	135	69	Right Tilted	0mm	DSI 1	Main PA	-	633332	3499.98	22.13	23.50	1.371	0.03	0.266	0.365
	FR1 n78_Ant 8	100M	QPSK	1	1	Left Cheek	0mm	DSI 1	Main PA	-	633332	3499.98	22.18	23.50	1.355	-0.08	0.134	0.182
	FR1 n78_Ant 8	100M	QPSK	135	69	Left Cheek	0mm	DSI 1	Main PA	-	633332	3499.98	22.13	23.50	1.371	-0.08	0.138	0.189
	FR1 n78_Ant 8	100M	QPSK	1	1	Left Tilted	0mm	DSI 1	Main PA	-	633332	3499.98	22.18	23.50	1.355	0.1	0.171	0.232
	FR1 n78_Ant 8	100M	QPSK	135	69	Left Tilted	0mm	DSI 1	Main PA	-	633332	3499.98	22.13	23.50	1.371	-0.18	0.184	0.252
	FR1 n78_HPUE_Ant 8	100M	QPSK	1	1	Right Cheek	0mm	DSI 1	Main PA	-	633332	3499.98	24.95	26.50	1.429	0.1	0.367	0.524



<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Standalone / Non-DBS / DBS	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)
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 7	Index 2	Non-DBS	11	2462	7.72	9.00	1.343	98.64	1.014	0.08	0.043	0.059
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 7	Index 2	Non-DBS	11	2462	7.72	9.00	1.343	98.64	1.014	0.01	0.030	0.041
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 7	Index 2	Non-DBS	11	2462	7.72	9.00	1.343	98.64	1.014	0.04	0.236	0.321
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 7	Index 2	Non-DBS	11	2462	7.72	9.00	1.343	98.64	1.014	0.03	0.093	0.127
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 7	Index 3	DBS	11	2462	6.48	7.00	1.127	98.64	1.014	0.08	0.032	0.037
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 7	Index 3	DBS	11	2462	6.48	7.00	1.127	98.64	1.014	0.01	0.022	0.025
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 7	Index 3	DBS	11	2462	6.48	7.00	1.127	98.64	1.014	-0.02	0.176	0.201
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 7	Index 3	DBS	11	2462	6.48	7.00	1.127	98.64	1.014	-0.08	0.069	0.079
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 16+7	Index 2	Non-DBS	11	2462	10.89	12.00	1.291	98.64	1.014	-0.08	0.063	0.082
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 16+7	Index 2	Non-DBS	11	2462	10.89	12.00	1.291	98.64	1.014	-0.08	0.062	0.081
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 16+7	Index 2	Non-DBS	11	2462	10.89	12.00	1.291	98.64	1.014	-0.02	0.358	0.469
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 16+7	Index 2	Non-DBS	11	2462	10.89	12.00	1.291	98.64	1.014	0.1	0.193	0.253
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 16+7	Index 3	DBS	11	2462	9.49	10.00	1.125	98.64	1.014	0.1	0.040	0.046
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 16+7	Index 3	DBS	11	2462	9.49	10.00	1.125	98.64	1.014	-0.18	0.039	0.044
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 16+7	Index 3	DBS	11	2462	9.49	10.00	1.125	98.64	1.014	0.06	0.224	0.255
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 16+7	Index 3	DBS	11	2462	9.49	10.00	1.125	98.64	1.014	0.08	0.121	0.138
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 16+7	Index 8	Standalone	11	2462	16.45	17.00	1.135	98.64	1.014	0.08	0.170	0.196
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 16+7	Index 8	Standalone	11	2462	16.45	17.00	1.135	98.64	1.014	0.01	0.167	0.192
28	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 16+7	Index 8	Standalone	11	2462	16.45	17.00	1.135	98.64	1.014	0.03	0.944	1.086
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 16+7	Index 8	Standalone	11	2462	16.45	17.00	1.135	98.64	1.014	0.03	0.521	0.600
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 16+7	Index 8	Standalone	1	2462	16.31	17.00	1.172	98.64	1.014	0.09	0.811	0.964
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 16+7	Index 8	Standalone	6	2462	16.39	17.00	1.151	98.64	1.014	0.05	0.845	0.986
	WLAN5GHz	802.11ac-VHT160 MCS0	Right Cheek	0mm	Ant 6+17	Index 2	Non-DBS	50	5250	13.95	15.00	1.274	92.8	1.078	-0.18	0.107	0.147
	WLAN5GHz	802.11ac-VHT160 MCS0	Right Tilted	0mm	Ant 6+17	Index 2	Non-DBS	50	5250	13.95	15.00	1.274	92.8	1.078	0.1	0.119	0.163
	WLAN5GHz	802.11ac-VHT160 MCS0	Left Cheek	0mm	Ant 6+17	Index 2	Non-DBS	50	5250	13.95	15.00	1.274	92.8	1.078	-0.13	0.284	0.390
	WLAN5GHz	802.11ac-VHT160 MCS0	Left Tilted	0mm	Ant 6+17	Index 2	Non-DBS	50	5250	13.95	15.00	1.274	92.8	1.078	0.08	0.251	0.345
	WLAN5GHz	802.11ac-VHT160 MCS0	Right Cheek	0mm	Ant 6+17	Index 3	DBS	50	5250	11.84	12.00	1.038	92.8	1.078	-0.17	0.077	0.086
	WLAN5GHz	802.11ac-VHT160 MCS0	Right Tilted	0mm	Ant 6+17	Index 3	DBS	50	5250	11.84	12.00	1.038	92.8	1.078	-0.03	0.086	0.096
	WLAN5GHz	802.11ac-VHT160 MCS0	Left Cheek	0mm	Ant 6+17	Index 3	DBS	50	5250	11.84	12.00	1.038	92.8	1.078	0.11	0.207	0.232
	WLAN5GHz	802.11ac-VHT160 MCS0	Left Tilted	0mm	Ant 6+17	Index 3	DBS	50	5250	11.84	12.00	1.038	92.8	1.078	0.18	0.181	0.202
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 6+17	Index 8	Standalone	58	5290	18.94	19.50	1.138	96.57	1.036	-0.08	0.340	0.401
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 6+17	Index 8	Standalone	58	5290	18.94	19.50	1.138	96.57	1.036	-0.08	0.378	0.446
29	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6+17	Index 8	Standalone	58	5290	18.94	19.50	1.138	96.57	1.036	0.12	0.900	1.061
	WLAN5GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 6+17	Index 8	Standalone	62	5310	18.81	19.50	1.172	91.65	1.091	0.11	0.794	1.015
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 6+17	Index 8	Standalone	58	5290	18.94	19.50	1.138	96.57	1.036	0.1	0.797	0.939
	WLAN5GHz	802.11ac-VHT160 MCS0	Right Cheek	0mm	Ant 6+17	Index 2	Non-DBS	114	5570	13.26	14.50	1.330	92.8	1.078	-0.17	0.076	0.109
	WLAN5GHz	802.11ac-VHT160 MCS0	Right Tilted	0mm	Ant 6+17	Index 2	Non-DBS	114	5570	13.26	14.50	1.330	92.8	1.078	-0.03	0.080	0.115
	WLAN5GHz	802.11ac-VHT160 MCS0	Left Cheek	0mm	Ant 6+17	Index 2	Non-DBS	114	5570	13.26	14.50	1.330	92.8	1.078	0.17	0.254	0.364
	WLAN5GHz	802.11ac-VHT160 MCS0	Left Tilted	0mm	Ant 6+17	Index 2	Non-DBS	114	5570	13.26	14.50	1.330	92.8	1.078	0.11	0.162	0.232
	WLAN5GHz	802.11ac-VHT160 MCS0	Right Cheek	0mm	Ant 6+17	Index 3	DBS	114	5570	10.84	11.50	1.164	92.8	1.078	0.14	0.053	0.067
	WLAN5GHz	802.11ac-VHT160 MCS0	Right Tilted	0mm	Ant 6+17	Index 3	DBS	114	5570	10.84	11.50	1.164	92.8	1.078	-0.17	0.056	0.070
	WLAN5GHz	802.11ac-VHT160 MCS0	Left Cheek	0mm	Ant 6+17	Index 3	DBS	114	5570	10.84	11.50	1.164	92.8	1.078	0.03	0.189	0.237
	WLAN5GHz	802.11ac-VHT160 MCS0	Left Tilted	0mm	Ant 6+17	Index 3	DBS	114	5570	10.84	11.50	1.164	92.8	1.078	-0.17	0.113	0.142
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 6+17	Index 8	Standalone	138	5690	19.52	20.50	1.253	96.57	1.036	0.08	0.251	0.326
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 6+17	Index 8	Standalone	138	5690	19.52	20.50	1.253	96.57	1.036	-0.17	0.265	0.344



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30	WLAN5GHZ	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6+17	Index 8	Standalone	138	5690	19.52	20.50	1.253	96.57	1.036	0.1	0.842	1.093
	WLAN5GHZ	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 6+17	Index 8	Standalone	138	5690	19.52	20.50	1.253	96.57	1.036	-0.03	0.534	0.693
	WLAN5GHZ	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6+17	Index 8	Standalone	106	5690	19.51	20.50	1.256	96.57	1.036	0.02	0.816	1.062
	WLAN5GHZ	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6+17	Index 8	Standalone	122	5690	19.23	20.00	1.194	96.57	1.036	0.06	0.771	0.954
	WLAN5GHZ	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 6+17	Index 2	Non-DBS	155	5775	13.07	14.00	1.239	96.03	1.041	0.08	0.116	0.150
	WLAN5GHZ	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 6+17	Index 2	Non-DBS	155	5775	13.07	14.00	1.239	96.03	1.041	0.01	0.136	0.175
	WLAN5GHZ	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6+17	Index 2	Non-DBS	155	5775	13.07	14.00	1.239	96.03	1.041	-0.09	0.283	0.365
	WLAN5GHZ	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 6+17	Index 2	Non-DBS	155	5775	13.07	14.00	1.239	96.03	1.041	0.03	0.226	0.291
	WLAN5GHZ	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 6+17	Index 3	DBS	155	5775	11.75	12.50	1.189	96.03	1.041	0.04	0.076	0.094
	WLAN5GHZ	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 6+17	Index 3	DBS	155	5775	11.75	12.50	1.189	96.03	1.041	-0.01	0.089	0.110
	WLAN5GHZ	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6+17	Index 3	DBS	155	5775	11.75	12.50	1.189	96.03	1.041	0.17	0.186	0.230
	WLAN5GHZ	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 6+17	Index 3	DBS	155	5775	11.75	12.50	1.189	96.03	1.041	0.06	0.148	0.183
	WLAN5GHZ	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 6+17	Index 8	Standalone	155	5775	18.47	19.00	1.129	96.03	1.041	0.14	0.364	0.428
	WLAN5GHZ	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 6+17	Index 8	Standalone	155	5775	18.47	19.00	1.129	96.03	1.041	0.11	0.426	0.501
31	WLAN5GHZ	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6+17	Index 8	Standalone	155	5775	18.47	19.00	1.129	96.03	1.041	0.05	0.891	1.047
	WLAN5GHZ	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 6+17	Index 8	Standalone	151	5755	18.33	19.00	1.167	91.65	1.091	0.08	0.815	1.037
	WLAN5GHZ	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 6+17	Index 8	Standalone	155	5775	18.47	19.00	1.129	96.03	1.041	-0.05	0.707	0.831

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Non-DBS / DBS	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)
	WLAN6GHZ	802.11be-EHT320 MCS0	Right Cheek	0mm	Ant 6+17	Index 2/3	Non-DBS / DBS	127	6585	13.11	14.00	1.227	86.83	1.152	0.08	0.027	0.038	0.126	0.178
	WLAN6GHZ	802.11be-EHT320 MCS0	Right Tilted	0mm	Ant 6+17	Index 2/3	Non-DBS / DBS	127	6585	13.11	14.00	1.227	86.83	1.152	0.01	0.033	0.047	0.155	0.219
	WLAN6GHZ	802.11be-EHT320 MCS0	Left Cheek	0mm	Ant 6+17	Index 2/3	Non-DBS / DBS	127	6585	13.11	14.00	1.227	86.83	1.152	-0.15	0.068	0.096	0.438	0.619
32	WLAN6GHZ	802.11be-EHT320 MCS0	Left Cheek	0mm	Ant 6+17	Index 2/3	Non-DBS / DBS	31	6105	12.49	13.00	1.125	86.83	1.152	0.09	0.132	0.171	0.921	1.193
	WLAN6GHZ	802.11be-EHT320 MCS0	Left Cheek	0mm	Ant 6+17	Index 2/3	Non-DBS / DBS	63	6265	12.04	13.00	1.247	86.83	1.152	0.03	0.065	0.093	0.397	0.570
	WLAN6GHZ	802.11be-EHT320 MCS0	Left Cheek	0mm	Ant 6+17	Index 2/3	Non-DBS / DBS	95	6425	12.15	13.00	1.216	86.83	1.152	-0.08	0.039	0.055	0.106	0.149
	WLAN6GHZ	802.11be-EHT320 MCS0	Left Cheek	0mm	Ant 6+17	Index 2/3	Non-DBS / DBS	159	6745	13.04	14.00	1.247	86.83	1.152	-0.08	0.022	0.032	0.088	0.126
	WLAN6GHZ	802.11be-EHT320 MCS0	Left Cheek	0mm	Ant 6+17	Index 2/3	Non-DBS / DBS	191	6905	13.05	14.00	1.245	86.83	1.152	0.1	0.058	0.083	0.345	0.495
	WLAN6GHZ	802.11be-EHT320 MCS0	Left Tilted	0mm	Ant 6+17	Index 2/3	Non-DBS / DBS	127	6585	13.11	14.00	1.227	86.83	1.152	-0.18	0.061	0.086	0.348	0.492

## <Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Non-DBS / DBS	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)
	Bluetooth	1Mbps	Right Cheek	0mm	Ant 16	Index 2/3	Non-DBS / DBS	78	2480	7.99	8.50	1.125	76.83	1.084	0.08	0.013	0.016
	Bluetooth	1Mbps	Right Tilted	0mm	Ant 16	Index 2/3	Non-DBS / DBS	78	2480	7.99	8.50	1.125	76.83	1.084	0.01	0.015	0.018
	Bluetooth	1Mbps	Left Cheek	0mm	Ant 16	Index 2/3	Non-DBS / DBS	78	2480	7.99	8.50	1.125	76.83	1.084	0.15	0.038	0.046
	Bluetooth	1Mbps	Left Tilted	0mm	Ant 16	Index 2/3	Non-DBS / DBS	78	2480	7.99	8.50	1.125	76.83	1.084	0.03	0.033	0.040
	Bluetooth	1Mbps	Right Cheek	0mm	Ant 7	Index 2/3	Non-DBS / DBS	78	2480	7.93	8.50	1.140	76.74	1.085	0.14	0.006	0.007
	Bluetooth	1Mbps	Right Tilted	0mm	Ant 7	Index 2/3	Non-DBS / DBS	78	2480	7.93	8.50	1.140	76.74	1.085	-0.17	0.001	0.001
33	Bluetooth	1Mbps	Left Cheek	0mm	Ant 7	Index 2/3	Non-DBS / DBS	78	2480	7.93	8.50	1.140	76.74	1.085	-0.18	0.087	0.108
	Bluetooth	1Mbps	Left Tilted	0mm	Ant 7	Index 2/3	Non-DBS / DBS	78	2480	7.93	8.50	1.140	76.74	1.085	0.17	0.005	0.006



15.2 Hotspot SAR

<GSM SAR>

Table with 15 columns: Plot No., Band, Mode, Test Position, Gap (mm), Power State, Main PA / Other PA, Ch., Freq. (MHz), Average Power (dBm), Tune-Up Limit (dBm), Tune-up Scaling Factor, Power Drift (dB), Measured 1g SAR (W/kg), Reported 1g SAR (W/kg). Rows include GSM850 and GSM1900 bands.

<WCDMA SAR>

Table with 15 columns: Plot No., Band, Mode, Test Position, Gap (mm), Power State, Main PA / Other PA, Ch., Freq. (MHz), Average Power (dBm), Tune-Up Limit (dBm), Tune-up Scaling Factor, Power Drift (dB), Measured 1g SAR (W/kg), Reported 1g SAR (W/kg). Rows include WCDMA II, IV, and V bands.



<LTE SAR>

Table with columns: Plot No., Band, BW (MHz), Modulation, RB Size, RB offset, Test Position, Gap (mm), Power State, Main PA / Other PA, Code, 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). Contains multiple rows of test data for LTE bands 4 and 5.









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Table with columns for LTE Band, Antenna, Modulation, Power, Location, Frequency, Power Density, and SAR values. Includes rows for bands 25, 26, 38, and 38C.







**FCC SAR TEST REPORT**

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	LTE Band 48_Ant 8	20M	QPSK	1	0	Top Side	10mm	DSI 5	Main PA	-	55830	3609	20.66	21.30	1.159	62.9	1.006	0.14	0.079	0.092
	LTE Band 48_Ant 8	20M	QPSK	50	0	Top Side	10mm	DSI 5	Main PA	-	55830	3609	20.51	21.30	1.199	62.9	1.006	-0.09	0.064	0.077
	LTE Band 48_Ant 9	20M	QPSK	1	0	Front	10mm	DSI 5	Main PA	-	55830	3609	20.24	20.80	1.138	62.9	1.006	-0.09	0.104	0.119
	LTE Band 48_Ant 9	20M	QPSK	50	0	Front	10mm	DSI 5	Main PA	-	55830	3609	20.09	20.80	1.178	62.9	1.006	-0.12	0.079	0.094
	LTE Band 48_Ant 9	20M	QPSK	1	0	Back	10mm	DSI 5	Main PA	-	55830	3609	20.24	20.80	1.138	62.9	1.006	-0.01	0.184	0.211
	LTE Band 48_Ant 9	20M	QPSK	50	0	Back	10mm	DSI 5	Main PA	-	55830	3609	20.09	20.80	1.178	62.9	1.006	-0.19	0.142	0.168
	LTE Band 48_Ant 9	20M	QPSK	1	0	Left Side	10mm	DSI 5	Main PA	-	55830	3609	20.24	20.80	1.138	62.9	1.006	0.09	0.106	0.121
	LTE Band 48_Ant 9	20M	QPSK	50	0	Left Side	10mm	DSI 5	Main PA	-	55830	3609	20.09	20.80	1.178	62.9	1.006	0.13	0.087	0.103
	LTE Band 66_Ant 2	20M	QPSK	1	0	Front	10mm	DSI 5	Main PA	-	132322	1745	16.82	17.50	1.169			-0.08	0.205	0.240
	LTE Band 66_Ant 2	20M	QPSK	50	0	Front	10mm	DSI 5	Main PA	-	132322	1745	16.80	17.50	1.175			0.08	0.199	0.234
	LTE Band 66_Ant 2	20M	QPSK	1	0	Back	10mm	DSI 5	Main PA	-	132322	1745	16.82	17.50	1.169			-0.04	0.180	0.211
	LTE Band 66_Ant 2	20M	QPSK	50	0	Back	10mm	DSI 5	Main PA	-	132322	1745	16.80	17.50	1.175			0.12	0.170	0.200
	LTE Band 66_Ant 2	20M	QPSK	1	0	Right Side	10mm	DSI 5	Main PA	-	132322	1745	16.82	17.50	1.169			0.09	0.291	0.340
	LTE Band 66_Ant 2	20M	QPSK	50	0	Right Side	10mm	DSI 5	Main PA	-	132322	1745	16.80	17.50	1.175			-0.02	0.281	0.330
	LTE Band 66_Ant 2	20M	QPSK	1	0	Right Side	10mm	DSI 5	Main PA	-	132322	1745	16.82	17.50	1.169			-0.12	0.293	0.343
	LTE Band 66_Ant 3	20M	QPSK	1	0	Front	10mm	DSI 5	Main PA	-	132322	1745	15.67	17.00	1.358			-0.03	0.096	0.130
	LTE Band 66_Ant 3	20M	QPSK	50	0	Front	10mm	DSI 5	Main PA	-	132322	1745	15.64	17.00	1.368			-0.06	0.088	0.120
	LTE Band 66_Ant 3	20M	QPSK	1	0	Back	10mm	DSI 5	Main PA	-	132322	1745	15.67	17.00	1.358			0.08	0.074	0.101
	LTE Band 66_Ant 3	20M	QPSK	50	0	Back	10mm	DSI 5	Main PA	-	132322	1745	15.64	17.00	1.368			-0.07	0.107	0.146
	LTE Band 66_Ant 3	20M	QPSK	1	0	Left Side	10mm	DSI 5	Main PA	-	132322	1745	15.67	17.00	1.358			-0.12	0.177	0.240
	LTE Band 66_Ant 3	20M	QPSK	50	0	Left Side	10mm	DSI 5	Main PA	-	132322	1745	15.64	17.00	1.368			-0.13	0.170	0.233
	LTE Band 66_Ant 3	20M	QPSK	1	0	Top Side	10mm	DSI 5	Main PA	-	132322	1745	15.67	17.00	1.358			0.04	0.064	0.087
	LTE Band 66_Ant 3	20M	QPSK	50	0	Top Side	10mm	DSI 5	Main PA	-	132322	1745	15.64	17.00	1.368			0.17	0.051	0.070
	LTE Band 66_Ant 3	20M	QPSK	1	0	Left Side	10mm	DSI 5	Main PA	-	132322	1745	15.67	17.00	1.358			-0.1	0.160	0.217
	LTE Band 66_Ant 4	20M	QPSK	1	0	Front	10mm	DSI 5	Main PA	-	132322	1745	21.23	23.00	1.503			0.17	0.065	0.098
	LTE Band 66_Ant 4	20M	QPSK	50	0	Front	10mm	DSI 5	Main PA	-	132322	1745	21.11	22.50	1.377			-0.15	0.056	0.077
	LTE Band 66_Ant 4	20M	QPSK	1	0	Back	10mm	DSI 5	Main PA	-	132322	1745	21.23	23.00	1.503			-0.12	0.089	0.134
	LTE Band 66_Ant 4	20M	QPSK	50	0	Back	10mm	DSI 5	Main PA	-	132322	1745	21.11	22.50	1.377			0.05	0.077	0.106
	LTE Band 66_Ant 4	20M	QPSK	1	0	Left Side	10mm	DSI 5	Main PA	-	132322	1745	21.23	23.00	1.503			0.04	0.001	0.002
	LTE Band 66_Ant 4	20M	QPSK	50	0	Left Side	10mm	DSI 5	Main PA	-	132322	1745	21.11	22.50	1.377			0.15	0.001	0.001
	LTE Band 66_Ant 4	20M	QPSK	1	0	Right Side	10mm	DSI 5	Main PA	-	132322	1745	21.23	23.00	1.503			0.03	0.052	0.078
	LTE Band 66_Ant 4	20M	QPSK	50	0	Right Side	10mm	DSI 5	Main PA	-	132322	1745	21.11	22.50	1.377			-0.1	0.045	0.062
	LTE Band 66_Ant 4	20M	QPSK	1	0	Top Side	10mm	DSI 5	Main PA	-	132322	1745	21.23	23.00	1.503			0.14	0.085	0.128
	LTE Band 66_Ant 4	20M	QPSK	50	0	Top Side	10mm	DSI 5	Main PA	-	132322	1745	21.11	22.50	1.377			-0.16	0.077	0.106
	LTE Band 66_Ant 4	20M	QPSK	1	0	Back	10mm	DSI 5	Main PA	-	132322	1745	21.23	23.00	1.503			-0.02	0.064	0.096
	LTE Band 66_Ant 5	20M	QPSK	1	0	Front	10mm	DSI 5	Main PA	-	132322	1745	21.24	22.50	1.337			0.1	0.437	0.584
	LTE Band 66_Ant 5	20M	QPSK	50	0	Front	10mm	DSI 5	Main PA	-	132322	1745	21.08	22.50	1.387			-0.1	0.435	0.603
	LTE Band 66_Ant 5	20M	QPSK	1	0	Back	10mm	DSI 5	Main PA	-	132322	1745	21.24	22.50	1.337			-0.05	0.434	0.580
	LTE Band 66_Ant 5	20M	QPSK	50	0	Back	10mm	DSI 5	Main PA	-	132322	1745	21.08	22.50	1.387			-0.04	0.439	0.609
	LTE Band 66_Ant 5	20M	QPSK	1	0	Right Side	10mm	DSI 5	Main PA	-	132322	1745	21.24	22.50	1.337			0.01	0.156	0.209
	LTE Band 66_Ant 5	20M	QPSK	50	0	Right Side	10mm	DSI 5	Main PA	-	132322	1745	21.08	22.50	1.387			-0.09	0.152	0.211
50	LTE Band 66_Ant 5	20M	QPSK	1	0	Bottom Side	10mm	DSI 5	Main PA	-	132322	1745	21.24	22.50	1.337			-0.01	0.591	0.790
	LTE Band 66_Ant 5	20M	QPSK	50	0	Bottom Side	10mm	DSI 5	Main PA	-	132322	1745	21.08	22.50	1.387			-0.11	0.566	0.785
	LTE Band 66_Ant 5	20M	QPSK	1	0	Bottom Side	10mm	DSI 5	Main PA	-	132322	1745	21.24	22.50	1.337			-0.16	0.558	0.746



<5G NR SAR>

Table with 18 columns: Plot No., Band, BW (MHz), Modulation, RB Size, RB offset, Test Position, Gap (mm), Power State, Main PA / Other PA, Code, Ch., Freq. (MHz), Average Power (dBm), Tune-Up Limit (dBm), Tune-up Scaling Factor, Power Drift (dB), Measured 1g SAR (W/kg), Reported 1g SAR (W/kg). Rows include antenna configurations for FR1 n7\_Ant 2-5, FR1 n12\_Ant 0-1, and FR1 n25\_Ant 2.





FCC SAR TEST REPORT

Report No. : FA442005B

Table with columns: Antenna ID, Power, Modulation, Frequency, Power Density, Distance, Direction, Diameter, Frequency Band, PA Type, Max E-field, Max H-field, Max A-weighted SAR, Max SAR, Max SAR (head), Max SAR (limb), Max SAR (torso). Rows include FR1 n38\_Ant 3-5 and FR1 n41\_Ant 2-5.



FCC SAR TEST REPORT

Report No. : FA442005B

Table with columns for antenna ID, power, modulation, and various test parameters. Includes rows for antennas FR1 n41\_Ant 5 through FR1 n66\_Ant 3.





FCC SAR TEST REPORT

Report No. : FA442005B

Table with columns: Antenna ID, Power (W), Modulation, Frequency (MHz), Channels, Position, Distance (mm), Power Density (mW/cm²), Exposure Type, Duty Cycle, and SAR values (1g, 0.1g, 10g, 0.10g).



FCC SAR TEST REPORT

Report No. : FA442005B

Table with columns for antenna ID, frequency, modulation, power, distance, location, dimensions, and SAR values. Includes rows 59 and 60 with highlighted values.



**FCC SAR TEST REPORT**

**Report No. : FA442005B**

FR1 n78_Ant 9	100M	QPSK	1	1	Front	10mm	DSI 5	Main PA	-	650000	3750	17.59	18.50	1.233	0.04	0.077	0.095
FR1 n78_Ant 9	100M	QPSK	135	69	Front	10mm	DSI 5	Main PA	-	650000	3750	17.54	18.50	1.247	0.1	0.073	0.091
FR1 n78_Ant 9	100M	QPSK	1	1	Back	10mm	DSI 5	Main PA	-	650000	3750	17.59	18.50	1.233	0.08	0.220	0.271
FR1 n78_Ant 9	100M	QPSK	135	69	Back	10mm	DSI 5	Main PA	-	650000	3750	17.54	18.50	1.247	0.07	0.227	0.283
FR1 n78_Ant 9	100M	QPSK	1	1	Left Side	10mm	DSI 5	Main PA	-	650000	3750	17.59	18.50	1.233	0.1	0.090	0.111
FR1 n78_Ant 9	100M	QPSK	135	69	Left Side	10mm	DSI 5	Main PA	-	650000	3750	17.54	18.50	1.247	-0.09	0.092	0.115
FR1 n78_HPUE_Ant 9	100M	QPSK	135	69	Back	10mm	DSI 5	Main PA	-	650000	3750	20.15	21.50	1.365	-0.05	0.233	0.318
FR1 n78_Ant 9	100M	QPSK	1	1	Front	10mm	DSI 5	Main PA	-	633332	3499.98	17.69	18.50	1.205	0	0.117	0.141
FR1 n78_Ant 9	100M	QPSK	135	69	Front	10mm	DSI 5	Main PA	-	633332	3499.98	17.65	18.50	1.216	0.02	0.093	0.113
FR1 n78_Ant 9	100M	QPSK	1	1	Back	10mm	DSI 5	Main PA	-	633332	3499.98	17.69	18.50	1.205	-0.01	0.119	0.143
FR1 n78_Ant 9	100M	QPSK	135	69	Back	10mm	DSI 5	Main PA	-	633332	3499.98	17.65	18.50	1.216	-0.03	0.113	0.137
FR1 n78_Ant 9	100M	QPSK	1	1	Left Side	10mm	DSI 5	Main PA	-	633332	3499.98	17.69	18.50	1.205	-0.06	0.077	0.093
FR1 n78_Ant 9	100M	QPSK	135	69	Left Side	10mm	DSI 5	Main PA	-	633332	3499.98	17.65	18.50	1.216	0.18	0.078	0.095
FR1 n78_HPUE_Ant 9	100M	QPSK	1	1	Back	10mm	DSI 5	Main PA	-	633332	3499.98	20.29	21.50	1.321	0.01	0.107	0.141



<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Non-DBS / DBS	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)
	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 7	Index 4	Non-DBS	11	2462	15.73	16.50	1.194	98.64	1.014	0.08	0.276	0.334
	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Ant 7	Index 4	Non-DBS	11	2462	15.73	16.50	1.194	98.64	1.014	0.01	0.231	0.280
	WLAN2.4GHz	802.11b 1Mbps	Right Side	10mm	Ant 7	Index 4	Non-DBS	11	2462	15.73	16.50	1.194	98.64	1.014	-0.01	0.450	0.545
	WLAN2.4GHz	802.11b 1Mbps	Top Side	10mm	Ant 7	Index 4	Non-DBS	11	2462	15.73	16.50	1.194	98.64	1.014	0.03	0.044	0.053
	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 7	Index 5	DBS	11	2462	13.71	14.50	1.199	98.64	1.014	0.11	0.151	0.184
	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Ant 7	Index 5	DBS	11	2462	13.71	14.50	1.199	98.64	1.014	-0.17	0.106	0.129
	WLAN2.4GHz	802.11b 1Mbps	Right Side	10mm	Ant 7	Index 5	DBS	11	2462	13.71	14.50	1.199	98.64	1.014	-0.06	0.255	0.310
	WLAN2.4GHz	802.11b 1Mbps	Top Side	10mm	Ant 7	Index 5	DBS	11	2462	13.71	14.50	1.199	98.64	1.014	-0.05	0.024	0.029
	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 16+7	Index 4	Non-DBS	11	2462	18.81	19.50	1.172	98.64	1.014	0.1	0.371	0.441
	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Ant 16+7	Index 4	Non-DBS	11	2462	18.81	19.50	1.172	98.64	1.014	-0.18	0.240	0.285
	WLAN2.4GHz	802.11b 1Mbps	Right Side	10mm	Ant 16+7	Index 4	Non-DBS	11	2462	18.81	19.50	1.172	98.64	1.014	0.1	0.674	0.801
	WLAN2.4GHz	802.11b 1Mbps	Right Side	10mm	Ant 16+7	Index 4	Non-DBS	1	2412	18.76	19.50	1.186	98.64	1.014	0.12	0.624	0.750
61	WLAN2.4GHz	802.11b 1Mbps	Right Side	10mm	Ant 16+7	Index 4	Non-DBS	6	2437	18.44	19.50	1.276	98.64	1.014	0	0.688	0.890
	WLAN2.4GHz	802.11b 1Mbps	Top Side	10mm	Ant 16+7	Index 4	Non-DBS	11	2462	18.81	19.50	1.172	98.64	1.014	0.08	0.206	0.245
	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 16+7	Index 5	DBS	6	2437	16.75	17.50	1.189	98.64	1.014	0.08	0.211	0.254
	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Ant 16+7	Index 5	DBS	6	2437	16.75	17.50	1.189	98.64	1.014	0.01	0.136	0.164
	WLAN2.4GHz	802.11b 1Mbps	Right Side	10mm	Ant 16+7	Index 5	DBS	6	2437	16.75	17.50	1.189	98.64	1.014	0	0.391	0.471
	WLAN2.4GHz	802.11b 1Mbps	Top Side	10mm	Ant 16+7	Index 5	DBS	6	2437	16.75	17.50	1.189	98.64	1.014	-0.08	0.117	0.141
	WLAN5GHz	802.11n-HT20 MCS0	Front	10mm	Ant 6+17	Index 4/5	Non-DBS / DBS	40	5200	21.05	22.00	1.246	96.26	1.039	-0.17	0.175	0.226
	WLAN5GHz	802.11n-HT20 MCS0	Back	10mm	Ant 6+17	Index 4/5	Non-DBS / DBS	40	5200	21.05	22.00	1.246	96.26	1.039	-0.03	0.304	0.393
	WLAN5GHz	802.11n-HT20 MCS0	Right Side	10mm	Ant 6+17	Index 4/5	Non-DBS / DBS	40	5200	21.05	22.00	1.246	96.26	1.039	0.14	0.185	0.239
62	WLAN5GHz	802.11n-HT20 MCS0	Top Side	10mm	Ant 6+17	Index 4/5	Non-DBS / DBS	40	5200	21.05	22.00	1.246	96.26	1.039	-0.08	0.528	0.683
	WLAN5GHz	802.11a 6Mbps	Front	0mm	Ant 6+17	Index 4	Non-DBS	149	5745	22.32	23.00	1.169	96.48	1.036	0.14	0.285	0.345
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Ant 6+17	Index 4	Non-DBS	149	5745	22.32	23.00	1.169	96.48	1.036	-0.17	0.432	0.523
	WLAN5GHz	802.11a 6Mbps	Right Side	0mm	Ant 6+17	Index 4	Non-DBS	149	5745	22.32	23.00	1.169	96.48	1.036	0.17	0.410	0.496
	WLAN5GHz	802.11a 6Mbps	Top Side	0mm	Ant 6+17	Index 4	Non-DBS	149	5745	22.32	23.00	1.169	96.48	1.036	-0.05	0.756	0.915
63	WLAN5GHz	802.11a 6Mbps	Top Side	10mm	Ant 6+17	Index 4	Non-DBS	157	5785	22.28	23.00	1.180	96.48	1.036	-0.02	0.765	0.935
	WLAN5GHz	802.11a 6Mbps	Top Side	0mm	Ant 6+17	Index 4	Non-DBS	165	5825	21.81	22.50	1.171	96.48	1.036	0.08	0.523	0.635
	WLAN5GHz	802.11a 6Mbps	Front	10mm	Ant 6+17	Index 5	DBS	149	5745	22.32	22.50	1.042	96.48	1.036	0.14	0.285	0.308
	WLAN5GHz	802.11a 6Mbps	Back	10mm	Ant 6+17	Index 5	DBS	149	5745	22.32	22.50	1.042	96.48	1.036	-0.17	0.418	0.451
	WLAN5GHz	802.11a 6Mbps	Right Side	10mm	Ant 6+17	Index 5	DBS	149	5745	22.32	22.50	1.042	96.48	1.036	0.17	0.410	0.442
	WLAN5GHz	802.11a 6Mbps	Top Side	10mm	Ant 6+17	Index 5	DBS	149	5745	22.32	22.50	1.042	96.48	1.036	-0.05	0.756	0.816
	WLAN5GHz	802.11a 6Mbps	Top Side	10mm	Ant 6+17	Index 5	DBS	157	5785	22.28	22.50	1.052	96.48	1.036	-0.02	0.765	0.833
	WLAN5GHz	802.11a 6Mbps	Top Side	10mm	Ant 6+17	Index 5	DBS	165	5825	21.81	22.50	1.171	96.48	1.036	0.08	0.523	0.635

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Non-DBS / DBS	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)
	Bluetooth	1Mbps	Front	10mm	Ant 16	Index 4/5	Non-DBS / DBS	78	2480	15.25	16.50	1.334	76.83	1.084	0.01	0.094	0.136
	Bluetooth	1Mbps	Back	10mm	Ant 16	Index 4/5	Non-DBS / DBS	78	2480	15.25	16.50	1.334	76.83	1.084	0.1	0.097	0.140
	Bluetooth	1Mbps	Right Side	10mm	Ant 16	Index 4/5	Non-DBS / DBS	78	2480	15.25	16.50	1.334	76.83	1.084	-0.17	0.099	0.143
	Bluetooth	1Mbps	Top Side	10mm	Ant 16	Index 4/5	Non-DBS / DBS	78	2480	15.25	16.50	1.334	76.83	1.084	0.02	0.135	0.195
	Bluetooth	1Mbps	Front	10mm	Ant 7	Index 4/5	Non-DBS / DBS	78	2480	15.18	16.50	1.355	76.74	1.085	0.04	0.060	0.088
64	Bluetooth	1Mbps	Back	10mm	Ant 7	Index 4/5	Non-DBS / DBS	78	2480	15.18	16.50	1.355	76.74	1.085	-0.02	0.166	0.244
	Bluetooth	1Mbps	Right Side	10mm	Ant 7	Index 4/5	Non-DBS / DBS	78	2480	15.18	16.50	1.355	76.74	1.085	-0.01	0.001	0.001
	Bluetooth	1Mbps	Top Side	10mm	Ant 7	Index 4/5	Non-DBS / DBS	78	2480	15.18	16.50	1.355	76.74	1.085	-0.08	0.001	0.001



15.3 Body Worn Accessory SAR

<GSM SAR>

Table with 15 columns: Plot No., Band, Mode, Test Position, Gap (mm), Power State, Antenna, Ch., Freq. (MHz), Average Power (dBm), Tune-Up Limit (dBm), Tune-up Scaling Factor, Power Drift (dB), Measured 1g SAR (W/kg), Reported 1g SAR (W/kg). Rows include GSM850 and GSM1900 bands.

<WCDMA SAR>

Table with 15 columns: Plot No., Band, Mode, Test Position, Gap (mm), Power State, Antenna, Ch., Freq. (MHz), Average Power (dBm), Tune-Up Limit (dBm), Tune-up Scaling Factor, Power Drift (dB), Measured 1g SAR (W/kg), Reported 1g SAR (W/kg). Rows include WCDMA II, IV, and V bands.











<5G NR SAR>

Table with 19 columns: Plot No., Band, BW (MHz), Modulation, RB Size, RB offset, Test Position, Gap (mm), Power State, Antenna, Code, Ch., Freq. (MHz), Average Power (dBm), Tune-Up Limit (dBm), Tune-up Scaling Factor, Power Drift (dB), Measured 1g SAR (W/kg), Reported 1g SAR (W/kg). Rows include various antenna configurations (Ant 2, Ant 3, Ant 4, Ant 5, Ant 0, Ant 1) across different bands (FR1 n7, n12, n25, n26) and power states (DSI 4).





Table with 17 columns: Antenna ID, Power, Modulation, Frequency, Polarization, Distance, Orientation, Power Density, and SAR values (1-6). Rows include various antenna configurations for n66, n77, and n77\_HPUE series.



**FCC SAR TEST REPORT**

**Report No. : FA442005B**

	FR1 n77_Ant 9	100M	QPSK	135	69	Front	15mm	DSI 4	Main PA	-	633332	3499.98	19.91	21.00	1.285	0.03	0.090	0.116
	FR1 n77_Ant 9	100M	QPSK	1	1	Back	15mm	DSI 4	Main PA	-	633332	3499.98	19.97	21.00	1.268	-0.06	0.089	0.113
	FR1 n77_Ant 9	100M	QPSK	135	69	Back	15mm	DSI 4	Main PA	-	633332	3499.98	19.91	21.00	1.285	0.01	0.088	0.113
	FR1 n77_HPUE_Ant 9	100M	QPSK	135	69	Front	15mm	DSI 4	Main PA	-	633332	3499.98	22.69	24.00	1.352	0.1	0.101	0.137
	FR1 n78_Ant 6	100M	QPSK	1	1	Front	15mm	DSI 4	Main PA	-	650000	3750	24.22	24.50	1.067	-0.17	0.262	0.279
	FR1 n78_Ant 6	100M	QPSK	135	69	Front	15mm	DSI 4	Main PA	-	650000	3750	24.21	24.50	1.069	0.02	0.254	0.272
	FR1 n78_Ant 6	100M	QPSK	1	1	Back	15mm	DSI 4	Main PA	-	650000	3750	24.22	24.50	1.067	-0.11	0.243	0.259
	FR1 n78_Ant 6	100M	QPSK	135	69	Back	15mm	DSI 4	Main PA	-	650000	3750	24.21	24.50	1.069	0.18	0.241	0.258
	FR1 n78_HPUE_Ant 6	100M	QPSK	1	1	Front	15mm	DSI 4	Main PA	-	650000	3750	27.07	27.50	1.104	-0.06	0.270	0.298
	FR1 n78_Ant 6	100M	QPSK	1	1	Front	15mm	DSI 4	Main PA	-	633332	3499.98	24.32	24.50	1.042	0.13	0.350	0.365
	FR1 n78_Ant 6	100M	QPSK	135	69	Front	15mm	DSI 4	Main PA	-	633332	3499.98	24.28	24.50	1.052	-0.03	0.338	0.356
	FR1 n78_Ant 6	100M	QPSK	1	1	Back	15mm	DSI 4	Main PA	-	633332	3499.98	24.32	24.50	1.042	0.12	0.359	0.374
	FR1 n78_Ant 6	100M	QPSK	135	69	Back	15mm	DSI 4	Main PA	-	633332	3499.98	24.28	24.50	1.052	0.19	0.377	0.397
	FR1 n78_HPUE_Ant 6	100M	QPSK	135	69	Back	15mm	DSI 4	Main PA	-	633332	3499.98	26.91	27.50	1.146	0.17	0.379	0.434
	FR1 n78_Ant 7	100M	QPSK	1	1	Front	15mm	DSI 4	Main PA	-	650000	3750	17.02	17.50	1.117	-0.07	0.116	0.130
	FR1 n78_Ant 7	100M	QPSK	135	69	Front	15mm	DSI 4	Main PA	-	650000	3750	17.00	17.50	1.122	-0.05	0.098	0.110
	FR1 n78_Ant 7	100M	QPSK	1	1	Back	15mm	DSI 4	Main PA	-	650000	3750	17.02	17.50	1.117	-0.04	0.154	0.172
	FR1 n78_Ant 7	100M	QPSK	135	69	Back	15mm	DSI 4	Main PA	-	650000	3750	17.00	17.50	1.122	0.13	0.127	0.142
	FR1 n78_HPUE_Ant 7	100M	QPSK	1	1	Back	15mm	DSI 4	Main PA	-	650000	3750	19.91	20.50	1.146	0.16	0.158	0.181
	FR1 n78_Ant 7	100M	QPSK	1	1	Front	15mm	DSI 4	Main PA	-	633332	3499.98	16.86	17.50	1.159	0.06	0.082	0.095
	FR1 n78_Ant 7	100M	QPSK	135	69	Front	15mm	DSI 4	Main PA	-	633332	3499.98	16.83	17.50	1.167	-0.04	0.087	0.102
	FR1 n78_Ant 7	100M	QPSK	1	1	Back	15mm	DSI 4	Main PA	-	633332	3499.98	16.86	17.50	1.159	0.17	0.064	0.074
	FR1 n78_Ant 7	100M	QPSK	135	69	Back	15mm	DSI 4	Main PA	-	633332	3499.98	16.83	17.50	1.167	0.06	0.072	0.084
	FR1 n78_HPUE_Ant 7	100M	QPSK	135	69	Front	15mm	DSI 4	Main PA	-	633332	3499.98	19.72	20.50	1.197	0.07	0.105	0.126
	FR1 n78_Ant 8	100M	QPSK	1	1	Front	15mm	DSI 4	Main PA	-	650000	3750	22.35	23.50	1.303	0.07	0.060	0.078
	FR1 n78_Ant 8	100M	QPSK	135	69	Front	15mm	DSI 4	Main PA	-	650000	3750	22.34	23.50	1.306	-0.18	0.057	0.074
	FR1 n78_Ant 8	100M	QPSK	1	1	Back	15mm	DSI 4	Main PA	-	650000	3750	22.35	23.50	1.303	-0.06	0.318	0.414
	FR1 n78_Ant 8	100M	QPSK	135	69	Back	15mm	DSI 4	Main PA	-	650000	3750	22.34	23.50	1.306	0.07	0.316	0.413
	FR1 n78_HPUE_Ant 8	100M	QPSK	1	1	Back	15mm	DSI 4	Main PA	-	650000	3750	25.05	26.50	1.396	-0.04	0.357	0.499
	FR1 n78_Ant 8	100M	QPSK	1	1	Front	15mm	DSI 4	Main PA	-	633332	3499.98	22.18	23.50	1.355	-0.08	0.052	0.070
	FR1 n78_Ant 8	100M	QPSK	135	69	Front	15mm	DSI 4	Main PA	-	633332	3499.98	22.13	23.50	1.371	-0.04	0.050	0.069
	FR1 n78_Ant 8	100M	QPSK	1	1	Back	15mm	DSI 4	Main PA	-	633332	3499.98	22.18	23.50	1.355	0.02	0.362	0.491
	FR1 n78_Ant 8	100M	QPSK	135	69	Back	15mm	DSI 4	Main PA	-	633332	3499.98	22.13	23.50	1.371	-0.07	0.399	0.547
90	FR1 n78_HPUE_Ant 8	100M	QPSK	135	69	Back	15mm	DSI 4	Main PA	-	633332	3499.98	24.93	26.50	1.435	0.04	0.416	0.597
	FR1 n78_Ant 9	100M	QPSK	1	1	Front	15mm	DSI 4	Main PA	-	650000	3750	21.88	23.00	1.294	0.03	0.130	0.168
	FR1 n78_Ant 9	100M	QPSK	135	69	Front	15mm	DSI 4	Main PA	-	650000	3750	21.78	23.00	1.324	0.09	0.130	0.172
	FR1 n78_Ant 9	100M	QPSK	1	1	Back	15mm	DSI 4	Main PA	-	650000	3750	21.88	23.00	1.294	-0.02	0.313	0.405
	FR1 n78_Ant 9	100M	QPSK	135	69	Back	15mm	DSI 4	Main PA	-	650000	3750	21.78	23.00	1.324	0.15	0.355	0.470
	FR1 n78_HPUE_Ant 9	100M	QPSK	135	69	Back	15mm	DSI 4	Main PA	-	650000	3750	24.73	26.00	1.340	0.03	0.361	0.484
	FR1 n78_Ant 9	100M	QPSK	1	1	Front	15mm	DSI 4	Main PA	-	633332	3499.98	21.87	23.00	1.297	0.15	0.180	0.233
	FR1 n78_Ant 9	100M	QPSK	135	69	Front	15mm	DSI 4	Main PA	-	633332	3499.98	21.77	23.00	1.327	-0.08	0.169	0.224
	FR1 n78_Ant 9	100M	QPSK	1	1	Back	15mm	DSI 4	Main PA	-	633332	3499.98	21.87	23.00	1.297	-0.05	0.183	0.237
	FR1 n78_Ant 9	100M	QPSK	135	69	Back	15mm	DSI 4	Main PA	-	633332	3499.98	21.77	23.00	1.327	-0.18	0.192	0.255
	FR1 n78_HPUE_Ant 9	100M	QPSK	135	69	Back	15mm	DSI 4	Main PA	-	633332	3499.98	24.62	26.00	1.374	0.09	0.199	0.273



<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Standalone / Non-DBS / DBS	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)
	WLAN2.4GHz	802.11b 1Mbps	Front	15mm	Ant 7	Index 6/7	Non-DBS / DBS	11	2462	16.81	17.50	1.172	98.64	1.014	-0.03	0.155	0.184
	WLAN2.4GHz	802.11b 1Mbps	Back	15mm	Ant 7	Index 6/7	Non-DBS / DBS	11	2462	16.81	17.50	1.172	98.64	1.014	0.05	0.137	0.163
	WLAN2.4GHz	802.11b 1Mbps	Front	15mm	Ant 16+7	Index 6/7	Non-DBS / DBS	11	2462	19.77	20.50	1.183	98.64	1.014	0.06	0.192	0.230
	WLAN2.4GHz	802.11b 1Mbps	Back	15mm	Ant 16+7	Index 6/7	Non-DBS / DBS	11	2462	19.77	20.50	1.183	98.64	1.014	0.01	0.164	0.197
91	WLAN2.4GHz	802.11b 1Mbps	Front	15mm	Ant 16+7	Index 9	Standalone	11	2462	22.03	23.00	1.251	98.64	1.014	0.01	0.344	0.437
	WLAN2.4GHz	802.11b 1Mbps	Back	15mm	Ant 16+7	Index 9	Standalone	11	2462	22.03	23.00	1.251	98.64	1.014	0.05	0.294	0.373
	WLAN5GHz	802.11a 6Mbps	Front	15mm	Ant 6+17	Index 6/7	Non-DBS / DBS	60	5300	20.96	22.00	1.271	96.48	1.036	0.03	0.206	0.271
	WLAN5GHz	802.11a 6Mbps	Back	15mm	Ant 6+17	Index 6/7	Non-DBS / DBS	60	5300	20.96	22.00	1.271	96.48	1.036	0.11	0.229	0.302
	WLAN5GHz	802.11a 6Mbps	Front	15mm	Ant 6+17	Index 9	Standalone	52	5260	21.23	22.00	1.193	96.48	1.036	0.06	0.255	0.315
92	WLAN5GHz	802.11a 6Mbps	Back	15mm	Ant 6+17	Index 9	Standalone	52	5260	21.23	22.00	1.193	96.48	1.036	-0.08	0.284	0.351
	WLAN5GHz	802.11a 6Mbps	Front	15mm	Ant 6+17	Index 6/7/9	Standalone / Non-DBS / DBS	124	5620	20.85	21.50	1.161	96.48	1.036	-0.08	0.237	0.285
93	WLAN5GHz	802.11a 6Mbps	Back	15mm	Ant 6+17	Index 6/7/9	Standalone / Non-DBS / DBS	124	5620	20.85	21.50	1.161	96.48	1.036	0.1	0.291	0.350
	WLAN5GHz	802.11a 6Mbps	Front	15mm	Ant 6+17	Index 6/9	Standalone / Non-DBS / DBS	149	5745	22.32	23.00	1.169	96.48	1.036	-0.08	0.232	0.281
94	WLAN5GHz	802.11a 6Mbps	Back	15mm	Ant 6+17	Index 6/9	Standalone / Non-DBS / DBS	149	5745	22.32	23.00	1.169	96.48	1.036	-0.05	0.421	0.510
	WLAN5GHz	802.11a 6Mbps	Front	15mm	Ant 6+17	Index 7	DBS	149	5745	22.32	22.50	1.042	96.48	1.036	-0.08	0.232	0.250
	WLAN5GHz	802.11a 6Mbps	Back	15mm	Ant 6+17	Index 7	DBS	149	5745	22.32	22.50	1.042	96.48	1.036	-0.05	0.421	0.454

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Non-DBS / DBS	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)
	WLAN6GHz	802.11be-EHT320 MCS0	Front	15mm	Ant 6+17	Index 6/7	Non-DBS / DBS	127	6585	13.11	14.00	1.227	86.83	1.152	0.1	0.019	0.027	0.179	0.253
95	WLAN6GHz	802.11be-EHT320 MCS0	Back	15mm	Ant 6+17	Index 6/7	Non-DBS / DBS	127	6585	13.11	14.00	1.227	86.83	1.152	-0.1	0.036	0.051	0.303	0.428
	WLAN6GHz	802.11be-EHT320 MCS0	Back	15mm	Ant 6+17	Index 6/7	Non-DBS / DBS	31	6105	12.49	13.00	1.125	86.83	1.152	-0.06	0.025	0.032	0.204	0.264
	WLAN6GHz	802.11be-EHT320 MCS0	Back	15mm	Ant 6+17	Index 6/7	Non-DBS / DBS	63	6265	12.04	13.00	1.247	86.83	1.152	0.12	0.033	0.047	0.288	0.414
	WLAN6GHz	802.11be-EHT320 MCS0	Back	15mm	Ant 6+17	Index 6/7	Non-DBS / DBS	95	6425	12.15	13.00	1.216	86.83	1.152	0.08	0.031	0.043	0.254	0.356
	WLAN6GHz	802.11be-EHT320 MCS0	Back	15mm	Ant 6+17	Index 6/7	Non-DBS / DBS	159	6745	13.04	14.00	1.247	86.83	1.152	-0.17	0.012	0.017	0.111	0.160
	WLAN6GHz	802.11be-EHT320 MCS0	Back	15mm	Ant 6+17	Index 6/7	Non-DBS / DBS	191	6905	13.05	14.00	1.245	86.83	1.152	-0.03	0.012	0.017	0.122	0.175

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Non-DBS / DBS	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)
	Bluetooth	1Mbps	Front	15mm	Ant 16	Index 6/7	Non-DBS / DBS	78	2480	15.25	16.50	1.334	76.83	1.084	0.05	0.027	0.039
	Bluetooth	1Mbps	Back	15mm	Ant 16	Index 6/7	Non-DBS / DBS	78	2480	15.25	16.50	1.334	76.83	1.084	-0.03	0.028	0.040
	Bluetooth	1Mbps	Front	15mm	Ant 7	Index 6/7	Non-DBS / DBS	78	2480	15.18	16.50	1.355	76.74	1.085	0.01	0.001	0.001
96	Bluetooth	1Mbps	Back	15mm	Ant 7	Index 6/7	Non-DBS / DBS	78	2480	15.18	16.50	1.355	76.74	1.085	0.06	0.068	0.100



15.4 Product Specific SAR

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Standalone / Non-DBS / DBS	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)	Measured APD (W/m^2)	Reported APD (W/m^2)
	WLAN5GHz	802.11a 6Mbps	Front	0mm	Ant 6+17	Index 6/7/9	Standalone / Non-DBS / DBS	60	5300	20.96	22.00	1.271	96.48	1.036	-0.08	1.260	1.660		
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Ant 6+17	Index 6/7/9	Standalone / Non-DBS / DBS	60	5300	20.96	22.00	1.271	96.48	1.036	-0.08	0.331	0.436		
	WLAN5GHz	802.11a 6Mbps	Right Side	0mm	Ant 6+17	Index 6/7/9	Standalone / Non-DBS / DBS	60	5300	20.96	22.00	1.271	96.48	1.036	0.1	1.270	1.673		
	WLAN5GHz	802.11a 6Mbps	Top Side	0mm	Ant 6+17	Index 6/7/9	Standalone / Non-DBS / DBS	60	5300	20.96	22.00	1.271	96.48	1.036	-0.18	1.870	2.463		
	WLAN5GHz	802.11a 6Mbps	Top Side	0mm	Ant 6+17	Index 6/7/9	Standalone / Non-DBS / DBS	52	5260	20.93	22.00	1.279	96.48	1.036	0.1	1.860	2.465		
97	WLAN5GHz	802.11a 6Mbps	Top Side	0mm	Ant 6+17	Index 6/7/9	Standalone / Non-DBS / DBS	56	5280	20.92	22.00	1.282	96.48	1.036	0.02	1.890	2.511		
	WLAN5GHz	802.11a 6Mbps	Top Side	0mm	Ant 6+17	Index 6/7/9	Standalone / Non-DBS / DBS	64	5320	20.92	22.00	1.282	96.48	1.036	0.12	1.870	2.484		
	WLAN5GHz	802.11a 6Mbps	Front	0mm	Ant 6+17	Index 6/7/9	Standalone / Non-DBS / DBS	124	5620	20.85	21.50	1.161	96.48	1.036	0.08	1.160	1.396		
	WLAN5GHz	802.11a 6Mbps	Back	0mm	Ant 6+17	Index 6/7/9	Standalone / Non-DBS / DBS	124	5620	20.85	21.50	1.161	96.48	1.036	-0.17	0.216	0.260		
	WLAN5GHz	802.11a 6Mbps	Right Side	0mm	Ant 6+17	Index 6/7/9	Standalone / Non-DBS / DBS	124	5620	20.85	21.50	1.161	96.48	1.036	-0.03	1.430	1.721		
98	WLAN5GHz	802.11a 6Mbps	Top Side	0mm	Ant 6+17	Index 6/7/9	Standalone / Non-DBS / DBS	124	5620	20.85	21.50	1.161	96.48	1.036	-0.1	1.900	2.286		
	WLAN5GHz	802.11a 6Mbps	Top Side	0mm	Ant 6+17	Index 6/7/9	Standalone / Non-DBS / DBS	100	5500	20.84	21.50	1.164	96.48	1.036	0.14	1.740	2.099		
	WLAN5GHz	802.11a 6Mbps	Top Side	0mm	Ant 6+17	Index 6/7/9	Standalone / Non-DBS / DBS	116	5580	20.81	21.50	1.172	96.48	1.036	0.11	1.850	2.247		
	WLAN5GHz	802.11a 6Mbps	Top Side	0mm	Ant 6+17	Index 6/7/9	Standalone / Non-DBS / DBS	132	5660	20.79	21.50	1.178	96.48	1.036	-0.05	1.820	2.220		
	WLAN5GHz	802.11a 6Mbps	Top Side	0mm	Ant 6+17	Index 6/7/9	Standalone / Non-DBS / DBS	144	5720	20.56	21.50	1.242	96.48	1.036	0.18	1.650	2.122		
	WLAN6GHz	802.11be-EHT320 MCS0	Front	0mm	Ant 6+17	Index 6/7	Non-DBS / DBS	127	6585	13.11	14.00	1.227	86.83	1.152	0.14	0.089	0.126	2.190	3.097
	WLAN6GHz	802.11be-EHT320 MCS0	Back	0mm	Ant 6+17	Index 6/7	Non-DBS / DBS	127	6585	13.11	14.00	1.227	86.83	1.152	0.11	0.027	0.038	0.988	1.397
99	WLAN6GHz	802.11be-EHT320 MCS0	Right Side	0mm	Ant 6+17	Index 6/7	Non-DBS / DBS	127	6585	13.11	14.00	1.227	86.83	1.152	-0.09	0.128	0.181	3.030	4.284
	WLAN6GHz	802.11be-EHT320 MCS0	Right Side	0mm	Ant 6+17	Index 6/7	Non-DBS / DBS	31	6105	12.49	13.00	1.125	86.83	1.152	0.02	0.135	0.175	2.870	3.718
	WLAN6GHz	802.11be-EHT320 MCS0	Right Side	0mm	Ant 6+17	Index 6/7	Non-DBS / DBS	63	6265	12.04	13.00	1.247	86.83	1.152	-0.05	0.082	0.118	1.840	2.644
	WLAN6GHz	802.11be-EHT320 MCS0	Right Side	0mm	Ant 6+17	Index 6/7	Non-DBS / DBS	95	6425	12.15	13.00	1.216	86.83	1.152	0.18	0.044	0.062	1.320	1.849
	WLAN6GHz	802.11be-EHT320 MCS0	Right Side	0mm	Ant 6+17	Index 6/7	Non-DBS / DBS	159	6745	13.04	14.00	1.247	86.83	1.152	0.14	0.034	0.049	1.120	1.609
	WLAN6GHz	802.11be-EHT320 MCS0	Right Side	0mm	Ant 6+17	Index 6/7	Non-DBS / DBS	191	6905	13.05	14.00	1.245	86.83	1.152	-0.17	0.037	0.053	1.330	1.907
	WLAN6GHz	802.11be-EHT320 MCS0	Top Side	0mm	Ant 6+17	Index 6/7	Non-DBS / DBS	127	6585	13.11	14.00	1.227	86.83	1.152	0.17	0.123	0.174	2.740	3.874

<NFC SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Freq. (MHz)	Power Drift (dB)	Measured 10g SAR (W/kg)
	NFC	ASK	Front	0mm	13.56	0	0.001
100	NFC	ASK	Back	0mm	13.56	0	0.001
	NFC	ASK	Left Side	0mm	13.56	0	0.001
	NFC	ASK	Right Side	0mm	13.56	0	0.001
	NFC	ASK	Top Side	0mm	13.56	0	0.001



15.1 6GHz PD Test Result

Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Grid Step (λ)	iPDn	iPD ratio (≥ -1)	Normal psPD (W/m <sup>2</sup> )	Total psPD (W/m <sup>2</sup> )
WLAN6GHz	802.11be-EHT320 MCS0	Front	2mm	Ant 17+6	Index 6/7	31	6105	12.49	0.0625	1.9	-0.90462256	0.572	0.616
WLAN6GHz	802.11be-EHT320 MCS0	Front	9.82mm	Ant 17+6	Index 6/7	31	6105	12.49	0.25	2.34	-0.90462256	0.347	0.352
WLAN6GHz	802.11be-EHT320 MCS0	Front	2mm	Ant 17+6	Index 6/7	191	6905	13.05	0.0625	0.842	-0.99993774	0.337	0.385
WLAN6GHz	802.11be-EHT320 MCS0	Front	8.68mm	Ant 17+6	Index 6/7	191	6905	13.05	0.25	1.06	-0.99993774	0.311	0.337

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Grid Step (λ)	Scaling Factor for Measurement Uncertainty	Power Drift (dB)	Normal psPD (W/m <sup>2</sup> )	Scaled Normal psPD (W/m <sup>2</sup> )	Total psPD (W/m <sup>2</sup> )	Scaled Total psPD (W/m <sup>2</sup> )
	WLAN6GHz	802.11be-EHT320 MCS0	Front	2mm	Ant 17+6	Index 6/7	127	6585	13.11	14.00	1.227	86.83	1.152	0.0625	1.5535	-0.15	0.497	1.092	0.543	1.193
	WLAN6GHz	802.11be-EHT320 MCS0	Front	2mm	Ant 17+6	Index 6/7	31	6105	12.49	13.00	1.125	86.83	1.152	0.0625	1.5535	0.18	0.572	1.151	0.616	1.240
	WLAN6GHz	802.11be-EHT320 MCS0	Front	2mm	Ant 17+6	Index 6/7	63	6265	12.04	13.00	1.247	86.83	1.152	0.0625	1.5535	0.06	0.455	1.016	0.495	1.105
	WLAN6GHz	802.11be-EHT320 MCS0	Front	2mm	Ant 17+6	Index 6/7	95	6425	12.15	13.00	1.216	86.83	1.152	0.0625	1.5535	-0.03	0.522	1.136	0.553	1.204
	WLAN6GHz	802.11be-EHT320 MCS0	Front	2mm	Ant 17+6	Index 6/7	159	6745	13.04	14.00	1.247	86.83	1.152	0.0625	1.5535	-0.08	0.377	0.842	0.427	0.953
	WLAN6GHz	802.11be-EHT320 MCS0	Front	2mm	Ant 17+6	Index 6/7	191	6905	13.05	14.00	1.245	86.83	1.152	0.0625	1.5535	-0.16	0.337	0.751	0.385	0.857
	WLAN6GHz	802.11be-EHT320 MCS0	Front	2mm	Ant 17+6	Index 6/7	127	6585	13.11	14.00	1.227	86.83	1.152	0.0625	1.5535	-0.15	0.497	1.092	0.543	1.193
	WLAN6GHz	802.11be-EHT320 MCS0	Back	2mm	Ant 17+6	Index 6/7	127	6585	13.11	14.00	1.227	86.83	1.152	0.0625	1.5535	-0.16	0.872	1.915	0.987	2.168
	WLAN6GHz	802.11be-EHT320 MCS0	Right Side	2mm	Ant 17+6	Index 6/7	127	6585	13.11	14.00	1.227	86.83	1.152	0.0625	1.5535	0.09	1.460	3.207	1.660	3.646
01	WLAN6GHz	802.11be-EHT320 MCS0	Right Side	2mm	Ant 17+6	Index 6/7	31	6105	12.49	13.00	1.125	86.83	1.152	0.0625	1.5535	-0.14	3.370	6.783	3.570	7.185
	WLAN6GHz	802.11be-EHT320 MCS0	Right Side	2mm	Ant 17+6	Index 6/7	63	6265	12.04	13.00	1.247	86.83	1.152	0.0625	1.5535	0.02	0.816	1.822	1.400	3.125
	WLAN6GHz	802.11be-EHT320 MCS0	Right Side	2mm	Ant 17+6	Index 6/7	95	6425	12.15	13.00	1.216	86.83	1.152	0.0625	1.5535	0	0.835	1.817	1.510	3.287
	WLAN6GHz	802.11be-EHT320 MCS0	Right Side	2mm	Ant 17+6	Index 6/7	159	6745	13.04	14.00	1.247	86.83	1.152	0.0625	1.5535	0.04	0.728	1.625	0.762	1.701
	WLAN6GHz	802.11be-EHT320 MCS0	Right Side	2mm	Ant 17+6	Index 6/7	191	6905	13.05	14.00	1.245	86.83	1.152	0.0625	1.5535	-0.03	0.846	1.884	0.974	2.169
	WLAN6GHz	802.11be-EHT320 MCS0	Top Side	2mm	Ant 17+6	Index 6/7	127	6585	13.11	14.00	1.227	86.83	1.152	0.0625	1.5535	-0.14	0.976	2.144	1.190	2.614



15.2 Repeated SAR Measurement

No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power State	Standalone/ Non-DBS/ DBS	code	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	FR1 n12_Ant 1	15M	QPSK	36	22	Left Cheek	0mm	DSI 1	Main PA	-	141500	707.5	22.92	23.00	1.019	-0.14	1.060	-	1.080
2nd	FR1 n12_Ant 1	15M	QPSK	36	22	Left Cheek	0mm	DSI 1	Main PA	-	141500	707.5	22.92	23.00	1.019	0.05	1.030	1.03	1.049
1st	FR1 n25_Ant 2	40M	QPSK	108	54	Left Cheek	0mm	DSI 1	Main PA	code:2	376500	1882.5	18.75	19.50	1.189	0.05	0.803	-	0.954
2nd	FR1 n25_Ant 2	40M	QPSK	108	54	Left Cheek	0mm	DSI 1	Main PA	code:2	376500	1882.5	18.75	19.50	1.189	0.01	0.795	1.01	0.945
1st	FR1 n66_Ant 2	40M	QPSK	108	54	Left Cheek	0mm	DSI 1	Main PA	code:8	349000	1745	19.58	20.00	1.102	-0.06	0.983	-	1.083
2nd	FR1 n66_Ant 2	40M	QPSK	108	54	Left Cheek	0mm	DSI 1	Main PA	code:8	349000	1745	19.58	20.00	1.102	0.04	0.971	1.01	1.070
1st	FR1 n77_Ant 6	100M	QPSK	135	69	Left Tilted	0mm	DSI 1	Main PA	-	633332	3499.98	15.49	15.50	1.002	0.01	1.090	-	1.093
2nd	FR1 n77_Ant 6	100M	QPSK	135	69	Left Tilted	0mm	DSI 1	Main PA	-	633332	3499.98	15.49	15.50	1.002	0.08	1.080	1.01	1.082

No.	Band	Mode	Test Position	Gap (mm)	Power State	Standalone/ Non-DBS/ DBS	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Index 8	Standalone	11	2462	16.45	17.00	1.135	98.64	1.014	0.03	0.944	-	1.086
2nd	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Index 8	Standalone	11	2462	16.45	17.00	1.135	98.64	1.014	-0.11	0.923	1.02	1.062
1st	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Index 8	Standalone	58	5290	18.94	19.50	1.138	96.57	1.036	0.12	0.900	-	1.061
2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Index 8	Standalone	58	5290	18.94	19.50	1.138	96.57	1.036	0.03	0.866	1.04	1.021
1st	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Index 8	Standalone	138	5690	19.52	20.50	1.253	96.57	1.036	0.1	0.842	-	1.093
2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Index 8	Standalone	138	5690	19.52	20.50	1.253	96.57	1.036	0.02	0.830	1.01	1.078
1st	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Index 8	Standalone	155	5775	18.47	19.00	1.129	96.03	1.041	0.05	0.891	-	1.047
2nd	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Index 8	Standalone	155	5775	18.47	19.00	1.129	96.03	1.041	0.02	0.865	1.03	1.016

General Note:

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is  $\geq 0.8W/kg$ .
2. Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is  $\leq 1.2$  and the measured SAR  $< 1.45W/kg$ , only one repeated measurement is required.
3. Per KDB 865664 D01v01r04, if the extremity repeated SAR is necessary, the same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.
4. The ratio is the difference in percentage between original and repeated *measured SAR*.
5. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.





**15.3 Power Class 2 and Power Class 3 Linearity**

**General Note:**

This device support Power Class 2 and Power Class 3 operations. Per FCC Guidance based on the device behavior, all SAR tests were performed using Power Class 3. Power Class 2 is tested using the highest SAR test configuration in Power Class 3 for each LTE and FR1 configuration and exposure condition combination, according to the highest time averaged power for Power Class 2. When the reported SAR vs. output power is linearly scaled with < 10% discrepancy between power classes and all reported SAR are < 1.4 W/kg, Separate SAR testing for Power Class 2 is not required. Use PC3 power level and SAR to estimated PC2 SAR linearly, and check if the deviation from the measured PC2 SAR is <10%

**<Head condition>**

Ant 2	FR1 n41_Ant 2 (Power Class 3)	FR1 n41_Ant 2 (Power Class 2)
Maximum Tune up Power (dBm)	16.5	19.5
Reported 1g SAR (W/kg)	0.855	0.888
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	44.67	44.56
Linearity SAR(W/kg)	0.85	
% deviation from expected linearity		4.11%
Ant 3	FR1 n41_Ant 3 (Power Class 3)	FR1 n41_Ant 3 (Power Class 2)
Maximum Tune up Power (dBm)	17	20
Reported 1g SAR (W/kg)	0.835	0.886
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	50.12	50.00
Linearity SAR(W/kg)	0.83	
% deviation from expected linearity		6.36%
Ant 4	FR1 n41_Ant 4 (Power Class 3)	FR1 n41_Ant 4 (Power Class 2)
Maximum Tune up Power (dBm)	16	19
Reported 1g SAR (W/kg)	0.534	0.51
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	39.81	39.72
Linearity SAR(W/kg)	0.53	
% deviation from expected linearity		-4.27%
Ant 5	FR1 n41_Ant 5 (Power Class 3)	FR1 n41_Ant 5 (Power Class 2)
Maximum Tune up Power (dBm)	24	27
Reported 1g SAR (W/kg)	0.2	0.218
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	251.19	250.59
Linearity SAR(W/kg)	0.20	
% deviation from expected linearity		9.26%
Ant 6	FR1 n77_Ant 6 (Power Class 3)	FR1 n77_Ant 6 (Power Class 2)
Maximum Tune up Power (dBm)	15.5	18.5
Reported 1g SAR (W/kg)	1.093	1.092
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	35.48	35.40
Linearity SAR(W/kg)	1.09	
% deviation from expected linearity		0.15%
Ant 7	FR1 n78_Ant 7 (Power Class 3)	FR1 n78_Ant 7 (Power Class 2)
Maximum Tune up Power (dBm)	15.5	18.5



Reported 1g SAR (W/kg)	0.682	0.677
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	35.48	35.40
Linearity SAR(W/kg)	0.68	
% deviation from expected linearity		-0.50%
Ant 8	FR1 n78_Ant 8 (Power Class 3)	FR1 n78_Ant 8 (Power Class 2)
Maximum Tune up Power (dBm)	23.5	26.5
Reported 1g SAR (W/kg)	0.559	0.552
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	223.87	223.34
Linearity SAR(W/kg)	0.56	
% deviation from expected linearity		-1.02%
Ant 9	FR1 n77_Ant 9 (Power Class 3)	FR1 n77_Ant 9 (Power Class 2)
Maximum Tune up Power (dBm)	18.5	21.5
Reported 1g SAR (W/kg)	0.482	0.481
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	70.79	70.63
Linearity SAR(W/kg)	0.48	
% deviation from expected linearity		0.03%

**<Hotspot condition>**

Ant 2	FR1 n41_Ant 2 (Power Class 3)	FR1 n41_Ant 2 (Power Class 2)
Maximum Tune up Power (dBm)	16.5	19.5
Reported 1g SAR (W/kg)	0.3	0.318
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	44.67	44.56
Linearity SAR(W/kg)	0.30	
% deviation from expected linearity		6.25%
Ant 3	FR1 n41_Ant 3 (Power Class 3)	FR1 n41_Ant 3 (Power Class 2)
Maximum Tune up Power (dBm)	17	20
Reported 1g SAR (W/kg)	0.171	0.184
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	50.12	50.00
Linearity SAR(W/kg)	0.17	
% deviation from expected linearity		7.86%
Ant 4	FR1 n41_Ant 4 (Power Class 3)	FR1 n41_Ant 4 (Power Class 2)
Maximum Tune up Power (dBm)	16	19
Reported 1g SAR (W/kg)	0.244	0.264
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	39.81	39.72
Linearity SAR(W/kg)	0.24	
% deviation from expected linearity		8.45%
Ant 5	FR1 n41_Ant 5 (Power Class 3)	FR1 n41_Ant 5 (Power Class 2)
Maximum Tune up Power (dBm)	20	23
Reported 1g SAR (W/kg)	0.54	0.582
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	100.00	99.76
Linearity SAR(W/kg)	0.54	
% deviation from expected linearity		8.03%
Ant 6	FR1 n77_Ant 6	FR1 n77_Ant 6



	(Power Class 3)	(Power Class 2)
Maximum Tune up Power (dBm)	15.5	18.5
Reported 1g SAR (W/kg)	0.201	0.215
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	35.48	35.40
Linearity SAR(W/kg)	0.20	
% deviation from expected linearity		7.22%
Ant 7	FR1 n78_Ant 7	FR1 n78_Ant 7
	(Power Class 3)	(Power Class 2)
Maximum Tune up Power (dBm)	15.5	18.5
Reported 1g SAR (W/kg)	0.316	0.33
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	35.48	35.40
Linearity SAR(W/kg)	0.32	
% deviation from expected linearity		4.68%
Ant 8	FR1 n77_Ant 8	FR1 n77_Ant 8
	(Power Class 3)	(Power Class 2)
Maximum Tune up Power (dBm)	19.5	22.5
Reported 1g SAR (W/kg)	0.611	0.657
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	89.13	88.91
Linearity SAR(W/kg)	0.61	
% deviation from expected linearity		7.78%
Ant 9	FR1 n77_Ant 9	FR1 n77_Ant 9
	(Power Class 3)	(Power Class 2)
Maximum Tune up Power (dBm)	16.5	19.5
Reported 1g SAR (W/kg)	0.317	0.341
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	44.67	44.56
Linearity SAR(W/kg)	0.32	
% deviation from expected linearity		7.83%

**<Body-worn condition>**

Ant 2	FR1 n41_Ant 2	FR1 n41_Ant 2
	(Power Class 3)	(Power Class 2)
Maximum Tune up Power (dBm)	20	23
Reported 1g SAR (W/kg)	0.247	0.236
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	100.00	99.76
Linearity SAR(W/kg)	0.25	
% deviation from expected linearity		-4.23%
Ant 3	FR1 n41_Ant 3	FR1 n41_Ant 3
	(Power Class 3)	(Power Class 2)
Maximum Tune up Power (dBm)	24.5	27.5
Reported 1g SAR (W/kg)	0.426	0.417
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	281.84	281.17
Linearity SAR(W/kg)	0.42	
% deviation from expected linearity		-1.88%
Ant 4	FR1 n41_Ant 4	FR1 n41_Ant 4
	(Power Class 3)	(Power Class 2)
Maximum Tune up Power (dBm)	22.5	25.5
Reported 1g SAR (W/kg)	0.258	0.251
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	177.83	177.41



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Linearity SAR(W/kg)	0.26	
% deviation from expected linearity		-2.48%
Ant 5	FR1 n41_Ant 5	FR1 n41_Ant 5
	(Power Class 3)	(Power Class 2)
Maximum Tune up Power (dBm)	24	27
Reported 1g SAR (W/kg)	0.22	0.212
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	251.19	250.59
Linearity SAR(W/kg)	0.22	
% deviation from expected linearity		-3.41%
Ant 6	FR1 n78_Ant 6	FR1 n78_Ant 6
	(Power Class 3)	(Power Class 2)
Maximum Tune up Power (dBm)	24.5	27.5
Reported 1g SAR (W/kg)	0.397	0.434
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	281.84	281.17
Linearity SAR(W/kg)	0.40	
% deviation from expected linearity		9.58%
Ant 7	FR1 n78_Ant 7	FR1 n78_Ant 7
	(Power Class 3)	(Power Class 2)
Maximum Tune up Power (dBm)	17.5	20.5
Reported 1g SAR (W/kg)	0.172	0.181
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	56.23	56.10
Linearity SAR(W/kg)	0.17	
% deviation from expected linearity		5.48%
Ant 8	FR1 n78_Ant 8	FR1 n78_Ant 8
	(Power Class 3)	(Power Class 2)
Maximum Tune up Power (dBm)	23.5	26.5
Reported 1g SAR (W/kg)	0.547	0.597
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	223.87	223.34
Linearity SAR(W/kg)	0.55	
% deviation from expected linearity		9.40%
Ant 9	FR1 n78_Ant 9	FR1 n78_Ant 9
	(Power Class 3)	(Power Class 2)
Maximum Tune up Power (dBm)	23	26
Reported 1g SAR (W/kg)	0.47	0.484
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	199.53	199.05
Linearity SAR(W/kg)	0.47	
% deviation from expected linearity		3.22%

**16. Simultaneous Transmission Analysis**

Non-DBS					
NO.	Simultaneous Transmission Configurations	Head	Body-worn	Hotspot	Product Specific
1.	WWAN + WLAN5G/6GHz Ant 6+17 + Bluetooth Ant 16	Yes	Yes	Yes	
2.	WWAN + WLAN5G/6GHz Ant 6+17 + Bluetooth Ant 7	Yes	Yes	Yes	
3.	WWAN + WLAN2.4GHz Ant 16+7	Yes	Yes	Yes	
4.	WWAN + WLAN2.4GHz Ant 7 + Bluetooth Ant 16	Yes	Yes	Yes	
5.	WLAN5/6GHz Ant 6+17 + NFC				Yes

DBS					
NO	Simultaneous Transmission Configurations	Head	Body-worn	Hotspot	Product Specific
6.	WWAN + WLAN2.4GHz Ant 7+ WLAN5/6GHz Ant 6+17 + Bluetooth Ant 16	Yes	Yes	Yes	
7.	WWAN + WLAN2.4GHz Ant 16+7+ WLAN5/6GHz Ant 6+17	Yes	Yes	Yes	
8.	WLAN5/6GHz Ant 6+17 + NFC				Yes

**General Note:**

1. This device WLAN 2.4GHz / 5.2GHz / 5.8GHz supports Hotspot operation and Bluetooth support tethering applications.
2. The Scaled SAR summation is calculated based on the same configuration and test position.
3. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
  - i) Scalar SAR summation < 1.6W/kg.
  - ii)  $SPLSR = (SAR1 + SAR2)^{1.5} / (\min. \text{ separation distance, mm})$ , and the peak separation distance is determined from the square root of  $[(x1-x2)^2 + (y1-y2)^2 + (z1-z2)^2]$ , where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
  - iii) If  $SPLSR \leq 0.04$ , simultaneously transmission SAR measurement is not necessary.
  - iv) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.

**16.1 Head Exposure Conditions**

**<Non-DBS>**

Exposure Position	1	2	3	4	5	6	1+4+5 Summed 1g SAR (W/kg)	1+4+6 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+2+5 Summed 1g SAR (W/kg)
	Maximum WWAN 1g SAR (W/kg)	WLAN2.4GHz Ant 7 1g SAR (W/kg)	WLAN2.4GHz Ant 16+7 1g SAR (W/kg)	WLAN5/6GHz Ant 6+17 1g SAR (W/kg)	Bluetooth Ant 16 1g SAR (W/kg)	Bluetooth Ant 7 1g SAR (W/kg)				
Right Cheek	1.086	0.059	0.082	0.150	0.016	0.007	1.252	1.243	1.168	1.161
Right Tilted	1.064	0.041	0.081	0.175	0.018	0.001	1.257	1.240	1.145	1.123
Left Cheek	1.091	0.321	0.469	0.390	0.046	0.108	1.527	1.589	1.560	1.458
Left Tilted	1.093	0.127	0.253	0.345	0.040	0.006	1.478	1.444	1.346	1.260

**<DBS>**

Exposure Position	1	2	3	4	5	6	1+2+4+5 Summed 1g SAR (W/kg)	1+3+4 Summed 1g SAR (W/kg)
	Maximum WWAN 1g SAR (W/kg)	WLAN2.4GHz Ant 7 1g SAR (W/kg)	WLAN2.4GHz Ant 16+7 1g SAR (W/kg)	WLAN5/6GHz Ant 6+17 1g SAR (W/kg)	Bluetooth Ant 16 1g SAR (W/kg)	Bluetooth Ant 7 1g SAR (W/kg)		
Right Cheek	1.086	0.037	0.046	0.094	0.016	0.007	1.233	1.226
Right Tilted	1.064	0.025	0.044	0.110	0.018	0.001	1.217	1.218
Left Cheek	1.091	0.201	0.255	0.237	0.046	0.108	1.575	1.583
Left Tilted	1.093	0.079	0.138	0.202	0.040	0.006	1.414	1.433

**16.2 Hotspot Exposure Conditions**

**<Non-DBS>**

Exposure Position	1	2	3	4	5	6	1+4+5 Summed 1g SAR (W/kg)	1+4+6 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+2+5 Summed 1g SAR (W/kg)
	Maximum WWAN 1g SAR (W/kg)	WLAN2.4GHz Ant 7 1g SAR (W/kg)	WLAN2.4GHz Ant 16+7 1g SAR (W/kg)	WLAN5/6GHz Ant 6+17 1g SAR (W/kg)	Bluetooth Ant 16 1g SAR (W/kg)	Bluetooth Ant 7 1g SAR (W/kg)				
Front	0.777	0.334	0.441	0.345	0.136	0.088	1.258	1.210	1.218	1.247
Back	0.811	0.280	0.285	0.523	0.140	0.244	1.474	1.578	1.096	1.231
Left side	0.901						0.901	0.901	0.901	0.901
Right side	0.657	0.545	0.890	0.496	0.143	0.001	1.296	1.154	1.547	1.345
Top side	0.422	0.053	0.245	0.935	0.195	0.001	1.552	1.358	0.667	0.670
Bottom side	1.080						1.080	1.080	1.080	1.080

**<DBS>**

Exposure Position	1	2	3	4	5	6	1+2+4+5 Summed 1g SAR (W/kg)	1+3+4 Summed 1g SAR (W/kg)
	Maximum WWAN 1g SAR (W/kg)	WLAN2.4GHz Ant 7 1g SAR (W/kg)	WLAN2.4GHz Ant 16+7 1g SAR (W/kg)	WLAN5/6GHz Ant 6+17 1g SAR (W/kg)	Bluetooth Ant 16 1g SAR (W/kg)	Bluetooth Ant 7 1g SAR (W/kg)		
Front	0.777	0.184	0.254	0.308	0.136	0.088	1.405	1.339
Back	0.811	0.129	0.164	0.451	0.140	0.244	1.531	1.426
Left side	0.901						0.901	0.901
Right side	0.657	0.310	0.471	0.442	0.143	0.001	1.552	1.570
Top side	0.422	0.029	0.141	0.833	0.195	0.001	1.479	1.396
Bottom side	1.080						1.080	1.080

**16.3 Body-Worn Accessory Exposure Conditions**

**<Non-DBS>**

Exposure Position	1	2	3	4	5	6	1+4+5 Summed 1g SAR (W/kg)	1+4+6 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+2+5 Summed 1g SAR (W/kg)
	Maximum WWAN 1g SAR (W/kg)	WLAN2.4GHz Ant 7 1g SAR (W/kg)	WLAN2.4GHz Ant 16+7 1g SAR (W/kg)	WLAN5/6GHz Ant 6+17 1g SAR (W/kg)	Bluetooth Ant 16 1g SAR (W/kg)	Bluetooth Ant 7 1g SAR (W/kg)				
Front	0.890	0.184	0.230	0.285	0.039	0.001	<b>1.214</b>	<b>1.176</b>	<b>1.120</b>	<b>1.113</b>
Back	0.746	0.163	0.197	0.510	0.040	0.100	<b>1.296</b>	<b>1.356</b>	<b>0.943</b>	<b>0.949</b>

**<DBS>**

Exposure Position	1	2	3	4	5	6	1+2+4+5 Summed 1g SAR (W/kg)	1+3+4 Summed 1g SAR (W/kg)
	Maximum WWAN 1g SAR (W/kg)	WLAN2.4GHz Ant 7 1g SAR (W/kg)	WLAN2.4GHz Ant 16+7 1g SAR (W/kg)	WLAN5/6GHz Ant 6+17 1g SAR (W/kg)	Bluetooth Ant 16 1g SAR (W/kg)	Bluetooth Ant 7 1g SAR (W/kg)		
Front	0.890	0.184	0.230	0.285	0.039	0.001	<b>1.398</b>	<b>1.405</b>
Back	0.746	0.163	0.197	0.454	0.040	0.100	<b>1.403</b>	<b>1.397</b>

**16.4 Product Specific Exposure Conditions**

**<Non-DBS>**

Exposure Position	1	2	1+2 Summed 10g SAR (W/kg)
	WLAN5/6GHz Ant 6+17	NFC	
	10g SAR (W/kg)	10g SAR (W/kg)	
Front	1.660	0.001	<b>1.661</b>
Back	0.436	0.001	<b>0.437</b>
Left side		0.001	<b>0.001</b>
Right side	1.721	0.001	<b>1.722</b>
Top side	2.511	0.001	<b>2.512</b>
Bottom side			<b>0.000</b>

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## **17. Uncertainty Assessment**

Per KDB 865664 D01 SAR measurement 100MHz to 6GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be ≤ 30%, for a confidence interval of k = 2. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. For this device, the highest measured 1-g SAR is less 1.5W/kg and highest measured 10-g SAR is less 3.75W/kg. Therefore, the measurement uncertainty table is not required in this report.

Declaration of Conformity:

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

Comments and Explanations:

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

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

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

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

<b>Uncertainty Distributions</b>	<b>Normal</b>	<b>Rectangular</b>	<b>Triangular</b>	<b>U-Shape</b>
Multi-plying Factor <sup>(a)</sup>	1/k <sup>(b)</sup>	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) (±%)
<b>Measurement System</b>							
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
<b>Test Sample Related</b>							
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
<b>Phantom and Setup</b>							
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
<b>Combined Std. Uncertainty</b>						14.5%	14.2%
<b>Coverage Factor for 95 %</b>						K=2	K=2
<b>Expanded STD Uncertainty</b>						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 dependance	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
<b>Uncertainty terms dep endent on the DUT and environmental factors</b>					
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	
<b>Combined Std. Uncertainty</b>					<b>1.34</b>
<b>Expanded STD Uncertainty (95%)</b>					<b>2.68</b>



## **18. References**

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- [6] FCC KDB 447498 D01 v06, “Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies”, Oct 2015
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- [15] SPEAG DASY6 System Handbook
- [16] SPEAG DASY6 Application Note (Interim Procedure for Device Operation at 6GHz-10GHz)