Testing and Certification

TEST REPORT

Part 1 SAR Test for certification of A3LSMS721B

APPLICANT

Samsung Electronics. Co., Ltd.

REPORT NO.

HCT-SR-2407-FC017

DATE OF ISSUE

Jul. 24, 2024

Tested by
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FCC ID
A3LSMS721B

Applicant	**SAMSUNG Electronics Co., Ltd** **129, Samsung-ro, Yeongtong-gu, Suwon-Si, Gyeonggi-do, 16677, Korea**
Product Name	Mobile Phone
Model Name	SM-S721B/DS
Additional Model Name	SM-S721B
Date of Test	Jun. 11, 2024 ~ Jul. 15, 2024
Location of Test	■ **Permanent Testing Lab** □ **On Site Testing Lab** **(Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA)**
FCC Rule Part(s)	CFR §2.1093
Test Results	PASS (SAR Limit : 1.6 W/kg(1g), 4 W/kg(10g)/PD Limit : 1 ㎽/㎠(4 ㎠)) Refer to the clause 3.2 Attestation of test result

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	Jul. 24, 2024	Initial Release

Notice

Content
The results shown in this test report only apply to the sample(s), as received, provided by the applicant, unless otherwise stated. The test results have only been applied with the test methods required by the standard(s). The laboratory is not accredited for the test results marked *. Information provided by the applicant is marked **. Test results provided by external providers are marked ***. When confirmation of authenticity of this test report is required, please contact www.hct.co.kr The test results in this test report are not associated with the ((KS Q) ISO/IEC 17025) accreditation by KOLAS (Korea Laboratory Accreditation Scheme) / A2LA (American Association for Laboratory Accreditation) that are under the ILAC (International Laboratory Accreditation Cooperation) Mutual Recognition Agreement (MRA).

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1. Test Regulations

The tests documented in this report were performed in accordance with FCC CFR § 2.1093, IEEE 1528-2013, ANSI C63.26-2015 the following FCC Published RF exposure KDB procedures:

- FCC KDB Publication 941225 D01 3G SAR Procedures v03r01
- FCC KDB Publication 941225 D06 Hot Spot SAR v02r01
- FCC KDB Publication 941225 D05 SAR for LTE Devices v02r05
- FCC KDB Publication 941225 D05A LTE Rel.10 KDB Inquiry sheet v01r02
- FCC KDB Publication 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB Publication 447498 D01 General RF Exposure Guidance v06
- FCC KDB Publication 648474 D04 Handset SAR v01r03
- FCC KDB Publication 616217 D04 v01r02 (Proximity Sensor)
- FCC KDB Publication 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
- FCC KDB Publication 865664 D02 SAR Reporting v01r02
- FCC KDB Publication 690783 D01 SAR Listings on Grants v01r03
- FCC KDB Publication 971168 D01 Power Meas License Digital Systems v03r01

In Addition to the above, the following information was used.

- October 2013 TCB Workshop Notes (GPRS testing criteria)
- October 2014 TCB Workshop Notes (Overlapping LTE Bands)
- April 2015 TCB Workshop Notes (Overlapping LTE Bands Test exclusion)
- April 2015 TCB Workshop Notes (Simultaneous transmission summation clarified)
- October 2016 TCB Workshop Notes (Bluetooth Duty Factor)
- November 2017 TCBC Workshop Notes (LTE Carrier Aggregation)
- May 2017 TCBC Workshop Notes (LTE Band 41 Power Class 2)
- April 2019 TCBC Workshop Notes (IEEE 802.11 ax)
- April 2018 TCBC Workshop Notes (LTE UL CA, DL CA SAR Test Exclusion)

FCC RF Exposure evaluation of U-NII 6 -7 GHz Band of this device were measured by referring to the interim procedures in TCB Workshop document of Oct 2020, IEC/IEEE 62209-1528:2020 and also the App Note of SPEAG, the manufacturer of measuring equipment.
SAR Testing was performed using 6.5 GHz SAR Probe calibration factor according to FCC TCBC Document.

- November 2017, October 2018, April 2019, November 2019, October 2020, October 2022, TCBC Workshop Notes.
- SPEAG DASY6 System Handbook
- SPEAG DASY6 Application Note (Interim Procedures for Operating at 6 -10GHz) (ver.9)
- IEEE 1528-2013
- IEC TR 63170:2018
- IEC 62479:2010
- IEC/IEEE 63195-1:2022

2. Test Location

2.1 Test Laboratory

Company Name	HCT Co., Ltd.
Address	74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si,Gyeonggi-do, 17383 KOREA
Telephone	031-645-6300
Fax.	031-645-6401

2.2 Test Facilities

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

Korea	National Radio Research Agency (Designation No. KR0032)
	KOLAS (Testing No. KT197)

3. Information of the EUT

3.1 General Information of the EUT

Model Name	SM-S721B/DS
Additional Model Name	SM-S721B
Equipment Type	Mobile Phone
FCC ID	A3LSMS721B
Application Type	Certification
Applicant	SAMSUNG Electronics Co., Ltd.

3.2 Attestation of test result of device under test

The Highest Reported SAR					
Band	Tx. Frequency	Equipment Class	Reported SAR (W/kg)		
			1 g Head	1 g Body /Hotspot	10 g Extremity
GSM/GPRS/EDGE 850	824.2 ㎒ ~ 848.8 ㎒	PCE	0.16	0.51	N/A
GSM/GPRS/EDGE 1900	1 850.2 ㎒ ~ 1 909.8 ㎒	PCE	0.12	0.69	N/A
UMTS Band 5	826.4 ㎒ ~ 846.6 ㎒	PCE	0.15	0.73	N/A
UMTS Band 4	1 712.4 ㎒ ~ 1 752.6 ㎒	PCE	0.13	0.80	N/A
UMTS Band 2	1 852.4 ㎒ ~ 1 907.6 ㎒	PCE	0.10	**0.99**	N/A
LTE FDD Band 2 (PCS)	1 850.7 ㎒ ~ 1 909.3 ㎒	PCE	N/A	N/A	N/A
LTE FDD Band 4 (AWS)	1 710.7 ㎒ ~ 1 754.3 ㎒	PCE	N/A	N/A	N/A
LTE FDD Band 5 (Cell)	824.7 ㎒ ~ 848.3 ㎒	PCE	0.18	**0.95**	N/A
LTE FDD Band 12	699.7 ㎒ ~ 715.3 ㎒	PCE	0.18	0.58	N/A
LTE FDD Band 13	779.5 ㎒ ~ 784.5 ㎒	PCE	0.18	0.67	N/A
LTE FDD Band 17	706.5 ㎒ ~ 713.5 ㎒	PCE	N/A	N/A	N/A
LTE FDD Band 25 (PCS)	1 850.7 ㎒ ~ 1 914.3 ㎒	PCE	0.53	0.58	N/A
LTE FDD Band 26 (Cell)	814.7 ㎒ ~ 848.3 ㎒	PCE	0.20	0.83	N/A
LTE TDD Band 41	2 498.5 ㎒ ~ 2 687.5 ㎒	PCE	0.51	0.47	N/A
LTE FDD Band 66 (AWS)	1 710.7 ㎒ ~ 1 779.3 ㎒	PCE	0.72	0.63	N/A
NR FDD Band n2 (PCS)	1 852.5 ㎒ ~ 1 907.5 ㎒	PCE	N/A	N/A	N/A
NR FDD Band n5	826.5 ㎒ ~ 846.5 ㎒	PCE	0.21	0.74	N/A
NR FDD Band n25 (PCS)	1 852.5 ㎒ ~ 1 912.5 ㎒	PCE	0.50	0.61	N/A
NR TDD Band n41	2 506.02 ㎒ ~ 2 679.99 ㎒	PCE	0.35	0.40	N/A
NR FDD Band n66	1 712.5 ㎒ ~ 1 777.5 ㎒	PCE	**0.86**	0.64	N/A
NR TDD Band n77	3 445.01 ㎒ ~ 3 544.98 ㎒ 3 705 ㎒ ~ 3 975 ㎒	PCE	0.47	0.22	N/A
2.4 ㎓ WLAN	2 412 ㎒ ~ 2 462 ㎒	DTS	**0.60**	**0.94**	N/A
U-NII-1	5 180 ㎒ ~ 5 240 ㎒	NII	N/A	N/A	N/A
U-NII-2A	5 260 ㎒ ~ 5 320 ㎒	NII	0.34	0.50	**1.38**
U-NII-2C	5 500 ㎒ ~ 5 720 ㎒	NII	0.54	0.33	1.30
U-NII-3	5 745 ㎒ ~ 5 825 ㎒	NII	0.48	0.30	N/A
U-NII-4	5 845 ㎒ ~ 5 885 ㎒	NII	0.37	0.44	0.89
6 ㎓ WLAN	5 925 ㎒ ~ 7 115 ㎒	6CD	0.18	<0.10	0.14
Bluetooth	2 402 ㎒ ~ 2 480 ㎒	DSS/DTS	**0.29**	0.27	N/A
NFC	13.56 ㎒	DXX	N/A	N/A	<0.10
Simultaneous SAR per KDB 690783 D01v01r03			**1.59**	**1.43**	**1.38**
Date(s) of Tests:	Jun. 11, 2024 ~ Jul. 15, 2024				

The Highest Reported APD/PD					
Band	Tx. Frequency	Equipment Class	APD (4 ㎠)		
			㎽/㎠ Head	㎽/㎠ Body	㎽/㎠ Extremity
6 ㎓ WLAN	5 925 ㎒ ~ 7 115 ㎒	6CD	<0.10	<0.10	0.33
Band	Tx. Frequency	Equipment Class	PD (4 ㎠)		
			㎽/㎠ psPD		
6 ㎓ WLAN	5 925 ㎒ ~ 7 115 ㎒	6CD	0.55		
Date(s) of Tests:	Jun. 11, 2024 ~ Jul. 15, 2024				

4. Device Under Test Description

4.1 DUT specification

Device Wireless specification overview		
Band & Mode	Operating Mode	Tx Frequency
GSM850	Voice / Data	824.2 ㎒ ~ 848.8 ㎒
GSM1900	Voice / Data	1 850.2 ㎒ ~ 1 909.8 ㎒
UMTS Band 2	Voice / Data	1 852.4 ㎒ ~ 1 907.6 ㎒
UMTS Band 4	Voice / Data	1 712.4 ㎒ ~ 1 752.6 ㎒
UMTS Band 5	Voice / Data	826.4 ㎒ ~ 846.6 ㎒
LTE FDD Band 2 (PCS)	Voice / Data	1 850.7 ㎒ ~ 1 909.3 ㎒
LTE FDD Band 4 (AWS)	Voice / Data	1 710.7 ㎒ ~ 1 754.3 ㎒
LTE FDD Band 5 (Cell)	Voice / Data	824.7 ㎒ ~ 848.3 ㎒
LTE FDD Band 12	Voice / Data	699.7 ㎒ ~ 715.3 ㎒
LTE FDD Band 13	Voice / Data	779.5 ㎒ ~ 784.5 ㎒
LTE FDD Band 17	Voice / Data	706.5 ㎒ ~ 713.5 ㎒
LTE FDD Band 25	Voice / Data	1 850.7 ㎒ ~ 1 914.3 ㎒
LTE FDD Band 26	Voice / Data	814.7 ㎒ ~ 848.3 ㎒
LTE TDD Band 41	Voice / Data	2 498.5 ㎒ ~ 2 687.5 ㎒
LTE FDD Band 66 (AWS)	Voice / Data	1 710.7 ㎒ ~ 1 779.3 ㎒
NR FDD Band n2 (PCS)	Voice / Data	1 852.5 ㎒ ~ 1 907.5 ㎒
NR FDD Band n5	Voice / Data	826.5 ㎒ ~ 846.5 ㎒
NR FDD Band n25 (PCS)	Voice / Data	1 852.5 ㎒ ~ 1 912.5 ㎒
NR TDD Band n41	Voice / Data	2 501.01 ㎒ ~ 2 685 ㎒
NR FDD Band n66	Voice / Data	1 712.5 ㎒ ~ 1 777.5 ㎒
NR TDD Band n77	Voice / Data	3 705 ㎒ ~ 3 975 ㎒
NR TDD Band n77 DoD	Voice / Data	3 445.01 ㎒ ~ 3 544.98 ㎒
U-NII-1	Voice / Data	5 180 ㎒ ~ 5 240 ㎒
U-NII-2A	Voice / Data	5 260 ㎒ ~ 5 320 ㎒
U-NII-2C	Voice / Data	5 500 ㎒ ~ 5 720 ㎒
U-NII-3	Voice / Data	5 745 ㎒ ~ 5 825 ㎒
U-NII-4	Voice / Data	5 845 ㎒ ~ 5 885 ㎒
U-NII-5	Voice / Data	5 925 ㎒ – 6 425 ㎒
U-NII-6	Voice / Data	6 425 ㎒ – 6 525 ㎒
U-NII-7	Voice / Data	6 525 ㎒ – 6 865 ㎒
U-NII-8	Voice / Data	6 865 ㎒ – 7 115 ㎒
2.4 ㎓ WLAN	Voice / Data	2 412 ㎒ ~ 2 462 ㎒
Bluetooth / LE 5.3	Data	2 402 ㎒ ~ 2 480 ㎒
NFC	Data	13.56 ㎒
WPC	Data	110 ㎑ ~ 148 ㎑

Device Description		
Battery	Main: EB-BS721ABE(ATL)	
Device Serial Numbers	Mode	Serial Number
	GSM850, 1900, UMTS B2,4,5, LTE Band 12,13, LTE Band Ant 41 Ant F	XF50676M
	LTE Band 26	XF50676M / XF50762M
	NR n5, NR n25,NR n66 Ant A,NR n66 Ant F, NR n41,NR n41 SRS1,2,3	XF50677M / XF50676M/ XF50694M
	LTE Band 25,66 Ant A, LTE Band 41 Ant B, LTE Band 25,66 Ant F	XF50770M
	NR n77, NR n77 SRS1,2,3	XF50772M
	WLAN2.4 GHz, 5 GHz, 6 GHz,Bluetooth	XF50694M,XF50658M
	The manufacturer has confirmed that the devices tested have the same physical, mechanical and thermal characteristics are within operational tolerances expected for production units.	

4.2 Time-Averaging Algorithm for RF Exposure Compliance

This WWAN Mode of DUT is equipped with S. LSI chipset to which the Samsung S.LSI proprietary TAS(Time Average SAR) algorithm is applied and also this equipment contains the Qualcomm modem supporting Qualcomm Fast Connect TAS for WLAN.
This DUT is enabled with the Samsung S.LSI proprietary TAS (Time Average SAR) algorithm for WWAN Mode and also Qualcomm Fast Connect TAS feature for WLAN Mode to control and manage transmitting power in real time and to ensure at all times the time-averaged RF exposure is incompliance with the FCC requirement

FCC RF exposure limit is based on time averaged RF exposure. The SAR regulatory specification is defined over certain measurement duration allowing for time-averaging. The Samsung S.LSI proprietary TAS (Time Average SAR) algorithm has been designed to meet the compliance limits over the required duration, while still allowing dynamic control of transmit power to satisfy the performance of the system.

This feature performs time averaging SAR algorithm in real time to control and manage transmitting power and ensure the time-averaged RF exposure is in compliance with FCC requirements all the time.

The WLAN mode are not controlled by The Samsung S.LSI proprietary TAS (Time Average SAR) algorithm.
This equipment contains the Qualcomm modem supporting Qualcomm Fast Connect TAS algorithm for TAS operations This feature performs time averaging algorithm in real time to control and manage transmitting power and ensure the time-averaged RF exposure is in compliance with FCC requirements all the time. DUT contains BDF File configured for the Qualcomm Fast Connect TAS algorithm. Only the BT, NFC mode of the device did not apply the time averaged SAR algorithm.

The Samsung S.LSI TAS algorithm and Qualcomm Fast Connect TAS algorithm allow the device to transmit at higher power instantaneously, as high as Pmax, when needed, but enforces power limiting to maintain time-averaged transmit power to Plimit. Below table shows Plimit NV settings and maximum tune up output power Pmax configured for this DUT for various transmit conditions (Radio SAR indicator RSI for Head /Body SAR of WWAN Mode, Device State Index DSI for WLAN mode).
Note that the device uncertainty for sub-6GHz WLAN/WWAN is 1.0dB for this DUT.

The purpose of this report is to demonstrate that the DUT meets FCC SAR limits when transmitting in static transmission configurations at Plimit specified by manufacturer.

Measurement Condition: All conducted power and SAR measurements in this report were performed by Plimit in static Power condition.

Plim values in green indicate Plimit < Pmax			Plimit values in grey indicate Plimit > Pmax				
Plimit corresponding to 1 W/kg (1g) 2.5W/kg(10g) SAR_Design_target						Pmax	
SAR Exposure Position			Head (RCV ON)	Body Phablet		Maximum Tune-up Output Power (Burst Average Power) [dBm]	UL:DL Ratio
Averaging volume			1g	1g	10g		
seperation Distance			0 mm	10 mm	0 mm		
Mode	Band	Antenna	RSI = 1	RSI =0,2			
GSM/GPRS/EDGE	850	ANT A	22.6	22.6		29.0	36.1%
GSM/GPRS/EDGE	1900	ANT A	32.4	19.5		28.5	24.1%
UMTS	2	ANT A	33.7	20.0		23.5	100%
UMTS	4	ANT A	32.8	20.0		23.5	100%
UMTS	5	ANT A	33.8	26.8		24.8	100%
LTE FDD	25(2) Lower	ANT A	33.2	17.0		23.0	100%
LTE FDD	25(2) Upper	ANT F	16.0	18.0		23.5	100%
LTE FDD	66(4) Lower	ANT A	31.7	17.0		23.0	100%
LTE FDD	66(4) Upper	ANT F	16.0	18.0		23.5	100%
LTE FDD	12(17)	ANT A	32.6	27.4		24.0	100%
LTE FDD	13	ANT A	32.4	26.8		24.0	100%
LTE FDD	5	ANT A	33.0	25.7		24.5	100%
LTE FDD	26	ANT A	32.1	25.8		24.0	100%
LTE TDD PC3	41	ANT B	32.1	19.0		24.0	63.3%
LTE TDD PC2	41	ANT B	32.1	19.0		25.0	43.3%
LTE TDD PC3	41	ANT F	14.5	17.5		23.5	63.3%
LTE TDD PC2	41	ANT F	14.4	17.4		24.2	43.3%
NR FDD	5	ANT A	32.4	26.8		24.5	100%
NR FDD	25(2) Lower	ANT A	33.9	17.0		23.0	100%
NR FDD	25(2) Upper	ANT F	16.0	20.0		23.0	100%
NR FDD	66 Lower	ANT A	33.2	17.0		23.5	100%
NR FDD	66 Upper	ANT F	18.0	19.0		23.0	100%
NR TDD	41 SRS0	ANT B	18.0	17.0		24.0	100%
NR TDD	41 SRS1	ANT F	13.0	12.0		19.0	100%
NR TDD	41 SRS2	ANT D	14.5	13.5		20.5	100%
NR TDD	41 SRS3	ANT E	13.5	12.5		19.5	100%
NR TDD	77 SRS0	ANT F	14.0	15.0		24.0	100%
NR TDD	77DoD SRS0	ANT F	14.0	15.0		24.0	100%
NR TDD	77 SRS1	ANT C	10.5	11.5		20.5	100%
NR TDD	77DoD SRS1	ANT C	10.5	11.5		20.5	100%
NR TDD	77 SRS2	ANT I	13.5	14.5		23.5	100%
NR TDD	77DoD SRS2	ANT I	13.5	14.5		23.5	100%
NR TDD	77 SRS3	ANT D	10.5	11.5		20.5	100%
NR TDD	77DoD SRS3	ANT D	10.5	11.5		20.5	100%

Plim values in green indicate Plimit < Pmax			Plimit values in grey indicate Plimit > Pmax				
Plimit corresponding to 1 W/kg (1g) 2.5W/kg(10g) SAR_Design_target						Pmax	
SAR Exposure Position			Head (RCV ON)	Body Phablet		Maximum Tune-up Output Power (Burst Average Power)	UL:DL Ratio
Averaging volume			1g	1g	10g		
seperation Distance			0 mm	10 mm	0 mm		
Mode	Band	Antenna	DSI = 1	DSI =0			
WLAN	2.4	ANT H	13.0	18.2		17.0	100%
WLAN	2.4	ANT J	13.0	19.8		17.0	100%
WLAN	2.4	ANT H+J	13.0	18.3		17.0	100%
WLAN	5	ANT G	12.0	21.9		15.0	100%
WLAN	5	ANT E	12.0	23.0		15.0	100%
WLAN	5	ANT G+E	12.0	19.1		15.0	100%
WLAN	6	ANT G	16.6	21.6		8.0	100%
WLAN	6	ANT E	19.0	23.6		8.0	100%
WLAN	6	ANT G+E	17.0	21.9		8.0	100%

*Note all Plimit and maximum tune up output power Pmax levels entered in above Table correspond to average power levels after accounting for duty cycle in the case of TDD modulation schemes (for e.g., GSM, LTE TDD, 5G NR TDD).
*The maximum time-averaged output power (dBm) for any 2G/3G/4G/5G WWAN technology, band, and SAR Exposure condition=minimum of "Plimit" and "Maximum tune up output power: "Pmax" + 1dB device uncertainty.
The maximum time averaged output power means Plimit for each modes SAR values in this report were scaled to the maximum allowed output power to determine compliance per KDB Publication 447498 D01v06.

4.3 Nominal and Maximum Output Power Specifications

This device operates using the following maximum output power specifications. SAR values were scaled to the maximum allowed power to determine compliance per KDB publication 447498 D01v06.

* The output power for SAR test in WWAN modes[**2G/3G/4G/5G**]of this device is characterized as Head [RSI=1] and Non-Head [RSI=0,2], and the output power of non-Head condition RSI=0 and RSI=2 is the same.

4.3.1 2G/3G/4G/5G Nominal Output Power

A. GSM Modes

GSM/GPRS/EDGE 850 (Ant A)									
Power Level	Voice (in dBm)	Data – Burst Average GMSK (in dBm)				Data – Burst Average 8-PSK (in dBm)			
	1 TX Slot	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots
Pmax	33.0	33.0	30.5	29.0	27.5	26.5	24.0	23.0	21.5
RSI = 0 (Free)	31.0	31.0	28.5	27.0	25.5	26.5	24.0	23.0	21.5
RSI = 1 (RCV)	31.0	31.0	28.5	27.0	25.5	26.5	24.0	23.0	21.5
RSI = 2 (Hotspot)	31.0	31.0	28.5	27.0	25.5	26.5	24.0	23.0	21.5
GSM/GPRS/EDGE 1900 (Ant A)									
Power Level	Voice (in dBm)	Data – Burst Average GMSK (in dBm)				Data – Burst Average 8-PSK (in dBm)			
	1 TX Slot	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots
Pmax	30.5	30.5	28.5	26.5	24.0	25.5	23.0	21.0	19.5
RSI = 0 (Free)	28.7	28.7	25.7	23.9	21.0	25.5	23.0	21.0	19.5
RSI = 1 (RCV)	30.5	30.5	28.5	26.5	24.0	25.5	23.0	21.0	19.5
RSI = 2 (Hotspot)	28.7	28.7	25.7	23.9	21.0	25.5	23.0	21.0	19.5

Tolerance: -1.5 dB ~ +1.0 dB

B. UMTS Modes

UMTS Band 5 (850 MHz) (Ant A)				
Mode / Band	Modulated Average Output Power (in dBm)			
	Pmax	RSI = 0 (Free)	RSI = 1 (RCV)	RSI = 2 (Hotspot)
3GPP WCDMA Rel 99	24.8	24.8	24.8	24.8
3GPP HSDPA Rel 5	22.0	22.0	22.0	22.0
3GPP HSUPA Rel 6	21.0	21.0	21.0	21.0
3GPP DC-HSDPA Rel 8	22.0	22.0	22.0	22.0
UMTS Band 4 (1750 MHz) (Ant A)				
Mode / Band	Modulated Average Output Power (in dBm)			
	Pmax	RSI = 0 (Free)	RSI = 1 (RCV)	RSI = 2 (Hotspot)
3GPP WCDMA Rel 99	23.5	20.0	23.5	20.0
3GPP HSDPA Rel 5	22.0	18.5	22.0	18.5
3GPP HSUPA Rel 6	21.0	17.5	21.0	17.5
3GPP DC-HSDPA Rel 8	22.0	18.5	22.0	18.5
UMTS Band 2 (1900 MHz) (Ant A)				
Mode / Band	Modulated Average Output Power (in dBm)			
	Pmax	RSI = 0 (Free)	RSI = 1 (RCV)	RSI = 2 (Hotspot)
3GPP WCDMA Rel 99	23.5	20.0	23.5	20.0
3GPP HSDPA Rel 5	22.0	18.5	22.0	18.5
3GPP HSUPA Rel 6	21.0	17.5	21.0	17.5
3GPP DC-HSDPA Rel 8	22.0	18.5	22.0	18.5

Tolerance: -1.5 dB ~ +1.0 dB

C. LTE Modes

Mode / Band	Modulated Average Output Power (in dBm)			
	Pmax	RSI = 0 (Free)	RSI = 1 (RCV)	RSI = 2 (Hotspot)
LTE FDD Band 12 Ant A	24.0	24.0	24.0	24.0
LTE FDD Band 17 Ant A	24.0	24.0	24.0	24.0
LTE FDD Band 13 Ant A	24.0	24.0	24.0	24.0
LTE FDD Band 25 Ant A	23.0	17.0	23.0	17.0
LTE FDD Band 25 Ant F	23.5	18.0	16.0	18.0
LTE FDD Band 26 Ant A	24.0	24.0	24.0	24.0
LTE FDD Band 5 Ant A	24.5	24.5	24.5	24.5
LTE FDD Band 66 Ant A	23.0	17.0	23.0	17.0
LTE FDD Band 66 Ant F	23.5	18.0	16.0	18.0
LTE FDD Band 4 Ant A	23.0	17.0	23.0	17.0
LTE FDD Band 4 Ant F	23.5	18.0	16.0	18.0
LTE FDD Band 2 Ant A	23.0	17.0	23.0	17.0
LTE FDD Band 2 Ant F	23.5	18.0	16.0	18.0
LTE TDD Band 41 Ant B	24.0	21.0	24.0	21.0
LTE TDD Band 41 (PC2) Ant B	23.5	19.5	16.5	19.5
LTE TDD Band 41 Ant F	25.0	22.6	25.0	22.6
LTE TDD Band 41 (PC2) Ant F	24.2	21.0	18.0	21.0

Tolerance: -1.5 dB ~ +1.0 dB

D. 5G NR SUB 6

Mode / Band	Modulated Average Output Power (in dBm)			
	Pmax	RSI = 0 (Free)	RSI = 1 (RCV)	RSI = 2 (Hotspot)
NR FDD Band 5 Ant A	24.5	24.5	24.5	24.5
NR FDD Band 2 Ant A	23.0	17.0	23.0	17.0
NR FDD Band 2 Ant F	23.0	20.0	16.0	20.0
NR FDD Band 25 Ant A	23.0	17.0	23.0	17.0
NR FDD Band 25 Ant F	23.0	20.0	16.0	20.0
NR FDD Band 66 Ant A	23.5	17.0	23.5	17.0
NR FDD Band 66 Ant F	23.0	19.0	18.0	19.0
Mode / Band	Modulated Average Output Power (in dBm)			
	Pmax	RSI = 0 (Free) Duty 100%	RSI = 1 (RCV) Duty 100%	RSI = 2 (Hotspot) Duty 100%
NR TDD Band 41 (AntB, MAIN2, SRS0)	24.0	17.0	18.0	17.0
NR TDD Band 41 (AntF, SUB2, SRS1)	19.0	12.0	12.0	12.0
NR TDD Band 41 (AntD, MAIN4, SRS2)	20.5	13.5	13.5	13.5
NR TDD Band 41 (AntE, SUB1, SRS3)	19.5	12.5	12.5	12.5
NR TDD Band 77 (AntF, SUB2, SRS0)	24.0	15.0	14.0	15.0
NR TDD Band 77 (AntC, MAIN3, SRS1)	20.5	11.5	10.5	11.5
NR TDD Band 77 (AntI, SUB5, SRS2)	23.5	14.5	13.5	14.5
NR TDD Band 77 (AntD, MAIN4, SRS3)	20.5	11.5	10.5	11.5
NR TDD Band 77 DoD (AntF, SUB2, SRS0)	24.0	15.0	14.0	15.0
NR TDD Band 77 DoD (AntC, MAIN3, SRS1)	20.5	11.5	10.5	11.5
NR TDD Band 77 DoD (AntI, SUB5, SRS2)	23.5	14.5	13.5	14.5
NR TDD Band 77 DoD (AntD, MAIN4, SRS3)	20.5	11.5	10.5	11.5

Tolerance: -1.5 dB ~ +1.0 dB

4.3.2 Maximum 2.4 GHz, 5 GHz, 6 GHz WIFI output power

a. Maximum Power Pmax

Mode	Band	SISO(ANT1=ANT2)						MIMO					
		a	b	g	n	ac	ax(SU)	a	b	g	n	ac	ax(SU)
2.4GHz	1ch		17	16	15	15	16		20	19	18	18	19
	2-10ch		17	16	16	16	16		20	19	19	19	19
	11ch		17	15	14	14	13		20	18	17	17	16
	12ch		5	5	5	5	5		8	8	8	8	8
	13ch		-3	-3	-3	-3	-1		0	0	0	0	2
5GHz (20MHz)	U-NII-1	15			15	15	15	18			18	18	18
	U-NII-2A	15			15	15	15	18			18	18	18
	U-NII-2C	15			15	15	15	18			18	18	18
	U-NII-3	15			15	15	15	18			18	18	18
	U-NII-4	15			15	15	15	18			18	18	18
5GHz (40MHz)	U-NII-1				14	14	14				17	17	17
	U-NII-2A				14	14	14				17	17	17
	U-NII-2C				14	14	14				17	17	17
	U-NII-3				14	14	14				17	17	17
	U-NII-4				14	14	14				17	17	17
5GHz (80MHz)	U-NII-1					14	14					17	17
	U-NII-2A					14	14					17	17
	U-NII-2C					14	14					17	17
	U-NII-3					14	14					17	17
	U-NII-4					14	14					17	17
5GHz (160MHz)	U-NII-1/2A					12	13					15	16
	U-NII-2C					12	13					15	16
	U-NII-3/4					12	13					15	16
6GHz - SP (20MHz)	2ch	7					7	10					10
	45ch	7					8	10					11
	93ch	7					8	10					11
	U-NII-6												
	U-NII-7	8					8	11					11
	U-NII-8												
6GHz - SP (40MHz)	U-NII-5						8						11
	U-NII-6												
	U-NII-7						8						11
	U-NII-8												
6GHz - SP (80MHz)	U-NII-5						8						11
	U-NII-6												
	U-NII-7						8						11
	U-NII-8												
6GHz - SP (160MHz)	U-NII-5						8						11
	U-NII-6												
	U-NII-7						8						11
	U-NII-8												
6GHz - LPI (20MHz)	2ch	7					7	10					10
	45ch	7					8	10					11
	93ch	7					8	10					11
	97ch	7					8	10					11
	105ch	8					8	11					11
	113ch	8					8	11					11
	U-NII-7	8					8	11					11
	U-NII-8	8					8	11					11
6GHz - LPI (40MHz)	U-NII-5						8						11
	U-NII-6						8						11
	U-NII-7						8						11
	U-NII-8						8						11
6GHz - LPI (80MHz)	U-NII-5						8						11
	U-NII-6						8						11
	U-NII-7						8						11
	U-NII-8						8						11
6GHz - LPI (160MHz)	U-NII-5						8						11
	U-NII-6						8						11
	U-NII-7						8						11
	U-NII-8						8						11

(Upper tolerance: target +1.0 dB)

b. Reduced Power Plimit (DSI =0 Free)

Mode	Band	SISO(ANT1=ANT2)						MIMO					
		a	b	g	n	ac	ax(SU)	a	b	g	n	ac	ax(SU)
2.4GHz	1ch		17	16	15	15	16		20	19	18	18	19
	2-10ch		17	16	16	16	16		20	19	19	19	19
	11ch		17	15	14	14	13		20	18	17	17	16
	12ch		5	5	5	5	5		8	8	8	8	8
	13ch		-3	-3	-3	-3	-1		0	0	0	0	2
5GHz (20MHz)	U-NII-1	15			15	15	15	18			18	18	18
	U-NII-2A	15			15	15	15	18			18	18	18
	U-NII-2C	15			15	15	15	18			18	18	18
	U-NII-3	15			15	15	15	18			18	18	18
	U-NII-4	15			15	15	15	18			18	18	18
5GHz (40MHz)	U-NII-1				14	14	14				17	17	17
	U-NII-2A				14	14	14				17	17	17
	U-NII-2C				14	14	14				17	17	17
	U-NII-3				14	14	14				17	17	17
	U-NII-4				14	14	14				17	17	17
5GHz (80MHz)	U-NII-1					14	14					17	17
	U-NII-2A					14	14					17	17
	U-NII-2C					14	14					17	17
	U-NII-3					14	14					17	17
	U-NII-4					14	14					17	17
5GHz (160MHz)	U-NII-1/2A					12	13					15	16
	U-NII-2C					12	13					15	16
	U-NII-3/4					12	13					15	16
6GHz - SP (20MHz)	2ch	7					7	10					10
	45ch	7					8	10					11
	93ch	7					8	10					11
	U-NII-6												
	U-NII-7	8					8	11					11
	U-NII-8												
6GHz - SP (40MHz)	U-NII-5						8						11
	U-NII-6												
	U-NII-7						8						11
	U-NII-8												
6GHz - SP (80MHz)	U-NII-5						8						11
	U-NII-6												
	U-NII-7						8						11
	U-NII-8												
6GHz - SP (160MHz)	U-NII-5						8						11
	U-NII-6												
	U-NII-7						8						11
	U-NII-8												
6GHz - LPI (20MHz)	2ch	7					7	10					10
	45ch	7					8	10					11
	93ch	7					8	10					11
	97ch	7					8	10					11
	105ch	8					8	11					11
	113ch	8					8	11					11
	U-NII-7	8					8	11					11
	U-NII-8	8					8	11					11
6GHz - LPI (40MHz)	U-NII-5						8						11
	U-NII-6						8						11
	U-NII-7						8						11
	U-NII-8						8						11
6GHz - LPI (80MHz)	U-NII-5						8						11
	U-NII-6						8						11
	U-NII-7						8						11
	U-NII-8						8						11
6GHz - LPI (160MHz)	U-NII-5						8						11
	U-NII-6						8						11
	U-NII-7						8						11
	U-NII-8						8						11

(Upper tolerance: target +1.0 dB)

c. Reduced Power Plimit (DSI =1 RCV), (DSI =8 NR active) (DSI =9 NR +RCV active)

Mode	Band	SISO(ANT1=ANT2)						MIMO					
		a	b	g	n	ac	ax(SU)	a	b	g	n	ac	ax(SU)
2.4GHz	1-11ch		13	13	13	13	13		16	16	16	16	16
	12ch		5	5	5	5	5		8	8	8	8	8
	13ch		-3	-3	-3	-3	-1		0	0	0	0	2
5GHz (20MHz)	U-NII-1	12			12	12	12	15			15	15	15
	U-NII-2A	12			12	12	12	15			15	15	15
	U-NII-2C	12			12	12	12	15			15	15	15
	U-NII-3	12			12	12	12	15			15	15	15
	U-NII-4	12			12	12	12	15			15	15	15
5GHz (40MHz)	U-NII-1				12	12	12				15	15	15
	U-NII-2A				12	12	12				15	15	15
	U-NII-2C				12	12	12				15	15	15
	U-NII-3				12	12	12				15	15	15
	U-NII-4				12	12	12				15	15	15
5GHz (80MHz)	U-NII-1					12	12					15	15
	U-NII-2A					12	12					15	15
	U-NII-2C					12	12					15	15
	U-NII-3					12	12					15	15
	U-NII-4					12	12					15	15
5GHz (160MHz)	U-NII-1/2A					12	12					15	15
	U-NII-2C					12	12					15	15
	U-NII-3/4					12	12					15	15
6GHz - SP (20MHz)	2ch	7					7	10					10
	45ch	7					8	10					11
	93ch	7					8	10					11
	U-NII-6												
	U-NII-7	8					8	11					11
	U-NII-8												
6GHz - SP (40MHz)	U-NII-5						8						11
	U-NII-6												
	U-NII-7						8						11
	U-NII-8												
6GHz - SP (80MHz)	U-NII-5						8						11
	U-NII-6												
	U-NII-7						8						11
	U-NII-8												
6GHz - SP (160MHz)	U-NII-5						8						11
	U-NII-6												
	U-NII-7						8						11
	U-NII-8												
6GHz - LPI (20MHz)	2ch	7					7	10					10
	45ch	7					8	10					11
	93ch	7					8	10					11
	97ch	7					8	10					11
	105ch	8					8	11					11
	113ch	8					8	11					11
	U-NII-7	8					8	11					11
	U-NII-8	8					8	11					11
6GHz - LPI (40MHz)	U-NII-5						8						11
	U-NII-6						8						11
	U-NII-7						8						11
	U-NII-8						8						11
6GHz - LPI (80MHz)	U-NII-5						8						11
	U-NII-6						8						11
	U-NII-7						8						11
	U-NII-8						8						11
6GHz - LPI (160MHz)	U-NII-5						8						11
	U-NII-6						8						11
	U-NII-7						8						11
	U-NII-8						8						11

(Upper tolerance: target +1.0 dB)

The output power of the WLAN mode is defined as a reduced power mode and a maximum power mode. DSI=0 (Body, Phablet) is the maximum power condition, DSI=1 (RCV-ON), DSI=8 (NR mode active) and DSI=9 (NR mode RCV active) are specified as the reduced power condition, and DSI1,8.9 modes are all reduced to the same output power.

d. 802.11ax RU Tx power Tables Maximum Power Pmax

Mode	Band	SISO(ANT1=ANT2)								MIMO							
		26T	52T	106T	242T	484T	996T	996 * 2T	996 * 4T	26T	52T	106T	242T	484T	996T	996 * 2T	996 * 4T
2.4GHz	1-10ch	13	14	15	16					16	17	18	19				
	11ch	13	14	15	12					16	17	18	15				
	12ch	5	5	5	5					8	8	8	8				
	13ch	-1	-1	-1	-1					2	2	2	2				
5GHZ (20MHz)	U-NII-1	10	13	15	15					13	16	18	18				
	U-NII-2A	10	13	15	15					13	16	18	18				
	U-NII-2C	10	13	15	15					13	16	18	18				
	U-NII-3	10	13	15	15					13	16	18	18				
	U-NII-4	10	13	15	15					13	16	18	18				
5GHZ (40MHz)	U-NII-1	10	13	15	14	14				13	16	18	17	17			
	U-NII-2A	10	13	15	14	14				13	16	18	17	17			
	U-NII-2C	10	13	15	14	14				13	16	18	17	17			
	U-NII-3	10	13	15	14	14				13	16	18	17	17			
	U-NII-4	10	13	15	14	14				13	16	18	17	17			
5GHZ (80MHz)	U-NII-1	10	13	14	14	14	14			13	16	17	17	17	17		
	U-NII-2A	10	13	15	14	14	14			13	16	18	17	17	17		
	U-NII-2C	10	13	15	14	14	14			13	16	18	17	17	17		
	U-NII-3	10	13	15	14	14	14			13	16	18	17	17	17		
	U-NII-4	10	13	14	14	14	14			13	16	17	17	17	17		
5GHZ (160MHz)	U-NII-1/2A	10	13	14	13	13	13	13		13	16	17	16	16	16	16	
	U-NII-2C	10	13	14	13	13	13	13		13	16	17	16	16	16	16	
	U-NII-3/4	10	13	14	13	13	13	13		13	16	17	16	16	16	16	
6GHZ - SP (20MHz)	U-NII-5	-2	1	4	8					1	4	7	11				
	U-NII-6																
	U-NII-7	-2	1	4	8					1	4	7	11				
	U-NII-8																
6GHZ - SP (40MHz)	U-NII-5	-2	1(ch3 : 0)	4	8(ch3 : 7)	8				1	4(ch3 : 3)	7	11(ch3 : 10)	11			
	U-NII-6																
	U-NII-7	-2	1	4	8	8				1	4	7	11	11			
	U-NII-8																
6GHZ - SP (80MHz)	U-NII-5	-2	1(ch7 : 0)	4	8(ch7 : 7)	8	8			1	4(ch7 : 3)	7	11(ch7 : 10)	11	11		
	U-NII-6																
	U-NII-7	-2	1	4	8	8	8			1	4	7	11	11	11		
	U-NII-8																
6GHZ - SP (160MHz)	U-NII-5	-2	1	4	8	8	8	8		1	4	7	11	11	11	11	
	U-NII-6																
	U-NII-7	-2	1	4	8	8	8	8		1	4	7	11	11	11	11	
	U-NII-8																
6GHZ - LPI (20MHz)	U-NII-5	-2	1	4	8					1	4	7	11				
	U-NII-6	-2	1	4	8					1	4	7	11				
	U-NII-7	-2	1	4	8					1	4	7	11				
	U-NII-8	-2	1	4	8					1	4	7	11				
6GHZ - LPI (40MHz)	U-NII-5	-2	1(ch3 : 0)	4	8(ch3 : 7)	8				1	4(ch3 : 3)	7	11(ch3 : 10)	11			
	U-NII-6	-2	1	4	8	8				1	4	7	11	11			
	U-NII-7	-2	1	4	8	8				1	4	7	11	11			
	U-NII-8	-2	1	4	8	8				1	4	7	11	11			
6GHZ - LPI (80MHz)	U-NII-5	-2	1(ch7 : 0)	4	8(ch7 : 7)	8	8			1	4(ch7 : 3)	7	11(ch7 : 10)	11	11		
	U-NII-6	-2	1	4	8	8	8			1	4	7	11	11	11		
	U-NII-7	-2	1	4	8	8	8			1	4	7	11	11	11		
	U-NII-8	-2	1	4	8	8	8			1	4	7	11	11	11		
6GHZ - LPI (160MHz)	U-NII-5	-2	1	4	8	8	8	8		1	4	7	11	11	11	11	
	U-NII-6	-2	1	4	8	8	8	8		1	4	7	11	11	11	11	
	U-NII-7	-2	1	4	8	8	8	8		1	4	7	11	11	11	11	
	U-NII-8	-2	1	4	8	8	8	8		1	4	7	11	11	11	11	

(Upper tolerance: target +1.0 dB)

e. 802.11ax RU Tx power Tables Reduced Power Plimit (DSI =0 Free)

Mode	Band	SISO(ANT1=ANT2)								MIMO							
		26T	52T	106T	242T	484T	996T	996 * 2T	996 * 4T	26T	52T	106T	242T	484T	996T	996 * 2T	996 * 4T
2.4GHz	1-10ch	13	14	15	16					16	17	18	19				
	11ch	13	14	15	12					16	17	18	15				
	12ch	5	5	5	5					8	8	8	8				
	13ch	-1	-1	-1	-1					2	2	2	2				
5GHZ (20MHz)	U-NII-1	10	13	15	15					13	16	18	18				
	U-NII-2A	10	13	15	15					13	16	18	18				
	U-NII-2C	10	13	15	15					13	16	18	18				
	U-NII-3	10	13	15	15					13	16	18	18				
	U-NII-4	10	13	15	15					13	16	18	18				
5GHZ (40MHz)	U-NII-1	10	13	14	14	14				13	16	17	17	17			
	U-NII-2A	10	13	14	14	14				13	16	17	17	17			
	U-NII-2C	10	13	14	14	14				13	16	17	17	17			
	U-NII-3	10	13	14	14	14				13	16	17	17	17			
	U-NII-4	10	13	14	14	14				13	16	17	17	17			
5GHZ (80MHz)	U-NII-1	10	13	14	14	14	14			13	16	17	17	17	17		
	U-NII-2A	10	13	14	14	14	14			13	16	17	17	17	17		
	U-NII-2C	10	13	14	14	14	14			13	16	17	17	17	17		
	U-NII-3	10	13	14	14	14	14			13	16	17	17	17	17		
	U-NII-4	10	13	14	14	14	14			13	16	17	17	17	17		
5GHZ (160MHz)	U-NII-1/2A	10	13	14	13	13	13	13		13	16	17	16	16	16	16	
	U-NII-2C	10	13	14	13	13	13	13		13	16	17	16	16	16	16	
	U-NII-3/4	10	13	14	13	13	13	13		13	16	17	16	16	16	16	
6GHZ - SP (20MHz)	U-NII-5	-2	1	4	8					1	4	7	11				
	U-NII-6																
	U-NII-7	-2	1	4	8					1	4	7	11				
	U-NII-8																
6GHZ - SP (40MHz)	U-NII-5	-2	1(ch3 : 0)	4	8(ch3 : 7)	8				1	4(ch3 : 3)	7	11(ch3 : 10)	11			
	U-NII-6																
	U-NII-7	-2	1	4	8	8				1	4	7	11	11			
	U-NII-8																
6GHZ - SP (80MHz)	U-NII-5	-2	1(ch7 : 0)	4	8(ch7 : 7)	8	8			1	4(ch7 : 3)	7	11(ch7 : 10)	11	11		
	U-NII-6																
	U-NII-7	-2	1	4	8	8	8			1	4	7	11	11	11		
	U-NII-8																
6GHZ - SP (160MHz)	U-NII-5	-2	1	4	8	8	8	8		1	4	7	11	11	11	11	
	U-NII-6																
	U-NII-7	-2	1	4	8	8	8	8		1	4	7	11	11	11	11	
	U-NII-8																
6GHZ - LPI (20MHz)	U-NII-5	-2	1	4	8					1	4	7	11				
	U-NII-6	-2	1	4	8					1	4	7	11				
	U-NII-7	-2	1	4	8					1	4	7	11				
	U-NII-8	-2	1	4	8					1	4	7	11				
6GHZ - LPI (40MHz)	U-NII-5	-2	1(ch3 : 0)	4	8(ch3 : 7)	8				1	4(ch3 : 3)	7	11(ch3 : 10)	11			
	U-NII-6	-2	1	4	8	8				1	4	7	11	11			
	U-NII-7	-2	1	4	8	8				1	4	7	11	11			
	U-NII-8	-2	1	4	8	8				1	4	7	11	11			
6GHZ - LPI (80MHz)	U-NII-5	-2	1(ch7 : 0)	4	8(ch7 : 7)	8	8			1	4(ch7 : 3)	7	11(ch7 : 10)	11	11		
	U-NII-6	-2	1	4	8	8	8			1	4	7	11	11	11		
	U-NII-7	-2	1	4	8	8	8			1	4	7	11	11	11		
	U-NII-8	-2	1	4	8	8	8			1	4	7	11	11	11		
6GHZ - LPI (160MHz)	U-NII-5	-2	1	4	8	8	8	8		1	4	7	11	11	11	11	
	U-NII-6	-2	1	4	8	8	8	8		1	4	7	11	11	11	11	
	U-NII-7	-2	1	4	8	8	8	8		1	4	7	11	11	11	11	
	U-NII-8	-2	1	4	8	8	8	8		1	4	7	11	11	11	11	

(Upper tolerance: target +1.0 dB)

f. 802.11ax RU Tx power Tables Reduced Power Plimit:
(DSI =1 RCV), (DSI =8 NR active) (DSI =9 NR +RCV active)

Mode	Band	SISO(ANT1=ANT2)								MIMO							
		26T	52T	106T	242T	484T	996T	996 * 2T	996 * 4T	26T	52T	106T	242T	484T	996T	996 * 2T	996 * 4T
2.4GHz	1-11ch	13	13	13	13					16	16	16	16				
	12ch	5	5	5	5					8	8	8	8				
	13ch	-1	-1	-1	-1					2	2	2	2				
5GHZ (20MHz)	U-NII-1	10	12	12	12					13	15	15	15				
	U-NII-2A	10	12	12	12					13	15	15	15				
	U-NII-2C	10	12	12	12					13	15	15	15				
	U-NII-3	10	12	12	12					13	15	15	15				
	U-NII-4	10	12	12	12					13	15	15	15				
5GHZ (40MHz)	U-NII-1	10	12	12	12	12				13	15	15	15	15			
	U-NII-2A	10	12	12	12	12				13	15	15	15	15			
	U-NII-2C	10	12	12	12	12				13	15	15	15	15			
	U-NII-3	10	12	12	12	12				13	15	15	15	15			
	U-NII-4	10	12	12	12	12				13	15	15	15	15			
5GHZ (80MHz)	U-NII-1	10	12	12	12	12	12			13	15	15	15	15	15		
	U-NII-2A	10	12	12	12	12	12			13	15	15	15	15	15		
	U-NII-2C	10	12	12	12	12	12			13	15	15	15	15	15		
	U-NII-3	10	12	12	12	12	12			13	15	15	15	15	15		
	U-NII-4	10	12	12	12	12	12			13	15	15	15	15	15		
5GHZ (160MHz)	U-NII-1/2A	10	12	12	12	12	12	12		13	15	15	15	15	15	15	
	U-NII-2C	10	12	12	12	12	12	12		13	15	15	15	15	15	15	
	U-NII-3/4	10	12	12	12	12	12	12		13	15	15	15	15	15	15	
6GHZ - SP (20MHz)	U-NII-5	-2	1	4	8					1	4	7	11				
	U-NII-6																
	U-NII-7	-2	1	4	8					1	4	7	11				
	U-NII-8																
6GHZ - SP (40MHz)	U-NII-5	-2	1(ch3 : 0)	4	8(ch3 : 7)	8				1	4(ch3 : 3)	7	11(ch3 : 10)	11			
	U-NII-6																
	U-NII-7	-2	1	4	8	8				1	4	7	11	11			
	U-NII-8																
6GHZ - SP (80MHz)	U-NII-5	-2	1(ch7 : 0)	4	8(ch7 : 7)	8	8			1	4(ch7 : 3)	7	11(ch7 : 10)	11	11		
	U-NII-6																
	U-NII-7	-2	1	4	8	8	8			1	4	7	11	11	11		
	U-NII-8																
6GHZ - SP (160MHz)	U-NII-5	-2	1	4	8	8	8	8		1	4	7	11	11	11	11	
	U-NII-6																
	U-NII-7	-2	1	4	8	8	8	8		1	4	7	11	11	11	11	
	U-NII-8																
6GHZ - LPI (20MHz)	U-NII-5	-2	1	4	8					1	4	7	11				
	U-NII-6	-2	1	4	8					1	4	7	11				
	U-NII-7	-2	1	4	8					1	4	7	11				
	U-NII-8	-2	1	4	8					1	4	7	11				
6GHZ - LPI (40MHz)	U-NII-5	-2	1(ch3 : 0)	4	8(ch3 : 7)	8				1	4(ch3 : 3)	7	11(ch3 : 10)	11			
	U-NII-6	-2	1	4	8	8				1	4	7	11	11			
	U-NII-7	-2	1	4	8	8				1	4	7	11	11			
	U-NII-8	-2	1	4	8	8				1	4	7	11	11			
6GHZ - LPI (80MHz)	U-NII-5	-2	1(ch7 : 0)	4	8(ch7 : 7)	8	8			1	4(ch7 : 3)	7	11(ch7 : 10)	11	11		
	U-NII-6	-2	1	4	8	8	8			1	4	7	11	11	11		
	U-NII-7	-2	1	4	8	8	8			1	4	7	11	11	11		
	U-NII-8	-2	1	4	8	8	8			1	4	7	11	11	11		
6GHZ - LPI (160MHz)	U-NII-5	-2	1	4	8	8	8	8		1	4	7	11	11	11	11	
	U-NII-6	-2	1	4	8	8	8	8		1	4	7	11	11	11	11	
	U-NII-7	-2	1	4	8	8	8	8		1	4	7	11	11	11	11	
	U-NII-8	-2	1	4	8	8	8	8		1	4	7	11	11	11	11	

(Upper tolerance: target +1.0 dB)

The output power of the WLAN mode is defined as a reduced power mode and a maximum power mode. DSI=0 (Body, Phablet) is the maximum power condition, DSI=1 (RCV-ON), DSI=8 (NR mode active) and DSI=9 (NR mode RCV active) are specified as the reduced power condition, and DSI1,8.9 modes are all reduced to the same output power.

4.3.3 Maximum Bluetooth Power

a. Maximum Power

Mode	ANT1	ANT2	Dual Tx
Bluetooth (1Mbps) (in dBm)	16.0	16.0	14.0
Bluetooth (EDR) (in dBm)	13.0	12.0	11.0
Bluetooth (LE,1M/2M) (in dBm)	16.0	15.0	14.0
Bluetooth (LE,125k/500k) (in dBm)	7.0	-	-

(Upper tolerance: target +1.0dB)

b. Reduced Power RCV active

Mode	ANT1	ANT2	Dual Tx
Bluetooth (1Mbps) (in dBm)	12.5	11.5	14.0
Bluetooth (EDR) (in dBm)	12.5	11.5	11.0
Bluetooth (LE,1M/2M) (in dBm)	12.5	11.5	14.0
Bluetooth (LE,125k/500k) (in dBm)	7.0	-	-

(Upper tolerance: target +1.0dB)

4.4 LTE Information

Item.		Description
Frequency Range	LTE FDD Band 2 (PCS)	1 850.7 ㎒ ~ 1 909.3 ㎒
	LTE FDD Band 4 (AWS)	1 710.7 ㎒ ~ 1 754.3 ㎒
	LTE FDD Band 5 (Cell)	824.7 ㎒ ~ 848.3 ㎒
	LTE FDD Band 12	699.7 ㎒ ~ 715.3 ㎒
	LTE FDD Band 13	779.5 ㎒ ~ 784.5 ㎒
	LTE FDD Band 17	706.5 ㎒ ~ 713.5 ㎒
	LTE FDD Band 25	1 850.7 ㎒ ~ 1 914.3 ㎒
	LTE FDD Band 26	814.7 ㎒ ~ 848.3 ㎒
	LTE TDD Band 41	2 498.5 ㎒ ~ 2 687.5 ㎒
	LTE FDD Band 66 (AWS)	1 710.7 ㎒ ~ 1 779.3 ㎒
Channel Bandwidths	LTE FDD Band 2 (PCS)	1.4 ㎒, 3 ㎒, 5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒
	LTE FDD Band 4 (AWS)	1.4 ㎒, 3 ㎒, 5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒
	LTE FDD Band 5 (Cell)	1.4 ㎒, 3 ㎒, 5 ㎒, 10 ㎒
	LTE FDD Band 12	1.4 ㎒, 3 ㎒, 5 ㎒, 10 ㎒
	LTE FDD Band 13	5 ㎒, 10 ㎒
	LTE FDD Band 17	5 ㎒, 10 ㎒
	LTE FDD Band 25	1.4 ㎒, 3 ㎒, 5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒
	LTE FDD Band 26	1.4 ㎒, 3 ㎒, 5 ㎒, 10 ㎒, 15 ㎒
	LTE TDD Band 41	5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒
	LTE FDD Band 66 (AWS)	1.4 ㎒, 3 ㎒, 5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒

Ch. No.& Freq.(MHz)		Low / Low-Mid	Mid	Mid-High / High
LTE FDD Band 2 (PCS)	1.4 MHz	1 850.7 (18607)	1 880.0 (18900)	1 909.3 (19193)
	3 MHz	1 851.5 (18615)	1 880.0 (18900)	1 908.5 (19185)
	5 MHz	1 852.5 (18625)	1 880.0 (18900)	1 907.5 (19175)
	10 MHz	1 855.0 (18650)	1 880.0 (18900)	1 905.0 (19150)
	15 MHz	1 857.5 (18675)	1 880.0 (18900)	1 902.5 (19125)
	20 MHz	1 860.0 (18700)	1 880.0 (18900)	1 900.0 (19100)
LTE FDD Band 4 (AWS)	1.4 MHz	1 710.7 (19957)	1 732.5 (20175)	1 754.3 (20393)
	3 MHz	1 711.5 (19965)	1 732.5 (20175)	1 753.5 (20385)
	5 MHz	1 712.5 (19975)	1 732.5 (20175)	1 752.5 (20375)
	10 MHz	1 715.0 (20000)	1 732.5 (20175)	1 750.0 (20350)
	15 MHz	1 717.5 (20025)	1 732.5 (20175)	1 747.5 (20325)
	20 MHz		1 732.5 (20175)	
LTE FDD Band 5 (Cell)	1.4 MHz	824.7 (20407)	836.5 (20525)	848.3 (20643)
	3 MHz	825.5 (20415)	836.5 (20525)	847.5 (20635)
	5 MHz	826.5 (20425)	836.5 (20525)	846.5 (20625)
	10 MHz		836.5 (20525)	
LTE FDD Band 12	1.4 MHz	699.7 (23017)	707.5 (23095)	715.3 (23173)
	3 MHz	700.5 (23025)	707.5 (23095)	714.5 (23165)
	5 MHz	701.5 (23035)	707.5 (23095)	713.5 (23155)
	10 MHz		707.5 (23095)	
LTE FDD Band 13	5 MHz		782 (23230)	
	10 MHz		782 (23230)	
LTE FDD Band 17	5 MHz		710 (23790)	
	10 MHz		710 (23790)	
LTE FDD Band 25(PCS)	1.4 MHz	1 850.7 (26047)	1 882.5 (26365)	1 914.3 (26683)
	3 MHz	1 851.5 (26055)	1 882.5 (26365)	1 913.5 (26675)
	5 MHz	1 852.5 (26065)	1 882.5 (26365)	1 912.5 (26665)
	10 MHz	1 855 (26090)	1 882.5 (26365)	1 910 (26640)
	15 MHz	1 857.5 (26115)	1 882.5 (26365)	1 907.5 (26615)
	20 MHz	1 860 (26140)	1 882.5 (26365)	1 905 (26590)
LTE FDD Band 26 (Cell)	1.4 MHz	814.7 (26697)	831.5 (26865)	848.3 (27033)
	3 MHz	815.5 (26705)	831.5 (26865)	847.5 (27025)
	5 MHz	816.5 (26715)	831.5 (26865)	846.5 (27015)
	10 MHz	819.0 (26740)	831.5 (26865)	844.0 (26990)
	15 MHz		831.5 (26865)	

Ch. No.& Freq.(MHz)		Low / Low-Mid		Mid		Mid-High / High
LTE FDD Band 66 (AWS)	1.4 MHz	1 710.7 (131979)		1 745 (132322)		1 779.3 (132665)
	3 MHz	1 711.5 (131987)		1 745 (132322)		1 778.5 (132657)
	5 MHz	1 712.5 (131997)		1 745 (132322)		1 777.5 (132647)
	10 MHz	1 715.0 (132022)		1 745 (132322)		1 775.0 (132622)
	15 MHz	1 717.5 (132047)		1 745 (132322)		1 772.5 (132597)
	20 MHz	1 720.0 (132072)		1 745 (132322)		1 770.0 (132572)
LTE TDD Band 41	5 MHz	2 506.0(39750)	2 549.5(40185)	2 593.0(40620)	2 636.5(41055)	2 680.0(41490)
	10 MHz	2 506.0(39750)	2 549.5(40185)	2 593.0(40620)	2 636.5(41055)	2 680.0(41490)
	15 MHz	2 506.0(39750)	2 549.5(40185)	2 593.0(40620)	2 636.5(41055)	2 680.0(41490)
	20 MHz	2 506.0(39750)	2 549.5(40185)	2 593.0(40620)	2 636.5(41055)	2 680.0(41490)

UE Category	LTE Rel. 16, DL: Category 20, UL: Category 18
HPUE Power Class	LTE TDD 41 Power Class 3 : (Duty : 63.3%) Power Class 2 : (Duty:43.3%)
Modulations Supported in UL	QPSK, 16QAM, 64QAM, 256 QAM
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3	Yes
A-MPR disabled for SAR Testing.	Yes
LTE Carrier Aggregation	This device supports Inter-Band & Intra-Band DL-link Carrier aggregations and Inter-Band UL-link Carrier aggregations. Detailed information of Down-Link CA is included in the Appendix. I and Technical Description document.
LTE Release information	This device does not support full CA features on 3GPP Release 16. It supports carrier aggregation, downlink MIMO. All other uplink communications are identical to the release 8 specifications. The following LTE Release 16 Features are not supported: Relay, Hetnet, Enhanced elCI, MDH, cross-carrier Scheduling, Enhanced SC-FDMA.

4.5 5G NR SUB 6 Information

Item.		Description
Frequency Range	NR FDD Band n2 (PCS)	1 852.5 ㎒ ~ 1 907.5 ㎒
	NR FDD Band n5	826.5 ㎒ ~ 846.5 ㎒
	NR FDD Band n25 (PCS)	1 852.5 ㎒ ~ 1 912.5 ㎒
	NR TDD Band n41	2 501.01 ㎒ ~ 2 685 ㎒
	NR FDD Band n66	1 712.5 ㎒ ~ 1 777.5 ㎒
	NR TDD Band n77	3 705 ㎒ ~ 3 975 ㎒
	NR TDD Band n77 DoD	3 445.01 ㎒ ~ 3 544.98 ㎒
Channel Bandwidths	NR FDD Band n2 (PCS)	5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒
	NR FDD Band n5	5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒
	NR FDD Band n25 (PCS)	5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒
	NR TDD Band n41	10 ㎒, 15 ㎒, 20 ㎒, 30 ㎒, 40 ㎒, 50 ㎒, 60 ㎒, 70 ㎒, 80 ㎒, 90 ㎒, 100 ㎒
	NR FDD Band n66	5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒
	NR TDD Band n77	10 ㎒, 15 ㎒, 20 ㎒, 30 ㎒, 40 ㎒, 50 ㎒, 60 ㎒, 70 ㎒, 80 ㎒, 90 ㎒, 100 ㎒
	NR TDD Band n77 DoD	10 ㎒, 15 ㎒, 20 ㎒, 30 ㎒, 40 ㎒, 50 ㎒, 60 ㎒, 70 ㎒, 80 ㎒, 90 ㎒, 100 ㎒

Ch. No.& Freq.(㎒)		Low / Low-Mid		Mid		Mid-High / High
NR FDD Band n2 (PCS)	5 ㎒	1852.5(370500)		1880(376000)		1907.5(381500)
	10 ㎒	1855(371000)		1880(376000)		1905(381000)
	15 ㎒	1857.5(371500)		1880(376000)		1902.5(380500)
	20 ㎒	1860(372000)		1880(376000)		1900(380000)
NR FDD Band n5 (Cell)	5 ㎒	826.5 (165300)		836.5(167300)		846.5 (169300)
	10 ㎒			836.5(167300)		
	15 ㎒			836.5(167300)		
	20 ㎒			836.5(167300)		
NR FDD Band n25	5 ㎒	1852.5(370500)		1882.5(376500)		1912.5(382500)
	10 ㎒	1855(371000)		1882.5(376500)		1910(382000)
	15 ㎒	1857.5(371500)		1882.5(376500)		1907.5(381500)
	20 ㎒	1860(372000)		1882.5(376500)		1905(381000)
NR TDD Band n41	10 ㎒	2501.01(500202)	2547(509400)	2592.99(518598)	2639.01(527802)	2685(537000)
	15 ㎒	2503.5(500700)	2548.26(509652	2592.99(518598)	2637.75(527550)	2682.51(536502)
	20 ㎒	2506.02(501204)	2549.49(509898)	2592.99(518598)	2636.49(527298)	2679.99(535998)
	30 ㎒	2511(502200)	2552.01(510402)	2592.99(518598)	2634(526800)	2674.98(534996)
	40 ㎒	2516.01(503202)	2567.34(513468)		2618.67(523734)	2670(534000)
	50 ㎒	2521.02(504204)		2592.99(518598)		2664.99(532998)
	60 ㎒	2526(505200)		2592.99(518598)		2659.98(531996)
	70 ㎒	2531.01(506202)				2655(531000)
	80 ㎒	2536.02(507204)				2649.99(529998)
	90 ㎒	2541(508200)				2644.98(528996)
	100 ㎒			2592.99(518598)		
NR FDD Band n66	5 ㎒	1712.5(342500)		1745(349000)		1777.5(355500)
	10 ㎒	1715(343000)		1745(349000)		1775(355000)
	15 ㎒	1717.5(343500)		1745(349000)		1772.5(354500)
	20 ㎒	1720(344000)		1745(349000)		1770(354000)

Ch. No.& Freq.(MHz)		Low / Low-Mid		Mid		Mid-High / High	
NR TDD Band n77	10 MHz	3705(647000)	3759(650600)	3813(654200)	3867(657800)	3921(661400)	3975(665000)
	15 MHz	3707.52(647168)	3760.5(650700)	3813.51(654234	3866.49(657766)	3919.5(661300)	3972.48(664832)
	20 MHz	3710.01 (647334)	3762 (650800)	3813.99(654266)	3866.01 (657734)	3918 (661200)	3969.99 (664666)
	30 MHz	3715.02 (647668)	3765 (651000)	3815.01(654334)	3864.99 (657666)	3915 (661000)	3964.98 (664332)
	40 MHz	3720 (648000)	3768 (651200)	3816 (654400)	3864 (657600)	3912 (660800)	3960 (664000)
	50 MHz	3725.01 (648334)	3782.49 (652166)	3840 (656000)		3897.51 (659834)	3954.99 (663666)
	60 MHz	3730.02 (648668)	3803.34(653556)			3876.66(658444)	3949.98 (663332)
	70 MHz	3735 (649000)	3804.99 (654336)			3875.01 (658334)	3945(663000)
	80 MHz	3740.01 (649334)		3840 (656000)			3939.99 (662666)
	90 MHz	3745.02 (649668)		3840 (656000)		3934.98 (662332)	
	100 MHz	3750 (650000)		3840 (656000)		3930 (662000)	
NR TDD Band n77 (DoD)	10 MHz	3455.01(630334)		3500.01(633334)		3544.98(636332)	
	15 MHz	3457.5(630500)		3500.01(633334)		3542.49(636166)	
	20 MHz	3460.02 (630668)		3500.01 (633334)		3540 (636000)	
	30 MHz	3465 (631000)		3500.01 (633334)		3534.99 (635666)	
	40 MHz	3470.01 (631334)				3529.98 (635332)	
	50 MHz	3475.02 (631668)				3525 (635000)	
	60 MHz			3500.01 (633334)			
	70 MHz			3500.01 (633334)			
	80 MHz			3500.01 (633334)			
	90 MHz			3500.01 (633334)			
	100 MHz			3500.01 (633334)			

Item.	Description
NR FDD Band n2/n5/n25/n66 SCS	15 kHz
NR TDD Band n41/n77 SCS	30 kHz
3GPP Rel.	Rel.16
A-MPR disabled for SAR Testing.	Yes
5G NR UL/DL FR1	CP-OFDM: QPSK, 16QAM, 64QAM, 256QAM DFT-s-OFDM: π/2-BPSK(UL Only), QPSK, 16QAM, 64QAM, 256QAM
Non-Standalone & Standalone are supported. 5G NR FR1 Bands are supported to NSA and SA Connectivity. More detailed specifications of the 5G NR bands are contained in the technical description document.	
EN-DC Carrier Aggregation Possible Combinations	The technical description includes all the possible carrier aggregation combinations
LTE Anchor Bands for NR Band n2 (PCS)	LTE Band 5/12/13
LTE Anchor Bands for NR Band n5 (Cell)	LTE Band 12/13
LTE Anchor Bands for NR Band n25	LTE Band 2/66
LTE Anchor Bands for NR Band n41	LTE Band 4/12/66
LTE Anchor Bands for NR Band n66 (AWS)	LTE Band 5/12/13
LTE Anchor Bands for NR Band n77	LTE Band 2/5/12/13/25/66

4.6 DUT Antenna Locations

A diagram showing the location of the device antennas for both open and closed configurations can be found in SAR_setup_photos. When the device is open, The overall dimensions of this device are > 9 X 5 cm. Since the diagonal dimension of this device is > 160 mm and < 200 mm, it is considered a "phablet". In the closed configuration, only a simple display/interaction of notifications occurs and overall dimensions are <9 X 5 cm. Therefore, when the device is closed, the only testing considered is for body-worn and hotspot.

Antenna	Mode	Rear	Front	Left	Right	Bottom	Top
Main1 [Ant A]	GSM/GPRS/EDGE 850	Yes	Yes	Yes	Yes	Yes	No
Main1 [Ant A]	GSM/GPRS/EDGE 1900	Yes	Yes	Yes	Yes	Yes	No
Main1 [Ant A]	UMTS Band 5	Yes	Yes	Yes	Yes	Yes	No
Main1 [Ant A]	UMTS Band 4	Yes	Yes	Yes	Yes	Yes	No
Main1 [Ant A]	UMTS Band 2	Yes	Yes	Yes	Yes	Yes	No
Main1 [Ant A]	LTE FDD Band 2 (PCS)	Yes	Yes	Yes	Yes	Yes	No
Sub2 [Ant F]	LTE FDD Band 2 (PCS)	Yes	Yes	Yes	No	No	Yes
Main1 [Ant A]	LTE FDD Band 4 (AWS)	Yes	Yes	Yes	Yes	Yes	No
Sub2 [Ant F]	LTE FDD Band 4 (AWS)	Yes	Yes	Yes	No	No	Yes
Main1 [Ant A]	LTE FDD Band 5	Yes	Yes	Yes	Yes	Yes	No
Main1 [Ant A]	LTE FDD Band 12	Yes	Yes	Yes	Yes	Yes	No
Main1 [Ant A]	LTE FDD Band 13	Yes	Yes	Yes	Yes	Yes	No
Main1 [Ant A]	LTE FDD Band 17	Yes	Yes	Yes	Yes	Yes	No
Main1 [Ant A]	LTE FDD Band 25 (PCS)	Yes	Yes	Yes	Yes	Yes	No
Sub2 [Ant F]	LTE FDD Band 25 (PCS)	Yes	Yes	Yes	No	No	Yes
Main1 [Ant A]	LTE FDD Band 26 (Cell)	Yes	Yes	Yes	Yes	Yes	No
Main2 [Ant B]	LTE TDD Band 41 (PC3)	Yes	Yes	Yes	No	Yes	No
Main2 [Ant B]	LTE TDD Band 41 (PC2)	Yes	Yes	Yes	No	Yes	No
Sub2 [Ant F]	LTE TDD Band 41 (PC3)	Yes	Yes	Yes	No	No	Yes
Sub2 [Ant F]	LTE TDD Band 41 (PC2)	Yes	Yes	Yes	No	No	Yes
Main1 [Ant A]	LTE FDD Band 66 (AWS)	Yes	Yes	Yes	Yes	Yes	No
Sub2 [Ant F]	LTE FDD Band 66 (AWS)	Yes	Yes	Yes	No	No	Yes
Main1 [Ant A]	NR FDD Band n2 (PCS)	Yes	Yes	Yes	Yes	Yes	No
Sub2 [Ant F]	NR FDD Band n2 (PCS)	Yes	Yes	Yes	No	No	Yes
Main1 [Ant A]	NR FDD Band n5	Yes	Yes	Yes	Yes	Yes	No
Main1 [Ant A]	NR FDD Band n25 (PCS)	Yes	Yes	Yes	Yes	Yes	No
Sub2 [Ant F]	NR FDD Band n25 (PCS)	Yes	Yes	Yes	No	No	Yes
Main2 [Ant B]	NR TDD Band n41	Yes	Yes	Yes	No	Yes	No
Sub2 [Ant F]	NR TDD Band n41	Yes	Yes	Yes	No	No	Yes
Main4 [Ant D]	NR TDD Band n41	Yes	Yes	No	Yes	Yes	No
Sub1 [Ant E]	NR TDD Band n41	Yes	Yes	No	Yes	No	Yes
Main1 [Ant A]	NR FDD Band n66	Yes	Yes	Yes	Yes	Yes	No
Sub2 [Ant F]	NR FDD Band n66	Yes	Yes	Yes	No	No	Yes
Sub2 [Ant F]	NR TDD Band n77	Yes	Yes	Yes	No	No	Yes
Main3 [Ant C]	NR TDD Band n77	Yes	Yes	Yes	No	Yes	No
Sub5 [Ant I]	NR TDD Band n77	Yes	Yes	Yes	No	No	No
Main4 [Ant D]	NR TDD Band n77	Yes	Yes	No	Yes	Yes	No
Sub2 [Ant F]	NR TDD Band n77 DoD	Yes	Yes	Yes	No	No	Yes
Main3 [Ant C]	NR TDD Band n77 DoD	Yes	Yes	Yes	No	Yes	No
Sub5 [Ant I]	NR TDD Band n77 DoD	Yes	Yes	Yes	No	No	No
Main4 [Ant D]	NR TDD Band n77 DoD	Yes	Yes	No	Yes	Yes	No

Antenna	Mode	Rear	Front	Left	Right	Bottom	Top
Sub4 [Ant H] WIFI 1	2.4 GHz WLAN	Yes	Yes	Yes	No	No	Yes
Sub6 [Ant J] WIFI2	2.4 GHz WLAN	Yes	Yes	No	Yes	No	Yes
Sub4 [Ant H] BT 1	Bluetooth	Yes	Yes	Yes	No	No	Yes
Sub6 [Ant J] BT 2	Bluetooth	Yes	Yes	No	Yes	No	Yes
Sub3 [Ant G] WIFI 1	5 GHz WLAN	Yes	Yes	Yes	No	No	Yes
Sub1 [Ant E] WIFI2	5 GHz WLAN	Yes	Yes	No	Yes	No	Yes
Sub3 [Ant G] WIFI 1	6 GHz WLAN	Yes	Yes	Yes	No	No	Yes
Sub1 [Ant E] WIFI2	6 GHz WLAN	Yes	Yes	No	Yes	No	Yes
NFC Ant	NFC	Yes	Yes	Yes	No	No	No

Particular EUT edges were not required to be evaluated for Bluetooth Tethering and Hotspot SAR if the edges were > 25 mm from the transmitting antenna according to FCC KDB 941225 D06v02r01 on page 2. The distance between the transmit antennas and the edges of the device are included in the filing.

- Note: All test configurations are based on front view position.

4.7 Near Field Communications (NFC) Antenna

This EUT has NFC operations. The NFC antenna is integrated into the device for this model. Therefore, all SAR tests were performed with the device which already incorporates the NFC antenna. A diagram showing the location of the NFC antenna can be found in SAR _ Setup_ photos.

4.8 SAR Summation Scenario

According to FCC KDB 447498 D01v06, transmitters are considered to be transmitting simultaneously when there is overlapping transmission, with the exception of transmissions during network hand-offs with maximum hand-off duration less than 30 seconds. Possible transmission paths for the EUT are shown below paths and are mode in same rectangle to indicate communication modes which share the same path. Modes which share the same transmission path cannot transmit simultaneously with one another.
This device contains multiple transmitters that may operate simultaneously, and therefore requires a simultaneous transmission analysis according to FCC KDB 447498 D01v06.

Capable Transmit Configuration	Head	Body-Worn Accessory	Wireless Router	Phablet
GSM voice + 2.4GHz Bluetooth Ant.1	Yes^	Yes	N/A	Yes
GSM voice + 2.4GHz Bluetooth Ant.2/Dual	Yes^	Yes	N/A	Yes
GSM voice + 2.4GHz WI-FI SISO/MIMO	Yes	Yes	N/A	Yes
GSM voice + 5GHz WI-FI SISO/MIMO	Yes	Yes	N/A	Yes
GSM voice + 6GHz WI-FI SISO/MIMO	Yes	Yes	N/A	Yes
GSM voice + 2.4GHz WI-FI SISO/MIMO + 5GHz WI-FI MIMO	Yes	Yes	N/A	Yes
GSM voice + 2.4GHz WI-FI SISO/MIMO + 6GHz WI-FI MIMO	Yes	Yes	N/A	Yes
GSM voice + 2.4GHz Bluetooth Ant.1 + 5GHz WI-FI SISO/MIMO	Yes^	Yes	N/A	Yes
GSM voice + 2.4GHz Bluetooth Ant.2/Dual + 5GHz WI-FI SISO/MIMO	Yes^	Yes	N/A	Yes
GSM voice + 2.4GHz Bluetooth Ant.1+ 6GHz WI-FI SISO/MIMO	Yes^	Yes	N/A	Yes
GSM voice + 2.4GHz Bluetooth Ant.2/Dual+ 6GHz WI-FI SISO/MIMO	Yes^	Yes	N/A	Yes
GSM voice + 2.4GHz Bluetooth Ant.1+ 2.4GHz WI-FI Ant 2	Yes^	Yes	N/A	Yes
GSM voice + 2.4GHz Bluetooth Ant.1+ 2.4GHz WI-FI Ant 2 + 5GHz WI-FI SISO/MIMO	Yes^	Yes	N/A	Yes
GSM voice + 2.4GHz Bluetooth Ant.1+ 2.4GHz WI-FI Ant 2 + 6GHz WI-FI SISO/MIMO	Yes^	Yes	N/A	Yes
UMTS + 2.4GHz Bluetooth Ant.1	Yes^	Yes	Yes^	Yes
UMTS + 2.4GHz Bluetooth Ant.2/Dual	Yes^	Yes	N/A	Yes
UMTS + 2.4GHz WI-FI SISO/MIMO	Yes	Yes	Yes	Yes
UMTS + 5GHz WI-FI SISO/MIMO	Yes	Yes	Yes	Yes
UMTS + 6GHz WI-FI MIMO SISO/MIMO	Yes	Yes	N/A	Yes
UMTS + 2.4GHz WI-FI SISO/MIMO + 5GHz WI-FI SISO/MIMO	Yes	Yes	Yes	Yes
UMTS + 2.4GHz WI-FI SISO/MIMO + 6GHz WI-FI SISO/MIMO	Yes	Yes	N/A	Yes
UMTS + 2.4GHz Bluetooth Ant.1 + 5GHz WI-FI SISO/MIMO	Yes^	Yes	Yes^	Yes
UMTS + 2.4GHz Bluetooth Ant.2/Dual + 5GHz WI-FI SISO/MIMO	Yes^	Yes	N/A	Yes
UMTS + 2.4GHz Bluetooth Ant.1+ 6GHz WI-FI SISO/MIMO	Yes^	Yes	N/A	Yes
UMTS + 2.4GHz Bluetooth Ant.2/Dual + 6GHz WI-FI SISO/MIMO	Yes^	Yes	N/A	Yes
UMTS + 2.4GHz Bluetooth Ant.1+ 2.4GHz WI-FI Ant 2	Yes^	Yes	Yes^	Yes
UMTS + 2.4GHz Bluetooth Ant.1+ 2.4GHz WI-FI Ant 2 + 5GHz WI-FI SISO/MIMO	Yes^	Yes	Yes^	Yes
UMTS + 2.4GHz Bluetooth Ant.1+ 2.4GHz WI-FI Ant 2 + 6GHz WI-FI SISO/MIMO	Yes^	Yes	N/A	Yes
LTE + 2.4GHz Bluetooth Ant.1	Yes^	Yes	Yes^	Yes
LTE + 2.4GHz Bluetooth Ant.2/Dual	Yes^	Yes	N/A	Yes
LTE + 2.4GHz WI-FI SISO/MIMO	Yes	Yes	Yes	Yes
LTE + 5GHz WI-FI SISO/MIMO	Yes	Yes	Yes	Yes
LTE + 6GHz WI-FI SISO/MIMO	Yes	Yes	N/A	Yes
LTE + 2.4GHz WI-FI SISO/MIMO + 5GHz WI-FI SISO/MIMO	Yes	Yes	Yes	Yes
LTE + 2.4GHz WI-FI SISO/MIMO + 6GHz WI-FI SISO/MIMO	Yes	Yes	N/A	Yes
LTE + 2.4GHz Bluetooth Ant.1+ 5GHz WI-FI SISO/MIMO	Yes^	Yes	Yes^	Yes
LTE + 2.4GHz Bluetooth Ant.2/Dual + 5GHz WI-FI SISO/MIMO	Yes^	Yes	N/A	Yes
LTE + 2.4GHz Bluetooth Ant.1 + 6GHz WI-FI SISO/MIMO	Yes^	Yes	N/A	Yes
LTE + 2.4GHz Bluetooth Ant.2/Dual + 6GHz WI-FI SISO/MIMO	Yes^	Yes	N/A	Yes
LTE + 2.4GHz Bluetooth Ant.1+ 2.4GHz WI-FI Ant 2	Yes^	Yes	Yes^	Yes
LTE + 2.4GHz Bluetooth Ant.1+ 2.4GHz WI-FI Ant 2 + 5GHz WI-FI SISO/MIMO	Yes^	Yes	Yes^	Yes

Capable Transmit Configuration	Head	Body-Worn Accessory	Wireless Router	Phablet
LTE + 2.4GHz Bluetooth Ant.1+ 2.4GHz WI-FI Ant 2 + 6GHz WI-FI SISO/MIMO	Yes^	Yes	N/A	Yes
LTE + 5GNR	Yes	Yes	Yes	Yes
LTE + 2.4GHz Bluetooth Ant.1 + 5GNR	Yes^	Yes	Yes^	Yes
LTE + 2.4GHz Bluetooth Ant.2/Dual + 5GNR	Yes^	Yes	N/A	Yes
LTE + 2.4GHz WI-FI SISO/MIMO + 5GNR	Yes	Yes	Yes	Yes
LTE + 5GHz WI-FI SISO/MIMO + 5GNR	Yes	Yes	Yes	Yes
LTE + 6GHz WI-FI SISO/MIMO + 5GNR	Yes	Yes	N/A	Yes
LTE + 2.4GHz WI-FI SISO/MIMO + 5GHz WI-FI SISO/MIMO + 5GNR	Yes	Yes	Yes	Yes
LTE + 2.4GHz WI-FI SISO/MIMO + 6GHz WI-FI SISO/MIMO + 5GNR	Yes	Yes	N/A	Yes
LTE + 2.4GHz Bluetooth Ant.1 + 5GHz WI-FI SISO/MIMO + 5GNR	Yes^	Yes	Yes^	Yes
LTE + 2.4GHz Bluetooth Ant.2/Dual + 5GHz WI-FI SISO/MIMO + 5GNR	Yes^	Yes	N/A	Yes
LTE + 2.4GHz Bluetooth Ant.1 + 6GHz WI-FI SISO/MIMO + 5GNR	Yes^	Yes	N/A	Yes
LTE + 2.4GHz Bluetooth Ant.2/Dual + 6GHz WI-FI SISO/MIMO + 5GNR	Yes^	Yes	N/A	Yes
LTE + 2.4GHz Bluetooth Ant.1+ 2.4GHz WI-FI Ant 2 + 5GNR	Yes^	Yes	Yes^	Yes
LTE + 2.4GHz Bluetooth Ant.1+ 2.4GHz WI-FI Ant 2 + 5GHz WI-FI SISO/MIMO + 5GNR	Yes^	Yes	Yes^	Yes
LTE + 2.4GHz Bluetooth Ant.1+ 2.4GHz WI-FI Ant 2 + 6GHz WI-FI SISO/MIMO + 5GNR	Yes^	Yes	N/A	Yes
GPRS/EDGE Data + 2.4GHz Bluetooth Ant.1	Yes^	Yes	Yes^	Yes
GPRS/EDGE Data + 2.4GHz Bluetooth Ant.2/Dual	Yes^	Yes	N/A	Yes
GPRS/EDGE Data + 2.4GHz WI-FI SISO/MIMO	Yes	Yes	Yes	Yes
GPRS/EDGE Data + 5GHz WI-FI SISO/MIMO	Yes	Yes	Yes	Yes
GPRS/EDGE Data + 6GHz WI-FI SISO/MIMO	Yes	Yes	N/A	Yes
GPRS/EDGE Data + 2.4GHz WI-FI SISO/MIMO + 5GHz WI-FI SISO/MIMO	Yes	Yes	Yes	Yes
GPRS/EDGE Data + 2.4GHz WI-FI SISO/MIMO + 6GHz WI-FI SISO/MIMO	Yes	Yes	N/A	Yes
GPRS/EDGE Data + 2.4GHz Bluetooth Ant.1 + 5GHz WI-FI SISO/MIMO	Yes^	Yes	Yes^	Yes
GPRS/EDGE Data + 2.4GHz Bluetooth Ant.2/Dual + 5GHz WI-FI SISO/MIMO	Yes^	Yes	N/A	Yes
GPRS/EDGE Data + 2.4GHz Bluetooth Ant.1 + 6GHz WI-FI SISO/MIMO	Yes^	Yes	N/A	Yes
GPRS/EDGE Data + 2.4GHz Bluetooth Ant.2/Dual + 6GHz WI-FI SISO/MIMO	Yes^	Yes	N/A	Yes
GPRS/EDGE Data + 2.4GHz Bluetooth Ant.1+ 2.4GHz WI-FI Ant 2	Yes^	Yes	Yes^	Yes
GPRS/EDGE Data + 2.4GHz Bluetooth Ant.1+ 2.4GHz WI-FI Ant 2 + 5GHz WI-FI SISO/MIMO	Yes^	Yes	Yes^	Yes
GPRS/EDGE Data + 2.4GHz Bluetooth Ant.1+ 2.4GHz WI-FI Ant 2 + 6GHz WI-FI SISO/MIMO	Yes^	Yes	N/A	Yes
5GNR + 2.4GHz Bluetooth Ant.1	Yes^	Yes	Yes^	Yes
5GNR + 2.4GHz Bluetooth Ant.2/Dual	Yes^	Yes	N/A	Yes
5GNR + 2.4GHz WI-FI SISO/MIMO	Yes	Yes	Yes	Yes
5GNR + 5GHz WI-FI SISO/MIMO	Yes	Yes	Yes	Yes
5GNR + 6GHz WI-FI SISO/MIMO	Yes	Yes	N/A	Yes
5GNR + 2.4GHz WI-FI SISO/MIMO + 5GHz WI-FI SISO/MIMO	Yes	Yes	Yes	Yes
5GNR + 2.4GHz WI-FI SISO/MIMO + 6GHz WI-FI SISO/MIMO	Yes	Yes	N/A	Yes
5GNR + 2.4GHz Bluetooth Ant.1+ 5GHz WI-FI SISO/MIMO	Yes^	Yes	Yes^	Yes
5GNR + 2.4GHz Bluetooth Ant.2/Dual+ 5GHz WI-FI SISO/MIMO	Yes^	Yes	N/A	Yes
5GNR + 2.4GHz Bluetooth Ant.1 + 6GHz WI-FI SISO/MIMO	Yes^	Yes	N/A	Yes
5GNR + 2.4GHz Bluetooth Ant.2/Dual + 6GHz WI-FI SISO/MIMO	Yes^	Yes	N/A	Yes
5GNR + 2.4GHz Bluetooth Ant.1+ 2.4GHz WI-FI Ant 2	Yes^	Yes	Yes^	Yes
5GNR + 2.4GHz Bluetooth Ant.1+ 2.4GHz WI-FI Ant 2 + 5GHz WI-FI SISO/MIMO	Yes^	Yes	Yes^	Yes
5GNR + 2.4GHz Bluetooth Ant.1+ 2.4GHz WI-FI Ant 2 + 6GHz WI-FI SISO/MIMO	Yes^	Yes	N/A	Yes

Note:

1. 2.4GHz WLAN and Bluetooth share the same antenna path. So, this DUT can only transmit together 2.4GHz WLAN Ant.2 and Bluetooth Ant.1.
2. 5 GHz WLAN and 6 GHz WLAN share the same antenna path and cannot transmit simultaneously.
3. When the user utilizes multiple services in UMTS 3G mode it uses multi-Radio Access Bearer or multi- RAB. The power control is based on a physical control channel (Dedicated Physical Control Channel [DPCCH]) and power control will be adjusted to meet the needs of both services. Therefore, the UMTS+WLAN scenario also represents the UMTS Voice/DATA + WLAN Hotspot scenario.
4. Per the manufacturer, WIFI Direct is not expected to be used in conjunction with a held-to-ear or body worn accessory voice call. Therefore, there are no simultaneous transmission scenarios involving WIFI direct beyond that listed in the above table.
5. 5 GHz Wireless Router is only supported for the U-NII-3 by S/W, therefore U-NII-1, U-NII-2A, U-NII-2C, and U-NII-4 were not evaluated for wireless router conditions.
6. 6 GHz Wireless Router is not supported; therefore, it was not evaluated for wireless router conditions.
7. This device supports 2x2 MIMO Tx for WLAN 802.11a/b/g/n/ac/ax. 802.11a/b/g/n/ac/ax supports CDD and STBC and 802.11n/ac/ax additionally supports SDM.
8. This device supports VoWIFI/VoLTE/VoNR
9. LTE + 5G NR FR1 Scenarios are limited to EN-DC combinations with anchor bands as shown in the NR FR1 checklist.
10. NFC was evaluated for phablet based on expected usage conditions.
11. The ^ indicates the BT Tethering feature.

4.9 SAR Test Considerations

4.9.1 WiFi

Since wireless router operations are not allowed by the chipset firmware using U-NII-1, U-NII-2A & U-NII-2C and U-NII-4 WiFi, WiFi Hotspot SAR test and combinations are considered only 2.4 GHz and U-NII-3 for SAR with respected to wireless router configurations according to FCC KDB 941225 D06v02r01.

Since U-NII-1 and U-NII-2A Bands have the same maximum output power and the highest reported SAR for U-NII-2A is less than 1.2 W/kg for 1g SAR and is less than 3.0 W/kg for 10g SAR, SAR is not required for U-NII-1 Band according to FCC KDB 248227D01v02r02.

This device supports IEEE 802.11ax with the following features:

a) Up to 160 MHz Bandwidth only for 5/6 GHz
b) Up to 20 MHz Bandwidth only for 2.4 GHz
c) 2Tx antenna output
d) Up to 1024 QAM is supported
e)TDWR and Band gap channels are supported for 5 GHz
f) MU-MIMO UL Operations are not supported

Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the diagonal dimension is greater than 160mm and less than 200 mm. Phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg. Because wireless router operations are not supported for U-NII-1, U-NII-2A & U-NII-2C, U-NII-4 WLAN, phablet SAR tests were performed. Phablet SAR was not
evaluated for 2.4 GHz WIFI, 2.4 GHz Bluetooth, and U-NII-3 WLAN operations since wireless router 1g SAR was < 1.2 W/kg.

Per April 2019 TCB Workshop Notes, SAR testing was not required for 802.11ax when applying the initial test configuration procedures of KDB 248227, with 802.11ax considered a higher order 802.11 mode.

Per Oct. 2020 TCBC Workshop note, SAR was performed using 6.5 GHz SAR probe calibration factors for WIFI 6GHz. FCC KDB 648474, FCC KDB 941225 D07 and FCC KDB 248227 were followed for test positions, distances, and modes. Absorbed power density (APD) using a 4cm2 averaging area is reported based on SAR measurements. Incident power density is evaluated at 2mm ensuring that the resolution is sufficient such that integrated power density(iPD) between d=2mm and d=λ/5mm is ≥ -1dB per equipment manufacturer guidance. Power density results are scaled up for uncertainty above 30%. Per TCB workshop October 2020 notes, 5 channels were tested for WIFI 6GHz.

802.11ax was considered a higher order 802.11 mode when compared to a/b/g/n/ac to apply KDB Publication 248227 D01v02r02 for OFDM mode selection. Therefore, SAR tests were not required for 802.11ax.

The output power of the WLAN is defined as a reduced power mode and a maximum power mode. DSI=0 (Body, Phablet) is the maximum power condition, DSI=1 (RCV-ON), DSI=8 (NR mode active) and DSI=9 (NR mode RCV active) are specified as the reduced power condition, and DSI1,8.9 modes are all reduced to the same output power. [DSI=1=8=9]

DASY6 Module mmWave is optimized for incident Power Density (PD) evaluations EUT at distances as close as 2mm for frequencies in the 6–110 GHz range.
The software Module mmWave V3.0+ features the novel Equivalent Source Reconstruction (ESR) method:
This new method will greatly simplify compliance testing for distances as close as λ/25 (2mm at 6 GHz) from any surface and improve the overall flexibility and precision.
With this method, the reconstruction uncertainty (REC) is below 0.6 dB for d > λ/25, corresponding to a test distance of 2mm at 6 GHz. The above-mentioned REC value is valid if the following conditions on the grid resolution (ℓ_{grid}) and grid extent (ν_{grid}) are met:

$$\ell_{\text{grid}} = \begin{cases} 1.25d & \text{for } d < \lambda/10 \\ \lambda/8 & \text{for } d \geq \lambda/10 \end{cases}.$$

$$\nu_{\text{grid}} \geq 2\lambda$$

In accordance with the October 2020 TCBC document, the novel Equivalent Source Reconstruction (ESR), a post-processing technology of SPEAG's The Module mmWave V3.0+, a source reconstruction method, was used to evaluate the IPD of a portable device in the 6-8.5 GHz band, and the measurement uncertainty was evaluated to be 1.51 dB.

4.9.2 Licensed Transmitter(s)

GSM/GPRS/EDGE DTM is not supported for US Bands. Therefore, the GSM Voice modes in this report do not transmit simultaneously with GPRS/EDGE Data.

LTE SAR for the higher modulations and lower Bandwidths were not tested since the maximum average output power of all required channels and configurations was not more than 0.5 dB higher than the highest Bandwidth; and the reported LTE SAR for the highest Bandwidth was less than 1.45 W/kg for all configurations according to FCC KDB 941225 D05v02r05.

Per FCC KDB 648474 D04v01r03, this device is considered a "Phablet" since the diagonal dimension is greater than 160 ㎜ and less than 200 ㎜. Therefore, extremity SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR >1.2 W/kg. When hotspot mode applies, 10g SAR required only for the surfaces and edges with hotspot mode scaled to the maximum output power (including tolerance) is 1g SAR > 1.2 W/kg.

This Device supports 64QAM and 256QAM on the uplink and 256QAM on the downlink for LTE Operations. Conducted powers for 64QAM and 256QAM uplink configurations were measured per section 5.1 of FCC KDB 941225 D05v02r05. SAR was not required for 64QAM or 256QAM since the highest maximum output power for 64QAM and 256QAM is ≤ 0.5dB higher than the same configuration in QPSK and the reported SAR for QPSK configuration is ≤1.45 W/Kg, per section 5.2.4 for FCC KDB941225 D05v02r05.

This device supports LTE capabilities with overlapping transmission frequency ranges. When the supported frequency range of LTE Band falls completely within an LTE Band with a larger transmission frequency range, both LTE Bands have the same target power or the Band with the larger transmission frequency range has a higher target power and both LTE Bands share the same transmission path and signal characteristics, SAR was only tested for the Band with the larger transmission frequency range.

LTE capabilities with overlapping transmission frequency ranges were applied to LTE Band 4 (1 712.4 ㎒ ~ 1 752.6㎒) is covered by LTE Band 66(1 712.5 ㎒ ~ 1 777.5 ㎒), LTE Band 2(1 850.7 ㎒ ~ 1 909.3㎒) is covered

by LTE Band 25(1 850.7 ㎒ ~ 1 914.3㎒), LTE Band 17(706.5 ㎒ ~ 713.5㎒) is covered by LTE Band 12(699.7 ㎒ ~ 715.3㎒) of this model each both LTE bands have the same target powers.
NR capabilities with overlapping transmission frequency ranges were applied to n2(1 852.5 ㎒ ~ 1 907.5㎒) is covered by n25(1 852.5 ㎒ ~ 1 912.5㎒), of this model each both NR bands have the same target powers.

This device supports LTE Carrier Aggregation (CA) in the downlink. All uplink communications are identical to Release 8 specifications. Per FCC KDB publication 941225 D05A v01r02, SAR for LTE DL CA operations was not needed since the maximum average output power in LTE CA mode was not >0.25 dB higher than the maximum output power when downlink carrier aggregation was inactive.

This device supports downlink 4x4 MIMO operations for some LTE Bands. Per May 2017 TCB Workshop Notes, SAR for 4x4 DL MIMO was not needed since the maximum average output power in 4x4 DL MIMO mode was not more than 0.25 dB higher than the maximum output power with 4x4 DL MIMO inactive. Additionally, SAR for 4x4 MIMO Downlink Carrier Aggregation was not needed since the maximum average output power in 4x4 MIMO Downlink Carrier Aggregation mode was not more than 0.25 dB higher than the maximum output power with 4x4 MIMO Downlink and downlink carrier aggregation inactive.

This device support both Power class 2(PC2) and Power Class 3 (PC3) for LTE TDD Band 41. Per May 2017 TCB workshop Notes, SAR test were performed with Power Class 3(given the specific UL/DL Limitations for Power Class 2). Additionally, SAR testing for the power class condition was evaluated for the highest configuration in Power class 3 for each test configuration to confirm he results were scalable linearly.

This device supports NSA(Non-standalone) and SA(Standalone) connectivity for 5G NR FR1 Bands, More detailed specifications of the Bands are contained in the Technical description document.

This device is only capable of QPSK HSUPA in the uplink. Therefore, no additional SAR tests are required beyond that described for devices with HSUPA in KDB 941225 D01v03r01.

Per FCC KDB 941225 D01v03r01, 12.2 kbps RMC is the primary mode and HSPA (HSUPA/HSDPA with RMC) is the secondary mode.
Per FCC KDB 941225 D01v03r01, The SAR test exclusion is applied to the secondary mode by the following equation.

$$Adjusted\ \ SAR = Highest\ \ Reported\ \ SAR\ \ x \frac{Secondary\ \ Max\ \ tune-up\ \ (mW)}{Primary\ \ Max\ \ tune\ \ tune-up(mW)} \leq 1.2\ \ \mathrm{W/kg}.$$

Based on the highest Reported SAR, the secondary mode is not required.

5. Introduction

The FCC has adopted the guidelines for evaluating the environmental effects of radio frequency radiation in ET Docket 93-62 on Aug. 6, 1996 to protect the public and workers from the potential hazards of RF emissions due to FCC-regulated portable devices.

The safety limits used for the environmental evaluation measurements are based on the criteria published by the American National Standards Institute (ANSI) for localized specific absorption rate (SAR) in IEEE/ANSI C95.1-1992 Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz. 1992 by the Institute of Electrical and Electronics Engineers, Inc., New York 10017. The measurement procedure described in IEEE/ANSI C95.3-1992 Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields – RF and Microwave is used for guidance in measuring SAR due to the RF radiation exposure from the Equipment Under Test (EUT). These criteria for SAR evaluation are similar to those recommended by the National Council on Radiation Protection and Measurements (NCRP) in Biological Effects and Exposure Criteria for Radio Frequency Electromagnetic Fields," NCRP Report No. 86 NCRP, 1986, Bethesda, MD 20814. SAR is a measure of the rate of energy absorption due to exposure to an RF transmitting source. SAR values have been related to threshold levels for potential biological hazards.

SAR Definition

Specific Absorption Rate (SAR) is defined as the time derivative of the incremental electromagnetic energy (d*W*) absorbed by (dissipated in) an incremental mass (d*m*) contained in a volume element (d*V*) of a given density (ρ). It is also defined as the rate of RF energy absorption per unit mass at a point in an absorbing body.

$$SAR = \frac{d}{dt}\left(\frac{dU}{dm}\right)$$

Figure 1. SAR Mathematical Equation

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

Where:
= conductivity of the tissue-simulant material (S/m)
= mass density of the tissue-simulant material (kg/m³)
= Total RMS electric field strength (V/m)

NOTE: The primary factors that control rate of energy absorption were found to be the wavelength of the incident field in relations to the dimensions and geometry of the irradiated organism, the orientation of the organism in relation to the polarity of field vectors, the presence of reflecting surfaces, and whether conductive contact is made by the organism with a ground plane.

6. Description of test equipment

6.1 SAR MEASUREMENT SETUP

These measurements are performed using the DASY4 automated dosimetric assessment system. It is made by Schmid& Partner Engineering AG (SPEAG) in Zurich, Switzerland. It consists of high precision robotics system (Staubli), robot controller, Pentium III computer, near-field probe, probe alignment sensor, and the generic twin phantom containing the brain equivalent material. The robot is a six-axis industrial robot performing precise movements to position the probe to the location (points) of maximum electromagnetic field (EMF) (see Figure.2).

A cell controller system contains the power supply, robot controller, teach pendant (Joystick), and remote control, is used to drive the robot motors. The PC with Windows XP or Windows 7 or Window 10 or Window 11 is working with SAR Measurement system DASY4 & DASY5 & DASY6 &DASY8 A/D interface card, monitor, mouse, and keyboard. The Staubli Robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) circuit performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC plug-in card.

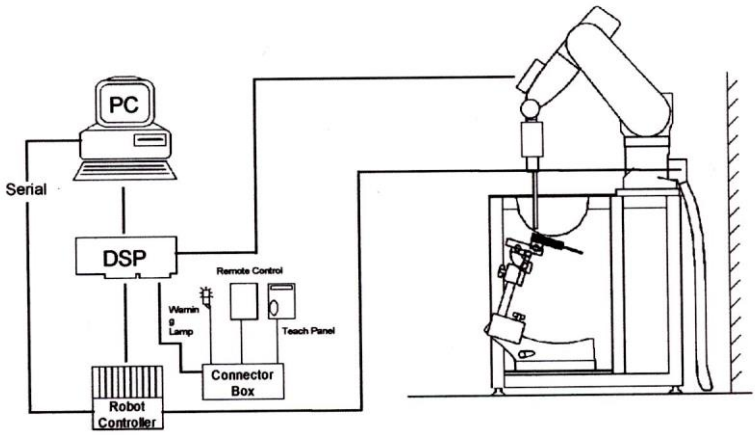


Figure 2. HCT SAR Lab. Test Measurement Set-up

The 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 PC-card is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe mounting device includes two different sensor systems for frontal and sidewise probe contacts. They are also used for mechanical surface detection and probe collision detection. The robot uses its own controller with a built in VME-bus computer. The system is described in detail in.

7. SAR Measurement Procedure

The evaluation was performed using the following procedure compliant to FCC KDB Publication 865664 D01v01r04 and IEEE 1528-2013.

1. The SAR distribution at the exposed side of the head or body was measured at a distance no more than 5.0 mm from the inner surface of the shell. The area covered the entire dimension of the DUT's head and body area and the horizontal grid resolution was depending on the FCC KDB 865664 D01v01r04 table 4-1 & IEEE 1528-2013.

2. Based on step, the area of the maximum absorption was determined by sophisticated interpolations routines implemented in DASY software. When an Area Scan has measured all reachable point. DASY system computes the field maximal found in the scanned are, within a range of the maximum. SAR at this fixed point was measured and used as a reference value.

3. Around this point, a volume was assessed according to the measurement resolution and volume size requirements of FCC KDB 865664 D01v01r04 table 4-1 and IEEE 1528-2013. On the basis of this data set, the spatial peak SAR value was evaluated with the following procedure (reference from the DASY manual.)

   a. The data at the surface were extrapolated, since the center of the dipoles is no more than 2.7 mm away from the tip of the probe (it is different from the probe type) and the distance between the surface and the lowest measuring point is 1.2 mm. The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip.

   b. The maximum interpolated value was searched with a straight-forward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1 g or 10 g) were computed using the 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the "Not a knot" condition (in x, y, and z directions. The volume was integrated with the trapezoidal algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the average.

   c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

4. The SAR reference value, at the same location as step 2, was re-measured after the zoom scan. If the value changed by more than 5 %, the SAR evaluation and drift measurements were repeated.

Area scan and zoom scan resolution setting follow KDB 865664 D01v01r04 quoted below.

<table>
<tr><td colspan="3"></td><td>≤ 3 GHz</td><td>> 3 GHz</td></tr>
<tr><td colspan="3">Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface</td><td>5±1 mm</td><td>·δ·ln(2)±0.5 mm</td></tr>
<tr><td colspan="3">Maximum probe angle from probe axis to phantom surface normal at the measurement location</td><td>30°±1°</td><td>20°±1°</td></tr>
<tr><td colspan="3" rowspan="2">Maximum area scan Spatial resolution: $\Delta x_{Area}, \Delta y_{Area}$</td><td>≤ 2 GHz: ≤15 mm
2-3 GHz: ≤12 mm</td><td>3-4 GHz: ≤12 mm
4-6 GHz: ≤10 mm</td></tr>
<tr><td colspan="2">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.</td></tr>
<tr><td colspan="3">Maximum zoom scan Spatial resolution: $\Delta x_{zoom}, \Delta y_{zoom}$</td><td>≤ 2 GHz: ≤8mm
2-3 GHz: ≤5mm*</td><td>3-4 GHz: ≤5 mm*
4-6 GHz: ≤4 mm*</td></tr>
<tr><td rowspan="3">Maximum zoom scan Spatial resolution normal to phantom surface</td><td colspan="2">uniform grid:$\Delta z_{zoom}(n)$</td><td>≤ 5 mm</td><td>3-4 GHz: ≤4 mm
4-5 GHz: ≤3 mm
5-6 GHz: ≤2 mm</td></tr>
<tr><td rowspan="2">graded grid</td><td>$\Delta z_{zoom}(1)$: between1st two Points closest to phantom surface</td><td>≤ 4 mm</td><td>3-4 GHz: ≤3 mm
4-5 GHz: ≤2.5 mm
5-6 GHz: ≤2 mm</td></tr>
<tr><td>$\Delta z_{zoom}(n>1)$:between subsequent Points</td><td colspan="2">≤1.5·$\Delta z_{zoom}(n-1)$</td></tr>
<tr><td>Minimum zoom scan volume</td><td colspan="2">x, y, z</td><td>≥ 30 mm</td><td>3-4 GHz: ≥28 mm
4-5 GHz: ≥25 mm
5-6 GHz: ≥22 mm</td></tr>
<tr><td colspan="5">Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.
* When zoom scan is required and the reported SAR from the area scan based 1-g SAR estimation procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.</td></tr>
</table>

8. Description of Test Position

8.1 EAR REFERENCE POINT

Figure 8-2 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 on the B-M (back-mouth) line located 15 mm behind the entrance-to-ear-canal (EEC) point, as shown in Figure 6-1. The Reference Plane is defined as passing through the two ear reference point and point M. The line N-F (Neck-Front), also called the Reference Pivoting Line, is not perpendicular to the reference plane (See Figure 5-1), Line B-M is perpendicular to the N-F line. Both N-F and B-M lines are marked on the external phantom shell to facilitate handset positioning.

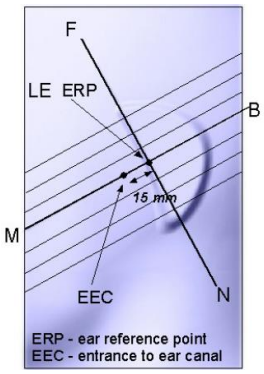


Figure 8-1
Close-up side view of ERP

8.2 HANDSET REFERENCE POINTS

Two imaginary lines on the handset were established: the vertical centerline and the horizontal line. The device under test was placed in a normal operating position with the acoustic output located along the "vertical centerline" on the front of the device aligned to the "ear reference point"(see Figure 8-3). The acoustic output was than located at the same level as the center of the ear reference point. The device under test was positioned so that the "vertical centerline" was bisecting the front surface of the handset at its top and bottom edges, positioning the "ear reference point" on the outer surface of the both the left and right head phantoms on the ear reference point.

Figure 8-2
Front, back and side views of SAM Twin Phantom

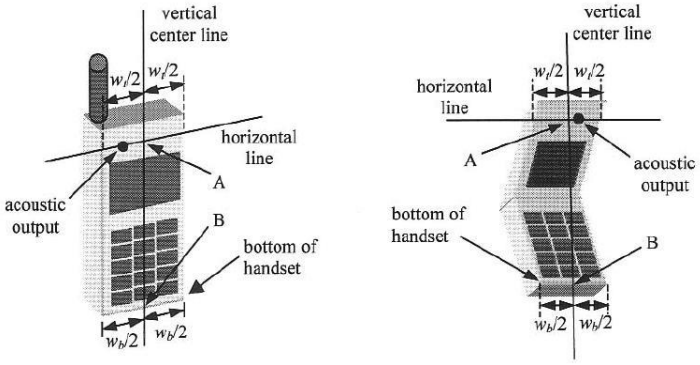


Figure 8-3. Handset vertical and horizontal reference lines

8.3 Device Holder

The device holder is made out of low-loss POM material having the following dielectric parameter; relative permittivity ε=3 and loss tangent σ =0.02.

8.4 Position for cheek

Figure 6.4. shows 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.

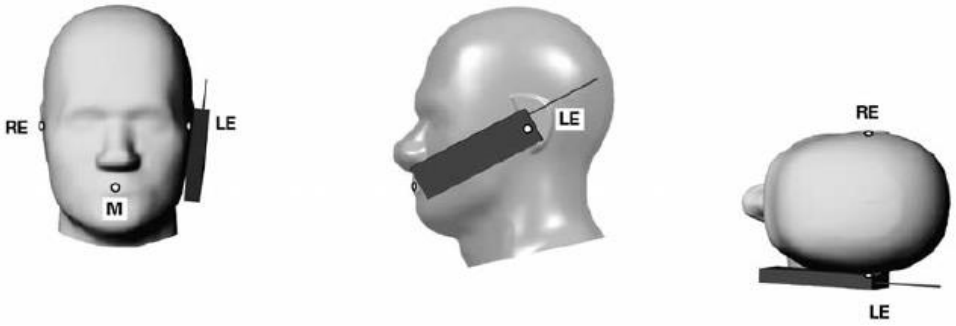


Figure 8.4 Cheek/ Touch position of the wireless device

8.5 Definition of the "tilted" position

Figure 6.5. shows tilted position. Place the device in the cheek position. Then while maintaining the orientation of the device, retract the device parallel to the reference plane far enough away from the phantom to enable a rotation of the device by 15°.

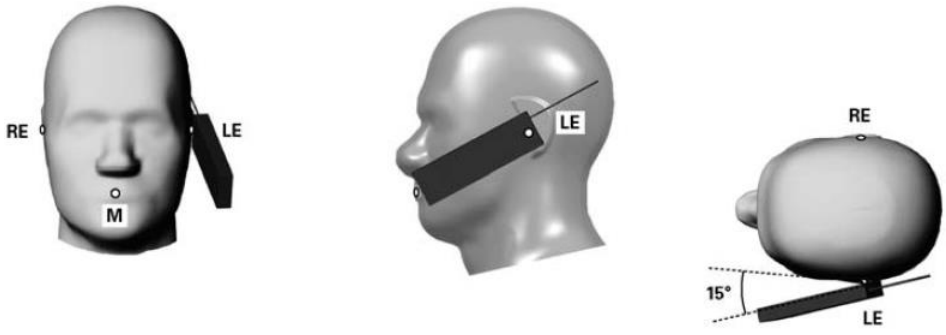


Figure 8.5. Tilt 15°position of the wireless device

8.6 Body-Worn Accessory Configurations

Body-worn operating configurations are tested with the belt-dips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 6-6). Per FCC KDB Publication 648474 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 Publication 447498 D01v06 should be used to test for Body-worn accessory SAR compliance, without a headset connected to it.. When the reported SAR for a body- worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency Band should be repeated for that body- worn accessory with a headset attached to the handset.

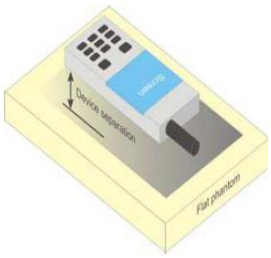


Figure 8-6
Sample Body-Worn Diagram

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 tested with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-dip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

8.7 Wireless Router Configurations

Some battery-operated handsets have the capability to transmit and receive user data through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06v02r01 where SAR test considerations for handsets (L x W≥9cmx5 cm) are based on *a* composite test separation distance of 10 mm from the front back and edges of the device containing transmitting antennas within 2.5 cm 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.

In the closed configuration, only a simple display/interaction of notifications occurs and overall dimensions are <9 X 5 cm. Therefore Per 941225 D06v02r01, when the device is closed, test separation for hotspot mode is 5mm.

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.

8.8 Extremity Exposure Configurations

Devices that are designed or intended for use on extremities or mainly operated in extremity only exposure conditions: i.e., hands, wrists, feet and ankles, may require extremity SAR evaluation. When the device also operates in close proximity to the user's body, SAR compliance for the body is also required. The 1-g body and 10-g extremity SAR Exclusion Thresholds found in KDB Publication 447498 D01v06 should be applied to determine SAR test requirements.

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. The phablets procedures outlined in KDB Publication 648474 D04 v01r03 should be applied to evaluate SAR compliance. A device marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance. In addition to the normally required head and body-worm accessory SAR test procedures required for handsets, the UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna ≤25 mm from that surface or edge, in direct contact with the phantom, for 10-g SAR. The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, 10-g SAR is required only for the surfaces and edges with hotspot mode scaled to the maximum output power (including tolerance) is 1-g SAR > 1.2 W/kg.

8.9 Bluetooth tethering Configurations

Per May 2017 TCBC Workshop Document, When Bluetooth tethering applies, simultaneous transmission SAR needs consideration.

This model allows users to exchange data or media files with other Bluetooth enabled devices using Bluetooth, which means they can connect to other Bluetooth enabled devices via Bluetooth tethering.
Therefore, SAR test was performed for additional simultaneous transmissions.
Head and Bluetooth tethering SAR were evaluated for BT BDR tethering applications.

9. RF Exposure Limits

RF Exposure Limits for Frequencies Below 6GHz

HUMAN EXPOSURE	UNCONTROLLED ENVIRONMENT General Population (W/kg)	CONTROLLED ENVIRONMENT Occupational (W/kg)
SPATIAL PEAK SAR * (Partial Body)	1.6	8.0
SPATIAL AVERAGE SAR ** (Whole Body)	0.08	0.4
SPATIAL PEAK SAR *** (Hands / Feet / Ankle / Wrist)	4.0	20.0

NOTES:

*The Spatial Peak value of the SAR averaged over any 1 g of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

** The Spatial Average value of the SAR averaged over the whole-body.

*** The Spatial Peak value of the SAR averaged over any 10 g of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

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 mad 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.

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. This 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.

RF Exposure Limits for Frequencies Above 6GHz

Per §1.1310 (d)(3), the MPE limits are applied for frequencies above 6 GHz. Power Density is expressed in units of mW/㎠ or W/㎡.
Peak Spatially Averaged Power Density was evaluated over a circular area of 4 ㎠ per interim.
FCC Guidance for near-field power density evaluations per October 2018 TCB Workshop notes.

HUMAN EXPOSURE	Limits For Occupational / Controlled Environments	Limits For General Population / Uncontrolled Environments
Frequency Range[MHz]	1,500 – 100,000	1,500 – 100,000
Power Density[mW/㎠]	5.0	1.0
Average Time[Minutes]	6	30

NOTES: 1.0 mW/㎠ is 10 W/㎡

10. FCC SAR General Measurement Procedures

Power Measurements for licensed transmitters are performed using a base simulator under digital average power.

10.1 Measured and Reported SAR

Per FCC KDB Publication 447498 D01v06, when SAR is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance. For simultaneous transmission, the measured aggregate SAR must be scaled according to the sum of the differences between the maximum tune-up tolerance and actual power used to test each transmitter. When SAR is measured at or scaled to the maximum tune-up tolerance limit, the results are referred to as Reported SAR. The highest reported SAR results are identified on the grant of equipment authorization according to procedures in KDB 690783 D01v01r03.

10.2 3G SAR Test Reduction Procedure

10.2.1 GSM, GPRS and EDGE

The following procedures may be considered for each frequency Band to determine SAR test reduction for devices operating in GSM/GPRS/EDGE modes to demonstrate RF exposure compliance. GSM voice mode transmits with 1 time-slot. GPRS and EDGE may transmit up to 4 time slots in the 8 time-slot frame according to the multi-slot class implemented in a device.

10.2.2 SAR Test Reduction

In FCC KDB 941225 D01v03r01, certain transmission modes within a frequency Band and wireless mode evaluated for SAR are defined as primary modes. The equivalent modes considered for SAR test reduction are denoted as secondary modes. When the maximum output power including tune-up tolerance specified for production units in a secondary mode is ≤ 0.25 dB higher than the primary mode or when the highest reported SAR of the primary mode, scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode, is ≤ 1.2 W/kg, SAR measurements are not required for the secondary mode. These criteria are referred to as the 3G SAR test reduction procedure. When the 3G SAR test reduction procedure is not satisfied, SAR measurements are additionally required for the secondary mode.
SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data 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

10.2.3 Procedures Used to Establish RF Signal for SAR

The following procedures are according to FCC KDB 941225 D01v03r01-3G SAR Measurement Procedures.
The handset was placed into a simulated call using a base station simulator in a shielded chamber. Such test signals offer a consistent means for testing SAR and are recommended for evaluation SAR measurements were taken with a fully charged battery. In order to verify that the device was tested and maintained at full power, this was configured with the base station simulator. The SAR measurement Software calculates a reference point at the start and end of the test to Cheek for power drifts. Lf conducted Power deviations of more than 5 % occurred, the tests were repeated.

10.3 SAR Measurement Conditions for UMTS

10.3.1 Output Power Verification

Maximum output power is verified on the High, Middle and Low channels according to the general descriptions in sec. 5.2 of 3GPP TS 34.121, using the appropriate RMC with TPC (transmit power control) set to all "1s" or applying the required inner loop power control procedures to maintain maximum output power while HSUPA is active. Results for all applicable physical channel configurations (DPCCH, DPDCHn and spreading codes, HS-DPCCH etc) are tabulated in this test report. All configurations that are not supported by the DUT or cannot be measured due to technical or equipment limitations are identified.

10.3.2 Body SAR measurements

SAR for body exposure configurations is measured using the 12.2kbps RMC with the TPC bits all "1s". the 3G SAR test reduction procedure is applied to other spreading codes and multiple DPDCHn configurations supported by the handset with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured using and applicable RMC configuration with the corresponding spreading code or DPDCHn, for the highest reported SAR configuration in 12.2kbps RMC.

10.3.3 SAR Measurements with Rel. 5 HSDPA

The 3G SAR test reduction procedure is applied to HSDPA body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSDPA is measured using and FRC with H-SET 1 in Sub-test and a 12.2 kbps RMC without HSDPA. Handsets with both HSDPA and HSUPA are tested according to release 6 HSPA test procedures. 8.4.5 SAR Measurement with Rel.6 HSUPA The 3G SAR test Reduction Procedure is applied to HSPA (HSUPA/HSDPA with RMC) body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSPA is measured with E-DCH Sub-test 5, Using H-Set 1 and QPSK for FRC and a 12.2kbps RMC configured in Test Loop Mode 1 and Power Control algorithm 2, according to the highest reported body SAR configuration in 12.2 kbps RMC without HSPA. When VOIP applies to head exposure, the 3G SAR test reduction procedure is applied with 12.2 kbps RMC as the primary mode; otherwise, the same HSPA configuration used for body SAR measurements are applied to head exposure testing.

10.3.4 SAR Measurements with Rel. 6 HSUPA

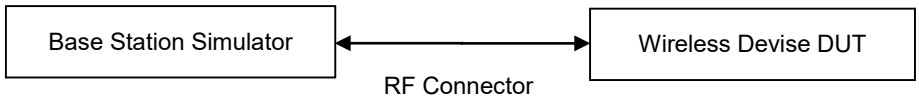
The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 and power control algorithm 2, according to the highest reported body SAR configuration in 12.2 kbps RMC without HSPA.

10.3.5 DC-HSDPA

SAR is required for Rel.8 DC-HSDPA when SAR is required for Rel.5 HSDPA; otherwise, the 3G SAR test reduction procedure is applied to DC-HSDPA with 12.2 kbps RMC as the primary mode. Power is measured for DC-HSDPA according to the H-Set 12, FRC configuration in table C.8.1.12 of 3GPP TS34.121-1 to determine SAR test reduction. Primary and secondary serving HS-DSCH Cell are required to perform the power measurement and for the results to be acceptable.

DC-HSDPA Configurations

- 3GPP specification TS 34.121-1 Release 8. Was used for used for DC-HSDPA guidance.
- H-set 12(QPSK)was conformed to be used during DC-HSDPA measurements.



10.4 SAR Measurement Conditions for LTE

LTE modes are tested according to FCC KDB 941225 D05v02r05publication. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluation SAR [4]. The R&S CMW500 or Anritsu MT8820C simulators are used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

10.4.1 Spectrum Plots for RB Configurations

A properly configured base station simulator was used for SAR tests and power measurements. Therefore, spectrum plots for RB configurations were not required to be included in this report.

10.4.2 MPR

MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36. 101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.

10.4.3 A-MPR

A-MPR (Additional MPR) has been disabled for all SAR tests by setting NS=01 on the base station simulator.

10.4.4 Required RB Size and RB offsets for SAR testing

According to FCC KDB 941225 D05v02r05

a. Per sec 4.2.1, SAR is required for QPSK 1 RB Allocation for the largest Bandwidth
   i. The required channel and offset combination with the highest maximum output power is required for SAR.
   ii. When the reported SAR is ≤ 0.8 W/Kg, testing of the remaining RB offset configurations and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the RB offset configuration with highest output power for that channel.
   iii. When the reported SAR for a required test channel is > 1.45 W/kg, SAR is required for all RB offset configurations for that channel.
b. Per Sec 4.2.2, SAR is required for 50% RB allocation using the largest Bandwidth following the same procedures outlined in Sec 4.2.1.
c. Per Sec. 4.2.3, QPSK SAR is not required for the 100% allocation when the highest maximum output power for the 100% allocation is less than the highest maximum output power of the 1 RB and 50% RB allocations and the reported SAR for the 1 RB and 50% RB allocations is < 0.8 W/kg.
d. Per Sec. 4.2.4 and 4.3, SAR test for higher order modulations and lower Bandwidths configurations are not required when the conducted power of the required test configurations determined by Sec. 4.2.1 through 4.2.3 is less than or equal to 1/2 dB higher than the equivalent configuration using QPSK modulation and when the QPSK SAR for those configurations is < 1.45 W/Kg.

10.4.5 Downlink Carrier Aggregation

Conducted power measurements with LTE Carrier aggregation (CA) downlink only active are made in accordance to KDB publication 941225 D05Av01r02. The RRC connection is only handled by one cell, the primary component carrier (PCC) for downlink and uplink communications. After making a data connection to the PCC, the UE device adds secondary component carrier (SCC) on the downlink only. All uplink communications and acknowledgements remain identical to specifications when downlink carrier aggregation is inactive on the PCC. For every supported combination of downlink only carrier aggregation, additional conducted output Powers are measured with downlink carrier aggregation active for the configuration with highest measured maximum conducted power with the downlink carrier aggregation inactive measured among the channel Bandwidth, modulation and RB combinations in each frequency Band. Per FCC KDB Publication 941225 D05Av01r02, no SAR measurements are required for carrier aggregation configurations when the average output power with downlink only carrier aggregation active is not more than 0.25dB higher than the average output power with downlink only carrier aggregation inactive.

10.4.7 LTE(TDD) Considerations

According to KDB 941225 D05v02r05, for Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.
SAR was tested with the highest transmission duty factor (63.33 %) using Uplink-downlink configuration 0 and Special subframe configuration 6. LTE TDD Band 41 supports 3GPP TS 36.211 section 4.2 for Type 2 Frame and Table 4.2-2 for uplink-downlink configurations and Table 4.2-1 for Special sub frame configurations.

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

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

Calculated Duty Cycle – Extended cyclic prefix in uplink x (T_s) x no of S + no of U

Table 4.2-2: Uplink-downlink configurations.

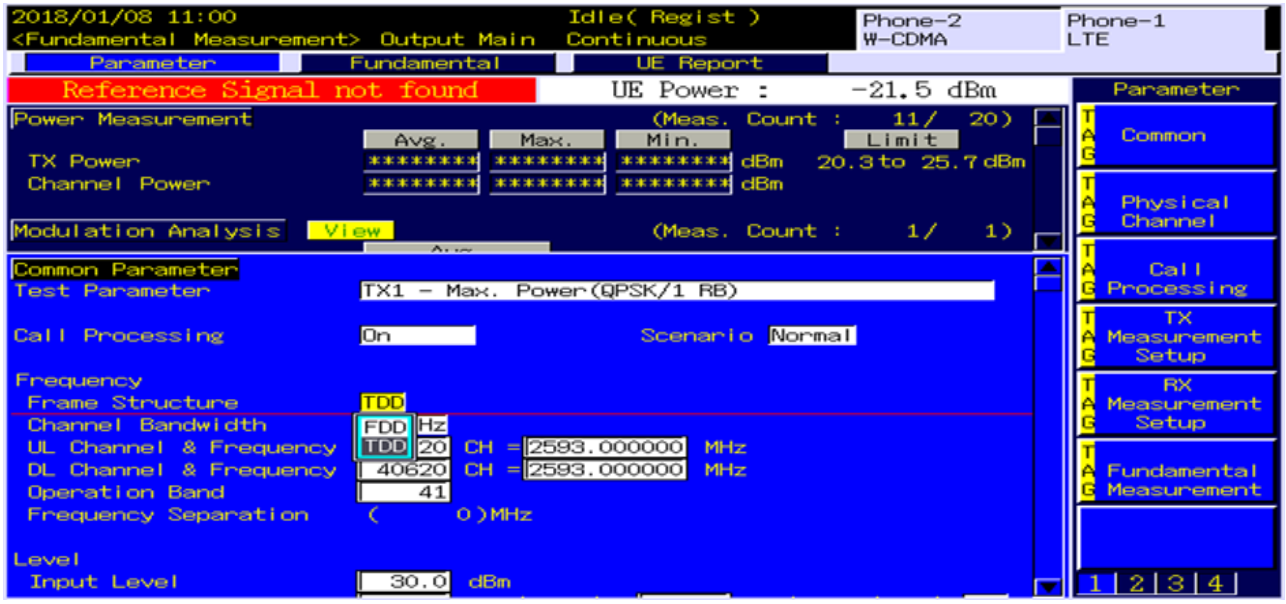
Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number									
		0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	U	U	D	S	U	U	U
1	5 ms	D	S	U	U	D	D	S	U	U	D
2	5 ms	D	S	U	D	D	D	S	U	D	D
3	10 ms	D	S	U	U	U	D	D	D	D	D
4	10 ms	D	S	U	U	D	D	D	D	D	D
5	10 ms	D	S	U	D	D	D	D	D	D	D
6	5 ms	D	S	U	U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

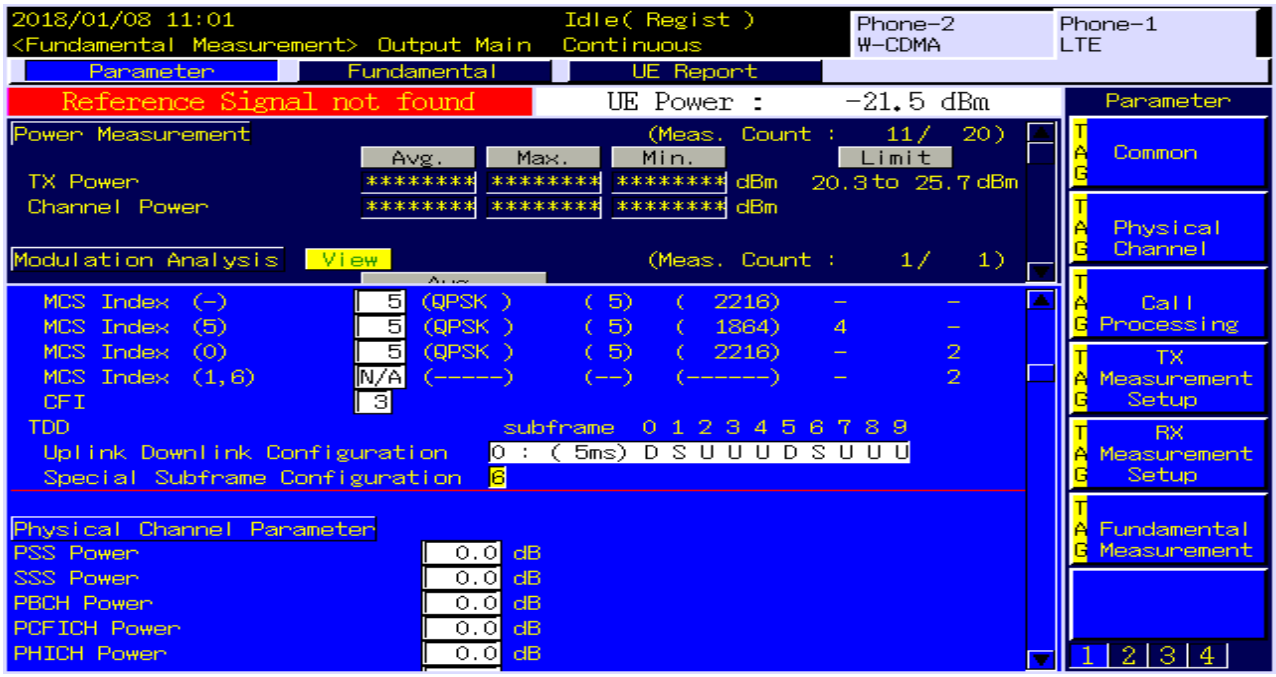
Example for calculated Duty Cycle for Uplink-Downlink Configuration 0:
Calculated Duty Cycle = (5120 x (1/(15000 x 2048)) x 2 + 0.006)/0.01 = 63.33 %
Where
T_s = 1/(15000 x 2048) seconds

HPUE :
Calculated Duty Cycle for Uplink-Downlink Configuration 1:
Calculated Duty Cycle =5120*(1/(15000*2048))*2+0.004)/0.01 = 43.33 %

10.4.8 The Call Box Setup for LTE(TDD)

When you Want to Test for LTE TDD, Please Change Frame Structure TDD and TDD Uplink Downlink Configuration 0 and Special Subframe Configuration 6.





10.5 SAR Testing with 802.11 Transmitters

The normal network operating configurations of 802.11 transmitters are not suitable for SAR measurements. Unpredictable fluctuations in network traffic and antenna diversity conditions can introduce undesirable variations in SAR results. The SAR for these devices should be measured using chipset based test mode software to ensure the results are consistent and reliable. See KDB Publication 248227 D01v02r02 for more details.

10.5.1 General Device Setup

Chipset based test mode software is hardware dependent and generally varies among manufacturers. The device operating parameters established in test mode for SAR measurements must be identical to those programmed in production units, including output power levels, amplifier gain settings and other RF performance tuning parameters.
A periodic duty factor is required for current generation SAR system to measure SAR. When 802.11 frame gaps are accounted for in the transmission, a maximum transmission duty factor of 92-96% is typically achievable in most test mode configurations. A minimum transmission duty factor of 85% is required to avoid certain hardware and device implementation issues related to wide range SAR scaling. The reported SAR is scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit.

10.5.2 U-NII-1 and U-NII-2A

For devices that operate in both U-NII-1 and U-NII2A Bands, when the same maximum output power is specified for both Bands, SAR measurement using OFDM SAR test procedures is not required for U-NII-1 unless the highest reported SAR for U-NII-2A is > 1.2 W/kg for 1g SAR or > 3.0 W/kg for 10g SAR. When different maximum output powers are specified for the Bands, SAR measurement for the U-NII Band with the lower maximum output power is not required unless the highest reported SAR for the U-NII Band with the higher maximum output power, adjusted by the ratio of lower to higher specified maximum output power for the two Bands, is > 1.2 W/kg for 1g SAR or > 3.0 W/kg for 10g SAR.

10.5.3 U-NII-2C and U-NII-3

The frequency range covered by U-NII-2C and U-NII-3 is 380 ㎒ (5.47 ㎓ – 5.85 ㎓), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. When Terminal Doppler Weather Radar (TDWR) restriction applies, the channels at 5.60 ㎓ – 5.65 ㎓ in U-NII-2C Band must be disabled with acceptable mechanisms and documented in the equipment certification.
Unless Band gap channels are permanently disabled, SAR must be considered for these channels.

10.5.4 Initial Test Position Procedure

For exposure conditions with multiple test positions, such as handset operating nest to the ear, devices with hotspot mode or UMPC mini-tablet, procedures for initial test position can be applied. Using the transmission mode determined by the DSSS procedure or initial test configuration, area scans are measured for all positions in an exposure condition. The test position with the highest extrapolated (peak) SAR is used as the initial test position. When reported SAR for the initial test position is ≤ 0.4 W/kg for 1g SAR and ≤ 1.0 W/kg for 10g SAR, no additional testing for the remaining test position is required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is ≤ 0.8 W/kg for 1g SAR and ≤ 2.0 W/kg for 10g SAR or all test positions are measured.

10.5.5 2.4 ㎓ SAR test Requirements

SAR is measured for 2.4 ㎓ 802.11b DSSS using either the fixed test position or, when applicable, the initial test position procedure. SAR test reduction is determined according to the following:
1) When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS is that exposure configuration.
2) When the reported SAR is > 0.8 W/kg, SAR is required for that position using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

2.4 ㎓ 802.11 g/n OFDM are additionally evaluated for SAR if the highest reported SAR for 802.11b, adjusted by the ratio of the OFDM to DSSS specified maximum output power, is > 1.2 W/kg. When SAR is required for OFDM modes in 2.4 ㎓ Band, the Initial Test Configuration Procedures should be followed.

10.5.6 OFDM Transmission Mode and SAR Test Channel Selection

For the 2.4 ㎓ and 5 ㎓ Bands, when the same maximum output power was specified for multiple OFDM transmission mode configurations in a frequency Band or aggregated Band, SAR is measured using the configuration with the largest channel Bandwidth, lowest order modulation and lowest data rate and lowest order 802.11 a/g/n/ac mode. When the maximum output power of a channel is the same for equivalent OFDM configurations; for example, 802.11a, 802.11n and 802.11 ac or 802.11g and 802.11n with the same channel Bandwidth, modulation and data rate etc., the lower order 802.11 mode i.2., 802.11a, then 802.11n and 802.11ac or 802.11g then 802.11n, is used for SAR measurement. When the maximum output power are the same for multiple test channels, either according to the default or additional power measurement requirements, SAR is measured using the channel closest to the middle of the frequency Band or aggregated Band. When there are multiple channels with the same maximum output power, SAR is measured using the higher number channel.

10.5.7 Initial Test Configuration Procedure

For OFDM, in both 2.4 ㎓ and 5 ㎓ Bands, an initial test configuration is determined for each frequency Band and aggregated Band, according to the transmission mode with the highest maximum output power specified for SAR measurements. When the same maximum output power is specified for multiple OFDM transmission mode configurations in a frequency Band or aggregated Band, SAR is measured using the configuration(s) with the largest channel Bandwidth, lowest order modulation, and lowest data rate. If the average RF output powers of the highest identical transmission modes are within 0.25 dB of each other, mid channel of the transmission mode with highest average RF output power is the initial test channel. Otherwise, the channel of the transmission mode with the highest average RF output conducted power will be the initial test configuration.

When the reported SAR is ≤ 0.8 W/kg, no additional measurements on other test channels are required. Otherwise, SAR is evaluated using the subsequent highest average RF output channel until the reported SAR result is 1.2 W/kg or all channels are measured. When there are multiple untested channels having the same subsequent highest average RF output power, the channel with higher frequency from the lowest 802.11 mode is considered for SAR measurements.

10.5.8 Subsequent Test Configuration Procedures

For OFDM configurations in each frequency Band and aggregated Band, SAR is evaluated for initial test configuration using the fixed test position or the initial test position on procedure. When the highest reported SAR (for the initial test configuration), adjusted by the ratio of the specified maximum output power of the subsequent test configuration to initial test configuration, is ≤ 1.2 W/kg for 1g SAR and ≤ 3.0 W/kg for 10g SAR, no additional SAR tests for the subsequent test configurations are required.

10.5.9 MIMO SAR Considerations

Per KDB Publication 248227 D01v02r02, the simultaneous SAR provisions in KDB publication 447498 D01v06. Should be applied to determine simultaneous transmission SAR test exclusion for WIFI MIMO. If the sum of 1g single transmission chain SAR measurements is <1.6 W/kg, no additional SAR Measurements for MIMO are required. Alternatively, SAR for MIMO can be measured with all antennas transmitting simultaneously at the specified maximum output power of MIMO operation.

11. Output Power Specifications

This device operates using the following maximum output power specifications. SAR values were scaled to the maximum allowed power to determine compliance per KDB publication 447498 D01v06.

Licensed Bands

Test Description	Test Procedure Used
Conducted Output Power	- KDB 971168 D01 v03r01 – Section 5.2.4 - ANSI C63.26-2015 – Section 5.2.1 & 5.2.4.2

Test Overview

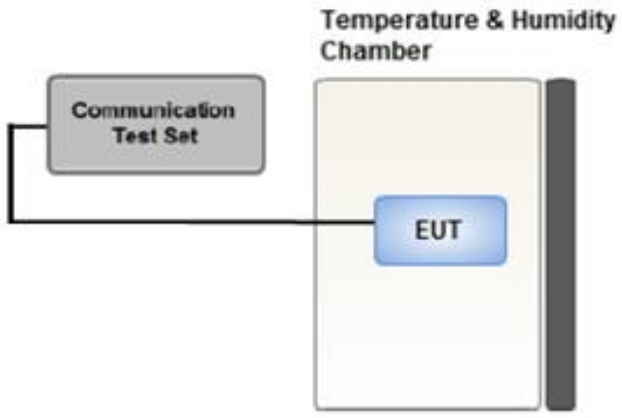
According to ANSI C63.26-2015 Section 5.2.1 when measuring the maximum RF output power from such devices, control over the EUT must be provided either through special test software (provided by manufacturer specifically for compliance testing, but not accessible by an end user) or through use of a base station emulator, communications test set, call box, or similar instrumentation that is capable of establishing a communications link with the EUT to enable control over variable parameters (e.g., output power, OBW, etc.).

In some cases, these instruments also include basic digital spectrum analyzer and/or power meter capabilities that can be utilized to measure the RF output power if the specified detectors and requirements can be realized and the measurement functions have been calibrated.

Test Procedure

1. The RF port of the EUT was connected to the Communication Tester via an RF cable.
2. Conducted average power was measured using a calibrated Radio Communication Tester.

Test setup



11.1 GSM Maximum Output Power

11.1.1 GSM Maximum Conducted Output Power

GSM850 – MAIN1 [Ant A]

Measured *Pmax*

Mode / Band		Voice	GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)			
		GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Maximum		34.00	34.00	31.50	30.00	28.50	27.50	25.00	24.00	22.50
Nominal		33.00	33.00	30.50	29.00	27.50	26.50	24.00	23.00	21.50
GSM 850	128	32.36	32.78	30.36	28.82	27.50	25.87	23.67	22.68	21.64
	190	32.56	32.44	30.43	28.95	27.50	26.04	23.68	22.65	21.74
	251	32.54	32.45	30.47	28.80	27.49	26.02	23.63	22.60	21.63

GSM Conducted output powers (Burst-Average)

Mode / Band		Voice	GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)			
		GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Maximum		24.97	24.97	25.48	25.74	25.49	18.47	18.98	19.74	19.49
Nominal		23.97	23.97	24.48	24.74	24.49	17.47	17.98	18.74	18.49
GSM 850	128	23.33	23.75	24.34	24.56	24.49	16.84	17.65	18.42	18.63
	190	23.53	23.41	24.41	24.69	24.49	17.01	17.66	18.39	18.73
	251	23.51	23.42	24.45	24.54	24.48	16.99	17.61	18.34	18.62

GSM Conducted output powers (Frame-Average)

Measured Free (RSI 0) , RCV (RSI 1), Hotspot (RSI 2)

Mode / Band		Voice	GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)			
		GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Maximum		32.00	32.00	29.50	28.00	26.50	27.50	25.00	24.00	22.50
Nominal		31.00	31.00	28.50	27.00	25.50	26.50	24.00	23.00	21.50
GSM 850	128	30.91	31.19	28.16	26.24	25.07				
	190	31.19	31.41	28.07	26.68	25.20				
	251	31.18	31.34	28.36	26.53	25.43				

GSM Conducted output powers (Burst-Average)

Mode / Band		Voice	GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)			
		GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Maximum		22.97	22.97	23.48	23.74	23.49	18.47	18.98	19.74	19.49
Nominal		21.97	21.97	22.48	22.74	22.49	17.47	17.98	18.74	18.49
GSM 850	128	21.88	22.16	22.14	21.98	22.06				
	190	22.16	22.38	22.05	22.42	22.19				
	251	22.15	22.31	22.34	22.27	22.42				

GSM Conducted output powers (Frame-Average)

GSM1900 – MAIN1 [Ant A]

Measured *Pmax*, RCV (RSI 1),

Mode / Band		Voice	GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)			
		GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Maximum		**31.50**	**31.50**	**29.50**	**27.50**	**25.00**	**26.50**	**24.00**	**22.00**	**20.50**
Nominal		**30.50**	**30.50**	**28.50**	**26.50**	**24.00**	**25.50**	**23.00**	**21.00**	**19.50**
GSM 1900	512	30.33	30.31	27.82	26.27	23.33	24.80	23.05	21.02	19.57
	661	30.61	30.42	27.84	26.29	23.24	25.10	23.00	21.17	19.57
	810	30.54	30.37	27.82	26.51	23.50	25.26	23.18	21.26	19.48

GSM Conducted output powers (Burst-Average)

Mode / Band		Voice	GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)			
		GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Maximum		**22.47**	**22.47**	**23.48**	**23.24**	**21.99**	**17.47**	**17.98**	**17.74**	**17.49**
Nominal		**21.47**	**21.47**	**22.48**	**22.24**	**20.99**	**16.47**	**16.98**	**16.74**	**16.49**
GSM 1900	512	21.30	21.28	21.80	22.01	20.32	15.77	17.03	16.76	16.56
	661	21.58	21.39	21.82	22.03	20.23	16.07	16.98	16.91	16.56
	810	21.51	21.34	21.80	22.25	20.49	16.23	17.16	17.00	16.47

GSM Conducted output powers (Frame-Average)

Measured Free (RSI 0) , Hotspot (RSI 2)

Mode / Band		Voice	GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)			
		GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Maximum		**29.70**	**29.70**	**26.70**	**24.90**	**22.00**	**26.50**	**24.00**	**22.00**	**20.50**
Nominal		**28.70**	**28.70**	**25.70**	**23.90**	**21.00**	**25.50**	**23.00**	**21.00**	**19.50**
GSM 1900	512	28.65	28.63	25.72	23.28	20.33				
	661	28.87	28.87	25.90	23.15	20.38				
	810	29.05	29.05	25.71	23.18	20.51				

GSM Conducted output powers (Burst-Average)

Mode / Band		Voice	GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)			
		GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Maximum		**20.67**	**20.67**	**20.68**	**20.64**	**18.99**	**17.47**	**17.98**	**17.74**	**17.49**
Nominal		**19.67**	**19.67**	**19.68**	**19.64**	**17.99**	**16.47**	**16.98**	**16.74**	**16.49**
GSM 1900	512	19.62	19.60	19.70	19.02	17.32				
	661	19.84	19.84	19.88	18.89	17.37				
	810	20.02	20.02	19.69	18.92	17.50				

GSM Conducted output powers (Frame-Average)

Note:

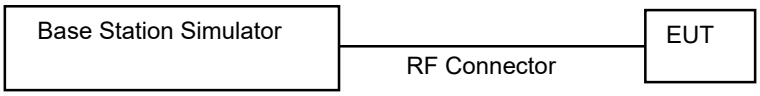
Time slot average factor is as follows:

1 Tx slot = 9.03 dB, Frame-Average output power = Burst-Average output power – 9.03 dB

2 Tx slot = 6.02 dB, Frame-Average output power = Burst-Average output power – 6.02 dB

3 Tx slot = 4.26 dB, Frame-Average output power = Burst-Average output power – 4.26 dB

4 Tx slot = 3.01 dB, Frame-Average output power = Burst-Average output power – 3.01 dB



11.2 UMTS Maximum Output Power

HSPA+
This DUT is only capable of QPSK HSPA+ in uplink. Therefore, the RF conducted power is not measured according to 941225 D01v03r01 3G SAR.

11.2.1 UMTS Maximum Conducted Output Power

UMTS Band 5 Maximum Conducted Output Power – MAIN1 [Ant A]

Measured *Pmax*, Free (RSI 0) , RCV (RSI 1), Hotspot (RSI 2)

3GPP Release Version	Mode	3GPP 34.121	UMTS Band 5 [dBm]			3GPP MPR
		Subtest	UL4132 DL4357	UL4183 DL4408	UL4233 DL4458	
99	UMTS	12.2 kbps RMC	24.89	24.79	24.78	-
99		12.2 kbps AMR	24.86	24.62	24.71	-
5	HSDPA	Subtest 1	22.47	22.36	22.39	0
5		Subtest 2	21.54	21.44	21.44	0
5		Subtest 3	21.52	21.42	21.41	0.5
5		Subtest 4	20.45	20.32	20.35	0.5
6	HSUPA	Subtest 1	21.54	21.40	21.42	0
6		Subtest 2	19.42	19.31	19.34	2
6		Subtest 3	20.48	20.34	20.35	1
6		Subtest 4	19.40	19.30	19.29	2
6		Subtest 5	21.51	21.43	21.45	0
8	DC-HSDPA	Subtest1	21.98	21.96	21.88	0
8		Subtest2	21.44	21.25	21.11	0
8		Subtest3	20.33	20.28	20.02	0.5
8		Subtest4	20.12	20.10	20.02	0.5

UMTS Average Conducted output powers

UMTS Band 4 Maximum Conducted Output Power – MAIN1 [Ant A]

Measured *Pmax*, Measured RCV (RSI 1)

3GPP Release Version	Mode	3GPP 34.121 Subtest	UMTS Band 4 [dBm] UL 1312 DL 1537	UL 1412 DL 1637	UL 1513 DL 1738	3GPP MPR
99	UMTS	12.2 kbps RMC	23.81	23.55	23.31	-
99		12.2 kbps AMR	23.77	23.53	23.25	-
5	HSDPA	Subtest 1	22.49	22.22	21.99	0
5		Subtest 2	21.41	21.16	20.95	0
5		Subtest 3	21.40	21.20	20.92	0.5
5		Subtest 4	20.39	20.15	20.90	0.5
6	HSUPA	Subtest 1	21.37	21.12	20.89	0
6		Subtest 2	19.42	19.15	18.88	2
6		Subtest 3	20.36	20.33	19.93	1
6		Subtest 4	19.42	19.16	18.91	2
6		Subtest 5	21.38	21.11	20.90	0
8	DC-HSDPA	Subtest1	21.82	21.62	21.44	0
8		Subtest2	20.95	20.82	20.66	0
8		Subtest3	20.11	20.13	20.18	0.5
8		Subtest4	20.12	20.14	20.16	0.5

UMTS Average Conducted output powers

Measured Free (RSI 0), Hotspot (RSI 2)

3GPP Release Version	Mode	3GPP 34.121 Subtest	UMTS Band 4 [dBm] UL 1312 DL 1537	UL 1412 DL 1637	UL 1513 DL 1738	3GPP MPR
99	UMTS	12.2 kbps RMC	20.33	20.09	19.88	-
99		12.2 kbps AMR	20.30	20.05	19.85	-
5	HSDPA	Subtest 1	18.51	18.22	18.00	0
5		Subtest 2	18.48	18.22	18.01	0
5		Subtest 3	18.47	18.13	17.90	0.5
5		Subtest 4	18.50	18.23	17.87	0.5
6	HSUPA	Subtest 1	18.03	17.76	17.53	0
6		Subtest 2	18.07	17.82	17.57	0
6		Subtest 3	18.05	17.81	17.58	0
6		Subtest 4	18.04	17.82	17.56	0
6		Subtest 5	17.01	16.77	16.57	0
8	DC-HSDPA	Subtest1	18.01	17.70	17.64	0
8		Subtest2	18.01	17.75	17.60	0
8		Subtest3	18.06	17.76	17.56	0.5
8		Subtest4	18.05	17.77	17.58	0.5

UMTS Average Conducted output powers

UMTS Band 2 Maximum Conducted Output Power – MAIN1 [Ant A]

Measured *Pmax*, Measured RCV (RSI 1)

3GPP Release Version	Mode	3GPP 34.121	UMTS Band 2 [dBm]			3GPP MPR
		Subtest	UL9262 DL9662	UL9400 DL9800	UL9538 DL9938	
99	UMTS	12.2 kbps RMC	23.62	23.36	23.52	-
99		12.2 kbps AMR	23.60	23.33	23.48	-
5	HSDPA	Subtest 1	21.49	21.13	21.96	0
5		Subtest 2	21.26	20.98	21.08	0
5		Subtest 3	21.29	20.97	21.09	0.5
5		Subtest 4	20.26	20.00	20.10	0.5
6	HSUPA	Subtest 1	21.18	21.53	21.13	0
6		Subtest 2	19.19	18.88	19.01	2
6		Subtest 3	20.24	19.97	20.03	1
6		Subtest 4	19.19	18.88	18.99	2
6		Subtest 5	21.16	20.91	21.07	0
8	DC-HSDPA	Subtest 1	21.30	21.11	21.22	0
8		Subtest2	20.61	20.59	20.63	0
8		Subtest3	20.14	20.11	20.16	0.5
8		Subtest4	20.13	20.10	20.14	0.5

UMTS Average Conducted output powers

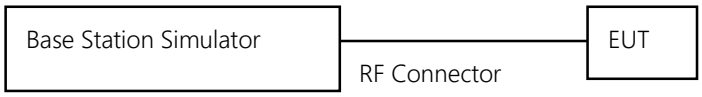
Measured Free (RSI 0), Hotspot (RSI 2)

3GPP Release Version	Mode	3GPP 34.121	UMTS Band 2 [dBm]			3GPP MPR
		Subtest	UL9262 DL9662	UL9400 DL9800	UL9538 DL9938	
99	UMTS	12.2 kbps RMC	20.21	19.99	20.06	-
99		12.2 kbps AMR	20.18	19.92	20.09	-
5	HSDPA	Subtest 1	18.26	18.02	18.11	0
5		Subtest 2	18.29	18.05	18.13	0
5		Subtest 3	18.33	18.10	18.12	0.5
5		Subtest 4	18.30	18.04	18.09	0.5
6	HSUPA	Subtest 1	17.80	17.52	17.68	0
6		Subtest 2	17.86	17.57	17.69	0
6		Subtest 3	17.83	17.55	17.68	0
6		Subtest 4	17.83	17.54	17.67	0
6		Subtest 5	16.85	16.56	16.71	0
8	DC-HSDPA	Subtest 1	17.71	17.67	17.83	0
8		Subtest2	17.76	17.57	17.68	0
8		Subtest3	17.85	17.61	17.70	0.5
8		Subtest4	17.87	17.62	17.57	0.5

UMTS Average Conducted output powers

HSDPA Configurations

- 3GPP specification TS 34.121-1 Release 8. Was used for used for DC-HSDPA guidance.
- H-set 12(QPSK)was conformed to be used during DC-HSDPA measurements.



11.3 LTE Maximum Output Power

Only the Conducted Power measurement results of the maximum bandwidth, which is the SAR test condition of LTE Bands according to FCC KDB 941225 D05, are included, and the measurement results of other bandwidths are listed in Appendix K.

LTE B4/B5/B12/B13/B26 at Max 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 mid channel of the group of overlapping channels should be selected for testing.

11.3.1 LTE Maximum Conducted Power

LTE FDD Band 2 Conducted Power _ Measured *Pmax*, RCV (RSI 1) _ Main1 [Ant A]

LTE FDD Band 2 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 ㎒	18900 Ch. 1880 ㎒	19100 Ch. 1900 ㎒		
20 ㎒	QPSK	1	0	22.53	22.55	22.61	0	0
		1	49	22.53	22.56	22.63	0	0
		1	99	22.51	22.50	22.53	0	0
		50	0	21.53	21.56	21.61	0-1	1
		50	25	21.54	21.52	21.62	0-1	1
		50	49	21.55	21.52	21.62	0-1	1
		100	0	21.53	21.51	21.59	0-1	1
	16QAM	1	0	21.70	21.80	21.73	0-1	1
		1	49	21.53	21.74	21.80	0-1	1
		1	99	21.65	21.71	21.72	0-1	1
		50	0	20.48	20.56	20.63	0-2	2
		50	25	20.51	20.54	20.62	0-2	2
		50	49	20.49	20.50	20.61	0-2	2
		100	0	20.49	20.49	20.62	0-2	2
	64QAM	1	0	20.63	20.62	20.76	0-2	2
		1	49	20.52	20.45	20.67	0-2	2
		1	99	20.59	20.65	20.74	0-2	2
		50	0	19.53	19.58	19.63	0-3	3
		50	25	19.47	19.55	19.63	0-3	3
		50	49	19.51	19.47	19.60	0-3	3
		100	0	19.50	19.54	19.60	0-3	3
	256QAM	1	0	17.69	17.68	17.82	0-5	5
		1	49	17.66	17.75	17.71	0-5	5
		1	99	17.57	17.69	17.72	0-5	5
		50	0	17.49	17.55	17.62	0-5	5
		50	25	17.49	17.52	17.62	0-5	5
		50	49	17.53	17.53	17.63	0-5	5
		100	0	17.56	17.55	17.62	0-5	5

LTE FDD Band 2 Conducted Power _ Measured Free (RSI 0), Hotspot (RSI 2)_ Main1 [Ant A]

LTE FDD Band 2 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 ㎒	18900 Ch. 1880 ㎒	19100 Ch. 1900 ㎒		
20 ㎒	QPSK	1	0	16.40	16.48	16.55	0	0
		1	49	16.39	16.43	16.58	0	0
		1	99	16.39	16.40	16.47	0	0
		50	0	16.38	16.41	16.48	0-1	0
		50	25	16.38	16.41	16.51	0-1	0
		50	49	16.38	16.41	16.48	0-1	0
		100	0	16.39	16.39	16.49	0-1	0
	16QAM	1	0	16.64	16.48	16.78	0-1	0
		1	49	16.32	16.45	16.69	0-1	0
		1	99	16.69	16.67	16.78	0-1	0
		50	0	16.37	16.42	16.53	0-2	0
		50	25	16.38	16.39	16.50	0-2	0
		50	49	16.34	16.39	16.49	0-2	0
		100	0	16.39	16.40	16.50	0-2	0
	64QAM	1	0	16.56	16.61	16.74	0-2	0
		1	49	16.52	16.39	16.49	0-2	0
		1	99	16.53	16.54	16.66	0-2	0
		50	0	16.41	16.43	16.55	0-3	0
		50	25	16.40	16.42	16.49	0-3	0
		50	49	16.39	16.43	16.47	0-3	0
		100	0	16.40	16.38	16.53	0-3	0
	256QAM	1	0	16.58	16.58	16.65	0-5	0
		1	49	16.48	16.45	16.61	0-5	0
		1	99	16.39	16.56	16.65	0-5	0
		50	0	16.40	16.43	16.53	0-5	0
		50	25	16.34	16.39	16.52	0-5	0
		50	49	16.38	16.44	16.55	0-5	0
		100	0	16.39	16.48	16.55	0-5	0

LTE FDD Band 4 Conducted Power _ Measured *Pmax,* RCV (RSI 1)_ Main1 [Ant A]

LTE FDD Band 4 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 20175 ch. 1732.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
20 ㎒	QPSK	1	0	22.52	0	0
		1	49	22.42	0	0
		1	99	22.40	0	0
		50	0	21.37	0-1	1
		50	25	21.38	0-1	1
		50	49	21.37	0-1	1
		100	0	21.40	0-1	1
	16QAM	1	0	21.61	0-1	1
		1	49	21.54	0-1	1
		1	99	21.57	0-1	1
		50	0	20.41	0-2	2
		50	25	20.38	0-2	2
		50	49	20.34	0-2	2
		100	0	20.36	0-2	2
	64QAM	1	0	20.47	0-2	2
		1	49	20.46	0-2	2
		1	99	20.43	0-2	2
		50	0	19.44	0-3	3
		50	25	19.37	0-3	3
		50	49	19.37	0-3	3
		100	0	19.40	0-3	3
	256QAM	1	0	17.44	0-5	5
		1	49	17.41	0-5	5
		1	99	17.43	0-5	5
		50	0	17.34	0-5	5
		50	25	17.34	0-5	5
		50	49	17.35	0-5	5
		100	0	17.34	0-5	5

LTE FDD Band 4 Conducted Power _ Measured Free (RSI 0), Hotspot (RSI 2) _Main1 [Ant A]

LTE FDD Band 4 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 20175 ch. 1732.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
20 ㎒	QPSK	1	0	16.27	0	0
		1	49	16.33	0	0
		1	99	16.30	0	0
		50	0	16.29	0-1	0
		50	25	16.25	0-1	0
		50	49	16.28	0-1	0
		100	0	16.24	0-1	0
	16QAM	1	0	16.58	0-1	0
		1	49	16.36	0-1	0
		1	99	16.50	0-1	0
		50	0	16.31	0-2	0
		50	25	16.25	0-2	0
		50	49	16.24	0-2	0
		100	0	16.26	0-2	0
	64QAM	1	0	16.50	0-2	0
		1	49	16.27	0-2	0
		1	99	16.47	0-2	0
		50	0	16.29	0-3	0
		50	25	16.26	0-3	0
		50	49	16.29	0-3	0
		100	0	16.31	0-3	0
	256QAM	1	0	16.39	0-5	0
		1	49	16.39	0-5	0
		1	99	16.36	0-5	0
		50	0	16.26	0-5	0
		50	25	16.24	0-5	0
		50	49	16.15	0-5	0
		100	0	16.26	0-5	0

LTE FDD Band 5 Conducted Power _ Measured *Pmax*, Free (RSI 0), RCV (RSI 1), Hotspot (RSI 2) _ Main1 [Ant A]

LTE FDD Band 5 _ 10 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 20525 Ch. 836.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	24.17	0	0
		1	24	24.20	0	0
		1	49	24.05	0	0
		25	0	22.61	0-1	1
		25	12	22.53	0-1	1
		25	24	22.42	0-1	1
		50	0	22.51	0-1	1
	16QAM	1	0	22.33	0-1	1
		1	24	22.10	0-1	1
		1	49	22.24	0-1	1
		25	0	21.21	0-2	2
		25	12	21.17	0-2	2
		25	24	21.07	0-2	2
		50	0	21.13	0-2	2
	64QAM	1	0	21.21	0-2	2
		1	24	21.19	0-2	2
		1	49	21.18	0-2	2
		25	0	20.13	0-3	3
		25	12	20.07	0-3	3
		25	24	20.08	0-3	3
		50	0	20.19	0-3	3
	256QAM	1	0	19.30	0-5	5
		1	24	19.18	0-5	5
		1	49	19.12	0-5	5
		25	0	19.23	0-5	5
		25	12	19.16	0-5	5
		25	24	19.14	0-5	5
		50	0	19.13	0-5	5

LTE FDD Band 12 Conducted Power_ Measured *Pmax*, Free(RSI 0), RCV(RSI 1), Hotspot(RSI 2) _ Main1 [Ant A]

LTE FDD Band 12 _ 10 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 23095 Ch. 707.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	23.76	0	0
		1	24	23.74	0	0
		1	49	23.63	0	0
		25	0	22.14	0-1	1
		25	12	22.08	0-1	1
		25	24	22.05	0-1	1
		50	0	22.12	0-1	1
	16QAM	1	0	22.37	0-1	1
		1	24	22.22	0-1	1
		1	49	22.48	0-1	1
		25	0	21.15	0-2	2
		25	12	21.13	0-2	2
		25	24	21.09	0-2	2
		50	0	21.14	0-2	2
	64QAM	1	0	21.44	0-2	2
		1	24	21.36	0-2	2
		1	49	21.30	0-2	2
		25	0	20.12	0-3	3
		25	12	20.07	0-3	3
		25	24	20.06	0-3	3
		50	0	20.16	0-3	3
	256QAM	1	0	18.83	0-5	5
		1	24	18.71	0-5	5
		1	49	18.72	0-5	5
		25	0	18.70	0-5	5
		25	12	18.62	0-5	5
		25	24	18.58	0-5	5
		50	0	18.63	0-5	5

LTE FDD Band 13 Conducted Power_ Measured *Pmax*, Free(RSI 0), RCV(RSI 1), Hotspot(RSI 2)_ Main1 [Ant A]

LTE FDD Band 13 _ 10 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 23230 Ch. 782 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	23.86	0	0
		1	24	23.84	0	0
		1	49	23.62	0	0
		25	0	22.31	0-1	1
		25	12	22.22	0-1	1
		25	24	22.13	0-1	1
		50	0	22.23	0-1	1
	16QAM	1	0	22.49	0-1	1
		1	24	22.37	0-1	1
		1	49	22.30	0-1	1
		25	0	21.31	0-2	2
		25	12	21.23	0-2	2
		25	24	21.14	0-2	2
		50	0	21.23	0-2	2
	64QAM	1	0	21.58	0-2	2
		1	24	21.45	0-2	2
		1	49	21.29	0-2	2
		25	0	20.27	0-3	3
		25	12	20.23	0-3	3
		25	24	20.20	0-3	3
		50	0	20.26	0-3	3
	256QAM	1	0	19.03	0-5	5
		1	24	18.90	0-5	5
		1	49	18.77	0-5	5
		25	0	18.87	0-5	5
		25	12	18.78	0-5	5
		25	24	18.65	0-5	5
		50	0	18.77	0-5	5

LTE FDD Band 17 Conducted Power_ Measured *Pmax*, Free(RSI 0), RCV(RSI 1), Hotspot(RSI 2)_ Main1 [Ant A]

LTE FDD Band 17 _ 10 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 23790 Ch. 710 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	23.80	0	0
		1	24	23.81	0	0
		1	49	23.61	0	0
		25	0	22.16	0-1	1
		25	12	22.12	0-1	1
		25	24	22.08	0-1	1
		50	0	22.15	0-1	1
	16QAM	1	0	22.52	0-1	1
		1	24	22.30	0-1	1
		1	49	22.27	0-1	1
		25	0	21.16	0-2	2
		25	12	21.17	0-2	2
		25	24	21.12	0-2	2
		50	0	21.18	0-2	2
	64QAM	1	0	21.49	0-2	2
		1	24	21.49	0-2	2
		1	49	21.28	0-2	2
		25	0	20.19	0-3	3
		25	12	20.16	0-3	3
		25	24	20.13	0-3	3
		50	0	20.16	0-3	3
	256QAM	1	0	18.89	0-5	5
		1	24	18.75	0-5	5
		1	49	18.76	0-5	5
		25	0	18.73	0-5	5
		25	12	18.68	0-5	5
		25	24	18.66	0-5	5
		50	0	18.70	0-5	5

LTE FDD Band 25 Conducted Power_ Measured *Pmax*, RCV(RSI 1)_ Main1 [Ant A]

LTE FDD Band 25 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26140 Ch. 1860 ㎒	26365 Ch. 1882.5 ㎒	26590 Ch. 1905 ㎒		
20 ㎒	QPSK	1	0	22.53	22.51	22.64	0	0
		1	49	22.52	22.52	22.60	0	0
		1	99	22.50	22.46	22.55	0	0
		50	0	21.53	21.54	21.61	0-1	1
		50	25	21.55	21.49	21.59	0-1	1
		50	49	21.55	21.51	21.56	0-1	1
		100	0	21.53	21.50	21.55	0-1	1
	16QAM	1	0	21.65	21.77	21.70	0-1	1
		1	49	21.65	21.54	21.46	0-1	1
		1	99	21.64	21.64	21.70	0-1	1
		50	0	20.53	20.52	20.59	0-2	2
		50	25	20.50	20.49	20.59	0-2	2
		50	49	20.50	20.49	20.58	0-2	2
		100	0	20.54	20.48	20.59	0-2	2
	64QAM	1	0	20.66	20.66	20.76	0-2	2
		1	49	20.48	20.63	20.56	0-2	2
		1	99	20.70	20.61	20.67	0-2	2
		50	0	19.50	19.54	19.67	0-3	3
		50	25	19.53	19.56	19.57	0-3	3
		50	49	19.54	19.46	19.60	0-3	3
		100	0	19.52	19.52	19.58	0-3	3
	256QAM	1	0	17.70	17.54	17.71	0-5	5
		1	49	17.66	17.58	17.67	0-5	5
		1	99	17.65	17.61	17.66	0-5	5
		50	0	17.54	17.50	17.64	0-5	5
		50	25	17.51	17.49	17.59	0-5	5
		50	49	17.52	17.52	17.63	0-5	5
		100	0	17.57	17.53	17.64	0-5	5

LTE FDD Band 25 Conducted Power_ Measured Free(RSI 0), Hotspot(RSI 2)_ Main1 [Ant A]

LTE FDD Band 25 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26140 Ch. 1860 ㎒	26365 Ch. 1882.5 ㎒	26590 Ch. 1905 ㎒		
20 ㎒	QPSK	1	0	16.49	16.49	16.55	0	0
		1	49	16.43	16.42	16.53	0	0
		1	99	16.44	16.46	16.45	0	0
		50	0	16.43	16.45	16.48	0-1	0
		50	25	16.43	16.44	16.53	0-1	0
		50	49	16.44	16.43	16.48	0-1	0
		100	0	16.44	16.45	16.51	0-1	0
	16QAM	1	0	16.66	16.54	16.73	0-1	0
		1	49	16.52	16.42	16.53	0-1	0
		1	99	16.64	16.63	16.67	0-1	0
		50	0	16.40	16.40	16.49	0-2	0
		50	25	16.41	16.44	16.51	0-2	0
		50	49	16.39	16.41	16.49	0-2	0
		100	0	16.45	16.42	16.51	0-2	0
	64QAM	1	0	16.54	16.68	16.67	0-2	0
		1	49	16.45	16.33	16.42	0-2	0
		1	99	16.64	16.52	16.65	0-2	0
		50	0	16.41	16.45	16.51	0-3	0
		50	25	16.41	16.42	16.48	0-3	0
		50	49	16.43	16.42	16.48	0-3	0
		100	0	16.40	16.44	16.48	0-3	0
	256QAM	1	0	16.48	16.46	16.67	0-5	0
		1	49	16.56	16.62	16.55	0-5	0
		1	99	16.58	16.49	16.57	0-5	0
		50	0	16.40	16.44	16.56	0-5	0
		50	25	16.42	16.45	16.51	0-5	0
		50	49	16.41	16.43	16.50	0-5	0
		100	0	16.46	16.48	16.59	0-5	0

LTE FDD Band 26 Conducted Power _ Measured *Pmax*, Free(RSI 0), RCV(RSI 1), Hotspot (RSI 2)_ Main1 [Ant A]

LTE FDD Band 26 _ 15 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 26865 Ch. 831.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
15 ㎒	QPSK	1	0	23.77	0	0
		1	36	23.66	0	0
		1	74	23.56	0	0
		36	0	22.25	0-1	1
		36	18	22.23	0-1	1
		36	39	22.21	0-1	1
		75	0	22.26	0-1	1
	16QAM	1	0	22.47	0-1	1
		1	36	22.44	0-1	1
		1	74	22.35	0-1	1
		36	0	21.22	0-2	2
		36	18	21.31	0-2	2
		36	39	21.18	0-2	2
		75	0	21.26	0-2	2
	64QAM	1	0	21.41	0-2	2
		1	36	21.37	0-2	2
		1	74	21.40	0-2	2
		36	0	20.29	0-3	3
		36	18	20.30	0-3	3
		36	39	20.20	0-3	3
		75	0	20.27	0-3	3
	256QAM	1	0	18.88	0-5	5
		1	36	18.80	0-5	5
		1	74	18.81	0-5	5
		36	0	18.76	0-5	5
		36	18	18.74	0-5	5
		36	39	18.68	0-5	5
		75	0	18.71	0-5	5

LTE FDD Band 66 Conducted Power_ Measured *Pmax,* RCV(RSI 1) _**Main1 [Ant A]**

LTE FDD Band 66 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 ㎒	132322 Ch. 1745 ㎒	132572 Ch. 1770 ㎒		
20 ㎒	QPSK	1	0	22.63	22.55	22.54	0	0
		1	49	22.68	22.43	22.56	0	0
		1	99	22.62	22.43	22.56	0	0
		50	0	21.62	21.53	21.51	0-1	1
		50	25	21.65	21.38	21.47	0-1	1
		50	49	21.70	21.37	21.53	0-1	1
		100	0	21.62	21.46	21.58	0-1	1
	16QAM	1	0	21.93	21.70	21.71	0-1	1
		1	49	21.65	21.58	21.60	0-1	1
		1	99	21.74	21.60	21.79	0-1	1
		50	0	20.68	20.47	20.57	0-2	2
		50	25	20.68	20.38	20.44	0-2	2
		50	49	20.61	20.43	20.44	0-2	2
		100	0	20.62	20.43	20.52	0-2	2
	64QAM	1	0	20.78	20.56	20.65	0-2	2
		1	49	20.66	20.56	20.43	0-2	2
		1	99	20.80	20.52	20.72	0-2	2
		50	0	19.60	19.52	19.58	0-3	3
		50	25	19.61	19.47	19.48	0-3	3
		50	49	19.65	19.40	19.50	0-3	3
		100	0	19.63	19.47	19.54	0-3	3
	256QAM	1	0	17.76	17.45	17.61	0-5	5
		1	49	17.68	17.50	17.64	0-5	5
		1	99	17.70	17.53	17.59	0-5	5
		50	0	17.65	17.40	17.54	0-5	5
		50	25	17.59	17.41	17.53	0-5	5
		50	49	17.66	17.40	17.46	0-5	5
		100	0	17.86	17.37	17.50	0-5	5

LTE FDD Band 66 Conducted Power_ Measured Free(RSI 0), Hotspot(RSI 2) _**Main1 [Ant A]**

LTE FDD Band 66 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 ㎒	132322 Ch. 1745 ㎒	132572 Ch. 1770 ㎒		
20 ㎒	QPSK	1	0	16.56	16.41	16.37	0	0
		1	49	16.56	16.40	16.48	0	0
		1	99	16.58	16.40	16.39	0	0
		50	0	16.53	16.40	16.38	0-1	0
		50	25	16.51	16.37	16.36	0-1	0
		50	49	16.58	16.37	16.36	0-1	0
		100	0	16.49	16.37	16.34	0-1	0
	16QAM	1	0	16.75	16.66	16.54	0-1	0
		1	49	16.61	16.70	16.37	0-1	0
		1	99	16.84	16.52	16.61	0-1	0
		50	0	16.55	16.36	16.38	0-2	0
		50	25	16.52	16.39	16.36	0-2	0
		50	49	16.47	16.33	16.30	0-2	0
		100	0	16.51	16.34	16.39	0-2	0
	64QAM	1	0	16.67	16.56	16.53	0-2	0
		1	49	16.63	16.43	16.32	0-2	0
		1	99	16.62	16.66	16.46	0-2	0
		50	0	16.53	16.41	16.37	0-3	0
		50	25	16.51	16.37	16.38	0-3	0
		50	49	16.53	16.40	16.37	0-3	0
		100	0	16.52	16.43	16.41	0-3	0
	256QAM	1	0	16.68	16.42	16.56	0-5	0
		1	49	16.60	16.45	16.41	0-5	0
		1	99	16.56	16.48	16.50	0-5	0
		50	0	16.52	16.37	16.33	0-5	0
		50	25	16.49	16.35	16.30	0-5	0
		50	49	16.50	16.35	16.35	0-5	0
		100	0	16.51	16.39	16.38	0-5	0

LTE TDD Band 41 Conducted Power (Power Class 3)_Measured RCV(RSI 1) _Main2 [Ant B]

LTE TDD Band 41 _ 20 ㎒ Bandwidth Conducted Power - Power Class 3

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Defined by Manufacture [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	22.57	23.04	22.96	22.78	22.78	0	0
		1	49	22.53	23.01	22.88	22.65	22.89	0	0
		1	99	22.55	23.00	22.97	22.77	22.73	0	0
		50	0	21.51	22.27	22.12	21.95	21.89	0-2	2
		50	25	21.55	22.26	22.13	21.89	21.92	0-2	2
		50	49	21.62	22.26	22.12	21.93	21.93	0-2	2
		100	0	21.57	22.26	22.13	21.90	21.91	0-2	2
	16QAM	1	0	21.26	22.16	22.02	21.84	21.79	0-2	2
		1	49	21.52	22.29	22.10	21.73	21.73	0-2	2
		1	99	21.52	22.20	22.09	21.83	21.72	0-2	2
		50	0	21.03	21.71	21.62	21.47	21.41	0-2.5	2.5
		50	25	21.06	21.75	21.63	21.41	21.42	0-2.5	2.5
		50	49	21.12	21.75	21.62	21.43	21.44	0-2.5	2.5
		100	0	21.11	21.79	21.67	21.44	21.46	0-2.5	2.5
	64QAM	1	0	20.95	21.70	21.62	21.51	21.49	0-2.5	2.5
		1	49	20.95	21.66	21.56	21.35	21.33	0-2.5.	2.5
		1	99	21.10	21.73	21.64	21.55	21.49	0-2.5	2.5
		50	0	20.55	21.24	21.16	20.99	20.93	0-3	3
		50	25	20.60	21.29	21.17	20.94	20.95	0-3	3
		50	49	20.65	21.28	21.16	20.97	20.96	0-3	3
		100	0	20.57	21.25	21.13	20.92	20.91	0-3	3
	256QAM	1	0	18.19	18.81	18.75	18.80	18.72	0-5	5
		1	49	18.19	18.77	18.67	18.48	18.55	0-5	5
		1	99	18.31	18.83	18.73	18.73	18.66	0-5	5
		50	0	18.58	19.28	19.17	19.06	18.98	0-5	5
		50	25	18.63	19.32	19.20	19.01	19.01	0-5	5
		50	49	18.69	19.32	19.19	19.04	19.02	0-5	5
		100	0	18.57	19.25	19.13	18.93	18.93	0-5	5

Note; LTE Band 41 has 5 required test channels per FCC KDB 447498 D04v01.

LTE TDD Band 41 Conducted Power (Power Class 3)_Measured Free(RSI 0), Hotspot(RSI 2) _Main2 [Ant B]

LTE TDD Band 41 _ 20 ㎒ Bandwidth Conducted Power - Power Class 3

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	20.49	21.03	21.02	20.88	20.71	0	0
		1	49	20.39	20.86	21.15	20.70	20.56	0	0
		1	99	20.53	20.88	20.91	20.66	20.34	0	0
		50	0	20.52	21.04	21.00	20.87	20.48	0-1	1
		50	25	20.50	21.02	20.99	20.81	20.73	0-1	1
		50	49	20.49	20.98	20.97	20.77	20.64	0-1	1
		100	0	20.50	21.00	20.99	20.81	20.67	0-1	1
	16QAM	1	0	20.42	20.95	20.94	20.77	20.58	0-1	1
		1	49	20.31	20.83	20.82	20.54	20.36	0-1	1
		1	99	20.30	20.84	20.84	20.57	20.50	0-1	1
		50	0	20.42	20.93	20.89	20.76	20.60	0-2	2
		50	25	20.38	20.90	20.88	20.71	20.56	0-2	2
		50	49	20.38	20.87	20.87	20.66	20.54	0-2	2
		100	0	20.43	20.93	20.93	20.76	20.61	0-2	2
	64QAM	1	0	20.57	21.20	21.06	20.91	20.79	0-2	2
		1	49	20.46	21.06	21.02	20.79	20.69	0-2	2
		1	99	20.54	20.97	21.00	20.73	20.72	0-2	2
		50	0	19.96	20.46	20.44	20.33	20.21	0-3	3
		50	25	19.92	20.43	20.41	20.28	20.11	0-3	3
		50	49	19.92	20.40	20.41	20.22	20.08	0-3	3
		100	0	19.91	20.40	20.39	20.24	20.14	0-3	3
	256QAM	1	0	17.75	18.37	18.32	18.13	17.92	0-5	5
		1	49	17.72	18.35	18.27	18.02	17.87	0-5	5
		1	99	17.60	18.21	18.21	17.96	17.81	0-5	5
		50	0	17.99	18.50	18.48	18.35	18.18	0-5	5
		50	25	17.96	18.47	18.46	18.31	18.18	0-5	5
		50	49	17.97	18.43	18.46	18.26	18.16	0-5	5
		100	0	17.91	18.39	18.39	18.24	18.09	0-5	5

Note; LTE Band 41 has 5 required test channels per FCC KDB 447498 D04v01.

LTE TDD Band 41 Conducted Power (Power Class 2)_Measured *Pmax*, RCV(RSI 1) _Main2 [Ant B]

LTE TDD Band 41 _ 20 ㎒ Bandwidth Conducted Power - Power Class 2

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	23.90	24.43	24.37	24.51	24.18	0	0
		1	49	23.95	24.40	24.37	24.44	24.07	0	0
		1	99	24.04	24.28	24.30	24.26	24.05	0	0
		50	0	22.92	23.42	23.40	23.39	23.21	0-1	1
		50	25	22.89	23.39	23.36	23.31	23.13	0-1	1
		50	49	23.04	23.38	23.36	23.24	23.13	0-1	1
		100	0	22.90	23.40	23.37	23.30	23.17	0-1	1
	16QAM	1	0	22.77	23.56	23.50	23.57	23.21	0-1	1
		1	49	22.53	23.32	23.29	23.26	22.76	0-1	1
		1	99	22.64	23.43	23.54	23.40	23.11	0-1	1
		50	0	22.41	22.93	22.85	22.83	22.69	0-2	2
		50	25	22.39	22.91	22.84	22.76	22.67	0-2	2
		50	49	22.38	22.87	22.83	22.71	22.66	0-2	2
		100	0	22.44	22.90	22.89	22.82	22.73	0-2	2
	64QAM	1	0	22.91	23.06	23.13	23.49	23.25	0-2	2
		1	49	23.07	23.15	22.95	23.49	22.91	0-2	2
		1	99	22.88	22.91	22.98	23.27	22.98	0-2	2
		50	0	21.96	22.49	22.41	22.37	22.20	0-3	3
		50	25	21.94	22.46	22.39	22.33	22.16	0-3	3
		50	49	21.93	22.42	22.38	22.28	22.14	0-3	3
		100	0	21.91	22.40	22.37	22.32	22.14	0-3	3
	256QAM	1	0	20.10	20.55	20.63	20.73	20.25	0-5	5
		1	49	20.11	20.47	20.74	20.31	19.86	0-5	5
		1	99	20.03	20.38	20.57	20.50	20.13	0-5	5
		50	0	20.00	20.49	20.45	20.49	20.30	0-5	5
		50	25	19.99	20.47	20.43	20.43	20.28	0-5	5
		50	49	19.98	20.42	20.43	20.39	20.26	0-5	5
		100	0	19.91	20.39	20.37	20.37	20.21	0-5	5

Note; LTE Band 41 has 5 required test channels per FCC KDB 447498 D04v01.

LTE TDD Band 41 Conducted Power (Power Class 2)_Measured Free(RSI 0), Hotspot(RSI 2) _Main2 [Ant B]

LTE TDD Band 41 _ 20 ㎒ Bandwidth Conducted Power - Power Class 2

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	22.60	23.13	23.09	22.97	22.79	0	0
		1	49	22.61	23.09	23.06	22.88	22.73	0	0
		1	99	22.55	23.00	23.03	22.75	22.66	0	0
		50	0	22.62	23.11	23.08	22.91	22.77	0-1	0
		50	25	22.59	23.07	23.04	22.84	22.70	0-1	0
		50	49	22.58	23.04	23.02	22.79	22.69	0-1	0
		100	0	22.58	23.07	23.06	22.85	22.72	0-1	0
	16QAM	1	0	23.04	23.19	23.39	23.05	22.99	0-1	0
		1	49	22.66	22.69	23.09	22.83	22.48	0-1	0
		1	99	22.99	23.07	23.34	22.83	22.78	0-1	0
		50	0	22.61	23.10	23.06	22.90	22.73	0-2	0
		50	25	22.59	23.07	23.03	22.84	22.68	0-2	0
		50	49	22.57	23.06	23.02	22.80	22.67	0-2	0
		100	0	22.57	23.10	23.08	22.89	22.74	0-2	0
	64QAM	1	0	22.87	23.36	23.24	23.58	23.39	0-2	0
		1	49	22.85	23.29	23.25	23.10	23.12	0-2	0
		1	99	22.80	23.22	23.18	23.35	23.26	0-2	0
		50	0	22.10	22.62	22.59	22.46	22.27	0-3	0.6
		50	25	22.13	22.58	22.55	22.41	22.22	0-3	0.6
		50	49	22.06	22.56	22.53	22.35	22.21	0-3	0.6
		100	0	22.04	22.59	22.56	22.37	22.22	0-3	0.6
	256QAM	1	0	20.12	20.45	20.49	20.73	20.42	0-5	2.6
		1	49	19.68	20.01	20.11	20.45	20.04	0-5	2.6
		1	99	20.06	20.31	20.41	20.56	20.33	0-5	2.6
		50	0	20.18	20.66	20.63	20.53	20.33	0-5	2.6
		50	25	20.17	20.63	20.62	20.49	20.30	0-5	2.6
		50	49	20.15	20.61	20.62	20.42	20.29	0-5	2.6
		100	0	20.07	20.57	20.56	20.40	20.24	0-5	2.6

Note; LTE Band 41 has 5 required test channels per FCC KDB 447498 D04v01.

LTE FDD Band 2 Conducted Power _ Measured Free(RSI 0), Hotspot(RSI 2) _ Sub2 [Ant F]

LTE FDD Band 2 _ 20 ㎒ Bandwidth Conducted Power_ Upper Antenna

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 ㎒	18900 Ch. 1880 ㎒	19100 Ch. 1900 ㎒		
20 ㎒	QPSK	1	0	17.57	17.58	17.68	0	0
		1	49	17.23	17.65	17.27	0	0
		1	99	17.51	17.58	17.56	0	0
		50	0	17.51	17.57	17.65	0-1	0
		50	25	17.52	17.55	17.63	0-1	0
		50	49	17.50	17.57	17.57	0-1	0
		100	0	17.55	17.57	17.62	0-1	0
	16QAM	1	0	17.78	17.75	17.90	0-1	0
		1	49	17.75	17.59	17.70	0-1	0
		1	99	17.78	17.74	17.83	0-1	0
		50	0	17.53	17.57	17.65	0-2	0
		50	25	17.52	17.56	17.57	0-2	0
		50	49	17.48	17.54	17.57	0-2	0
		100	0	17.52	17.59	17.66	0-2	0
	64QAM	1	0	17.74	17.80	17.96	0-2	0
		1	49	17.34	17.25	17.66	0-2	0
		1	99	17.60	17.83	17.75	0-2	0
		50	0	17.57	17.57	17.69	0-3	0
		50	25	17.52	17.56	17.62	0-3	0
		50	49	17.52	17.62	17.60	0-3	0
		100	0	17.56	17.59	17.66	0-3	0
	256QAM	1	0	17.29	17.31	17.43	0-5	0
		1	49	17.41	17.44	17.25	0-5	0
		1	99	17.27	17.29	17.28	0-5	0
		50	0	17.14	17.15	17.24	0-5	0
		50	25	17.13	17.15	17.21	0-5	0
		50	49	17.11	17.16	17.17	0-5	0
		100	0	17.14	17.21	17.25	0-5	0

LTE FDD Band 2 Conducted Power _ Measured RCV(RSI 1) _ Sub2 [Ant F]

LTE FDD Band 2 _ 20 ㎒ Bandwidth Conducted Power_ Upper Antenna

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 ㎒	18900 Ch. 1880 ㎒	19100 Ch. 1900 ㎒		
20 ㎒	QPSK	1	0	15.84	15.78	15.89	0	0
		1	49	15.74	15.69	15.78	0	0
		1	99	15.70	15.75	15.72	0	0
		50	0	15.79	15.71	15.81	0-1	0
		50	25	15.76	15.74	15.81	0-1	0
		50	49	15.73	15.75	15.72	0-1	0
		100	0	15.74	15.76	15.80	0-1	0
	16QAM	1	0	15.96	16.01	16.05	0-1	0
		1	49	15.77	15.79	15.99	0-1	0
		1	99	15.98	16.05	16.11	0-1	0
		50	0	15.82	15.75	15.85	0-2	0
		50	25	15.81	15.73	15.77	0-2	0
		50	49	15.74	15.72	15.74	0-2	0
		100	0	15.80	15.77	15.79	0-2	0
	64QAM	1	0	16.05	15.96	16.04	0-2	0
		1	49	15.89	15.64	15.79	0-2	0
		1	99	15.96	15.86	15.93	0-2	0
		50	0	15.84	15.75	15.83	0-3	0
		50	25	15.78	15.73	15.80	0-3	0
		50	49	15.72	15.75	15.78	0-3	0
		100	0	15.77	15.71	15.81	0-3	0
	256QAM	1	0	15.95	15.84	15.85	0-5	0
		1	49	15.79	15.81	15.87	0-5	0
		1	99	15.79	15.89	15.71	0-5	0
		50	0	15.78	15.68	15.79	0-5	0
		50	25	15.70	15.69	15.73	0-5	0
		50	49	15.74	15.70	15.77	0-5	0
		100	0	15.77	15.68	15.81	0-5	0

LTE FDD Band 4 Conducted Power _ Measured Free(RSI 0), Hotspot(RSI 2) _ Sub2 [Ant F]

LTE FDD Band 4 _ 20 ㎒ Bandwidth Conducted Power_ Upper Antenna

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 20175 ch. 1732.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
20 ㎒	QPSK	1	0	17.60	0	0
		1	49	17.33	0	0
		1	99	17.53	0	0
		50	0	17.56	0-1	0
		50	25	17.52	0-1	0
		50	49	17.51	0-1	0
		100	0	17.51	0-1	0
	16QAM	1	0	17.91	0-1	0
		1	49	17.68	0-1	0
		1	99	17.61	0-1	0
		50	0	17.56	0-2	0
		50	25	17.50	0-2	0
		50	49	17.50	0-2	0
		100	0	17.53	0-2	0
	64QAM	1	0	17.75	0-2	0
		1	49	17.43	0-2	0
		1	99	17.64	0-2	0
		50	0	17.53	0-3	0
		50	25	17.51	0-3	0
		50	49	17.52	0-3	0
		100	0	17.53	0-3	0
	256QAM	1	0	17.18	0-5	0
		1	49	17.39	0-5	0
		1	99	17.18	0-5	0
		50	0	17.08	0-5	0
		50	25	17.08	0-5	0
		50	49	17.09	0-5	0
		100	0	17.13	0-5	0

LTE FDD Band 4 Conducted Power _ Measured RCV(RSI 1) _ Sub2 [Ant F]

LTE FDD Band 4 _ 20 ㎒ Bandwidth Conducted Power_ Upper Antenna

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 20175 ch. 1732.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
20 ㎒	QPSK	1	0	15.81	0	0
		1	49	15.86	0	0
		1	99	15.76	0	0
		50	0	15.90	0-1	0
		50	25	15.84	0-1	0
		50	49	15.81	0-1	0
		100	0	15.87	0-1	0
	16QAM	1	0	16.21	0-1	0
		1	49	15.97	0-1	0
		1	99	16.04	0-1	0
		50	0	15.87	0-2	0
		50	25	15.85	0-2	0
		50	49	15.84	0-2	0
		100	0	15.86	0-2	0
	64QAM	1	0	16.05	0-2	0
		1	49	15.89	0-2	0
		1	99	15.97	0-2	0
		50	0	15.85	0-3	0
		50	25	15.64	0-3	0
		50	49	15.83	0-3	0
		100	0	15.84	0-3	0
	256QAM	1	0	15.93	0-5	0
		1	49	15.66	0-5	0
		1	99	15.81	0-5	0
		50	0	15.83	0-5	0
		50	25	15.79	0-5	0
		50	49	15.84	0-5	0
		100	0	15.83	0-5	0

LTE FDD Band 25 Conducted Power_ Measured Free(RSI 0), Hotspot(RSI 2) _ Sub2 [Ant F]

LTE FDD Band 25 _ 20 ㎒ Bandwidth Conducted Power_ Upper Antenna

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26140 Ch. 1860 ㎒	26365 Ch. 1882.5 ㎒	26590 Ch. 1905 ㎒		
20 ㎒	QPSK	1	0	18.70	18.67	18.81	0	0
		1	49	18.38	18.23	18.34	0	0
		1	99	18.63	18.69	18.68	0	0
		50	0	18.65	18.61	18.79	0-1	0
		50	25	18.66	18.61	18.68	0-1	0
		50	49	18.64	18.64	18.67	0-1	0
		100	0	18.67	18.63	18.73	0-1	0
	16QAM	1	0	18.85	18.95	18.96	0-1	0
		1	49	18.78	18.83	18.92	0-1	0
		1	99	18.75	18.84	18.93	0-1	0
		50	0	18.68	18.67	18.75	0-2	0
		50	25	18.66	18.67	18.74	0-2	0
		50	49	18.61	18.67	18.73	0-2	0
		100	0	18.65	18.67	18.78	0-2	0
	64QAM	1	0	18.83	18.87	18.95	0-2	0
		1	49	18.33	18.52	18.46	0-2	0
		1	99	18.75	18.94	18.95	0-2	0
		50	0	18.70	18.67	18.81	0-3	0
		50	25	18.70	18.69	18.73	0-3	0
		50	49	18.66	18.69	18.72	0-3	0
		100	0	18.70	18.68	18.75	0-3	0
	256QAM	1	0	17.37	17.44	17.34	0-5	0
		1	49	17.20	17.44	17.39	0-5	0
		1	99	17.28	17.23	17.31	0-5	0
		50	0	17.16	17.12	17.28	0-5	0
		50	25	17.17	17.07	17.18	0-5	0
		50	49	17.13	17.13	17.18	0-5	0
		100	0	17.17	17.15	17.20	0-5	0

LTE FDD Band 25 Conducted Power_ Measured RCV(RSI 1) _ Sub2 [Ant F]

LTE FDD Band 25 _ 20 ㎒ Bandwidth Conducted Power_ Upper Antenna

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26140 Ch. 1860 ㎒	26365 Ch. 1882.5 ㎒	26590 Ch. 1905 ㎒		
20 ㎒	QPSK	1	0	15.87	15.74	15.85	0	0
		1	49	15.71	15.51	15.60	0	0
		1	99	15.71	15.76	15.73	0	0
		50	0	15.80	15.65	15.79	0-1	0
		50	25	15.82	15.69	15.76	0-1	0
		50	49	15.67	15.74	15.72	0-1	0
		100	0	15.77	15.74	15.76	0-1	0
	16QAM	1	0	16.01	15.86	15.96	0-1	0
		1	49	15.92	15.80	16.01	0-1	0
		1	99	16.07	15.92	15.92	0-1	0
		50	0	15.78	15.69	15.78	0-2	0
		50	25	15.73	15.68	15.79	0-2	0
		50	49	15.69	15.71	15.72	0-2	0
		100	0	15.76	15.67	15.79	0-2	0
	64QAM	1	0	15.89	15.82	16.03	0-2	0
		1	49	15.54	15.54	15.70	0-2	0
		1	99	15.83	15.87	15.89	0-2	0
		50	0	15.77	15.68	15.83	0-3	0
		50	25	15.70	15.65	15.74	0-3	0
		50	49	15.72	15.71	15.74	0-3	0
		100	0	15.74	15.69	15.80	0-3	0
	256QAM	1	0	15.76	15.71	15.87	0-5	0
		1	49	15.73	15.85	15.93	0-5	0
		1	99	15.68	15.77	15.74	0-5	0
		50	0	15.71	15.63	15.77	0-5	0
		50	25	15.67	15.67	15.74	0-5	0
		50	49	15.66	15.69	15.67	0-5	0
		100	0	15.72	15.65	15.70	0-5	0

LTE FDD Band 66 Conducted Power_ Measured Free(RSI 0), Hotspot(RSI 2) _ Sub2 [Ant F]

LTE FDD Band 66 _ 20 ㎒ Bandwidth Conducted Power_ Upper Antenna

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 ㎒	132322 Ch. 1745 ㎒	132572 Ch. 1770 ㎒		
20 ㎒	QPSK	1	0	17.81	17.55	17.42	0	0
		1	49	17.80	17.19	17.22	0	0
		1	99	17.74	17.48	17.46	0	0
		50	0	17.81	17.48	17.41	0-1	0
		50	25	17.82	17.42	17.44	0-1	0
		50	49	17.83	17.46	17.41	0-1	0
		100	0	17.82	17.52	17.42	0-1	0
	16QAM	1	0	17.97	17.74	17.46	0-1	0
		1	49	18.12	17.53	17.40	0-1	0
		1	99	17.93	17.74	17.63	0-1	0
		50	0	17.81	17.53	17.42	0-2	0
		50	25	17.81	17.47	17.39	0-2	0
		50	49	17.79	17.42	17.39	0-2	0
		100	0	17.78	17.45	17.40	0-2	0
	64QAM	1	0	18.01	17.67	17.51	0-2	0
		1	49	17.97	17.43	17.11	0-2	0
		1	99	17.99	17.66	17.53	0-2	0
		50	0	17.82	17.49	17.43	0-3	0
		50	25	17.82	17.47	17.43	0-3	0
		50	49	17.82	17.45	17.40	0-3	0
		100	0	17.77	17.45	17.42	0-3	0
	256QAM	1	0	17.40	17.17	17.12	0-5	0
		1	49	17.65	17.20	17.22	0-5	0
		1	99	17.48	17.28	17.17	0-5	0
		50	0	17.40	17.07	17.00	0-5	0
		50	25	17.37	17.04	17.00	0-5	0
		50	49	17.45	17.02	17.02	0-5	0
		100	0	17.37	17.06	17.05	0-5	0

LTE FDD Band 66 Conducted Power_ Measured RCV (RSI 1) _ Sub2 [Ant F]

LTE FDD Band 66 _ 20 ㎒ Bandwidth Conducted Power_ Upper Antenna

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 ㎒	132322 Ch. 1745 ㎒	132572 Ch. 1770 ㎒		
20 ㎒	QPSK	1	0	16.07	15.78	15.64	0	0
		1	49	16.10	15.76	15.59	0	0
		1	99	16.11	15.66	15.70	0	0
		50	0	16.08	15.73	15.68	0-1	0
		50	25	16.10	15.71	15.65	0-1	0
		50	49	16.11	15.69	15.65	0-1	0
		100	0	16.10	15.72	15.64	0-1	0
	16QAM	1	0	16.26	15.88	15.90	0-1	0
		1	49	16.33	15.69	15.67	0-1	0
		1	99	16.36	15.81	15.81	0-1	0
		50	0	16.04	15.67	15.59	0-2	0
		50	25	16.05	15.74	15.60	0-2	0
		50	49	16.09	15.70	15.58	0-2	0
		100	0	16.09	15.71	15.63	0-2	0
	64QAM	1	0	16.14	15.96	15.75	0-2	0
		1	49	16.16	15.84	15.47	0-2	0
		1	99	16.22	15.92	15.85	0-2	0
		50	0	16.09	15.73	15.60	0-3	0
		50	25	16.05	15.71	15.58	0-3	0
		50	49	16.07	15.71	15.66	0-3	0
		100	0	16.07	15.71	15.58	0-3	0
	256QAM	1	0	16.16	15.87	15.79	0-5	0
		1	49	16.22	15.54	15.71	0-5	0
		1	99	16.17	15.81	15.76	0-5	0
		50	0	16.08	15.69	15.63	0-5	0
		50	25	16.08	15.68	15.60	0-5	0
		50	49	16.11	15.71	15.61	0-5	0
		100	0	16.09	15.71	15.65	0-5	0

LTE TDD Band 41 Conducted Power (Power Class 3)_Measured Free(RSI 0), Hotspot(RSI2) _Sub2 [Ant F]

LTE TDD Band 41 _ 20 ㎒ Bandwidth Conducted Power - Power Class 3_ Upper Antenna

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	19.34	19.64	19.28	19.27	19.67	0	0
		1	49	19.17	19.63	19.35	19.08	19.46	0	0
		1	99	19.14	19.81	19.06	19.10	19.43	0	0
		50	0	19.32	19.70	19.23	19.16	19.59	0-1	0
		50	25	19.26	19.76	19.18	19.12	19.50	0-1	0
		50	49	19.22	19.79	19.14	19.13	19.47	0-1	0
		100	0	19.26	19.74	19.18	19.14	19.54	0-1	0
	16QAM	1	0	19.12	19.68	19.22	19.11	19.67	0-1	0
		1	49	19.05	19.64	19.03	19.02	19.36	0-1	0
		1	99	19.03	19.69	19.01	19.16	19.42	0-1	0
		50	0	19.32	19.69	19.23	19.17	19.58	0-2	0
		50	25	19.24	19.74	19.17	19.15	19.51	0-2	0
		50	49	19.22	19.77	19.13	19.13	19.48	0-2	0
		100	0	19.30	19.77	19.22	19.19	19.58	0-2	0
	64QAM	1	0	19.29	19.74	19.41	19.48	19.83	0-2	0
		1	49	19.24	19.82	19.25	19.18	19.67	0-2	0
		1	99	19.33	19.95	19.21	19.42	19.60	0-2	0
		50	0	19.26	19.63	19.17	19.12	19.54	0-3	0
		50	25	19.18	19.69	19.11	19.10	19.45	0-3	0
		50	49	19.17	19.72	19.08	19.09	19.41	0-3	0
		100	0	19.18	19.65	19.10	19.06	19.45	0-3	0
	256QAM	1	0	18.17	18.44	18.07	17.98	18.42	0-5	1
		1	49	18.07	18.45	17.88	17.93	18.31	0-5	1
		1	99	18.04	18.63	17.87	17.87	18.13	0-5	1
		50	0	18.31	18.69	18.22	18.16	18.59	0-5	1
		50	25	18.24	18.74	18.16	18.15	18.52	0-5	1
		50	49	18.22	18.77	18.12	18.15	18.49	0-5	1
		100	0	18.18	18.65	18.11	18.09	18.49	0-5	1

Note; LTE Band 41 has 5 required test channels per FCC KDB 447498 D04v01.

LTE TDD Band 41 Conducted Power (Power Class 3)_Measured RCV(RSI 1) _Sub2 [Ant F]

LTE TDD Band 41 _ 20 ㎒ Bandwidth Conducted Power - Power Class 3_ Upper Antenna

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	16.26	16.70	16.21	16.18	16.46	0	0
		1	49	16.21	16.65	16.09	15.96	16.31	0	0
		1	99	16.21	16.27	16.25	16.14	16.40	0	0
		50	0	16.29	16.47	16.18	16.12	16.34	0-1	0
		50	25	16.27	16.45	16.21	16.04	16.44	0-1	0
		50	49	16.27	16.38	16.19	16.13	16.45	0-1	0
		100	0	16.27	16.48	16.19	16.05	16.44	0-1	0
	16QAM	1	0	16.12	16.55	16.09	16.11	16.32	0-1	0
		1	49	16.16	16.43	15.92	15.95	16.23	0-1	0
		1	99	16.09	16.26	16.10	16.14	16.34	0-1	0
		50	0	16.27	16.45	16.15	16.11	16.30	0-2	0
		50	25	16.25	16.43	16.17	16.01	16.41	0-2	0
		50	49	16.25	16.36	16.17	16.12	16.43	0-2	0
		100	0	16.32	16.50	16.22	16.08	16.45	0-2	0
	64QAM	1	0	16.40	16.65	16.32	16.37	16.58	0-2	0
		1	49	16.41	16.49	16.16	16.17	16.52	0-2	0
		1	99	16.35	16.39	16.40	16.42	16.62	0-2	0
		50	0	16.33	16.50	16.19	16.17	16.36	0-3	0
		50	25	16.31	16.48	16.22	16.07	16.47	0-3	0
		50	49	16.32	16.40	16.21	16.19	16.46	0-3	0
		100	0	16.29	16.48	16.19	16.06	16.43	0-3	0
	256QAM	1	0	16.03	16.32	16.01	16.14	16.30	0-5	0
		1	49	16.04	16.23	15.92	15.97	16.36	0-5	0
		1	99	16.05	16.07	16.06	16.19	16.36	0-5	0
		50	0	16.38	16.55	16.23	16.22	16.41	0-5	0
		50	25	16.35	16.53	16.27	16.12	16.51	0-5	0
		50	49	16.37	16.47	16.26	16.23	16.52	0-5	0
		100	0	16.30	16.50	16.20	16.08	16.45	0-5	0

Note; LTE Band 41 has 5 required test channels per FCC KDB 447498 D04v01.

LTE TDD Band 41 Conducted Power (Power Class 2)_Measured Free(RSI 0), Hotspot(RSI 2) _Sub2 [Ant F]

LTE TDD Band 41 _ 20 ㎒ Bandwidth Conducted Power - Power Class 2_ Upper Antenna

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	21.19	21.47	21.17	21.08	21.53	0	0
		1	49	21.15	21.65	21.19	21.12	21.51	0	0
		1	99	20.98	21.64	20.99	21.00	21.29	0	0
		50	0	21.17	21.53	21.09	21.00	21.40	0-1	0
		50	25	21.09	21.57	21.01	20.97	21.31	0-1	0
		50	49	21.07	21.71	20.99	20.96	21.25	0-1	0
		100	0	21.11	21.56	21.04	20.98	21.34	0-1	0
	16QAM	1	0	21.19	21.67	21.04	21.40	21.79	0-1	0
		1	49	21.15	21.75	20.99	21.40	21.60	0-1	0
		1	99	21.04	21.87	20.89	21.32	21.55	0-1	0
		50	0	21.17	21.50	21.05	21.03	21.45	0-2	0
		50	25	21.09	21.53	20.97	20.98	21.34	0-2	0
		50	49	21.05	21.57	20.94	20.98	21.30	0-2	0
		100	0	21.15	21.58	21.07	21.04	21.39	0-2	0
	64QAM	1	0	21.57	21.86	21.42	21.59	21.87	0-2	0
		1	49	21.38	21.91	21.30	21.51	21.96	0-2	0
		1	99	21.37	21.92	21.25	21.50	21.80	0-2	0
		50	0	21.18	21.54	21.11	21.05	21.47	0-3	0
		50	25	21.12	21.61	21.05	21.03	21.37	0-3	0
		50	49	21.10	21.65	21.01	21.01	21.33	0-3	0
		100	0	21.10	21.55	21.03	21.01	21.39	0-3	0
	256QAM	1	0	20.54	20.85	20.71	20.48	20.93	0-5	1
		1	49	20.48	20.95	20.70	20.50	20.92	0-5	1
		1	99	20.36	20.94	20.53	20.39	20.71	0-5	1
		50	0	20.77	20.90	20.67	20.60	20.92	0-5	1
		50	25	20.69	20.92	20.60	20.59	20.93	0-5	1
		50	49	20.66	20.92	20.58	20.57	20.90	0-5	1
		100	0	20.60	20.98	20.55	20.52	20.88	0-5	1

Note; LTE Band 41 has 5 required test channels per FCC KDB 447498 D04v01.

LTE TDD Band 41 Conducted Power (Power Class 2)_Measured RCV(RSI 1) _Sub2 [Ant F]

LTE TDD Band 41 _ 20 ㎒ Bandwidth Conducted Power - Power Class 2_ Upper Antenna

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	18.10	18.51	18.07	18.00	18.22	0	0
		1	49	18.16	18.36	18.13	17.92	18.43	0	0
		1	99	18.11	18.12	18.14	18.05	18.28	0	0
		50	0	18.13	18.28	17.99	17.94	18.16	0-1	0
		50	25	18.11	18.25	18.03	17.86	18.26	0-1	0
		50	49	18.11	18.19	18.02	17.96	18.28	0-1	0
		100	0	18.10	18.27	18.02	17.88	18.29	0-1	0
	16QAM	1	0	18.05	18.23	18.19	18.19	18.46	0-1	0
		1	49	18.28	18.14	18.21	18.08	18.38	0-1	0
		1	99	18.21	17.97	18.26	18.22	18.49	0-1	0
		50	0	18.11	18.28	17.98	17.96	18.14	0-2	0
		50	25	18.08	18.26	18.01	17.85	18.22	0-2	0
		50	49	18.07	18.18	18.01	17.95	18.24	0-2	0
		100	0	18.13	18.29	18.05	17.91	18.27	0-2	0
	64QAM	1	0	18.81	18.84	18.68	18.84	18.72	0-2	0
		1	49	18.73	18.73	18.60	18.68	18.92	0-2	0
		1	99	18.83	18.57	18.75	18.87	18.91	0-2	0
		50	0	18.14	18.31	18.05	17.99	18.15	0-3	0
		50	25	18.11	18.30	18.07	17.89	18.27	0-3	0
		50	49	18.12	18.22	18.05	18.00	18.29	0-3	0
		100	0	18.11	18.26	18.03	17.89	18.26	0-3	0
	256QAM	1	0	18.08	18.52	18.34	17.94	18.15	0-5	0
		1	49	18.08	18.44	18.35	17.87	18.20	0-5	0
		1	99	18.39	18.25	18.43	17.95	18.21	0-5	0
		50	0	18.19	18.37	18.08	18.06	18.22	0-5	0
		50	25	18.16	18.32	18.11	17.97	18.33	0-5	0
		50	49	18.18	18.27	18.12	18.07	18.33	0-5	0
		100	0	18.10	18.29	18.05	17.89	18.27	0-5	0

Note; LTE Band 41 has 5 required test channels per FCC KDB 447498 D04v01.

11.4 NR Maximum Output Power

Only the Conducted Power measurement results of the maximum bandwidth, which is the SAR test condition of NR Bands according to FCC KDB 941225 D05, are included, and the measurement results of other bandwidths are listed in Appendix L.

11.4.1 NR Band Maximum Conducted Power

NR FDD Band n2 Conducted Power_ Measured *Pmax*, RCV(RSI 1) _ Main1 [Ant A]

NR FDD Band n2 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
						372000	376000	380000	
						1860 ㎒	1880 ㎒	1900 ㎒	
20 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	22.62	22.70	22.66	0
				1	53	22.68	22.79	22.85	0
				1	104	22.69	22.63	22.83	0
				50	0	22.11	22.13	22.19	0.5
				50	28	22.61	22.58	22.76	0
				50	56	22.16	22.11	22.23	0.5
				100	0	22.14	22.12	22.25	0.5
			QPSK	1	1	22.69	22.75	22.67	0
				1	53	22.75	22.70	22.83	0
				1	104	22.72	22.66	22.81	0
				50	0	21.63	21.66	21.70	1
				50	28	22.62	22.59	22.75	0
				50	56	21.65	21.59	21.76	1
				100	0	21.66	21.63	21.76	1
			16QAM	1	1	21.65	21.70	21.68	1
			64QAM	1	1	20.24	20.31	20.29	2.5
			256QAM	1	1	18.15	18.26	18.24	4.5
		CP	QPSK	1	1	21.14	21.22	21.17	1.5

NR FDD Band n2 Conducted Power_ Measured Free(RSI 0), Hotspot(RSI 2) _ Main1 [Ant A]

NR FDD Band n2 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
						372000	376000	380000	
						1860 ㎒	1880 ㎒	1900 ㎒	
20 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	17.04	17.09	17.05	0
				1	53	17.07	17.01	17.24	0
				1	104	17.08	17.01	17.20	0
				50	0	17.00	17.05	17.08	0
				50	28	17.01	17.00	17.13	0
				50	56	17.05	16.97	17.15	0
				100	0	17.04	16.99	17.16	0
			QPSK	1	1	16.99	17.06	17.05	0
				1	53	17.03	17.02	17.23	0
				1	104	17.05	16.99	17.19	0
				50	0	17.01	17.06	17.08	0
				50	28	17.00	16.99	17.13	0
				50	56	17.06	16.98	17.11	0
				100	0	17.03	16.99	17.15	0
			16QAM	1	1	17.06	17.17	17.01	0
			64QAM	1	1	17.08	17.13	17.05	0
			256QAM	1	1	17.03	17.10	17.02	0
		CP	QPSK	1	1	17.02	17.06	17.02	0

NR FDD Band n5 Conducted Power_ Measured *Pmax,* Free(RSI 0), RCV(RSI 1), Hotspot(RSI 2) _ Main1 [Ant A]

NR FDD Band n5_ 20 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						167300	
						836.5 ㎒	
20 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	23.84	0
				1	53	24.02	0
				1	104	24.18	0
				50	0	23.42	0.5
				50	28	23.98	0
				50	56	23.50	0.5
				100	0	23.46	0.5
			QPSK	1	1	23.87	0
				1	53	24.10	0
				1	104	24.18	0
				50	0	22.92	1
				50	28	23.99	0
				50	56	23.03	1
				100	0	22.96	1
			16QAM	1	1	22.94	1
			64QAM	1	1	21.52	2.5
			256QAM	1	1	19.31	4.5
		CP	QPSK	1	1	22.38	1.5

NR FDD Band n25 Conducted Power_ Measured *Pmax,* RCV(RSI 1) _ Main1 [Ant A]

NR FDD Band n25 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
						372000	376500	381000	
						1860 ㎒	1882.5 ㎒	1905 ㎒	
20 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	22.64	22.72	22.70	0
				1	53	22.69	22.77	22.83	0
				1	104	22.71	22.65	22.76	0
				50	0	22.13	22.16	22.26	0.5
				50	28	22.62	22.61	22.77	0
				50	56	22.15	22.11	22.35	0.5
				100	0	22.14	22.12	22.23	0.5
			QPSK	1	1	22.61	22.63	22.65	0
				1	53	22.65	22.63	22.83	0
				1	104	22.69	22.62	22.75	0
				50	0	21.62	21.66	21.77	1
				50	28	22.63	22.62	22.76	0
				50	56	21.70	21.63	21.86	1
				100	0	21.64	21.62	21.74	1
			16QAM	1	1	21.63	21.73	21.67	1
			64QAM	1	1	20.27	20.29	20.31	2.5
			256QAM	1	1	18.18	18.25	18.22	4.5
		CP	QPSK	1	1	21.16	21.20	21.24	1.5

NR FDD Band n25 Conducted Power_ Measured Free(RSI 0), Hotpost(RSI 2) _ Main1 [Ant A]

NR FDD Band n25 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
						372000	376500	381000	
						1860 ㎒	1882.5 ㎒	1905 ㎒	
20 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	17.05	17.11	17.10	0
				1	53	17.08	17.18	17.24	0
				1	104	17.11	17.04	17.20	0
				50	0	17.04	17.09	17.20	0
				50	28	17.04	17.02	17.17	0
				50	56	17.10	17.03	17.25	0
				100	0	17.08	17.04	17.17	0
			QPSK	1	1	17.02	17.06	17.06	0
				1	53	17.05	17.07	17.21	0
				1	104	17.07	16.97	17.15	0
				50	0	17.05	17.08	17.19	0
				50	28	17.02	17.01	17.17	0
				50	56	17.07	17.04	17.28	0
				100	0	17.05	17.02	17.17	0
			16QAM	1	1	17.07	17.05	17.09	0
			64QAM	1	1	17.10	17.10	17.08	0
			256QAM	1	1	17.06	17.10	17.07	0
		CP	QPSK	1	1	17.13	17.10	17.15	0

NR FDD Band n66 Conducted Power_ Measured *Pmax,* RCV(RSI 1) _ MAIN1 [Ant A]

NR FDD Band n66 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
						344000	349000	354000	
						1720 ㎒	1745 ㎒	1770 ㎒	
20 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	23.18	22.90	22.79	0
				1	53	23.18	23.05	23.00	0
				1	104	23.00	22.88	22.95	0
				50	0	22.69	22.36	22.41	0.5
				50	28	23.03	22.87	22.90	0
				50	56	22.58	22.34	22.52	0.5
				100	0	22.58	22.40	22.41	0.5
			QPSK	1	1	23.15	22.85	22.75	0
				1	53	23.10	22.95	22.97	0
				1	104	23.00	22.86	22.96	0
				50	0	22.19	21.85	21.91	1
				50	28	23.02	22.88	22.91	0
				50	56	22.08	21.83	21.99	1
				100	0	22.08	21.89	21.90	1
			16QAM	1	1	22.05	21.86	21.69	1
			64QAM	1	1	20.54	20.45	20.34	2.5
			256QAM	1	1	18.64	18.49	18.33	4.5
		CP	QPSK	1	1	21.66	21.40	21.32	1.5

NR FDD Band n66 Conducted Power_ Measured Free(RSI 0), Hotspot(RSI 2) _ Main1 [Ant A]

NR FDD Band n66 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
						344000	349000	354000	
						1720 ㎒	1745 ㎒	1770 ㎒	
20 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	17.11	16.82	16.73	0
				1	53	17.10	16.92	16.93	0
				1	104	16.94	16.85	16.90	0
				50	0	17.11	16.81	16.85	0
				50	28	16.96	16.82	16.86	0
				50	56	17.02	16.77	16.94	0
				100	0	17.00	16.83	16.84	0
			QPSK	1	1	17.16	16.81	16.71	0
				1	53	17.01	17.17	17.09	0
				1	104	16.90	16.79	16.87	0
				50	0	17.12	16.78	16.85	0
				50	28	16.97	17.13	16.84	0
				50	56	17.00	16.74	17.01	0
				100	0	17.02	16.81	16.82	0
			16QAM	1	1	17.18	16.86	16.70	0
			64QAM	1	1	17.20	17.06	16.81	0
			256QAM	1	1	17.14	16.74	16.79	0
		CP	QPSK	1	1	17.11	17.12	17.03	0

NR TDD Band n41 Conducted Power_ Measured Free(RSI 0), Hotspot(RSI 2) _Main2 [Ant B]

NR TDD Band n41 _100 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)					MPR [dB]
								518598			
								2592.99 ㎒			
100 ㎒	30	DFT-s	pi/2 BPSK	1	1			17.57			0
				1	137			17.14			0
				1	271			17.76			0
				135	0			17.15			0
				135	69			17.15			0
				135	138			17.36			0
				270	0			17.19			0
			QPSK	1	1			17.53			0
				1	137			17.14			0
				1	271			17.72			0
				135	0			17.15			0
				135	69			17.12			0
				135	138			17.34			0
				270	0			17.23			0
			16QAM	1	1			17.71			0
			64QAM	1	1			17.70			0
			256QAM	1	1			17.58			0
		CP	QPSK	1	1			17.13			0

NR TDD Band n41 Conducted Power_ Measured RCV(RSI 1) _Main2 [Ant B]

NR TDD Band n41 _100 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)					MPR [dB]
								518598			
								2592.99 ㎒			
100 ㎒	30	DFT-s	pi/2 BPSK	1	1			18.63			0
				1	137			18.15			0
				1	271			18.85			0
				135	0			18.21			0
				135	69			18.23			0
				135	138			18.44			0
				270	0			18.22			0
			QPSK	1	1			18.54			0
				1	137			18.15			0
				1	271			18.79			0
				135	0			18.16			0
				135	69			18.17			0
				135	138			18.43			0
				270	0			18.31			0
			16QAM	1	1			18.81			0
			64QAM	1	1			18.78			0
			256QAM	1	1			18.60			0
		CP	QPSK	1	1			18.17			0

NR FDD Band n2 Conducted Power_ Measured Free(RSI 0), RCV(RSI 1), Hotspot(RSI 2) _ Sub2 [Ant F]

NR FDD Band n2 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
						372000	376000	380000	
						1860 ㎒	1880 ㎒	1900 ㎒	
20 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	19.28	19.33	19.28	0
				1	53	19.47	19.33	19.42	0
				1	104	19.36	19.28	19.28	0
				50	0	19.32	19.30	19.31	0
				50	28	19.41	19.28	19.34	0
				50	56	19.36	19.21	19.25	0
				100	0	19.40	19.32	19.33	0
			QPSK	1	1	19.30	19.32	19.28	0
				1	53	19.49	19.36	19.41	0
				1	104	19.39	19.25	19.24	0
				50	0	19.31	19.30	19.30	0
				50	28	19.42	19.28	19.35	0
				50	56	19.38	19.22	19.25	0
				100	0	19.41	19.30	19.33	0
			16QAM	1	1	19.33	19.33	19.33	0
			64QAM	1	1	19.34	19.40	19.39	0
			256QAM	1	1	18.38	18.35	18.31	1.5
		CP	QPSK	1	1	19.30	19.34	19.32	0

NR FDD Band n2 Conducted Power_ Measured RCV(RSI 1) _ Sub2 [Ant F]

NR FDD Band n2 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
						372000	376000	380000	
						1860 ㎒	1880 ㎒	1900 ㎒	
20 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	16.24	16.11	16.21	0
				1	53	16.26	16.18	16.27	0
				1	104	16.12	16.21	16.21	0
				50	0	16.16	16.20	16.15	0
				50	28	16.16	16.16	16.16	0
				50	56	16.07	16.20	16.16	0
				100	0	16.12	16.19	16.14	0
			QPSK	1	1	16.24	16.08	16.16	0
				1	53	16.30	16.32	16.28	0
				1	104	16.11	16.20	16.20	0
				50	0	16.15	16.12	16.18	0
				50	28	16.17	16.16	16.16	0
				50	56	16.07	16.24	16.20	0
				100	0	16.17	16.19	16.19	0
			16QAM	1	1	16.23	16.08	16.13	0
			64QAM	1	1	16.29	16.15	16.32	0
			256QAM	1	1	16.19	16.08	16.17	0
		CP	QPSK	1	1	16.27	16.09	16.12	0

NR FDD Band n25 Conducted Power_ Measured Free(RSI 0), Hotspot (RSI 2) _ Sub2 [Ant F]

NR FDD Band n25 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
						372000	376500	381000	
						1860 ㎒	1882.5 ㎒	1905 ㎒	
20 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	19.27	19.27	19.32	0
				1	53	19.44	19.38	19.29	0
				1	104	19.36	19.22	19.17	0
				50	0	19.32	19.31	19.34	0
				50	28	19.37	19.25	19.24	0
				50	56	19.35	19.25	19.30	0
				100	0	19.40	19.25	19.27	0
			QPSK	1	1	19.25	19.28	19.29	0
				1	53	19.46	19.50	19.27	0
				1	104	19.32	19.21	19.15	0
				50	0	19.33	19.30	19.35	0
				50	28	19.40	19.46	19.24	0
				50	56	19.34	19.27	19.29	0
				100	0	19.39	19.46	19.24	0
			16QAM	1	1	19.29	19.31	19.38	0
			64QAM	1	1	19.41	19.43	19.43	0
			256QAM	1	1	18.29	18.31	18.40	1.5
		CP	QPSK	1	1	19.26	19.39	19.34	0

NR FDD Band n25 Conducted Power_ Measured RCV(RSI 1) _ Sub2 [Ant F]

NR FDD Band n25 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
						372000	376500	381000	
						1860 ㎒	1882.5 ㎒	1905 ㎒	
20 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	16.26	16.16	16.18	0
				1	53	16.24	16.34	16.23	0
				1	104	16.11	16.18	16.16	0
				50	0	16.18	16.21	16.23	0
				50	28	16.20	16.20	16.21	0
				50	56	16.11	16.22	16.20	0
				100	0	16.20	16.20	16.17	0
			QPSK	1	1	16.26	16.09	16.20	0
				1	53	16.29	16.25	16.27	0
				1	104	16.13	16.11	16.11	0
				50	0	16.13	16.19	16.21	0
				50	28	16.17	16.18	16.17	0
				50	56	16.08	16.24	16.22	0
				100	0	16.15	16.20	16.19	0
			16QAM	1	1	16.26	16.12	16.18	0
			64QAM	1	1	16.31	16.19	16.30	0
			256QAM	1	1	16.24	16.10	16.31	0
		CP	QPSK	1	1	16.26	16.16	16.15	0

NR FDD Band n66 Conducted Power_ Measured Free(RSI 0), Hotspot(RSI 2) _ Sub2 [Ant F]

NR FDD Band n66 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
						344000	349000	354000	
						1720 ㎒	1745 ㎒	1770 ㎒	
20 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	18.73	18.27	18.10	0
				1	53	18.71	18.26	18.23	0
				1	104	18.50	18.13	18.15	0
				50	0	18.67	18.18	18.14	0
				50	28	18.58	18.16	18.14	0
				50	56	18.55	18.09	18.17	0
				100	0	18.54	18.19	18.14	0
			QPSK	1	1	18.67	18.24	18.07	0
				1	53	18.64	18.22	18.21	0
				1	104	18.47	18.11	18.15	0
				50	0	18.64	18.19	18.15	0
				50	28	18.52	18.18	18.15	0
				50	56	18.55	18.10	18.20	0
				100	0	18.53	18.16	18.17	0
			16QAM	1	1	18.76	18.35	18.05	0
			64QAM	1	1	18.77	18.27	18.14	0
			256QAM	1	1	18.68	18.29	18.04	0.5
		CP	QPSK	1	1	18.65	18.27	18.11	0

NR FDD Band n66 Conducted Power_ Measured RCV(RSI 2) _ Sub2 [Ant F]

NR FDD Band n66 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
						344000	349000	354000	
						1720 ㎒	1745 ㎒	1770 ㎒	
20 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	18.50	18.19	17.92	0
				1	53	18.68	18.18	17.93	0
				1	104	18.40	18.09	17.53	0
				50	0	18.49	18.11	17.84	0
				50	28	18.51	18.05	17.83	0
				50	56	18.41	18.07	17.45	0
				100	0	18.52	18.07	17.83	0
			QPSK	1	1	18.48	18.16	17.94	0
				1	53	18.63	18.14	17.93	0
				1	104	18.38	18.02	17.50	0
				50	0	18.49	18.09	17.85	0
				50	28	18.60	18.01	17.81	0
				50	56	18.39	18.05	17.39	0
				100	0	18.52	18.01	17.83	0
			16QAM	1	1	18.45	18.13	18.01	0
			64QAM	1	1	18.60	18.21	17.98	0
			256QAM	1	1	18.47	18.14	17.94	0
		CP	QPSK	1	1	18.51	18.25	17.98	0

NR TDD Band n77 Conducted Power_ Measured Free(RSI 0), Hotspot(RSI 2) _ Sub2 [Ant F]

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)						MPR [dB]
						650000				662000		
						3750 ㎒				3930 ㎒		
100 ㎒	30	DFT-s OFDM	pi/2 BPSK	1	1	14.30				14.60		0
				1	137	14.47				14.25		0
				1	271	14.74				14.41		0
				135	0	14.65				14.36		0
				135	69	14.50				14.16		0
				135	138	14.86				14.45		0
				270	0	14.52				14.28		0
			QPSK	1	1	14.21				14.63		0
				1	137	14.53				14.33		0
				1	271	14.51				14.38		0
				135	0	14.68				14.42		0
				135	69	14.55				14.20		0
				135	138	14.90				14.42		0
				270	0	14.54				14.24		0
			16QAM	1	1	14.71				14.75		0
			64QAM	1	1	14.75				14.58		0
			256QAM	1	1	14.86				14.60		0
		CP	QPSK	1	1	14.77				14.65		0

NR TDD Band n77 DoD Conducted Power_ Measured Free(RSI 0), Hotspot(RSI 2) _ Sub2 [Ant F]

NR TDD Band n77 DoD_100 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
							633334		
							3500.01 ㎒		
100㎒	30	DFT-s	pi/2 BPSK	1	1		15.22		0
				1	137		14.35		0
				1	271		14.53		0
				135	0		14.23		0
				135	69		14.46		0
				135	138		14.45		0
				270	0		14.42		0
			QPSK	1	1		15.18		0
				1	137		14.49		0
				1	271		14.56		0
				135	0		14.26		0
				135	69		14.55		0
				135	138		14.72		0
				270	0		14.41		0
			16QAM	1	1		15.29		0
			64QAM	1	1		15.02		0
			256QAM	1	1		15.26		0
		CP	QPSK	1	1		15.21		0

NR TDD Band n77 Conducted Power_ Measured RCV(RSI 1) _ Sub2 [Ant F]

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)						MPR [dB]
						650000				662000		
						3750 ㎒				3930 ㎒		
100 ㎒	30	DFT-s OFDM	pi/2 BPSK	1	1	13.57				13.37		0
				1	137	13.18				12.87		0
				1	271	13.42				13.18		0
				135	0	13.47				13.18		0
				135	69	13.24				12.91		0
				135	138	13.61				13.20		0
				270	0	13.31				12.95		0
			QPSK	1	1	13.57				13.34		0
				1	137	13.16				12.83		0
				1	271	13.42				13.15		0
				135	0	13.47				13.16		0
				135	69	13.25				12.89		0
				135	138	13.62				13.19		0
				270	0	13.31				12.96		0
			16QAM	1	1	13.56				13.37		0
			64QAM	1	1	13.64				13.29		0
			256QAM	1	1	13.66				13.46		0
		CP	QPSK	1	1	13.59				13.35		0

NR TDD Band n77 DoD Conducted Power_ Measured RCV(RSI 1) _ Sub2 [Ant F]

NR TDD Band n77 DoD_100 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
							633334		
							3500.01 ㎒		
100㎒	30	DFT-s	pi/2 BPSK	1	1		14.00		0
				1	137		13.27		0
				1	271		13.52		0
				135	0		13.09		0
				135	69		13.31		0
				135	138		13.40		0
				270	0		13.29		0
			QPSK	1	1		13.97		0
				1	137		13.23		0
				1	271		13.47		0
				135	0		13.08		0
				135	69		13.29		0
				135	138		13.39		0
				270	0		13.32		0
			16QAM	1	1		13.98		0
			64QAM	1	1		13.96		0
			256QAM	1	1		13.96		0
		CP	QPSK	1	1		14.02		0

11.4.3 NR Band SRS Conducted Power

[NR TDD Band n41 SRS Conducted Power]

Measured Free(RSI 0), Hotspot(RSI 2)

NR TDD Band n41_ 100 ㎒ Bandwidth Conducted Power_ Antenna: Main3(Ant C), SRS1

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				518598		
				2592.99 ㎒		
100 ㎒	30	CW		12.50		0

NR TDD Band n41_ 100 ㎒ Bandwidth Conducted Power_ Antenna: Main4(Ant D), SRS2

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				518598		
				2592.99 ㎒		
100 ㎒	30	CW		14.46		0

NR TDD Band n41_ 100 ㎒ Bandwidth Conducted Power_ Antenna: Sub1(Ant E), SRS3

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				518598		
				2592.99 ㎒		
100 ㎒	30	CW		13.08		0

Measured RCV(RSI 1) Calculations

NR TDD Band n41_ 100 ㎒ Bandwidth Conducted Power_ Antenna: Main3 (Ant C), SRS1

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				518598		
				2592.99 ㎒		
100 ㎒	30	CW		13.52		0

NR TDD Band n41_ 100 ㎒ Bandwidth Conducted Power_ Antenna: Main4(Ant D), SRS2

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				518598		
				2592.99 ㎒		
100 ㎒	30	CW		15.48		0

NR TDD Band n41_ 100 ㎒ Bandwidth Conducted Power_ Antenna: Sub1(Ant E), SRS3

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				518598		
				2592.99 ㎒		
100 ㎒	30	CW		14.09		0

[NR TDD Band n77 SRS Conducted Power]

Measured Free(RSI 0), Hotspot(RSI 2)

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power_ Antenna: Main3(Ant C), SRS1

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]						MPR [dB]
			650000				662000		
			3750 ㎒				3930 ㎒		
100 ㎒	30	CW	11.15				12.20		0

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power_ Antenna: Sub5(Ant I), SRS2

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]						MPR [dB]
			650000				662000		
			3750 ㎒				3930 ㎒		
100 ㎒	30	CW	15.11				15.40		0

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power_ Antenna: Main4(Ant D), SRS3

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]						MPR [dB]
			650000				662000		
			3750 ㎒				3930 ㎒		
100 ㎒	30	CW	12.47				11.88		0

Measured RCV(RSI 1)

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power_ Antenna: Main3(Ant C), SRS1

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]						MPR [dB]
			650000				662000		
			3750 ㎒				3930 ㎒		
100 ㎒	30	CW	10.25				11.28		0

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power_ Antenna: Sub5(Ant I), SRS2

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]						MPR [dB]
			650000				662000		
			3750 ㎒				3930 ㎒		
100 ㎒	30	CW	14.12				14.43		0

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power_ Antenna: Main4(Ant D), SRS3

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]						MPR [dB]
			650000				662000		
			3750 ㎒				3930 ㎒		
100 ㎒	30	CW	11.42				10.71		0

[NR TDD Band n77 DoD SRS Conducted Power]

Measured Free(RSI 0), Hotspot(RSI 2)

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power_ Antenna: Main3(Ant C), SRS1

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm			MPR [dB]
				633334		
				3500.01 ㎒		
100 ㎒	30	CW		10.62		0

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power_ Antenna: Sub5(Ant I), SRS2

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm			MPR [dB]
				633334		
				3500.01 ㎒		
100 ㎒	30	CW		14.42		0

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power_ Antenna: Main4(Ant D), SRS3

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm			MPR [dB]
				633334		
				3500.01 ㎒		
100 ㎒	30	CW		13.50		0

Measured RCV(RSI 1)

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power_ Antenna: Main3(Ant C), SRS1

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm			MPR [dB]
				633334		
				3500.01 ㎒		
100 ㎒	30	CW		9.71		0

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power_ Antenna: Sub5(Ant I), SRS2

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm			MPR [dB]
				633334		
				3500.01 ㎒		
100 ㎒	30	CW		13.50		0

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power_ Antenna: Main4(Ant D), SRS3

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm			MPR [dB]
				633334		
				3500.01 ㎒		
100 ㎒	30	CW		10.33		0

11.5 WIFI Conducted Power measurement method

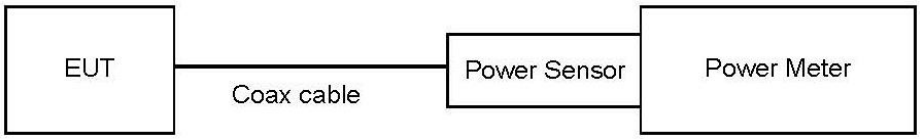
Un-Licensed Bands (DTS Band)

Test Description	Test Procedure Used
Conducted Output Power	- KDB 558074 v05 – Section 8.3.2.3 - ANSI 63.10-2013 – Section 11.9.2.3

Test Procedure

1. Measure the duty cycle.
2. Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
3. Add 10 log (1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times.

Test setup



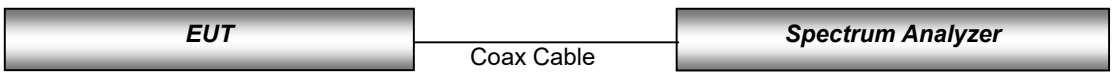
Un-Licensed Bands (NII Band)

Test Description	Test Procedure Used
Conducted Output Power	- KDB 789033 D02 v02r01 – Section E.3.a

Test Procedure

1. Measure the duty cycle.
2. Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
3. Add 10 log (1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times.

Test setup



11.5.1 IEEE 802.11 (2.4 ㎓) Maximum Conducted Power

Mode	Frequency [㎒]	Channel	IEEE 802.11 (2.4 ㎓) Average RF Conducted Power [dBm]		
			WIFI 1	WIFI 2	MIMO
802.11b	2 412	1	16.96	16.97	19.98
	2 437	6	16.76	16.54	19.66
	2 462	11	16.81	17.4	20.15
	2 467	12	4.81	5.29	8.07
	2 472	13	-1.40	-0.69	1.98

11.5.2 IEEE 802.11 (2.4 ㎓) Reduced Conducted Power

Mode	Frequency [㎒]	Channel	IEEE 802.11 (2.4 ㎓) Average RF Conducted Power [dBm]		
			WIFI 1	WIFI 2	MIMO
802.11b	2 412	1	13.81	12.96	16.41
	2 437	6	13.71	12.80	16.29
	2 462	11	13.66	13.50	16.59
	2 467	12	4.81	5.29	8.07
	2 472	13	-1.40	-0.69	1.98

11.5.3 IEEE 802.11 (5 ㎓) Maximum Conducted Power

Mode	Frequency [㎒]	Channel	IEEE 802.11 (5 ㎓) Average RF Conducted Power [dBm]		
			WIFI 1	WIFI 2	MIMO
802.11a (20 ㎒ BW)	5 180	36	15.53	14.19	17.93
	5 200	40	14.88	14..36	17.64
	5 220	44	15.24	15.14	17.78
	5 240	48	15.52	15.42	18.48
	5 260	52	14.66	15.22	17.96
	5 280	56	15.48	15.93	18.73
	5 300	60	15.08	14.49	17.81
	5 320	64	15.06	14.38	17.75
	5 500	100	15.34	14.28	17.86
	5 600	120	14.28	14.58	17.45
	5 620	124	15.70	15.48	18.61
	5 720	144	14.95	15.04	18.01
	5 745	149	14.53	15.11	17.84
	5 785	157	14.90	14.81	17.87
	5 825	165	14.44	14.43	17.45
	5 846	169	15.11	14.87	18.01
	5 865	173	14.57	15.03	17.82
	5 885	177	14.47	15.27	17.90

11.5.4 IEEE 802.11 (5 ㎓) Reduced Conducted Power

Mode	Frequency [㎒]	Channel	IEEE 802.11 (5 ㎓) Average RF Conducted Power [dBm]		
			WIFI 1	WIFI 2	MIMO
802.11ac (80 ㎒ BW)	5 210	42	11.94	11.70	14.83
	5 290	58	12.47	12.41	15.45
	5 530	106	12.84	12.56	15.71
	5 610	122	12.51	12.31	15.42
	5 690	138	12.90	12.02	15.49
	5 775	155	12.81	11.92	15.39
	5 855	171	12.98	12.92	15.96

11.5.5 IEEE 802.11 (6 ㎓) Maximum and Reduced Conducted Power

Mode	Frequency [㎒]	Channel	IEEE 802.11 (6 ㎓) Average RF Conducted Power [dBm]		
			WIFI 1	WIFI 2	MIMO
802.11ax (160 ㎒ BW)	6 025	15	7.29	8.06	10.70
	6 185	47	7.83	8.20	11.03
	6 345	79	7.49	8.32	10.94
	6 505	111	7.14	7.13	10.14
	6 665	143	7.55	7.20	10.39
	6 825	175	8.16	7.83	11.01
	6 985	207	7.13	7.39	10.27

Note:

For testing the WIFI 6 GHz of this DUT, the selection of test channels was based on FCC guidance, with five channels selected across the entire WIFI 6 GHz Bands.

Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02:

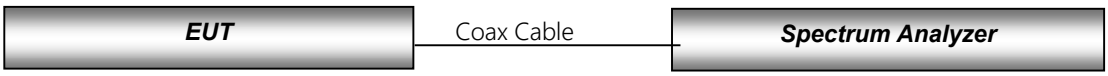
▪ Power measurements were performed for the transmission mode configuration with the highest maximum output power specified for production units.

▪ For transmission mode with the same maximum output power specification, powers were measured for the largest channel Bandwidth, lowest order modulation and lowest data rate.

▪ For transmission modes with identical maximum specified output power, channel Bandwidth, modulation and data rates, power measurements were required for all identical configurations.

▪ For each transmission mode configuration, powers were measured for the highest and lowest channels; and at the mid-Band channel(s) when there were at least 3 channels supported. For configurations with multiple mid-Band channels, due to an even number of channels, both channels were measured.

Test Configuration



11.6 Bluetooth Conducted Power

11.6.1 Bluetooth Maximum Conducted Power

The Burst Averaged-conducted power

Mode	Channel	Max. Average Conducted Power [dBm]		
		Ant. 1	Ant. 2	Dual
DH5	0	16.33	15.20	14.75
	39	16.90	15.23	14.07
	78	16.75	15.45	14.09
2-DH5	0	12.24	11.58	11.40
	39	13.53	11.53	11.81
	78	13.25	11.83	11.81
3-DH5	0	12.30	11.84	11.45
	39	13.66	11.61	11.82
	78	13.06	11.60	11.82

11.6.1.1 Bluetooth Receiver on Reduced Conducted Power

The Burst Averaged-conducted power

Mode	Channel	Max. Average Conducted Power [dBm]	
		Ant. 1	Ant. 2
DH5	0	12.01	11.77
	39	13.42	11.55
	78	12.95	11.78
2-DH5	0	11.22	10.47
	39	12.72	10.44
	78	12.16	10.88
3-DH5	0	11.21	10.49
	39	12.69	10.53
	78	12.15	10.83

Per October 2016 TCB Workshop Notes:
When call box and Bluetooth protocol are used for Bluetooth SAR measurement, time-domain plot is required to identify duty factor for supporting the test setup and result.
Bluetooth duty cycle was measured using Bluetooth tester equipment (CBT / R&S) with Bluetooth.

11.6.2 Bluetooth-LE Maximum Conducted Power

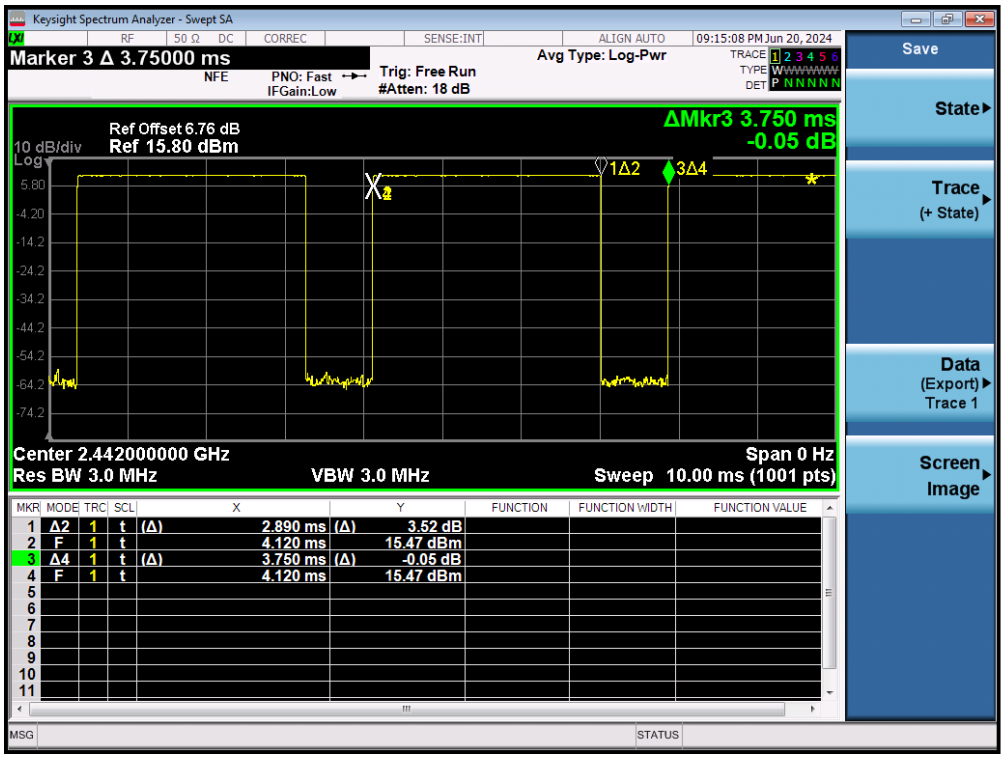
The Burst Averaged-conducted power

Mode	Channel	Max. Average Conducted Power [dBm]		
		Ant. 1	Ant. 2	Dual
1M 37 Packet	37	15.26	14.48	13.92
	17	16.04	14.06	14.31
	39	15.57	14.04	14.41
1M 255 Packet	37	15.08	14.31	14.01
	17	16.26	14.06	14.26
	39	15.47	14.04	14.34
2M 37 Packet	0	15.18	14.49	14.24
	17	16.13	14.28	14.28
	36	15.74	14.10	14.52
2M 255 Packet	0	15.37	14.46	14.25
	17	16.22	14.11	14.34
	36	15.67	14.26	14.44

The Burst Averaged-conducted power

Mode	Channel	Max. Average Conducted Power [dBm]	
		Ant. 1	Ant. 2
1M 37 Packet	37	11.23	10.76
	17	12.51	10.37
	39	11.91	10.70
1M 255 Packet	37	11.01	10.53
	17	12.99	10.32
	39	11.91	10.62
2M 37 Packet	0	11.38	10.94
	17	12.57	11.65
	36	12.06	12.08
2M 255 Packet	0	11.12	10.54
	17	12.44	11.18
	36	12.02	11.66

Bluetooth DH 5 Mode

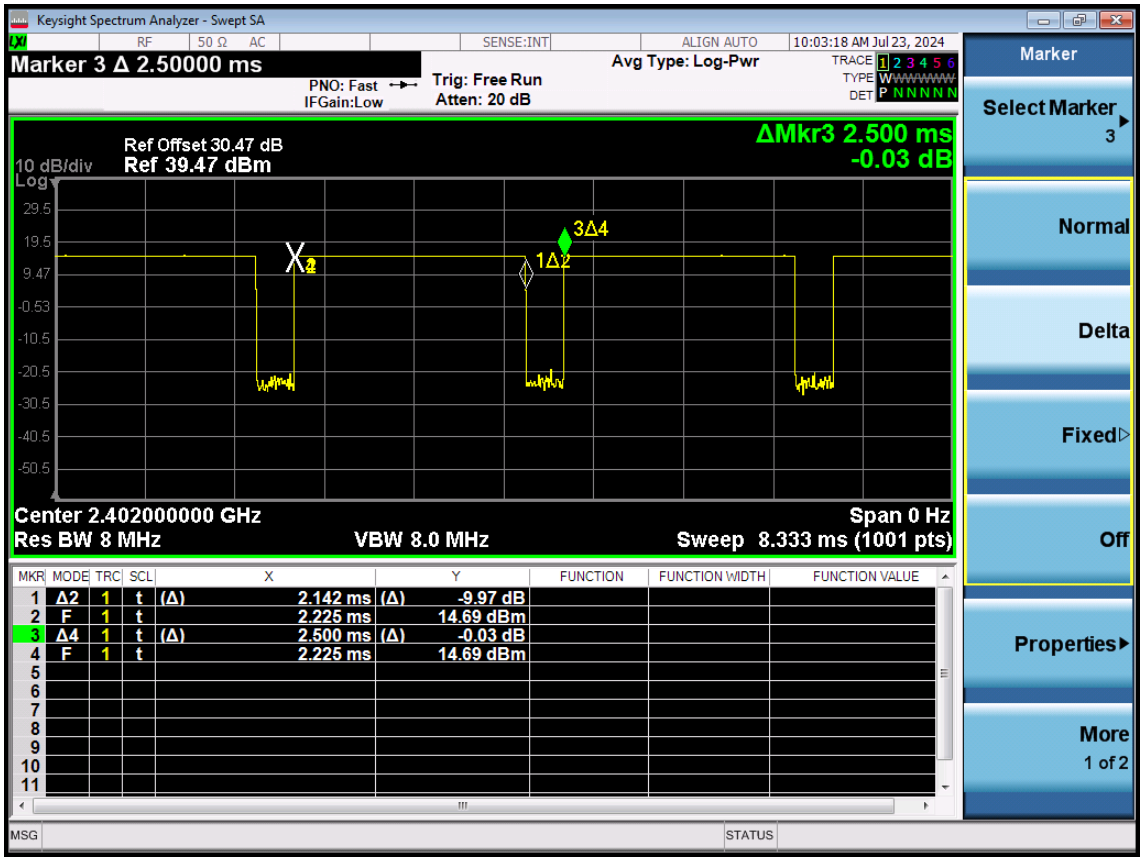


Duty Cycle

= (BT-On time /BT-Full time) =(2.890/3.750) = 0.771 (DH5)

BT DH5 Maximum Duty Factor:
The theoretical maximum duty cycle defined by chipset manufacturer is 76.56 % In the ideal theory Duty Cycle, the test error tolerance [1%] of the test equipment was considered and applied to the measurement results.The duty cycle of DH5 measured by DUT was 77.1%, and the duty cycle was compensated by applying test error tolerance 1%. For more information on BT , please refer to the technical description document.

BluetoothLE 1M Mode



Duty Cycle

= (BT-On time /BT-Full time) =(2.142/2.500) = 0.857 (1M)

BT DH5 Maximum Duty Factor:
The theoretical maximum duty cycle defined by chipset manufacturer is 84.8 % In the ideal theory Duty Cycle, the test error tolerance [1%] of the test equipment was considered and applied to the measurement results.The duty cycle of DH5 measured by DUT was 85.7%, and the duty cycle was compensated by applying test error tolerance 1%. For more information on BT , please refer to the technical description document.

12. System Verification

12.1 Tissue Verification

The head simulating material is calibrated by HCT using the DAKS 3.5 to determine the conductivity and permittivity.

Table for Head Tissue Verification									
Date of Tests	Tissue Temp. (°C)	Tissue Type	Freq. (㎒)	Measured Conductivity σ (S/m)	Measured Dielectric Constant, ε	Target Conductivity σ (S/m)	Target Dielectric Constant, ε	% dev σ	% dev ε
06/20/2024	22.7	13H	12	0.744	54.343	0.750	55.000	- 0.80	- 1.19
			13	0.724	54.352	0.750	55.000	- 3.47	- 1.18
			14	0.756	54.315	0.750	55.000	+ 0.80	- 1.25
06/17/2024	20.5	750H	705	0.855	43.921	0.889	42.174	- 3.82	+ 4.14
			710	0.861	43.847	0.890	42.148	- 3.26	+ 4.03
			750	0.903	43.260	0.893	41.940	+ 1.12	+ 3.15
06/18/2024	21.1	750H	750	0.896	43.500	0.893	41.940	+ 0.34	+ 3.72
			785	0.934	42.996	0.896	41.758	+ 4.24	+ 2.96
06/19/2024	20.6	835H	820	0.907	41.523	0.899	41.577	+ 0.89	- 0.13
			835	0.921	41.371	0.900	41.500	+ 2.33	- 0.31
			850	0.934	41.194	0.916	41.500	+ 1.97	- 0.74
06/11/2024	21.4	835H	820	0.897	41.729	0.899	41.577	- 0.22	+ 0.37
			835	0.910	41.582	0.900	41.500	+ 1.11	+ 0.20
			850	0.924	41.298	0.916	41.500	+ 0.87	- 0.49
06/20/2024	21.0	835H	820	0.921	43.016	0.920	42.079	+ 0.11	+ 2.23
			835	0.937	42.812	0.936	41.875	+ 0.11	+ 2.24
			850	0.952	42.610	0.951	41.674	+ 0.11	+ 2.25
06/16/2024	21.2	835H	820	0.917	42.662	0.920	42.079	- 0.33	+ 1.39
			835	0.932	42.455	0.936	41.875	- 0.43	+ 1.39
			850	0.947	42.252	0.951	41.674	- 0.42	+ 1.39
06/14/2024	20.2	1800H	1 710	1.299	40.280	1.348	40.144	- 3.64	+ 0.34
			1 750	1.343	40.127	1.371	40.080	- 2.04	+ 0.12
			1 800	1.397	39.886	1.400	40.000	- 0.21	- 0.28
06/12/2024	20.1	1800H	1 710	1.300	39.281	1.348	40.144	- 3.56	- 2.15
			1 750	1.344	39.130	1.371	40.080	- 1.97	- 2.37
			1 800	1.397	38.885	1.400	40.000	- 0.21	- 2.79
06/13/2024	20.3	1800H	1 710	1.300	39.283	1.348	40.144	- 3.56	- 2.14
			1 750	1.343	39.132	1.371	40.080	- 2.04	- 2.37
			1 800	1.397	38.893	1.400	40.000	- 0.21	- 2.77
07/02/2024	21.7	1900H	1 850	1.378	39.642	1.400	40.000	- 1.57	- 0.89
			1 900	1.427	39.436	1.400	40.000	+ 1.93	- 1.41
			1 910	1.436	39.395	1.400	40.000	+ 2.57	- 1.51
06/13/2024	19.9	1900H	1 850	1.362	39.383	1.400	40.000	- 2.71	- 1.54
			1 900	1.411	39.178	1.400	40.000	+ 0.79	- 2.06
			1 910	1.420	39.134	1.400	40.000	+ 1.43	- 2.16
06/11/2024	21.5	1900H	1 850	1.341	39.395	1.400	40.000	- 4.21	- 1.51
			1 900	1.389	39.186	1.400	40.000	- 0.79	- 2.04
			1 910	1.399	39.140	1.400	40.000	- 0.07	- 2.15
06/14/2024	20.6	1900H	1 850	1.383	39.390	1.400	40.000	- 1.21	- 1.53
			1 900	1.432	39.178	1.400	40.000	+ 2.29	- 2.06
			1 910	1.442	39.130	1.400	40.000	+ 3.00	- 2.18

Table for Head Tissue Verification									
Date of Tests	Tissue Temp. (°C)	Tissue Type	Freq. (㎒)	Measured Conductivity σ (S/m)	Measured Dielectric Constant, ε	Target Conductivity σ (S/m)	Target Dielectric Constant, ε	% dev σ	% dev ε
06/21/2024	22.2	2450H	2 400	1.798	39.080	1.756	39.290	+ 2.39	- 0.53
			2 450	1.838	39.152	1.800	39.200	+ 2.11	- 0.12
			2 500	1.885	39.263	1.855	39.140	+ 1.62	+ 0.31
06/23/2024	21.0	2450H	2 400	1.798	39.078	1.756	39.290	+ 2.39	- 0.54
			2 450	1.838	39.153	1.800	39.200	+ 2.11	- 0.12
			2 500	1.885	39.260	1.855	39.140	+ 1.62	+ 0.31
06/28/2024	21.7	2450H	2 400	1.708	38.753	1.756	39.290	- 2.73	- 1.37
			2 450	1.773	39.457	1.800	39.200	- 1.50	+ 0.66
			2 500	1.884	40.032	1.855	39.140	+ 1.56	+ 2.28
06/30/2024	20.8	2450H	2 400	1.708	39.354	1.756	39.290	- 2.73	+ 0.16
			2 450	1.773	40.057	1.800	39.200	- 1.50	+ 2.19
			2 500	1.884	40.633	1.855	39.140	+ 1.56	+ 3.81
06/24/2024	21.3	2450H	2 400	1.804	39.030	1.756	39.290	+ 2.73	- 0.66
			2 450	1.843	39.262	1.800	39.200	+ 2.39	+ 0.16
			2 500	1.879	39.263	1.855	39.140	+ 1.29	+ 0.31
07/03/2024	20.7	2450H	2 400	1.710	38.746	1.756	39.290	- 2.62	- 1.38
			2 450	1.773	39.478	1.800	39.200	- 1.50	+ 0.71
			2 500	1.885	40.033	1.855	39.140	+ 1.62	+ 2.28
06/16/2024	21.6	2600H	2 500	1.884	39.280	1.855	39.140	+ 1.56	+ 0.36
			2 600	2.004	39.165	1.964	39.010	+ 2.04	+ 0.40
			2 690	2.111	38.421	2.062	38.894	+ 2.38	- 1.22
07/01/2024	21.1	2600H	2 500	1.879	39.313	1.855	39.140	+ 1.29	+ 0.44
			2 600	2.007	39.168	1.964	39.010	+ 2.19	+ 0.41
			2 690	2.115	38.355	2.062	38.894	+ 2.57	- 1.39
06/23/2024	19.9	5180H-5320H	5 180	4.735	36.800	4.635	36.010	+ 2.16	+ 2.19
			5 250	4.870	36.611	4.706	35.930	+ 3.48	+ 1.90
			5 280	4.921	36.606	4.737	35.894	+ 3.88	+ 1.98
			5 320	4.973	36.648	4.778	35.846	+ 4.08	+ 2.24
07/11/2024	18.7	5180H-5320H	5 180	4.648	36.419	4.635	36.010	+ 0.28	+ 1.14
			5 250	4.738	36.179	4.706	35.930	+ 0.68	+ 0.69
			5 280	4.780	36.108	4.737	35.894	+ 0.91	+ 0.60
			5 320	4.837	36.059	4.778	35.846	+ 1.23	+ 0.59
06/24/2024	19.7	5500H-5600H	5 500	4.982	36.468	4.963	35.640	+ 0.38	+ 2.32
			5 600	5.053	36.190	5.065	35.530	- 0.24	+ 1.86
			5 750	5.273	36.077	5.219	35.360	+ 1.03	+ 2.03
07/12/2024	18.4	5500H-5600H	5 500	5.002	35.600	4.963	35.640	+ 0.79	- 0.11
			5 600	5.099	35.423	5.065	35.530	+ 0.67	- 0.30
			5 750	5.318	35.278	5.219	35.360	+ 1.90	- 0.23
06/25/2024	19.1	5750H-5825H	5 750	5.232	35.890	5.219	35.360	+ 0.25	+ 1.50
			5 800	5.189	35.878	5.270	35.300	- 1.54	+ 1.64
			5 825	5.181	35.817	5.296	35.270	- 2.17	+ 1.55
07/14/2024	18.3	5750H-5825H	5 750	5.314	35.079	5.219	35.360	+ 1.82	- 0.79
			5 800	5.254	35.086	5.270	35.300	- 0.30	- 0.61
			5 825	5.227	35.040	5.296	35.270	- 1.30	- 0.65

Table for Head Tissue Verification									
Date of Tests	Tissue Temp. (°C)	Tissue Type	Freq. (㎒)	Measured Conductivity σ (S/m)	Measured Dielectric Constant, ε	Target Conductivity σ (S/m)	Target Dielectric Constant, ε	% dev σ	% dev ε
06/26/2024	19.6	5800H-5885H	5 800	5.291	35.894	5.270	35.300	+ 0.40	+ 1.68
			5 835	5.278	35.816	5.306	35.258	- 0.53	+ 1.58
			5 845	5.281	35.778	5.316	35.246	- 0.66	+ 1.51
			5 855	5.286	35.733	5.326	35.235	- 0.75	+ 1.41
			5 865	5.294	35.685	5.337	35.225	- 0.81	+ 1.31
			5 875	5.304	35.635	5.347	35.215	- 0.80	+ 1.19
			5 885	5.313	35.591	5.357	35.205	- 0.82	+ 1.10
07/15/2024	18.2	5800H-5885H	5 800	5.319	35.289	5.270	35.300	+ 0.93	- 0.03
			5 835	5.284	35.214	5.306	35.258	- 0.41	- 0.12
			5 845	5.280	35.176	5.316	35.246	- 0.68	- 0.20
			5 855	5.277	35.130	5.326	35.235	- 0.92	- 0.30
			5 865	5.278	35.080	5.337	35.225	- 1.11	- 0.41
			5 875	5.282	35.028	5.347	35.215	- 1.22	- 0.53
			5 885	5.289	34.973	5.357	35.205	- 1.27	- 0.66
07/12/2024	22.0	6500H	5 965	5.56	34.4	5.439	35.11	+ 2.22	- 2.02
			6 000	5.57	35.2	5.475	35.07	+ 1.74	+ 0.37
			6 165	5.68	35.0	5.672	34.87	+ 0.14	+ 0.37
			6 500	6.20	34.3	6.072	34.46	+ 2.11	- 0.46
			6 525	6.18	33.8	6.101	34.43	+ 1.29	- 1.83
			6 845	6.50	33.5	6.470	34.06	+ 0.46	- 1.64
			7 000	6.57	33.1	6.650	33.88	- 1.20	- 2.30
			7 085	6.65	32.9	6.750	33.78	- 1.48	- 2.61
			7 500	7.34	32.9	7.239	33.29	+ 1.40	- 1.17
07/13/2042	21.9	6500H	5 965	5.40	34.7	5.439	35.11	- 0.72	- 1.17
			6 000	5.47	34.7	5.475	35.07	- 0.09	- 1.06
			6 165	5.64	34.7	5.672	34.87	- 0.56	- 0.49
			6 500	6.14	34.2	6.072	34.46	+ 1.12	- 0.75
			6 525	6.16	34.1	6.101	34.43	+ 0.97	- 0.96
			6 845	6.57	33.5	6.470	34.06	+ 1.55	- 1.64
			7 000	6.75	33.1	6.650	33.88	+ 1.50	- 2.30
			7 085	6.86	33.2	6.750	33.78	+ 1.63	- 1.72
			7 500	7.33	32.5	7.239	33.29	+ 1.26	- 2.37

◆ 5G NR SUB 6

Table for Head Tissue Verification									
Date of Tests	Tissue Temp. (°C)	Tissue Type	Freq. (㎒)	Measured Conductivity σ (S/m)	Measured Dielectric Constant, ε	Target Conductivity σ (S/m)	Target Dielectric Constant, ε	% dev σ	% dev ε
06/17/2024	20.1	835H	820	0.895	42.788	0.899	41.577	- 0.44	+ 2.91
			835	0.909	42.578	0.900	41.500	+ 1.00	+ 2.60
			850	0.922	42.369	0.916	41.500	+ 0.66	+ 2.09
06/27/2024	22.3	1800H	1 710	1.330	40.394	1.348	40.144	- 1.34	+ 0.62
			1 750	1.374	40.236	1.371	40.080	+ 0.22	+ 0.39
			1 800	1.429	39.996	1.400	40.000	+ 2.07	- 0.01
06/19/2024	20.3	1800H	1 710	1.320	39.285	1.348	40.144	- 2.08	- 2.14
			1 750	1.364	39.142	1.371	40.080	- 0.51	- 2.34
			1 800	1.418	38.905	1.400	40.000	+ 1.29	- 2.74
06/26/2024	22.4	1900H	1 850	1.395	39.232	1.400	40.000	- 0.36	- 1.92
			1 900	1.423	39.101	1.400	40.000	+ 1.64	- 2.25
			1 910	1.428	39.080	1.400	40.000	+ 2.00	- 2.30
06/18/2024	20.4	1900H	1 850	1.382	39.390	1.400	40.000	- 1.29	- 1.53
			1 900	1.432	39.182	1.400	40.000	+ 2.29	- 2.05
			1 910	1.441	39.137	1.400	40.000	+ 2.93	- 2.16
06/24/2024	21.4	2 600H	2 500	1.884	39.281	1.855	39.140	+ 1.56	+ 0.36
			2 600	2.003	39.155	1.964	39.010	+ 1.99	+ 0.37
			2 690	2.111	38.419	2.062	38.894	+ 2.38	- 1.22
06/25/2024	22.1	2 600H	2 500	1.884	39.283	1.855	39.140	+ 1.56	+ 0.37
			2 600	2.004	39.158	1.964	39.010	+ 2.04	+ 0.38
			2 690	2.110	38.415	2.062	38.894	+ 2.33	- 1.23
06/18/2024	19.8	3500H	3 400	2.921	38.316	2.810	38.040	+ 3.95	+ 0.73
			3 500	2.972	37.925	2.913	37.930	+ 2.03	- 0.01
			3 550	2.957	37.284	2.964	37.870	- 0.24	- 1.55
06/20/2024	18.9	3500H	3 400	2.908	38.188	2.810	38.040	+ 3.49	+ 0.39
			3 500	2.961	37.803	2.913	37.930	+ 1.65	- 0.33
			3 550	2.945	37.189	2.964	37.870	- 0.64	- 1.80
06/18/2024	19.8	3700H-3970	3 700	3.135	37.534	3.118	37.700	+ 0.55	- 0.44
			3 750	3.215	37.487	3.169	37.640	+ 1.45	- 0.41
			3 800	3.250	37.619	3.220	37.590	+ 0.93	+ 0.08
			3 900	3.286	37.415	3.233	37.470	+ 1.64	- 0.15
			3 970	3.325	37.291	3.394	37.390	- 2.03	- 0.26
06/20/2024	18.9	3700H-3970	3 700	3.111	37.461	3.118	37.700	- 0.22	- 0.63
			3 750	3.201	37.441	3.169	37.640	+ 1.01	- 0.53
			3 800	3.233	37.529	3.220	37.590	+ 0.40	- 0.16
			3 900	3.263	37.290	3.233	37.470	+ 0.93	- 0.48
			3 970	3.316	37.254	3.394	37.390	- 2.30	- 0.36

12.2 System Verification

Input Power: 50 mW

Freq.	Date	Probe	Dipole	Liquid	Amb. Temp.	Liquid Temp.	1 W Target SAR_{1g} (SPEAG)	50mW Measured SAR_{1g}	1 W Normalized SAR_{1g}	Deviation	Limit
[MHz]		(S/N)	(S/N)		[°C]	[°C]	[W/kg]	[W/kg]	[W/kg]	[%]	[%]
750	06/17/2024	7622	1014	Head	20.7	20.5	8.50	0.440	8.80	+ 3.53	± 10
750	06/18/2024	7622		Head	21.3	21.1	8.50	0.438	8.76	+ 3.06	± 10
835	06/19/2024	7622	441	Head	20.7	20.6	9.73	0.528	10.56	+ 8.53	± 10
835	06/11/2024	7622		Head	21.5	21.4	9.73	0.522	10.44	+ 7.30	± 10
835	06/20/2024	7622		Head	21.2	21.0	9.73	0.501	10.02	+ 2.98	± 10
835	06/16/2024	7622		Head	21.4	21.2	9.73	0.499	9.98	+ 2.57	± 10
1 800	06/14/2024	7622	2d007	Head	20.4	20.2	39.0	1.90	38.00	- 2.56	± 10
1 800	06/12/2024	3076		Head	20.2	20.1	39.0	1.81	36.20	- 7.18	± 10
1 800	06/13/2024	3903		Head	20.4	20.3	39.0	1.78	35.60	- 8.72	± 10
1 900	07/02/2024	7622	5d032	Head	21.9	21.7	40.2	1.99	39.80	- 1.00	± 10
1 900	06/13/2024	7622		Head	19.8	19.9	40.2	1.97	39.40	- 1.99	± 10
1 900	06/11/2024	3076		Head	21.7	21.5	40.2	1.95	39.00	- 2.99	± 10
1 900	06/14/2024	3903		Head	20.7	20.6	40.2	2.07	41.40	+ 2.99	± 10
2 450	06/21/2024	7622	743	Head	22.4	22.2	51.8	2.83	56.60	+ 9.27	± 10
2 450	06/23/2024	7622		Head	21.1	21.0	51.8	2.84	56.80	+ 9.65	± 10
2 450	06/28/2024	7622		Head	21.8	21.7	51.8	2.75	55.00	+ 6.18	± 10
2 450	06/30/2024	7622		Head	20.9	20.8	51.8	2.76	55.20	+ 6.56	± 10
2 450	06/24/2024	7622		Head	21.5	21.3	51.8	2.73	54.60	+ 5.41	± 10
2 450	07/03/2024	7622		Head	20.9	20.7	51.8	2.67	53.40	+ 3.09	± 10
2 600	06/16/2024	3903	1015	Head	21.8	21.6	56.4	2.59	51.80	- 8.16	± 10
2 600	07/01/2024	7622		Head	21.3	21.1	56.4	2.84	56.80	+ 0.71	± 10
5 250	06/23/2024	7681	1107	Head	20.0	19.9	80.2	3.73	74.60	- 6.98	± 10
5 250	07/11/2024	7622		Head	18.9	18.7	80.2	3.87	77.40	- 3.49	± 10
5 600	06/24/2024	7681		Head	19.8	19.7	82.1	4.14	82.80	+ 0.85	± 10
5 600	07/12/2024	7622		Head	18.5	18.4	82.1	4.24	84.80	+ 3.29	± 10
5 750	06/25/2024	7681		Head	19.3	19.1	79.9	4.06	81.20	+ 1.63	± 10
5 750	07/14/2024	7622		Head	18.5	18.3	79.9	3.84	76.80	- 3.88	± 10
5 800	06/26/2024	7681		Head	19.8	19.6	79.3	3.79	75.80	- 4.41	± 10
5 800	07/15/2024	7622		Head	18.3	18.2	79.3	4.05	81.00	+ 2.14	± 10

Input Power: 10 mW

Freq.	Date	Probe	Dipole	Liquid	Amb. Temp.	Liquid Temp.	1 W Target SAR_{1g} (SPEAG)	50mW Measured SAR_{1g}	1 W Normalized SAR_{1g}	Deviation	Limit
[MHz]		(S/N)	(S/N)		[°C]	[°C]	[W/kg]	[W/kg]	[W/kg]	[%]	[%]
6 500	07/12/2024	7751	1012	Head	22.2	22.0	292	3.03	303	+ 3.77	± 10
6 500	07/13/2024	7751		Head	22.0	21.9	292	2.78	278	- 4.79	± 10

◆ 5G NR SUB 6

Input Power: 50 ㎽

Freq.	Date	Probe (S/N)	Dipole (S/N)	Liquid	Amb. Temp.	Liquid Temp.	1 W Target SAR_{1g} (SPEAG)	50mW Measured SAR_{1g}	1 W Normalized SAR_{1g}	Deviation	Limit
[㎒]					[°C]	[°C]	[W/kg]	[W/kg]	[W/kg]	[%]	[%]
835	06/17/2024	3903	441	Head	20.3	20.1	9.73	0.507	10.14	+ 4.21	± 10
1 800	06/27/2024	7622	2d007	Head	22.5	22.3	39.0	2.01	40.20	+ 3.08	± 10
1 800	06/19/2024	3903		Head	20.5	20.3	39.0	1.80	36.00	- 7.69	± 10
1 900	06/26/2024	7622	5d032	Head	22.6	22.4	40.2	2.05	41.00	+ 1.99	± 10
1 900	06/18/2024	3903		Head	20.5	20.4	40.2	1.95	39.00	- 2.99	± 10
2 600	06/24/2024	7622	1015	Head	21.5	21.4	56.4	2.90	58.00	+ 2.84	± 10
2 600	06/25/2024	7622		Head	22.3	22.1	56.4	2.90	58.00	+ 2.84	± 10
3 500	06/18/2024	7681	1132	Head	19.7	19.8	65.1	3.19	63.80	- 2.00	± 10
3 500	06/20/2024	7681		Head	19.1	18.9	65.1	3.37	67.40	+ 3.53	± 10
3 700	06/18/2024	7681	1105	Head	19.7	19.8	67.1	3.33	66.60	- 0.75	± 10
3 700	06/20/2024	7681		Head	19.1	18.9	67.1	3.60	72.00	+ 7.30	± 10
3 900	06/18/2024	7681	1086	Head	19.7	19.8	67.6	3.19	63.80	- 5.62	± 10
3 900	06/20/2024	7681		Head	19.1	18.9	67.6	3.52	70.40	+ 4.14	± 10

◆ System Verification Results – Extremity SAR

Input Power: 50 ㎽

Freq.	Date	Probe (S/N)	Dipole (S/N)	Liquid	Amb. Temp.	Liquid Temp.	1 W Target SAR_{10g} (SPEAG)	50mW Measured SAR_{10g}	1 W Normalized SAR_{10g}	Deviation	Limit
[㎒]					[°C]	[°C]	[W/kg]	[W/kg]	[W/kg]	[%]	[%]
13	06/20/2024	3076	1016	Head	22.9	22.7	0.343	0.018	0.36	+ 4.96	± 10
5 250	06/23/2024	7681	1107	Head	20.0	19.9	23.1	1.09	21.80	- 5.63	± 10
5 250	07/11/2024	7622		Head	18.9	18.7	23.1	1.10	22.00	- 4.76	± 10
5 600	06/24/2024	7681		Head	19.8	19.7	23.5	1.19	23.80	+ 1.28	± 10
5 600	07/12/2024	7622		Head	18.5	18.4	23.5	1.19	23.80	+ 1.28	± 10
5 800	06/26/2024	7681		Head	19.8	19.6	22.5	1.06	21.20	- 5.78	± 10
5 800	07/15/2024	7622		Head	18.3	18.2	22.5	1.13	22.60	+ 0.44	± 10

Input Power: 10 ㎽

Freq.	Date	Probe (S/N)	Dipole (S/N)	Liquid	Amb. Temp.	Liquid Temp.	1 W Target SAR_{10g} (SPEAG)	10mW Measured SAR_{10g}	1 W Normalized SAR_{10g}	Deviation	Limit
[㎒]					[°C]	[°C]	[W/kg]	[W/kg]	[W/kg]	[%]	[%]
6 500	07/12/2024	7751	1012	Head	22.2	22.0	53.8	0.563	56.3	+ 4.65	± 10
6 500	07/13/2024	7751		Head	22.0	21.9	53.8	0.522	52.2	- 2.97	± 10

12.3 System Verification Procedure

For SAR Measurement

SAR measurement was prior to assessment; the system is verified to the ± 10 % of the specifications at each frequency band by using the system verification kit. (Graphic Plots Attached)

- Cabling the system, using the verification kit equipment.
- Generate about 50 mW Input level from the signal generator to the Dipole Antenna.
- Generate about 10 mW Input level from the signal generator to the 6.5 ㎓ Dipole Antenna.
- Dipole antenna was placed below the flat phantom.
- The measured one-gram SAR at the surface of the phantom above the dipole feed-point should be within 10 % of the target reference value.
- The results are normalized to 1 W input power.

Note;
SAR Verification was performed according to the FCC KDB 865664 D01v01r04.

12.4 Power Density System Verification

The system was verified to be within ±0.66 dB of the power density targets on the calibration certificate according to the test system specification in the user's manual and calibration facility recommendation. The 0.66 dB deviation threshold represents the expanded uncertainty for system performance checks using SPEAG's mmWave verification sources. The same spatial resolution and measurement region used in the source calibration was applied during the system check.

The measured power density distribution of verification source was also confirmed through visual inspection to have no noticeable differences, both spatially(shape) and numerically (level) from the distribution provided by the manufacturer, per November 2017 TCBC Workshop Notes.

◆ 10 GHz Power Density System Verification Result

Input Power: 10 mW

Freq. [GHz]	Date	Probe (S/N)	Dipole (S/N)	Amb. Temp.	Normal psPD (W/m² over 4 cm²)			Deviation	Total psPD (W/m² over 4 cm²)			Deviation	Limit
				[°C]	Measured	Normalized	Target	[dB]	Measured	Normalized	Target	[dB]	[dB]
10	07/09/2024	9464	1018	21.2	5.32	53.2	56.5	-0.26	5.35	53.5	57.1	-0.28	± 0.66
10	07/11/2024	9464		21.0	5.26	52.6	56.5	-0.31	5.30	53.0	57.1	-0.32	± 0.66

13. RF Exposure Test Data Summary

13.1 SAR Measurement Results

13.1.1 Head SAR Measurement Results

GSM 850 Head SAR													
Frequency		Mode	Ant.	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dB)	(dB)	(dB)				(W/kg)		(W/kg)	
836.6	190	GSM Voice	A	32.0	31.19	-0.11	Left Touch	1:8.3		0.075	1.205	0.090	-
836.6	190	GSM Voice	A	32.0	31.19	0.17	Left Tilt	1:8.3		0.055	1.205	0.066	-
836.6	190	GSM Voice	A	32.0	31.19	0.10	Right Cheek	1:8.3		0.131	1.205	**0.158**	**A1**
836.6	190	GSM Voice	A	32.0	31.19	-0.17	Right Tilt	1:8.3		0.065	1.205	0.078	-
836.6	190	GPRS 3Tx	A	28.0	26.68	-0.05	Left Touch	1:2.77		0.087	1.355	0.118	-
836.6	190	GPRS 3Tx	A	28.0	26.68	-0.09	Left Tilt	1:2.77		0.058	1.355	0.079	-
836.6	190	GPRS 3Tx	A	28.0	26.68	0.04	Right Cheek	1:2.77		0.116	1.355	0.157	-
836.6	190	GPRS 3Tx	A	28.0	26.68	-0.18	Right Tilt	1:2.77		0.056	1.355	0.076	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Head 1.6 W/kg Averaged over 1 gram						

GSM 1900 Head SAR													
Frequency		Mode	Ant.	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dB)	(dB)	(dB)				(W/kg)		(W/kg)	
1 880.0	661	GSM Voice	A	31.5	30.61	-0.12	Left Touch	1:8.3		0.066	1.227	0.081	-
1 880.0	661	GSM Voice	A	31.5	30.61	-0.15	Left Tilt	1:8.3		0.022	1.227	0.027	-
1 880.0	661	GSM Voice	A	31.5	30.61	-0.17	Right Cheek	1:8.3		0.031	1.227	0.038	-
1 880.0	661	GSM Voice	A	31.5	30.61	0.13	Right Tilt	1:8.3		0.028	1.227	0.034	-
1 880.0	661	GPRS 2Tx	A	29.5	27.84	-0.15	Left Touch	1:4.15		0.084	1.466	**0.123**	**A2**
1 880.0	661	GPRS 2Tx	A	29.5	27.84	0.11	Left Tilt	1:4.15		0.027	1.466	0.040	-
1 880.0	661	GPRS 2Tx	A	29.5	27.84	-0.15	Right Cheek	1:4.15		0.044	1.466	0.065	-
1 880.0	661	GPRS 2Tx	A	29.5	27.84	-0.01	Right Tilt	1:4.15		0.036	1.466	0.053	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Head 1.6 W/kg Averaged over 1 gram						

UMTS Band 5 Head SAR													
Frequency		Mode	Ant.	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dB)	(dB)	(dB)				(W/kg)		(W/kg)	
836.6	4183	RMC	A	25.8	24.79	0.15	Left Touch	1:1		0.071	1.262	0.090	-
836.6	4183	RMC	A	25.8	24.79	0.19	Left Tilt	1:1		0.046	1.262	0.058	-
836.6	4183	RMC	A	25.8	24.79	-0.14	Right Touch	1:1		0.116	1.262	**0.146**	**A3**
836.6	4183	RMC	A	25.8	24.79	0.01	Right Tilt	1:1		0.047	1.262	0.059	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Head 1.6 W/kg Averaged over 1 gram						

UMTS Band 4 Head SAR

Frequency		Mode	Ant.	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dB)	(dB)	(dB)				(W/kg)		(W/kg)	
1 732.4	1412	RMC	A	24.5	23.55	0.16	Left Touch	1:1		0.103	1.245	**0.128**	**A4**
1 732.4	1412	RMC	A	24.5	23.55	-0.01	Left Tilt	1:1		0.033	1.245	0.041	-
1 732.4	1412	RMC	A	24.5	23.55	0.12	Right Touch	1:1		0.053	1.245	0.066	-
1 732.4	1412	RMC	A	24.5	23.55	-0.15	Right Tilt	1:1		0.041	1.245	0.051	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Head 1.6 W/kg Averaged over 1 gram						

UMTS Band 2 Head SAR

Frequency		Mode	Ant.	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dB)	(dB)	(dB)				(W/kg)		(W/kg)	
1 880	9400	RMC	A	24.5	23.36	0.06	Left Touch	1:1		0.080	1.300	**0.104**	**A5**
1 880	9400	RMC	A	24.5	23.36	0.04	Left Tilt	1:1		0.056	1.300	0.073	-
1 880	9400	RMC	A	24.5	23.36	-0.19	Right Touch	1:1		0.063	1.300	0.082	-
1 880	9400	RMC	A	24.5	23.36	0.05	Right Tilt	1:1		0.064	1.300	0.083	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Head 1.6 W/kg Averaged over 1 gram						

LTE FDD Band 5(Cell) Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
836.5	20525	QPSK	A	10	25.5	24.20	0.18	Left Touch	0	1	24	1:1		0.086	1.349	0.116	-
836.5	20525	QPSK	A	10	24.5	22.61	0.13	Left Touch	1	25	0	1:1		0.049	1.545	0.076	-
836.5	20525	QPSK	A	10	25.5	24.20	-0.11	Left Tilt	0	1	24	1:1		0.033	1.349	0.045	-
836.5	20525	QPSK	A	10	24.5	22.61	-0.15	Left Tilt	1	25	0	1:1		0.032	1.545	0.049	-
836.5	20525	QPSK	A	10	25.5	24.20	0.15	Right Touch	0	1	24	1:1		0.132	1.349	**0.178**	**A6**
836.5	20525	QPSK	A	10	24.5	22.61	0.16	Right Touch	1	25	0	1:1		0.069	1.545	0.107	-
836.5	20525	QPSK	A	10	25.5	24.20	-0.08	Right Tilt	0	1	24	1:1		0.052	1.349	0.070	-
836.5	20525	QPSK	A	10	24.5	22.61	0.19	Right Tilt	1	25	0	1:1		0.026	1.545	0.040	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Head 1.6 W/kg Averaged over 1 gram									

LTE FDD Band 12 Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
707.5	23095	QPSK	A	10	25.0	23.76	-0.19	Left Touch	0	1	0	1:1		0.112	1.330	0.149	-
707.5	23095	QPSK	A	10	24.0	22.14	0.17	Left Touch	1	25	0	1:1		0.064	1.535	0.098	-
707.5	23095	QPSK	A	10	25.0	23.76	-0.13	Left Tilt	0	1	0	1:1		0.063	1.330	0.084	-
707.5	23095	QPSK	A	10	24.0	22.14	0.08	Left Tilt	1	25	0	1:1		0.039	1.535	0.060	-
707.5	23095	QPSK	A	10	25.0	23.76	-0.12	Right Touch	0	1	0	1:1		0.132	1.330	**0.176**	**A7**
707.5	23095	QPSK	A	10	24.0	22.14	0.11	Right Touch	1	25	0	1:1		0.080	1.535	0.123	-
707.5	23095	QPSK	A	10	25.0	23.76	0.03	Right Tilt	0	1	0	1:1		0.058	1.330	0.077	-
707.5	23095	QPSK	A	10	24.0	22.14	0.10	Right Tilt	1	25	0	1:1		0.032	1.535	0.049	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Head 1.6 W/kg Averaged over 1 gram									

LTE FDD Band 13 Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
782	23230	QPSK	A	10	25.0	23.86	0.07	Left Touch	0	1	0	1:1		0.098	1.300	0.127	-
782	23230	QPSK	A	10	24.0	22.31	0.15	Left Touch	1	25	0	1:1		0.061	1.476	0.090	-
782	23230	QPSK	A	10	25.0	23.86	0.03	Left Tilt	0	1	0	1:1		0.059	1.300	0.077	-
782	23230	QPSK	A	10	24.0	22.31	0.11	Left Tilt	1	25	0	1:1		0.034	1.476	0.050	-
782	23230	QPSK	A	10	25.0	23.86	0.02	Right Touch	0	1	0	1:1		0.141	1.300	**0.183**	**A8**
782	23230	QPSK	A	10	24.0	22.31	0.11	Right Touch	1	25	0	1:1		0.083	1.476	0.123	-
782	23230	QPSK	A	10	25.0	23.86	-0.03	Right Tilt	0	1	0	1:1		0.062	1.300	0.081	-
782	23230	QPSK	A	10	24.0	22.31	0.12	Right Tilt	1	25	0	1:1		0.035	1.476	0.052	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Head 1.6 W/kg Averaged over 1 gram									

LTE FDD Band 25 (PCS) Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB	RB	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)	Size	offset			(W/kg)		(W/kg)	
1 905	26590	QPSK	A	20	24.0	22.64	0.16	Left Touch	0	1	0	1:1		0.088	1.368	0.120	-
1 905	26590	QPSK	A	20	23.0	21.61	-0.04	Left Touch	1	50	0	1:1		0.072	1.377	0.099	-
1 905	26590	QPSK	A	20	24.0	22.64	-0.10	Left Tilt	0	1	0	1:1		0.044	1.368	0.060	-
1 905	26590	QPSK	A	20	23.0	21.61	0.00	Left Tilt	1	50	0	1:1		0.040	1.377	0.055	-
1 905	26590	QPSK	A	20	24.0	22.64	-0.18	Right Touch	0	1	0	1:1		0.064	1.368	0.088	-
1 905	26590	QPSK	A	20	23.0	21.61	-0.17	Right Touch	1	50	0	1:1		0.047	1.377	0.065	-
1 905	26590	QPSK	A	20	24.0	22.64	-0.13	Right Tilt	0	1	0	1:1		0.055	1.368	0.075	-
1 905	26590	QPSK	A	20	23.0	21.61	0.01	Right Tilt	1	50	0	1:1		0.045	1.377	0.062	-
1 860	26140	QPSK	F	20	17.0	15.87	0.03	Left Touch	0	1	0	1:1		0.213	1.297	0.276	-
1 860	26140	QPSK	F	20	17.0	15.82	-0.08	Left Touch	0	50	25	1:1		0.208	1.312	0.273	-
1 860	26140	QPSK	F	20	17.0	15.87	-0.02	Left Tilt	0	1	0	1:1		0.261	1.297	0.339	-
1 860	26140	QPSK	F	20	17.0	15.82	0.01	Left Tilt	0	50	25	1:1		0.258	1.312	0.338	-
1 860	26140	QPSK	F	20	17.0	15.87	-0.08	Right Touch	0	1	0	1:1		0.412	1.297	**0.534**	A9
1 860	26140	QPSK	F	20	17.0	15.82	-0.15	Right Touch	0	50	25	1:1		0.401	1.312	0.526	-
1 860	26140	QPSK	F	20	17.0	15.87	0.01	Right Tilt	0	1	0	1:1		0.393	1.297	0.510	-
1 860	26140	QPSK	F	20	17.0	15.82	-0.01	Right Tilt	0	50	25	1:1		0.389	1.312	0.510	-

ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population	Head 1.6 W/kg Averaged over 1 gram

LTE FDD Band 26 (Cell) Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB	RB	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)	Size	offset			(W/kg)		(W/kg)	
831.5	26865	QPSK	A	15	25.0	23.77	0.10	Left Touch	0	1	0	1:1		0.109	1.327	0.145	-
831.5	26865	QPSK	A	15	24.0	22.25	0.18	Left Touch	1	36	0	1:1		0.066	1.496	0.099	-
831.5	26865	QPSK	A	15	25.0	23.77	-0.13	Left Tilt	0	1	0	1:1		0.050	1.327	0.066	-
831.5	26865	QPSK	A	15	24.0	22.25	-0.06	Left Tilt	1	36	0	1:1		0.028	1.496	0.042	-
831.5	26865	QPSK	A	15	25.0	23.77	-0.07	Right Touch	0	1	0	1:1		0.148	1.327	**0.196**	A10
831.5	26865	QPSK	A	15	24.0	22.25	0.13	Right Touch	1	36	0	1:1		0.092	1.496	0.138	-
831.5	26865	QPSK	A	15	25.0	23.77	0.16	Right Tilt	0	1	0	1:1		0.070	1.327	0.093	-
831.5	26865	QPSK	A	15	24.0	22.25	0.11	Right Tilt	1	36	0	1:1		0.041	1.496	0.061	-

ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population	Head 1.6 W/kg Averaged over 1 gram

LTE TDD Band 41 Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
2 549.5	40185	QPSK	B	20	25.0	23.04	-0.17	Left Touch	0	1	0	1:1.58		0.078	1.570	0.122	-
2 549.5	40185	QPSK	B	20	23.0	22.27	-0.10	Left Touch	2	50	0	1:1.58		0.062	1.183	0.073	-
2 549.5	40185	QPSK	B	20	25.0	23.04	-0.19	Left Tilt	0	1	0	1:1.58		0.038	1.570	0.060	-
2 549.5	40185	QPSK	B	20	23.0	22.27	-0.12	Left Tilt	2	50	0	1:1.58		0.030	1.183	0.035	-
2 549.5	40185	QPSK	B	20	25.0	23.04	0.17	Right Touch	0	1	0	1:1.58		0.027	1.570	0.042	-
2 549.5	40185	QPSK	B	20	23.0	22.27	-0.10	Right Touch	2	50	0	1:1.58		0.024	1.183	0.028	-
2 549.5	40185	QPSK	B	20	25.0	23.04	-0.02	Right Tilt	0	1	0	1:1.58		0.024	1.570	0.038	-
2 549.5	40185	QPSK	B	20	23.0	22.27	0.08	Right Tilt	2	50	0	1:1.58		0.020	1.183	0.024	-
2 549.5	40185	QPSK	B	20	26.0	24.43	0.11	Left Touch	0	1	0	1:2.31		0.074	1.435	0.106	#
2 549.5	40185	QPSK	F	20	17.5	16.70	0.14	Left Touch	0	1	0	1:1.58		0.159	1.202	0.191	-
2 549.5	40185	QPSK	F	20	17.5	16.47	-0.02	Left Touch	0	50	0	1:1.58		0.161	1.268	0.204	-
2 549.5	40185	QPSK	F	20	17.5	16.70	0.08	Left Tilt	0	1	0	1:1.58		0.181	1.202	0.218	-
2 549.5	40185	QPSK	F	20	17.5	16.47	0.07	Left Tilt	0	50	0	1:1.58		0.184	1.268	0.233	-
2 549.5	40185	QPSK	F	20	17.5	16.70	-0.10	Right Touch	0	1	0	1:1.58		0.370	1.202	0.445	-
2 549.5	40185	QPSK	F	20	17.5	16.47	0.04	Right Touch	0	50	0	1:1.58		0.386	1.268	0.489	-
2 549.5	40185	QPSK	F	20	17.5	16.70	-0.18	Right Tilt	0	1	0	1:1.58		0.405	1.202	0.487	-
2 549.5	40185	QPSK	F	20	17.5	16.47	-0.11	Right Tilt	0	50	0	1:1.58		0.404	1.268	**0.512**	**A11**
2 549.5	40185	QPSK	F	20	19.0	18.28	-0.13	Right Tilt	0	50	0	1:2.31		0.430	1.180	0.507	#

ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population	Head 1.6 W/kg Averaged over 1 gram

Note : # Data entry indicate Power Class Test Data

LTE FDD Band 66 (AWS) Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
1 720	132072	QPSK	A	20	24.0	22.68	0.10	Left Touch	0	1	49	1:1		0.124	1.355	0.168	-
1 720	132072	QPSK	A	20	23.0	21.70	0.09	Left Touch	1	50	49	1:1		0.102	1.349	0.138	-
1 720	132072	QPSK	A	20	24.0	22.68	0.01	Left Tilt	0	1	49	1:1		0.049	1.355	0.066	-
1 720	132072	QPSK	A	20	23.0	21.70	-0.01	Left Tilt	1	50	49	1:1		0.044	1.349	0.059	-
1 720	132072	QPSK	A	20	24.0	22.68	-0.16	Right Touch	0	1	49	1:1		0.079	1.355	0.107	-
1 720	132072	QPSK	A	20	23.0	21.70	-0.16	Right Touch	1	50	49	1:1		0.070	1.349	0.094	-
1 720	132072	QPSK	A	20	24.0	22.68	-0.07	Right Tilt	0	1	49	1:1		0.057	1.355	0.077	-
1 720	132072	QPSK	A	20	23.0	21.70	-0.01	Right Tilt	1	50	49	1:1		0.051	1.349	0.069	-
1 720	132072	QPSK	F	20	17.0	16.11	-0.08	Left Touch	0	1	99	1:1		0.334	1.227	0.410	-
1 720	132072	QPSK	F	20	17.0	16.11	-0.02	Left Touch	0	50	49	1:1		0.310	1.227	0.380	-
1 720	132072	QPSK	F	20	17.0	16.11	0.05	Left Tilt	0	1	99	1:1		0.373	1.227	0.458	-
1 720	132072	QPSK	F	20	17.0	16.11	0.01	Left Tilt	0	50	49	1:1		0.381	1.227	0.467	-
1 720	132072	QPSK	F	20	17.0	16.11	0.03	Right Touch	0	1	99	1:1		0.557	1.227	0.683	-
1 720	132072	QPSK	F	20	17.0	16.11	-0.04	Right Touch	0	50	49	1:1		0.561	1.227	0.688	-
1 720	132072	QPSK	F	20	17.0	16.11	0.02	Right Tilt	0	1	49	1:1		0.572	1.227	0.702	-
1 720	132072	QPSK	F	20	17.0	16.11	0.02	Right Tilt	0	50	49	1:1		0.589	1.227	**0.723**	**A12**

ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population	Head 1.6 W/kg Averaged over 1 gram

NR FDD Band n5 (Cell) Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
831.5	166300	DFT-s OFDM QPSK	A	20	25.5	24.18	-0.16	Left Touch	0	1	104	1:1		0.121	1.355	0.164	-
831.5	166300	DFT-s OFDM QPSK	A	20	25.5	23.99	-0.19	Left Touch	0	50	28	1:1		0.114	1.416	0.161	-
831.5	166300	DFT-s OFDM QPSK	A	20	25.5	24.18	-0.19	Left Tilt	0	1	104	1:1		0.063	1.355	0.085	-
831.5	166300	DFT-s OFDM QPSK	A	20	25.5	23.99	-0.05	Left Tilt	0	50	28	1:1		0.066	1.416	0.093	-
831.5	166300	DFT-s OFDM QPSK	A	20	25.5	24.18	0.19	Right Touch	0	1	104	1:1		0.149	1.355	0.202	-
831.5	166300	DFT-s OFDM QPSK	A	20	25.5	23.99	-0.06	Right Touch	0	50	28	1:1		0.149	1.416	**0.211**	A13
831.5	166300	DFT-s OFDM QPSK	A	20	25.5	24.18	0.02	Right Tilt	0	1	104	1:1		0.063	1.355	0.085	-
831.5	166300	DFT-s OFDM QPSK	A	20	25.5	23.99	0.07	Right Tilt	0	50	28	1:1		0.069	1.416	0.098	-
831.5	166300	CP QPSK	A	20	24.0	22.38	-0.02	Right Touch	1.5	1	1	1:1		0.114	1.452	0.166	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Head 1.6 W/kg Averaged over 1 gram									

NR FDD Band n25 Head (PCS) SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
1 905	381000	DFT-s QPSK	A	20	24.0	22.83	-0.10	Left Touch	0	1	53	1:1		0.078	1.309	0.102	-
1 905	381000	DFT-s QPSK	A	20	24.0	22.76	0.04	Left Touch	0	50	28	1:1		0.077	1.330	0.102	-
1 905	381000	DFT-s QPSK	A	20	24.0	22.83	-0.06	Left Tilt	0	1	53	1:1		0.056	1.309	0.073	-
1 905	381000	DFT-s QPSK	A	20	24.0	22.76	0.10	Left Tilt	0	50	28	1:1		0.055	1.330	0.073	-
1 905	381000	DFT-s QPSK	A	20	24.0	22.83	-0.13	Right Touch	0	1	53	1:1		0.047	1.309	0.062	-
1 905	381000	DFT-s QPSK	A	20	24.0	22.76	0.12	Right Touch	0	50	28	1:1		0.043	1.330	0.057	-
1 905	381000	DFT-s QPSK	A	20	24.0	22.83	0.09	Right Tilt	0	1	53	1:1		0.040	1.309	0.052	-
1 905	381000	DFT-s QPSK	A	20	24.0	22.76	0.08	Right Tilt	0	50	28	1:1		0.043	1.330	0.057	-
1 905	381000	CP QPSK	A	20	22.5	21.24	-0.13	Left Touch	1.5	1	1	1:1		0.059	1.337	0.079	-
1 860	372000	DFT-s QPSK	F	20	17.0	16.29	-0.07	Left Touch	0	1	53	1:1		0.213	1.178	0.251	-
1 882.5	376500	DFT-s QPSK	F	20	17.0	16.24	-0.03	Left Touch	0	50	56	1:1		0.209	1.191	0.249	-
1 860	372000	DFT-s QPSK	F	20	17.0	16.29	-0.04	Left Tilt	0	1	53	1:1		0.281	1.178	0.331	-
1 882.5	376500	DFT-s QPSK	F	20	17.0	16.24	-0.04	Left Tilt	0	50	56	1:1		0.281	1.191	0.335	-
1 860	372000	DFT-s QPSK	F	20	17.0	16.29	-0.09	Right Touch	0	1	53	1:1		0.366	1.178	0.431	-
1 882.5	376500	DFT-s QPSK	F	20	17.0	16.24	-0.04	Right Touch	0	50	56	1:1		0.373	1.191	0.444	-
1 860	372000	DFT-s QPSK	F	20	17.0	16.29	-0.03	Right Tilt	0	1	53	1:1		0.408	1.178	0.481	-
1 882.5	376500	DFT-s QPSK	F	20	17.0	16.24	-0.04	Right Tilt	0	50	56	1:1		0.418	1.191	**0.498**	A14
1 860	372000	CP QPSK	F	20	17.0	16.26	0.01	Right Tilt	0	1	1	1:1		0.400	1.186	0.474	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Head 1.6 W/kg Averaged over 1 gram									

NR TDD Band n41 Head SAR																	
Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
2 592.99	518598	DFT-s QPSK	B	100	19.0	18.79	0.00	Left Touch	0	1	271	1:1		0.025	1.050	0.026	-
2 592.99	518598	DFT-s QPSK	B	100	19.0	18.43	0.15	Left Touch	0	135	138	1:1		0.015	1.140	0.017	-
2 592.99	518598	DFT-s QPSK	B	100	19.0	18.79	-0.19	Left Tilt	0	1	271	1:1		0.013	1.050	0.014	
2 592.99	518598	DFT-s QPSK	B	100	19.0	18.43	0.00	Left Tilt	0	135	138	1:1		0.00596	1.140	0.007	-
2 592.99	518598	DFT-s QPSK	B	100	19.0	18.79	0.00	Right Touch	0	1	271	1:1		0.023	1.050	0.024	-
2 592.99	518598	DFT-s QPSK	B	100	19.0	18.43	0.00	Right Touch	0	135	138	1:1		0.017	1.140	0.019	-
2 592.99	518598	DFT-s QPSK	B	100	19.0	18.79	0.18	Right Tilt	0	1	271	1:1		0.000971	1.050	0.001	-
2 592.99	518598	DFT-s QPSK	B	100	19.0	18.43	-0.14	Right Tilt	0	135	138	1:1		0.00266	1.140	0.003	-
2 592.99	518598	CP QPSK	B	100	19.0	18.17	0.10	Left Touch	0	1	1	1:1		0.031	1.211	0.038	-
2 592.99	518598	CW SRS #1	F	100	14.0	13.52	0.09	Left Touch	0	-	-	1:1		0.129	1.117	0.144	-
2 592.99	518598	CW SRS #1	F	100	14.0	13.52	-0.07	Left Tilt	0	-	-	1:1		0.155	1.117	0.173	-
2 592.99	518598	CW SRS #1	F	100	14.0	13.52	-0.02	Right Touch	0	-	-	1:1		0.306	1.117	0.342	-
2 592.99	518598	CW SRS #1	F	100	14.0	13.52	0.17	Right Tilt	0	-	-	1:1		0.311	1.117	**0.347**	**A15**
2 592.99	518598	CW SRS #2	D	100	15.5	15.48	-	Left Touch	0	-	-	1:1		0	1.005	0.000	-
2 592.99	518598	CW SRS #2	D	100	15.5	15.48	-	Left Tilt	0	-	-	1:1		0	1.005	0.000	-
2 592.99	518598	CW SRS #2	D	100	15.5	15.48	-	Right Touch	0	-	-	1:1		0	1.005	0.000	-
2 592.99	518598	CW SRS #2	D	100	15.5	15.48	-	Right Tilt	0	-	-	1:1		0	1.005	0.000	-
2 592.99	518598	CW SRS #3	E	100	14.5	14.09	-	Left Touch	0	-	-	1:1		0	1.099	0.000	-
2 592.99	518598	CW SRS #3	E	100	14.5	14.09	-	Left Tilt	0	-	-	1:1		0	1.099	0.000	-
2 592.99	518598	CW SRS #3	E	100	14.5	14.09	-	Right Touch	0	-	-	1:1		0	1.099	0.000	-
2 592.99	518598	CW SRS #3	E	100	14.5	14.09	-	Right Tilt	0	-	-	1:1		0	1.099	0.000	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Head 1.6 W/kg Averaged over 1 gram									

NR FDD Band n66 Head SAR																	
Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
1 720	344000	DFT-s QPSK	A	20	24.5	23.15	0.19	Left Touch	0	1	1	1:1		0.092	1.365	0.126	-
1 720	344000	DFT-s QPSK	A	20	24.5	23.02	0.12	Left Touch	0	50	28	1:1		0.096	1.406	0.135	-
1 720	344000	DFT-s QPSK	A	20	24.5	23.15	0.03	Left Tilt	0	1	1	1:1		0.057	1.365	0.078	-
1 720	344000	DFT-s QPSK	A	20	24.5	23.02	0.06	Left Tilt	0	50	28	1:1		0.049	1.406	0.069	-
1 720	344000	DFT-s QPSK	A	20	24.5	23.15	0.02	Right Touch	0	1	1	1:1		0.052	1.365	0.071	-
1 720	344000	DFT-s QPSK	A	20	24.5	23.02	0.13	Right Touch	0	50	28	1:1		0.053	1.406	0.075	-
1 720	344000	DFT-s QPSK	A	20	24.5	23.15	0.10	Right Tilt	0	1	1	1:1		0.046	1.365	0.063	-
1 720	344000	DFT-s QPSK	A	20	24.5	23.02	-0.04	Right Tilt	0	50	28	1:1		0.041	1.406	0.058	-
1 720	344000	CP QPSK	A	20	23.0	21.66	0.19	Left Touch	1.5	1	1	1:1		0.072	1.361	0.098	-
1 720	344000	DFT-s QPSK	F	20	19.0	18.63	-0.07	Left Touch	0	1	53	1:1		0.418	1.089	0.455	-
1 720	344000	DFT-s QPSK	F	20	19.0	18.60	-0.08	Left Touch	0	50	28	1:1		0.420	1.096	0.460	-
1 720	344000	DFT-s QPSK	F	20	19.0	18.63	-0.05	Left Tilt	0	1	53	1:1		0.472	1.089	0.514	-
1 720	344000	DFT-s QPSK	F	20	19.0	18.60	-0.03	Left Tilt	0	50	28	1:1		0.484	1.096	0.530	-
1 720	344000	DFT-s QPSK	F	20	19.0	18.63	-0.08	Right Touch	0	1	53	1:1		0.698	1.089	0.760	-
1 720	344000	DFT-s QPSK	F	20	19.0	18.60	-0.07	Right Touch	0	50	28	1:1		0.695	1.096	0.762	-
1 720	344000	DFT-s QPSK	F	20	19.0	18.63	-0.06	Right Tilt	0	1	53	1:1		0.757	1.089	0.824	-
1 745	349000	DFT-s QPSK	F	20	19.0	18.16	-0.09	Right Tilt	0	1	1	1:1		0.660	1.213	0.801	-
1 770	354000	DFT-s QPSK	F	20	19.0	17.94	-0.05	Right Tilt	0	1	1	1:1		0.569	1.276	0.726	-
1 720	344000	DFT-s QPSK	F	20	19.0	18.60	-0.09	Right Tilt	0	50	28	1:1		0.730	1.096	0.800	-
1 745	349000	DFT-s QPSK	F	20	19.0	18.09	-0.07	Right Tilt	0	50	0	1:1		0.645	1.233	0.795	-
1 770	354000	DFT-s QPSK	F	20	19.0	17.85	-0.05	Right Tilt	0	50	0	1:1		0.558	1.303	0.727	
1 720	344000	DFT-s QPSK	F	20	19.0	18.52	-0.06	Right Tilt	0	100	0	1:1		0.723	1.117	0.808	
1 720	344000	CP QPSK	F	20	19.0	18.51	-0.09	Right Tilt	0	1	1	1:1		0.768	1.119	**0.859**	A16
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Head 1.6 W/kg I Averaged over 1 gram									

NR TDD Band n77 Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
3 750	650000	DFT-s QPSK	F	100	15.0	13.57	-0.18	Left Touch	0	1	1	1:1		0.131	1.390	0.182	-
3 750	650000	DFT-s QPSK	F	100	15.0	13.62	-0.16	Left Touch	0	135	138	1:1		0.115	1.374	0.158	-
3 750	650000	DFT-s QPSK	F	100	15.0	13.57	0.01	Left Tilt	0	1	1	1:1		0.166	1.390	0.231	-
3 750	650000	DFT-s QPSK	F	100	15.0	13.62	0.11	Left Tilt	0	135	138	1:1		0.129	1.374	0.177	-
3 750	650000	DFT-s QPSK	F	100	15.0	13.57	-0.12	Right Touch	0	1	1	1:1		0.272	1.390	0.378	-
3 750	650000	DFT-s QPSK	F	100	15.0	13.62	-0.06	Right Touch	0	135	138	1:1		0.249	1.374	0.342	-
3 750	650000	DFT-s QPSK	F	100	15.0	13.57	0.17	Right Tilt	0	1	1	1:1		0.337	1.390	**0.468**	A17
3 930	662000	DFT-s QPSK	F	100	15.0	13.34	-0.18	Right Tilt	0	1	1	1:1		0.252	1.466	0.369	-
3 750	650000	DFT-s QPSK	F	100	15.0	13.62	-0.16	Right Tilt	0	135	138	1:1		0.281	1.374	0.386	-
3 750	650000	DFT-s QPSK	F	100	15.0	13.31	-0.12	Right Tilt	0	270	0	1:1		0.317	1.476	0.468	-
3 750	650000	CP QPSK	F	100	15.0	13.59	-0.13	Right Tilt	0	1	1	1:1		0.319	1.384	0.441	-
3 500.01	633334	DFT-s QPSK	F	100	15.0	13.97	-0.16	Right Tilt	0	1	1	1:1		0.279	1.268	0.354	-
3 930	662000	CW SRS #1	C	100	11.5	11.28	-	Left Touch	0	-	-	1:1		0	1.052	0.000	-
3 930	662000	CW SRS #1	C	100	11.5	11.28	-	Left Tilt	0	-	-	1:1		0	1.052	0.000	-
3 930	662000	CW SRS #1	C	100	11.5	11.28	-	Right Touch	0	-	-	1:1		0	1.052	0.000	-
3 930	662000	CW SRS #1	C	100	11.5	11.28	-	Right Tilt	0	-	-	1:1		0	1.052	0.000	-
3 500.01	633334	CW SRS #1	C	100	11.5	9.71	-	Left Touch	0	-	-	1:1		0	1.510	0.000	-
3 930	662000	CW SRS #2	I	100	14.5	14.43	0.15	Left Touch	0	-	-	1:1		0.151	1.016	0.153	-
3 930	662000	CW SRS #2	I	100	14.5	14.43	-0.14	Left Touch	0	-	-	1:1		0.016	1.016	0.016	-
3 930	662000	CW SRS #2	I	100	14.5	14.43	-0.19	Left Tilt	0	-	-	1:1		0.204	1.016	0.207	-
3 930	662000	CW SRS #2	I	100	14.5	14.43	0.15	Right Touch	0	-	-	1:1		0.024	1.016	0.024	-
3 500.01	633334	CW SRS #2	I	100	14.5	13.50	0.14	Right Tilt	0	-	-	1:1		0.073	1.259	0.092	-
3 750	650000	CW SRS #3	D	100	11.5	11.42	-	Left Touch	0	-	-	1:1		0	1.019	0.000	-
3 750	650000	CW SRS #3	D	100	11.5	11.42	-	Left Tilt	0	-	-	1:1		0	1.019	0.000	-
3 750	650000	CW SRS #3	D	100	11.5	11.42	-	Right Touch	0	-	-	1:1		0	1.019	0.000	-
3 750	650000	CW SRS #3	D	100	11.5	11.42	-	Right Tilt	0	-	-	1:1		0	1.019	0.000	-
3 500.01	633334	CW SRS #3	D	100	11.5	10.33	-	Left Touch	0	-	-	1:1		0	1.309	0.000	-

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DTS Head SAR – RCV ON

Frequency		Mode	Ant.	Band width	Data Rate	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Area Scan Peak SAR	Meas. SAR	Scaling Factor	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)		(dBm)	(dBm)	(dB)			(W/kg)	(W/kg)		(Duty)	(W/kg)	
2 412	1	802.11b	H	20	1Mbps	14.0	13.75	0.00	Left Touch	98.7	0.300	0.072	1.045	1.013	0.076	-
2 412	1	802.11b	H	20	1Mbps	14.0	13.75	0.10	Left Tilt	98.7	0.172	0.076	1.045	1.013	0.080	-
2 412	1	802.11b	H	20	1Mbps	14.0	13.75	-0.01	Right Touch	98.7	0.808	0.376	1.045	1.013	0.398	-
2 412	1	802.11b	H	20	1Mbps	14.0	13.75	-0.16	Right Tilt	98.7	0.540	0.287	1.045	1.013	0.304	-
2 462	11	802.11b	J	20	1Mbps	14.0	13.50	-0.19	Left Touch	98.7	0.855	0.529	1.122	1.013	**0.601**	A18
2 462	11	802.11b	J	20	1Mbps	14.0	13.50	-0.16	Left Tilt	98.7	0.131	0.069	1.122	1.013	0.078	-
2 462	11	802.11b	J	20	1Mbps	14.0	13.50	0.00	Right Touch	98.7	0.738	0.449	1.122	1.013	0.510	-
2 462	11	802.11b	J	20	1Mbps	14.0	13.50	0.08	Right Tilt	98.7	0.0836	0.058	1.122	1.013	0.066	-
2 462	11	802.11b	H+J	20	1Mbps	17.0	16.59	0.00	Left Touch	98.7	0.574	0.313	1.122	1.013	0.356	-
2 462	11	802.11b	H+J	20	1Mbps	17.0	16.59	0.10	Left Tilt	98.7	0.140	0.068	1.122	1.013	0.077	-
2 462	11	802.11b	H+J	20	1Mbps	17.0	16.59	-0.01	Right Touch	98.7	0.671	0.446	1.122	1.013	0.507	-
2 462	11	802.11b	H+J	20	1Mbps	17.0	16.59	-0.16	Right Tilt	98.7	0.458	0.277	1.122	1.013	0.315	-

ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population	Head 1.6 W/kg Averaged over 1 gram

NII Head SAR – RCV-ON

Frequency		Mode	Ant.	Band width	Data Rate	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Area Scan Peak SAR	Meas. SAR	Scaling Factor	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(Mbps)	(dBm)	(dBm)	(dB)			(W/kg)	(W/kg)		(Duty)	(W/kg)	
5 290	58	802.11ac80	G	80	MCS0	13.0	12.47	-0.13	Left Touch	85.8	0.295	0.038	1.130	1.166	0.050	-
5 290	58	802.11ac80	G	80	MCS0	13.0	12.47	0.15	Left Tilt	85.8	0.148	0.031	1.130	1.166	0.041	-
5 290	58	802.11ac80	G	80	MCS0	13.0	12.47	-0.14	Right Touch	85.8	0.663	0.256	1.130	1.166	**0.337**	-
5 290	58	802.11ac80	G	80	MCS0	13.0	12.47	0.12	Right Tilt	85.8	0.387	0.132	1.130	1.166	0.174	-
5 690	138	802.11ac80	G	80	MCS0	13.0	12.90	0.14	Left Touch	85.8	0.144	0.029	1.023	1.166	0.035	-
5 690	138	802.11ac80	G	80	MCS0	13.0	12.90	0.18	Left Tilt	85.8	0.180	0.022	1.023	1.166	0.026	-
5 690	138	802.11ac80	G	80	MCS0	13.0	12.90	0.19	Right Touch	85.8	0.820	0.277	1.023	1.166	0.330	-
5 690	138	802.11ac80	G	80	MCS0	13.0	12.90	0.16	Right Tilt	85.8	0.244	0.095	1.023	1.166	0.113	-
5 775	155	802.11ac80	G	80	MCS0	13.0	12.81	-0.13	Left Touch	85.8	0.0631	0.024	1.045	1.166	0.029	-
5 775	155	802.11ac80	G	80	MCS0	13.0	12.81	0.10	Left Tilt	85.8	0.0698	0.02	1.045	1.166	0.024	-
5 775	155	802.11ac80	G	80	MCS0	13.0	12.81	0.12	Right Touch	85.8	0.953	0.278	1.045	1.166	0.339	-
5 775	155	802.11ac80	G	80	MCS0	13.0	12.81	-0.12	Right Tilt	85.8	0.229	0.066	1.045	1.166	0.080	-
5 855	171	802.11ac80	G	80	MCS0	13.0	12.98	0.00	Left Touch	85.8	0.0613	0.021	1.005	1.166	0.025	-
5 855	171	802.11ac80	G	80	MCS0	13.0	12.98	0.19	Left Tilt	85.8	0.0532	0.014	1.005	1.166	0.016	-
5 855	171	802.11ac80	G	80	MCS0	13.0	12.98	0.19	Right Touch	85.8	0.961	0.222	1.005	1.166	0.260	-
5 855	171	802.11ac80	G	80	MCS0	13.0	12.98	-0.14	Right Tilt	85.8	0.326	0.051	1.005	1.166	0.060	-
5 290	58	802.11ac80	E	80	MCS0	13.0	12.41	-0.18	Left Touch	85.8	0.540	0.083	1.146	1.166	0.111	-
5 290	58	802.11ac80	E	80	MCS0	13.0	12.41	0.15	Left Tilt	85.8	0.318	0.068	1.146	1.166	0.091	-
5 290	58	802.11ac80	E	80	MCS0	13.0	12.41	-0.11	Right Touch	85.8	0.350	0.081	1.146	1.166	0.108	-
5 290	58	802.11ac80	E	80	MCS0	13.0	12.41	0.19	Right Tilt	85.8	0.228	0.082	1.146	1.166	0.110	-
5 530	106	802.11ac80	E	80	MCS0	13.0	12.56	0.13	Left Touch	85.8	0.236	0.061	1.159	1.166	0.082	-
5 530	106	802.11ac80	E	80	MCS0	13.0	12.56	-0.10	Left Tilt	85.8	0.186	0.044	1.159	1.166	0.059	-
5 530	106	802.11ac80	E	80	MCS0	13.0	12.56	-0.07	Right Touch	85.8	0.159	0.053	1.159	1.166	0.072	-
5 530	106	802.11ac80	E	80	MCS0	13.0	12.56	-0.02	Right Tilt	85.8	0.205	0.037	1.159	1.166	0.050	-
5 775	155	802.11ac80	E	80	MCS0	13.0	11.92	0.13	Left Touch	85.8	0.361	0.123	1.282	1.166	0.184	-
5 775	155	802.11ac80	E	80	MCS0	13.0	11.92	-0.07	Left Tilt	85.8	0.428	0.079	1.282	1.166	0.118	-
5 775	155	802.11ac80	E	80	MCS0	13.0	11.92	-0.12	Right Touch	85.8	0.472	0.059	1.282	1.166	0.088	-
5 775	155	802.11ac80	E	80	MCS0	13.0	11.92	0.16	Right Tilt	85.8	0.251	0.054	1.282	1.166	0.081	-
5 855	171	802.11ac80	E	80	MCS0	13.0	12.92	-0.02	Left Touch	85.8	0.579	0.093	1.019	1.166	0.110	-
5 855	171	802.11ac80	E	80	MCS0	13.0	12.92	-0.13	Left Tilt	85.8	0.321	0.091	1.019	1.166	0.108	-
5 855	171	802.11ac80	E	80	MCS0	13.0	12.92	-0.12	Right Touch	85.8	0.227	0.078	1.019	1.166	0.093	-
5 855	171	802.11ac80	E	80	MCS0	13.0	12.92	-0.12	Right Tilt	85.8	0.309	0.069	1.019	1.166	0.082	-
5 290	58	802.11ac80	G+E	80	MCS0	16.0	15.45	-0.11	Left Touch	85.8	0.346	0.117	1.146	1.166	0.156	-
5 290	58	802.11ac80	G+E	80	MCS0	16.0	15.45	-0.13	Left Tilt	85.8	0.368	0.120	1.146	1.166	0.160	-
5 290	58	802.11ac80	G+E	80	MCS0	16.0	15.45	0.09	Right Touch	85.8	1.33	0.207	1.146	1.166	0.276	-
5 290	58	802.11ac80	G+E	80	MCS0	16.0	15.45	0.17	Right Tilt	85.8	0.325	0.126	1.146	1.166	0.168	-
5 530	106	802.11ac80	G+E	80	MCS0	16.0	15.71	0.06	Left Touch	85.8	0.607	0.129	1.107	1.166	0.166	-
5 530	106	802.11ac80	G+E	80	MCS0	16.0	15.71	-0.10	Left Tilt	85.8	0.267	0.075	1.107	1.166	0.097	-
5 530	106	802.11ac80	G+E	80	MCS0	16.0	15.71	-0.13	Right Touch	85.8	1.35	0.415	1.107	1.166	**0.535**	A19
5 530	106	802.11ac80	G+E	80	MCS0	16.0	15.71	-0.08	Right Tilt	85.8	0.620	0.246	1.107	1.166	0.317	-
5 775	155	802.11ac80	G+E	80	MCS0	16.0	15.39	-0.13	Left Touch	85.8	0.154	0.057	1.282	1.166	0.085	-
5 775	155	802.11ac80	G+E	80	MCS0	16.0	15.39	-0.12	Left Tilt	85.8	0.283	0.059	1.282	1.166	0.088	-
5 775	155	802.11ac80	G+E	80	MCS0	16.0	15.39	0.08	Right Touch	85.8	1.29	0.318	1.282	1.166	**0.475**	-
5 775	155	802.11ac80	G+E	80	MCS0	16.0	15.39	0.13	Right Tilt	85.8	0.323	0.104	1.282	1.166	0.155	-
5 855	171	802.11ac80	G+E	80	MCS0	16.0	15.96	0.18	Left Touch	85.8	0.202	0.065	1.019	1.166	0.077	-
5 855	171	802.11ac80	G+E	80	MCS0	16.0	15.96	0.07	Left Tilt	85.8	0.217	0.060	1.019	1.166	0.071	-
5 855	171	802.11ac80	G+E	80	MCS0	16.0	15.96	0.06	Right Touch	85.8	1.12	0.307	1.019	1.166	0.365	-
5 855	171	802.11ac80	G+E	80	MCS0	16.0	15.96	-0.10	Right Tilt	85.8	0.315	0.076	1.019	1.166	0.090	-

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6 GHz Head SAR – RCV-ON															
Frequency		Mode	Ant.	Band width	Data Rate	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Meas. SAR	Scaling Factor	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(Mbps)	(dBm)	(dBm)	(dB)			(W/kg)		(Duty)	(W/kg)	
6 505	111	802.11ax160	G	160	MCS0	9.0	7.14	0.04	Left Touch	99.6	0.015	1.535	1.004	0.023	-
6 505	111	802.11ax160	G	160	MCS0	9.0	7.14	0.15	Left Tilt	99.6	0.014	1.535	1.004	0.022	-
6 505	111	802.11ax160	G	160	MCS0	9.0	7.14	0.00	Right Touch	99.6	0.114	1.535	1.004	**0.176**	**A20**
6 505	111	802.11ax160	G	160	MCS0	9.0	7.14	-0.10	Right Tilt	99.6	0.040	1.535	1.004	0.062	-
6 025	15	802.11ax160	G	160	MCS0	9.0	7.29	0.10	Right Touch	99.6	0.079	1.483	1.004	0.118	-
6 185	47	802.11ax160	G	160	MCS0	9.0	7.83	-0.15	Right Touch	99.6	0.057	1.309	1.004	0.075	-
6 825	175	802.11ax160	G	160	MCS0	9.0	8.16	0.10	Right Touch	99.6	0.065	1.213	1.004	0.079	-
6 985	207	802.11ax160	G	160	MCS0	9.0	7.13	-0.19	Right Touch	99.6	0.027	1.538	1.004	0.042	-
6 505	111	802.11ax160	E	160	MCS0	9.0	7.13	-0.13	Left Touch	99.6	0.052	1.538	1.004	0.080	-
6 505	111	802.11ax160	E	160	MCS0	9.0	7.13	-0.11	Left Tilt	99.6	0.039	1.538	1.004	0.060	-
6 505	111	802.11ax160	E	160	MCS0	9.0	7.13	0.11	Right Touch	99.6	0.036	1.538	1.004	0.056	-
6 505	111	802.11ax160	E	160	MCS0	9.0	7.13	-0.17	Right Tilt	99.6	0.029	1.538	1.004	0.045	-
6 025	15	802.11ax160	E	160	MCS0	9.0	8.06	-0.17	Left Touch	99.6	0.081	1.242	1.004	0.101	-
6 185	47	802.11ax160	E	160	MCS0	9.0	8.20	-0.17	Left Touch	99.6	0.062	1.202	1.004	0.075	-
6 825	175	802.11ax160	E	160	MCS0	9.0	7.83	0.02	Left Touch	99.6	0.046	1.309	1.004	0.060	-
6 985	207	802.11ax160	E	160	MCS0	9.0	7.39	0.18	Left Touch	99.6	0.019	1.449	1.004	0.028	-
6 505	111	802.11ax160	G+E	160	MCS0	12.0	10.14	-0.16	Left Touch	99.6	0.042	1.538	1.004	0.065	-
6 505	111	802.11ax160	G+E	160	MCS0	12.0	10.14	0.16	Left Tilt	99.6	0.028	1.538	1.004	0.043	-
6 505	111	802.11ax160	G+E	160	MCS0	12.0	10.14	0.13	Right Touch	99.6	0.104	1.538	1.004	0.161	-
6 505	111	802.11ax160	G+E	160	MCS0	12.0	10.14	0.15	Right Tilt	99.6	0.023	1.538	1.004	0.036	-
6 025	15	802.11ax160	G+E	160	MCS0	12.0	10.70	-0.10	Right Touch	99.6	0.088	1.483	1.004	0.131	-
6 185	47	802.11ax160	G+E	160	MCS0	12.0	11.03	-0.17	Right Touch	99.6	0.064	1.309	1.004	0.084	-
6 825	175	802.11ax160	G+E	160	MCS0	12.0	11.01	0.10	Right Touch	99.6	0.068	1.309	1.004	0.089	-
6 985	207	802.11ax160	G+E	160	MCS0	12.0	10.27	-0.17	Right Touch	99.6	0.001	1.538	1.004	0.002	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Head 1.6 W/kg Averaged over 1 gram						

DSS Head SAR – RCV ON													
Frequency		Mode	Ant.	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Meas. SAR	Scaling Factor	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dBm)	(dBm)	(dB)		(W/kg)		(Duty)	(W/kg)	
2 441	39	Bluetooth DH5	H	13.5	13.42	-0.18	Left Touch	0.064	1.019	1.010	0.066	-
2 441	39	Bluetooth DH5	H	13.5	13.42	-0.14	Left Tilt	0.070	1.019	1.010	0.072	-
2 441	39	Bluetooth DH5	H	13.5	13.42	0.11	Right Touch	0.272	1.019	1.010	0.280	**A21**
2 441	39	Bluetooth DH5	H	13.5	13.42	-0.08	Right Tilt	0.221	1.019	1.010	0.227	-
2 440	17	Bluetooth LE 1M(255)	H	13.5	12.99	0.11	Right Touch	0.256	1.125	1.010	**0.291**	
2 480	78	Bluetooth DH5	J	12.5	11.78	0.19	Left Touch	0.148	1.180	1.010	0.176	-
2 480	78	Bluetooth DH5	J	12.5	11.78	0.10	Left Tilt	0.014	1.180	1.010	0.017	-
2 480	78	Bluetooth DH5	J	12.5	11.78	0.12	Right Touch	0.154	1.180	1.010	0.184	-
2 480	78	Bluetooth DH5	J	12.5	11.78	0.13	Right Tilt	0.016	1.180	1.010	0.019	-
2 480	39	Bluetooth LE 1M(255)	J	12.5	10.62	0.00	Right Touch	0.051	1.542	1.010	0.079	-
2 402	0	Bluetooth DH5	H+J	15.0	14.75	0.14	Left Touch	0.121	1.069	1.010	0.131	-
2 402	0	Bluetooth DH5	H+J	15.0	14.75	-0.04	Left Tilt	0.036	1.069	1.010	0.039	-
2 402	0	Bluetooth DH5	H+J	15.0	14.75	0.04	Right Touch	0.155	1.069	1.010	0.167	-
2 402	0	Bluetooth DH5	H+J	15.0	14.75	0.13	Right Tilt	0.099	1.069	1.010	0.107	-
2 480	39	Bluetooth LE 1M(255)	H+J	15.0	14.34	-0.05	Right Touch	0.090	1.186	1.010	0.107	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Head 1.6 W/kg Averaged over 1 gram					

13.1.2 Hotspot/Body Worn SAR Measurement Results

GSM 850 Hotspot/Body Worn SAR													
Frequency		Mode	Ant.	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dB)	(dB)	(dB)			(mm)		(W/kg)		(W/kg)	
836.6	190	GPRS 3Tx	A	28.0	26.68	-0.06	Rear	1:2.77	10		0.378	1.355	0.512	-
836.6	190	GPRS 3Tx	A	28.0	26.68	-0.09	Front	1:2.77	10		0.273	1.355	0.370	-
836.6	190	GPRS 3Tx	A	28.0	26.68	-0.12	Left	1:2.77	10		0.052	1.355	0.070	-
836.6	190	GPRS 3Tx	A	28.0	26.68	-0.07	Right	1:2.77	10		0.221	1.355	0.299	-
836.6	190	GPRS 3Tx	A	28.0	26.68	0.15	Bottom	1:2.77	10		0.213	1.355	0.289	-
836.6	190	GPRS Voice	A	32.0	31.19	0.16	Rear	1:8.3	10		0.426	1.205	**0.513**	**B1**
836.6	190	GPRS Voice	A	32.0	31.19	-0.12	Front	1:8.3	10		0.296	1.205	0.357	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram						

GSM 1900 Hotspot/Body Worn SAR													
Frequency		Mode	Ant.	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dB)	(dB)	(dB)			(mm)		(W/kg)		(W/kg)	
1 880	661	GPRS 2Tx	A	26.7	25.90	-0.11	Rear	1:4.15	10		0.246	1.202	0.296	-
1 880	661	GPRS 2Tx	A	26.7	25.90	-0.18	Front	1:4.15	10		0.246	1.202	0.296	-
1 880	661	GPRS 2Tx	A	26.7	25.90	-0.18	Left	1:4.15	10		0.071	1.202	0.085	-
1 880	661	GPRS 2Tx	A	26.7	25.90	-0.18	Right	1:4.15	10		0.058	1.202	0.070	-
1 880	661	GPRS 2Tx	A	26.7	25.90	0.18	Bottom	1:4.15	10		0.576	1.202	**0.692**	**B2**
1 880	661	GPRS Voice	A	29.7	28.87	-0.13	Rear	1:8.3	10		0.384	1.211	0.465	-
1 880	661	GPRS Voice	A	29.7	28.87	-0.14	Front	1:8.3	10		0.385	1.211	0.466	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram						

UMTS Band 5 Hotspot/Body Worn SAR													
Frequency		Mode	Ant.	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dB)	(dB)	(dB)			(mm)		(W/kg)		(W/kg)	
836.6	4183	RMC	A	25.8	24.79	0.08	Rear	1:1	10		0.581	1.262	**0.733**	**B3**
836.6	4183	RMC	A	25.8	24.79	-0.13	Front	1:1	10		0.402	1.262	0.507	-
836.6	4183	RMC	A	25.8	24.79	0.07	Left	1:1	10		0.088	1.262	0.111	-
836.6	4183	RMC	A	25.8	24.79	0.05	Right	1:1	10		0.234	1.262	0.295	-
836.6	4183	RMC	A	25.8	24.79	0.07	Bottom	1:1	10		0.268	1.262	0.338	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram						

UMTS Band 4 Hotspot/Body Worn SAR

Frequency		Mode	Ant.	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dB)	(dB)	(dB)			(mm)		(W/kg)		(W/kg)	
1732.5	1412	RMC	A	21.0	20.09	-0.14	Rear	1:1	10		0.312	1.233	0.385	-
1732.5	1412	RMC	A	21.0	20.09	-0.14	Front	1:1	10		0.275	1.233	0.339	-
1732.5	1412	RMC	A	21.0	20.09	0.06	Left	1:1	10		0.083	1.233	0.102	-
1732.5	1412	RMC	A	21.0	20.09	0.19	Right	1:1	10		0.037	1.233	0.046	-
1732.5	1412	RMC	A	21.0	20.09	0.12	Bottom	1:1	10		0.645	1.233	**0.795**	**B4**
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram						

UMTS Band 2 Hotspot/BodyWorn SAR

Frequency		Mode	Ant.	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dB)	(dB)	(dB)			(mm)		(W/kg)		(W/kg)	
1880.0	9400	RMC	A	21.0	19.99	-0.16	Rear	1:1	10		0.280	1.262	0.353	-
1880.0	9400	RMC	A	21.0	19.99	-0.14	Front	1:1	10		0.251	1.262	0.317	-
1880.0	9400	RMC	A	21.0	19.99	-0.13	Left	1:1	10		0.061	1.262	0.077	-
1880.0	9400	RMC	A	21.0	19.99	0.19	Right	1:1	10		0.032	1.262	0.040	-
1880.0	9400	RMC	A	21.0	19.99	0.13	Bottom	1:1	10		0.781	1.262	**0.986**	**B5**
1852.4	9262	RMC	A	21.0	20.21	0.12	Bottom	1:1	10		0.736	1.199	0.882	-
1907.6	9538	RMC	A	21.0	20.06	0.14	Bottom	1:1	10		0.717	1.242	0.891	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram						

LTE FDD Band 5 (Cell) Hotspot/Body Worn SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
836.5	20525	QPSK	A	10	25.5	24.20	0.05	Rear	0	1	24	1:1		10	0.703	1.349	**0.948**	**B6**
836.5	20525	QPSK	A	10	24.5	22.61	0.08	Rear	1	25	0	1:1		10	0.398	1.545	0.615	-
836.5	20525	QPSK	A	10	24.5	22.51	0.05	Rear	1	50	0	1:1		10	0.396	1.581	0.626	-
836.5	20525	QPSK	A	10	25.5	24.20	-0.05	Front	0	1	24	1:1		10	0.443	1.349	0.598	-
836.5	20525	QPSK	A	10	24.5	22.61	-0.11	Front	1	25	0	1:1		10	0.257	1.545	0.397	-
836.5	20525	QPSK	A	10	25.5	24.20	-0.18	Left	0	1	24	1:1		10	0.089	1.349	0.120	-
836.5	20525	QPSK	A	10	24.5	22.61	0.00	Left	1	25	0	1:1		10	0.052	1.545	0.080	-
836.5	20525	QPSK	A	10	25.5	24.20	0.02	Right	0	1	24	1:1		10	0.166	1.349	0.224	-
836.5	20525	QPSK	A	10	24.5	22.61	0.00	Right	1	25	0	1:1		10	0.094	1.545	0.145	-
836.5	20525	QPSK	A	10	25.5	24.20	0.17	Bottom	0	1	24	1:1		10	0.265	1.349	0.357	-
836.5	20525	QPSK	A	10	24.5	22.61	0.11	Bottom	1	25	0	1:1		10	0.147	1.545	0.227	
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Body 1.6 W/kg Averaged over 1 gram									

LTE FDD Band 12 Hotspot/BodyWorn SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
707.5	23095	QPSK	A	10	25.0	23.76	-0.12	Rear	0	1	0	1:1		10	0.432	1.330	**0.575**	**B7**
707.5	23095	QPSK	A	10	24.0	22.14	0.02	Rear	1	25	0	1:1		10	0.270	1.535	0.414	-
707.5	23095	QPSK	A	10	25.0	23.76	-0.04	Front	0	1	0	1:1		10	0.266	1.330	0.354	-
707.5	23095	QPSK	A	10	24.0	22.14	-0.09	Front	1	25	0	1:1		10	0.168	1.535	0.258	-
707.5	23095	QPSK	A	10	25.0	23.76	0.03	Left	0	1	0	1:1		10	0.134	1.330	0.178	-
707.5	23095	QPSK	A	10	24.0	22.14	-0.01	Left	1	25	0	1:1		10	0.083	1.535	0.127	-
707.5	23095	QPSK	A	10	25.0	23.76	0.00	Right	0	1	0	1:1		10	0.105	1.330	0.140	-
707.5	23095	QPSK	A	10	24.0	22.14	-0.01	Right	1	25	0	1:1		10	0.063	1.535	0.097	-
707.5	23095	QPSK	A	10	25.0	23.76	0.12	Bottom	0	1	0	1:1		10	0.153	1.330	0.203	-
707.5	23095	QPSK	A	10	24.0	22.14	0.13	Bottom	1	25	0	1:1		10	0.094	1.535	0.144	-

ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population	Body 1.6 W/kg Averaged over 1 gram

LTE FDD Band 13 Hotspot/BodyWorn SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
782	23230	QPSK	A	10	25.0	23.86	0.03	Rear	0	1	0	1:1		10	0.514	1.300	**0.668**	**B8**
782	23230	QPSK	A	10	24.0	22.31	0.06	Rear	1	25	0	1:1		10	0.330	1.476	0.487	-
782	23230	QPSK	A	10	25.0	23.86	-0.14	Front	0	1	0	1:1		10	0.330	1.300	0.429	-
782	23230	QPSK	A	10	24.0	22.31	-0.10	Front	1	25	0	1:1		10	0.232	1.476	0.342	-
782	23230	QPSK	A	10	25.0	23.86	0.10	Left	0	1	0	1:1		10	0.092	1.300	0.120	-
782	23230	QPSK	A	10	24.0	22.31	-0.03	Left	1	25	0	1:1		10	0.055	1.476	0.081	-
782	23230	QPSK	A	10	25.0	23.86	0.00	Right	0	1	0	1:1		10	0.219	1.300	0.285	-
782	23230	QPSK	A	10	24.0	22.31	0.06	Right	1	25	0	1:1		10	0.115	1.476	0.170	-
782	23230	QPSK	A	10	25.0	23.86	0.14	Bottom	0	1	0	1:1		10	0.236	1.300	0.307	-
782	23230	QPSK	A	10	24.0	22.31	0.18	Bottom	1	25	0	1:1		10	0.236	1.476	0.348	-

ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population	Body 1.6 W/kg Averaged over 1 gram

LTE FDD Band 25 (PCS) Hotspot/BodyWorn SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
1 905	26590	QPSK	A	20	18.0	16.55	-0.11	Rear	0	1	0	1:1		10	0.241	1.396	0.336	-
1 905	26590	QPSK	A	20	18.0	16.53	-0.06	Rear	0	50	25	1:1		10	0.239	1.403	0.335	-
1 905	26590	QPSK	A	20	18.0	16.55	-0.03	Front	0	1	0	1:1		10	0.214	1.396	0.299	-
1 905	26590	QPSK	A	20	18.0	16.53	0.12	Front	0	50	25	1:1		10	0.221	1.403	0.310	-
1 905	26590	QPSK	A	20	18.0	16.55	-0.17	Left	0	1	0	1:1		10	0.023	1.396	0.032	-
1 905	26590	QPSK	A	20	18.0	16.53	-0.16	Left	0	50	25	1:1		10	0.023	1.403	0.032	-
1 905	26590	QPSK	A	20	18.0	16.55	-0.11	Right	0	1	0	1:1		10	0.032	1.396	0.045	-
1 905	26590	QPSK	A	20	18.0	16.53	-0.12	Right	0	50	25	1:1		10	0.030	1.403	0.042	-
1 905	26590	QPSK	A	20	18.0	16.55	-0.03	Bottom	0	1	0	1:1		10	0.403	1.396	0.563	-
1 905	26590	QPSK	A	20	18.0	16.53	-0.02	Bottom	0	50	25	1:1		10	0.415	1.403	**0.582**	**B9**
1 905	26590	QPSK	F	20	19.0	18.81	-0.18	Rear	0	1	0	1:1		10	0.148	1.045	0.155	-
1 905	26590	QPSK	F	20	19.0	18.79	-0.13	Rear	0	50	0	1:1		10	0.145	1.050	0.152	-
1 905	26590	QPSK	F	20	19.0	18.81	-0.06	Front	0	1	0	1:1		10	0.138	1.045	0.144	-
1 905	26590	QPSK	F	20	19.0	18.79	-0.15	Front	0	50	0	1:1		10	0.137	1.050	0.144	-
1 905	26590	QPSK	F	20	19.0	18.81	-0.03	Left	0	1	0	1:1		10	0.055	1.045	0.057	-
1 905	26590	QPSK	F	20	19.0	18.79	-0.09	Left	0	50	0	1:1		10	0.053	1.050	0.056	-
1 905	26590	QPSK	F	20	19.0	18.81	0.01	Top	0	1	0	1:1		10	0.323	1.045	0.338	-
1 905	26590	QPSK	F	20	19.0	18.79	0.03	Top	0	50	0	1:1		10	0.321	1.050	0.337	-

ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population	Body 1.6 W/kg Averaged over 1 gram

LTE FDD Band 26 (Cell) Hotspot/BodyWorn SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
831.5	26865	QPSK	A	15	25.0	23.77	0.03	Rear	0	1	0	1:1		10	0.627	1.327	**0.832**	**B10**
831.5	26865	QPSK	A	15	24.0	22.25	0.06	Rear	1	36	0	1:1		10	0.401	1.496	0.600	-
831.5	26865	QPSK	A	15	24.0	22.26	0.04	Rear	1	75	0	1:1		10	0.401	1.493	0.599	-
831.5	26865	QPSK	A	15	25.0	23.77	-0.08	Front	0	1	0	1:1		10	0.408	1.327	0.541	-
831.5	26865	QPSK	A	15	24.0	22.25	-0.06	Front	1	36	0	1:1		10	0.399	1.496	0.597	-
831.5	26865	QPSK	A	15	25.0	23.77	0.07	Left	0	1	0	1:1		10	0.105	1.327	0.139	-
831.5	26865	QPSK	A	15	24.0	22.25	-0.07	Left	1	36	0	1:1		10	0.064	1.496	0.096	-
831.5	26865	QPSK	A	15	25.0	23.77	-0.07	Right	0	1	0	1:1		10	0.156	1.327	0.207	-
831.5	26865	QPSK	A	15	24.0	22.25	0.03	Right	1	36	0	1:1		10	0.095	1.496	0.142	-
831.5	26865	QPSK	A	15	25.0	23.77	0.15	Bottom	0	1	0	1:1		10	0.222	1.327	0.295	-
831.5	26865	QPSK	A	15	24.0	22.25	0.14	Bottom	1	36	0	1:1		10	0.140	1.496	0.209	-

ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population	Body 1.6 W/kg Averaged over 1 gram

LTE TDD Band 41 Hotspot/BodyWorn SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
2 593	40620	QPSK	B	20	22.0	21.15	-0.17	Rear	0	1	49	1:1.58		10	0.349	1.216	0.424	-
2 549.5	40185	QPSK	B	20	22.0	21.04	-0.19	Rear	0	50	0	1:1.58		10	0.337	1.247	0.420	-
2 593	40620	QPSK	B	20	22.0	21.15	-0.14	Front	0	1	49	1:1.58		10	0.211	1.216	0.257	-
2 549.5	40185	QPSK	B	20	22.0	21.04	-0.13	Front	0	50	0	1:1.58		10	0.214	1.247	0.267	-
2 593	40620	QPSK	B	20	22.0	21.15	-0.06	Left	0	1	49	1:1.58		10	0.201	1.216	0.244	-
2 549.5	40185	QPSK	B	20	22.0	21.04	-0.01	Left	0	50	0	1:1.58		10	0.273	1.247	0.340	-
2 593	40620	QPSK	B	20	22.0	21.15	0.03	Bottom	0	1	49	1:1.58		10	0.322	1.216	0.392	-
2 549.5	40185	QPSK	B	20	22.0	21.04	0.00	Bottom	0	50	0	1:1.58		10	0.289	1.247	0.360	-
2 593	40620	QPSK	B	20	23.6	23.06	0.11	Rear	0	1	49	1:2.31		10	0.374	1.132	0.423	#
2549.5	40185	QPSK	F	20	20.5	19.81	0.00	Rear	0	1	99	1:1.58		10	0.133	1.172	0.156	-
2549.5	40185	QPSK	F	20	20.5	19.79	0.00	Rear	0	50	49	1:1.58		10	0.150	1.178	0.177	-
2549.5	40185	QPSK	F	20	20.5	19.81	0.13	Front	0	1	99	1:1.58		10	0.152	1.172	0.178	-
2549.5	40185	QPSK	F	20	20.5	19.79	0.11	Front	0	50	49	1:1.58		10	0.141	1.178	0.166	-
2549.5	40185	QPSK	F	20	20.5	19.81	-0.10	Left	0	1	99	1:1.58		10	0.039	1.172	0.046	-
2549.5	40185	QPSK	F	20	20.5	19.79	0.16	Left	0	50	49	1:1.58		10	0.028	1.178	0.033	-
2549.5	40185	QPSK	F	20	20.5	19.81	0.12	Top	0	1	99	1:1.58		10	0.344	1.172	0.403	-
2549.5	40185	QPSK	F	20	20.5	19.79	0.11	Top	0	50	49	1:1.58		10	0.400	1.178	**0.471**	-
2549.5	40185	QPSK	F	20	22.0	21.71	0.15	Top	0	50	49	1:2.31		10	0.438	1.069	0.468	**B11#**

ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population	Body 1.6 W/kg Averaged over 1 gram

Note : # Data entry indicate Power Class Test Data

LTE FDD Band 66 (AWS) Hotspot/BodyWorn SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
1 720	132072	QPSK	A	20	18.0	16.58	0.09	Rear	0	1	99	1:1		10	0.227	1.387	0.315	-
1 720	132072	QPSK	A	20	18.0	16.58	-0.04	Rear	0	50	49	1:1		10	0.232	1.387	0.322	-
1 720	132072	QPSK	A	20	18.0	16.58	-0.11	Front	0	1	99	1:1		10	0.204	1.387	0.283	-
1 720	132072	QPSK	A	20	18.0	16.58	-0.07	Front	0	50	49	1:1		10	0.207	1.387	0.287	-
1 720	132072	QPSK	A	20	18.0	16.58	-0.08	Left	0	1	99	1:1		10	0.060	1.387	0.083	-
1 720	132072	QPSK	A	20	18.0	16.58	-0.07	Left	0	50	49	1:1		10	0.060	1.387	0.083	-
1 720	132072	QPSK	A	20	18.0	16.58	0.00	Right	0	1	99	1:1		10	0.026	1.387	0.036	-
1 720	132072	QPSK	A	20	18.0	16.58	-0.13	Right	0	50	49	1:1		10	0.026	1.387	0.036	-
1 720	132072	QPSK	A	20	18.0	16.58	0.00	Bottom	0	1	99	1:1		10	0.411	1.387	0.570	-
1 720	132072	QPSK	A	20	18.0	16.58	-0.02	Bottom	0	50	49	1:1		10	0.422	1.387	0.585	-
1 720	132072	QPSK	F	20	19.0	17.81	-0.16	Rear	0	1	0	1:1		10	0.263	1.315	0.346	-
1 720	132072	QPSK	F	20	19.0	17.83	-0.16	Rear	0	50	49	1:1		10	0.242	1.309	0.317	-
1 720	132072	QPSK	F	20	19.0	17.81	-0.04	Front	0	1	0	1:1		10	0.219	1.315	0.288	-
1 720	132072	QPSK	F	20	19.0	17.83	-0.01	Front	0	50	49	1:1		10	0.217	1.309	0.284	-
1 720	132072	QPSK	F	20	19.0	17.81	-0.10	Left	0	1	0	1:1		10	0.073	1.315	0.096	-
1 720	132072	QPSK	F	20	19.0	17.83	0.02	Left	0	50	49	1:1		10	0.072	1.309	0.094	-
1 720	132072	QPSK	F	20	19.0	17.81	-0.02	Top	0	1	0	1:1		10	0.480	1.315	**0.631**	**B12**
1 720	132072	QPSK	F	20	19.0	17.83	0.02	Top	0	50	49	1:1		10	0.446	1.309	0.584	-

ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population	Body 1.6 W/kg Averaged over 1 gram

NR FDD Band n5 (Cell) Hotspot/BodyWorn SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
836.5	167300	DFT-s OFDM QPSK	A	20	25.5	24.18	-0.11	Rear	0	1	104	1:1		10	0.544	1.355	**0.737**	**B13**
836.5	167300	DFT-s OFDM QPSK	A	20	25.5	23.99	-0.09	Rear	0	50	28	1:1		10	0.507	1.416	0.718	-
836.5	167300	DFT-s OFDM QPSK	A	20	25.5	24.18	-0.07	Front	0	1	104	1:1		10	0.393	1.355	0.533	-
836.5	167300	DFT-s OFDM QPSK	A	20	25.5	23.99	-0.06	Front	0	50	28	1:1		10	0.391	1.416	0.554	-
836.5	167300	DFT-s OFDM QPSK	A	20	25.5	24.18	0.01	Left	0	1	104	1:1		10	0.068	1.355	0.092	-
836.5	167300	DFT-s OFDM QPSK	A	20	25.5	23.99	-0.04	Left	0	50	28	1:1		10	0.080	1.416	0.113	-
836.5	167300	DFT-s OFDM QPSK	A	20	25.5	24.18	-0.03	Right	0	1	104	1:1		10	0.185	1.355	0.251	-
836.5	167300	DFT-s OFDM QPSK	A	20	25.5	23.99	-0.01	Right	0	50	28	1:1		10	0.163	1.416	0.231	-
836.5	167300	DFT-s OFDM QPSK	A	20	25.5	24.18	-0.10	Bottom	0	1	104	1:1		10	0.240	1.355	0.325	-
836.5	167300	DFT-s OFDM QPSK	A	20	25.5	23.99	-0.12	Bottom	0	50	28	1:1		10	0.217	1.416	0.307	-
836.5	167300	CP QPSK	A	20	24.0	22.38	-0.03	Rear	1.5	1	1	1:1		10	0.360	1.452	0.523	-

ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population	Body 1.6 W/kg Averaged over 1 gram

NR FDD Band n25 Body Hotspot/BodyWorn SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
1 905	381000	DFT-s QPSK	A	20	18.0	17.21	-0.03	Rear	0	1	53	1:1		10	0.251	1.199	0.301	-
1 905	381000	DFT-s QPSK	A	20	18.0	17.28	-0.12	Rear	0	50	56	1:1		10	0.258	1.180	0.304	-
1 905	381000	DFT-s QPSK	A	20	18.0	17.21	-0.16	Front	0	1	53	1:1		10	0.249	1.199	0.299	-
1 905	381000	DFT-s QPSK	A	20	18.0	17.28	-0.14	Front	0	50	56	1:1		10	0.249	1.180	0.294	-
1 905	381000	DFT-s QPSK	A	20	18.0	17.21	0.00	Left	0	1	53	1:1		10	0.020	1.199	0.024	-
1 905	381000	DFT-s QPSK	A	20	18.0	17.28	-0.02	Left	0	50	56	1:1		10	0.018	1.180	0.021	-
1 905	381000	DFT-s QPSK	A	20	18.0	17.21	-0.13	Right	0	1	53	1:1		10	0.036	1.199	0.043	-
1 905	381000	DFT-s QPSK	A	20	18.0	17.28	-0.12	Right	0	50	56	1:1		10	0.030	1.180	0.035	-
1 905	381000	DFT-s QPSK	A	20	18.0	17.21	-0.12	Bottom	0	1	53	1:1		10	0.490	1.199	0.588	-
1 905	381000	DFT-s QPSK	A	20	18.0	17.28	-0.10	Bottom	0	50	56	1:1		10	0.517	1.180	**0.610**	**B14**
1 905	381000	CP QPSK	A	20	18.0	17.15	-0.15	Bottom	0	1	1	1:1		10	0.489	1.216	0.595	-
1 882.5	376500	DFT-s QPSK	F	20	21.0	19.50	-0.12	Rear	0	1	53	1:1		10	0.151	1.413	0.213	-
1 882.5	376500	DFT-s QPSK	F	20	21.0	19.46	-0.07	Rear	0	50	28	1:1		10	0.147	1.426	0.210	-
1 882.5	376500	DFT-s QPSK	F	20	21.0	19.50	-0.07	Front	0	1	53	1:1		10	0.128	1.413	0.181	-
1 882.5	376500	DFT-s QPSK	F	20	21.0	19.46	0.04	Front	0	50	28	1:1		10	0.124	1.426	0.177	-
1 882.5	376500	DFT-s QPSK	F	20	21.0	19.50	-0.19	Left	0	1	53	1:1		10	0.052	1.413	0.073	-
1 882.5	376500	DFT-s QPSK	F	20	21.0	19.46	-0.15	Left	0	50	28	1:1		10	0.050	1.426	0.071	-
1 882.5	376500	DFT-s QPSK	F	20	21.0	19.50	-0.15	Top	0	1	53	1:1		10	0.282	1.413	0.398	-
1 882.5	376500	DFT-s QPSK	F	20	21.0	19.46	-0.04	Top	0	50	28	1:1		10	0.280	1.426	0.399	-
1 882.5	376500	CP QPSK	F	20	21.0	19.39	-0.02	Top	0	1	1	1:1		10	0.303	1.449	0.439	-

ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population	Body 1.6 W/kg Averaged over 1 gram

NR TDD Band n41 Hotspot/BodyWorn SAR																		
Frequency		Mode	Ant	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
2 592.99	518598	DFT-s QPSK	B	100	18.0	17.76	0.00	Rear	0	1	271	1:1		10	0.295	1.057	0.312	-
2 592.99	518598	DFT-s QPSK	B	100	18.0	17.36	0.00	Rear	0	135	138	1:1		10	0.315	1.159	0.365	-
2 592.99	518598	DFT-s QPSK	B	100	18.0	17.76	0.00	Front	0	1	271	1:1		10	0.213	1.057	0.225	-
2 592.99	518598	DFT-s QPSK	B	100	18.0	17.36	0.00	Front	0	135	138	1:1		10	0.271	1.159	0.314	-
2 592.99	518598	DFT-s QPSK	B	100	18.0	17.76	0.16	Left	0	1	271	1:1		10	0.159	1.057	0.168	-
2 592.99	518598	DFT-s QPSK	B	100	18.0	17.36	-0.11	Left	0	135	138	1:1		10	0.152	1.159	0.176	-
2 592.99	518598	DFT-s QPSK	B	100	18.0	17.76	0.13	Bottom	0	1	271	1:1		10	0.360	1.057	0.381	-
2 592.99	518598	DFT-s QPSK	B	100	18.0	17.36	0.11	Bottom	0	135	138	1:1		10	0.349	1.159	**0.404**	**B15**
2 592.99	518598	CP QPSK	B	100	18.0	17.13	0.10	Bottom	0	1	1	1:1		10	0.225	1.222	0.275	-
2 592.99	518598	CW SRS #1	F	100	13.0	12.50	-0.12	Rear	0	-	-	1:1		10	0.049	1.122	0.055	-
2 592.99	518598	CW SRS #1	F	100	13.0	12.50	-0.15	Front	0	-	-	1:1		10	0.032	1.122	0.036	-
2 592.99	518598	CW SRS #1	F	100	13.0	12.50	0.15	Left	0	-	-	1:1		10	0.017	1.122	0.019	-
2 592.99	518598	CW SRS #1	F	100	13.0	12.50	0.19	Top	0	-	-	1:1		10	0.068	1.122	0.076	-
2 592.99	518598	CW SRS #2	D	100	14.5	14.46	0.00	Rear	0	-	-	1:1		10	0.00719	1.009	0.007	-
2 592.99	518598	CW SRS #2	D	100	14.5	14.46	-	Front	0	-	-	1:1		10	0	1.009	0.000	-
2 592.99	518598	CW SRS #2	D	100	14.5	14.46	-0.19	Right	0	-	-	1:1		10	0.00326	1.009	0.003	-
2 592.99	518598	CW SRS #2	D	100	14.5	14.46	0.14	Bottom	0	-	-	1:1		10	0.00191	1.009	0.002	-
2 592.99	518598	CW SRS #3	E	100	13.5	13.08	-	Rear	0	-	-	1:1		10	0	1.102	0.000	-
2 592.99	518598	CW SRS #3	E	100	13.5	13.08	-	Front	0	-	-	1:1		10	0	1.102	0.000	-
2 592.99	518598	CW SRS #3	E	100	13.5	13.08	0.13	Right	0	-	-	1:1		10	0.00382	1.102	0.004	-
2 592.99	518598	CW SRS #3	E	100	13.5	13.08	0.14	Top	0	-	-	1:1		10	0.000803	1.102	0.001	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Body 1.6 W/kg Averaged over 1 gram									

NR FDD Band n66 Body Hotspot/Body Worn SAR																		
Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
1 745	349000	DFT-s QPSK	A	20	18.0	17.17	-0.07	Rear	0	1	53	1:1		10	0.202	1.211	0.245	-
1 745	349000	DFT-s QPSK	A	20	18.0	17.13	-0.15	Rear	0	50	28	1:1		10	0.199	1.222	0.243	-
1 745	349000	DFT-s QPSK	A	20	18.0	17.17	-0.15	Front	0	1	53	1:1		10	0.209	1.211	0.253	-
1 745	349000	DFT-s QPSK	A	20	18.0	17.13	-0.15	Front	0	50	28	1:1		10	0.206	1.222	0.252	-
1 745	349000	DFT-s QPSK	A	20	18.0	17.17	-0.17	Left	0	1	53	1:1		10	0.060	1.211	0.073	-
1 745	349000	DFT-s QPSK	A	20	18.0	17.13	0.01	Left	0	50	28	1:1		10	0.058	1.222	0.071	-
1 745	349000	DFT-s QPSK	A	20	18.0	17.17	-0.11	Right	0	1	53	1:1		10	0.030	1.211	0.036	-
1 745	349000	DFT-s QPSK	A	20	18.0	17.13	-0.15	Right	0	50	28	1:1		10	0.030	1.222	0.037	-
1 745	349000	DFT-s QPSK	A	20	18.0	17.17	-0.18	Bottom	0	1	53	1:1		10	0.484	1.211	0.586	-
1 745	349000	DFT-s QPSK	A	20	18.0	17.13	-0.13	Bottom	0	50	28	1:1		10	**0.486**	1.222	0.594	**B16**
1 745	349000	CP QPSK	A	20	18.0	17.12	-0.17	Bottom	0	1	1	1:1		10	0.481	1.225	0.589	-
1 720	344000	DFT-s OFDM QPSK	F	20	20.0	18.67	-0.13	Rear	0	1	1	1:1		10	0.262	1.358	0.356	-
1 720	344000	DFT-s OFDM QPSK	F	20	20.0	18.64	-0.10	Rear	0	50	0	1:1		10	0.260	1.368	0.356	-
1 720	344000	DFT-s OFDM QPSK	F	20	20.0	18.67	0.02	Front	0	1	1	1:1		10	0.205	1.358	0.278	-
1 720	344000	DFT-s OFDM QPSK	F	20	20.0	18.64	0.01	Front	0	50	0	1:1		10	0.206	1.368	0.282	-
1 720	344000	DFT-s OFDM QPSK	F	20	20.0	18.67	-0.14	Left	0	1	1	1:1		10	0.058	1.358	0.079	-
1 720	344000	DFT-s OFDM QPSK	F	20	20.0	18.64	-0.05	Left	0	50	0	1:1		10	0.058	1.368	0.079	-
1 720	344000	DFT-s OFDM QPSK	F	20	20.0	18.67	-0.02	Top	0	1	1	1:1		10	0.463	1.358	0.629	-
1 720	344000	DFT-s OFDM QPSK	F	20	20.0	18.64	0.00	Top	0	50	0	1:1		10	0.468	1.368	0.640	-
1 720	344000	CP OFDM QPSK	F	20	20.0	18.65	-0.01	Top	0	1	1	1:1		10	0.469	1.365	**0.640**	-

ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population	Body 1.6 W/kg Averaged over 1 gram

NR TDD Band n77 Body Hotspot/BodyWorn SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
3930.0	662000	DFT-s QPSK	F	100	16.0	14.63	-0.13	Rear	0	1	1	1:1		10	0.114	1.371	0.156	-
3750.0	650000	DFT-s QPSK	F	100	16.0	14.90	0.00	Rear	0	135	138	1:1		10	**0.168**	1.288	0.216	**B17**
3930.0	662000	DFT-s QPSK	F	100	16.0	14.63	0.00	Front	0	1	1	1:1		10	0.040	1.371	0.055	-
3750.0	650000	DFT-s QPSK	F	100	16.0	14.90	0.00	Front	0	135	138	1:1		10	0.039	1.288	0.050	-
3930.0	662000	DFT-s QPSK	F	100	16.0	14.63	0.00	Left	0	1	1	1:1		10	0.010	1.371	0.014	-
3750.0	650000	DFT-s QPSK	F	100	16.0	14.90	0.00	Left	0	135	138	1:1		10	0.00364	1.288	0.005	-
3930.0	662000	DFT-s QPSK	F	100	16.0	14.63	0.13	Top	0	1	1	1:1		10	0.052	1.371	0.071	-
3750.0	650000	DFT-s QPSK	F	100	16.0	14.90	0.19	Top	0	135	138	1:1		10	0.076	1.288	0.098	-
3750.0	650000	CP QPSK	F	100	16.0	14.77	-0.14	Rear	0	1	1	1:1		10	0.165	1.327	**0.219**	-
3 500.01	633334	DFT-s QPSK	F	100	16.0	15.18	0.00	Rear	0	1	1	1:1		10	0.117	1.208	0.141	-
3930.0	662000	CW SRS #1	C	100	12.5	12.20	0.10	Rear	0	-	-	1:1		10	0.016	1.072	0.017	-
3930.0	662000	CW SRS #1	C	100	12.5	12.20	0.00	Front	0	-	-	1:1		10	0.012	1.072	0.013	-
3930.0	662000	CW SRS #1	C	100	12.5	12.20	0.16	Left	0	-	-	1:1		10	0.038	1.072	0.041	-
3 500.01	633334	CW SRS #1	C	100	12.5	12.20	0.15	Bottom	0	-	-	1:1		10	0.00967	1.072	0.010	-
3930.0	662000	CW SRS #1	C	100	12.5	10.62	0.14	Left		-	-	1:1		10	0.046	1.542	0.071	-
3930.0	662000	CW SRS #2	I	100	15.5	15.40	-0.08	Rear	0	-	-	1:1		10	0.092	1.023	0.094	-
3930.0	662000	CW SRS #2	I	100	15.5	15.40	-0.08	Front	0	-	-	1:1		10	0.066	1.023	0.068	-
3930.0	662000	CW SRS #2	I	100	15.5	15.40	-0.15	Left	0	-	-	1:1		10	0.023	1.023	0.024	-
3 500.01	633334	CW SRS #2	I	100	15.5	14.42	0.00	Rear	0	-	-	1:1		10	0.068	1.282	0.087	-
3 750	650000	CW SRS #3	D	100	12.5	12.47	-	Rear	0	-	-	1:1		10	0	1.007	0.000	-
3 750	650000	CW SRS #3	D	100	12.5	12.47	-	Front	0	-	-	1:1		10	0	1.007	0.000	-
3 750	650000	CW SRS #3	D	100	12.5	12.47	-	Right	0	-	-	1:1		10	0	1.007	0.000	-
3 750	650000	CW SRS #3	D	100	12.5	12.47	-	Bottom	0	-	-	1:1		10	0	1.007	0.000	-
3 500.01	633334	CW SRS #3	D	100	12.5	11.35	-	Rear	0	-	-	1:1		10	0	1.303	0.000	-

ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population	Body 1.6 W/kg Averaged over 1 gram

DTS Hotspot/BodyWorn SAR

Frequency		Mode	Ant.	Band width	Data Rate	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Area Scan Peak SAR	Meas. SAR	Scaling Factor	Scaling Factor	Reported SAR	Plot No.
MHz	Ch.			(MHz)		(dBm)	(dBm)	(dB)			(mm)	(W/kg)	(W/kg)		(Duty)	(W/kg)	
2 412	1	802.11b	H	20	1 Mbps	18.0	16.96	-0.19	Rear	98.7	10	0.482	0.305	1.271	1.013	0.393	-
2 412	1	802.11b	H	20	1 Mbps	18.0	16.96	0.12	Front	98.7	10	0.454	0.263	1.271	1.013	0.339	-
2 412	1	802.11b	H	20	1 Mbps	18.0	16.96	0.18	Left	98.7	10	0.759	0.447	1.271	1.013	0.576	-
2 412	1	802.11b	H	20	1 Mbps	18.0	16.96	0.19	Top	98.7	10	0.252	0.151	1.271	1.013	0.194	-
2 462	11	802.11b	J	20	1 Mbps	18.0	17.44	0.14	Rear	98.7	10	0.873	0.575	1.138	1.013	0.663	-
2 462	11	802.11b	J	20	1 Mbps	18.0	17.44	-0.09	Front	98.7	10	0.501	0.333	1.138	1.013	0.384	-
2 462	11	802.11b	J	20	1 Mbps	18.0	17.44	-0.18	Right	98.7	10	0.199	0.145	1.138	1.013	0.167	-
2 462	11	802.11b	J	20	1 Mbps	18.0	17.44	0.16	Top	98.7	10	0.0129	0.01	1.138	1.013	0.012	-
2 462	11	802.11b	H+J	20	1 Mbps	21.0	20.15	0.19	Rear	98.7	10	1.25	0.703	1.315	1.013	**0.937**	**B18**
2 412	1	802.11b	H+J	20	1 Mbps	21.0	19.98	-0.03	Rear	98.7	10	0.974	0.563	1.271	1.013	0.725	-
2 462	11	802.11b	H+J	20	1 Mbps	21.0	20.15	-0.13	Front	98.7	10	0.492	0.300	1.315	1.013	0.400	-
2 462	11	802.11b	H+J	20	1 Mbps	21.0	20.15	0.12	Left	98.7	10	0.622	0.375	1.315	1.013	0.500	-
2 462	11	802.11b	H+J	20	1 Mbps	21.0	20.15	0.07	Right	98.7	10	0.000175	0.0000000145	1.315	1.013	0.000	-
2 462	11	802.11b	H+J	20	1 Mbps	21.0	20.15	0.07	Top	98.7	10	0.260	0.146	1.315	1.013	0.195	-

ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population	Body 1.6 W/kg Averaged over 1 gram

NII Hotspot/BodyWorn SAR

Frequency		Mode	Ant.	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Reported SAR (W/kg)	Plot No.
MHz	Ch.																
5 280	56	802.11a	G	20	6Mbps	16.0	15.48	0.00	Rear	93.7	10	0.360	0.154	1.127	1.067	0.185	-
5 280	56	802.11a	G	20	6Mbps	16.0	15.48	0.00	Front	93.7	10	0.132	0.052	1.127	1.067	0.063	-
5 620	124	802.11a	G	20	6Mbps	16.0	15.70	0.00	Rear	93.7	10	0.467	0.177	1.072	1.067	0.203	-
5 620	124	802.11a	G	20	6Mbps	16.0	15.70	0.00	Front	93.7	10	0.152	0.048	1.072	1.067	0.055	-
5 785	157	802.11a	G	20	6Mbps	16.0	14.90	0.00	Rear	93.7	10	0.294	0.120	1.288	1.067	0.165	-
5 785	157	802.11a	G	20	6Mbps	16.0	14.90	0.00	Front	93.7	10	0.195	0.079	1.288	1.067	0.109	-
5 785	157	802.11a	G	20	6Mbps	16.0	14.90	-0.15	Left	93.7	10	0.486	0.198	1.288	1.067	0.272	-
5 785	157	802.11a	G	20	6Mbps	16.0	14.90	0.15	Top	93.7	10	0.0728	0.025	1.288	1.067	0.034	-
5 885	177	802.11a	G	20	6Mbps	16.0	14.47	0.00	Rear	93.7	10	0.324	0.112	1.422	1.067	0.170	-
5 885	177	802.11a	G	20	6Mbps	16.0	14.47	0.00	Front	93.7	10	0.150	0.051	1.422	1.067	0.077	-
5 280	56	802.11a	E	20	6Mbps	16.0	15.93	0.15	Rear	93.7	10	0.600	0.254	1.016	1.067	0.275	-
5 280	56	802.11a	E	20	6Mbps	16.0	15.93	0.00	Front	93.7	10	0.0816	0.014	1.016	1.067	0.015	-
5 620	124	802.11a	E	20	6Mbps	16.0	15.48	-0.14	Rear	93.7	10	0.363	0.149	1.127	1.067	0.179	-
5 620	124	802.11a	E	20	6Mbps	16.0	15.48	0.00	Front	93.7	10	0.0573	0.018	1.127	1.067	0.022	-
5 745	149	802.11a	E	20	6Mbps	16.0	15.11	0.18	Rear	93.7	10	0.372	0.163	1.227	1.067	0.213	-
5 745	149	802.11a	E	20	6Mbps	16.0	15.11	0.00	Front	93.7	10	0.196	0.042	1.227	1.067	0.055	-
5 745	149	802.11a	E	20	6Mbps	16.0	15.11	0.00	Right	93.7	10	0.0627	0.00863	1.227	1.067	0.011	-
5 745	149	802.11a	E	20	6Mbps	16.0	15.11	0.18	Top	93.7	10	0.137	0.055	1.227	1.067	0.072	-
5 885	177	802.11a	E	20	6Mbps	16.0	15.27	-0.09	Rear	93.7	10	0.630	0.258	1.183	1.067	**0.326**	-
5 885	177	802.11a	E	20	6Mbps	16.0	15.27	0.00	Front	93.7	10	0.207	0.064	1.183	1.067	0.081	-
5 280	56	802.11a	G+E	20	6Mbps	19.0	18.73	-0.00	Rear	93.7	10	0.944	0.419	1.127	1.067	**0.504**	**B19**
5 280	56	802.11a	G+E	20	6Mbps	19.0	18.73	0.00	Front	93.7	10	0.200	0.043	1.127	1.067	0.052	-
5 620	124	802.11a	G+E	20	6Mbps	19.0	18.61	0.09	Rear	93.7	10	0.707	0.271	1.127	1.067	0.326	-
5 620	124	802.11a	G+E	20	6Mbps	19.0	18.61	0.00	Front	93.7	10	0.534	0.078	1.127	1.067	0.094	-
5 785	157	802.11a	G+E	20	6Mbps	19.0	17.87	0.11	Rear	93.7	10	0.468	0.163	1.288	1.067	0.224	-
5 785	157	802.11a	G+E	20	6Mbps	19.0	17.87	0.00	Front	93.7	10	0.349	0.038	1.288	1.067	0.052	-
5 785	157	802.11a	G+E	20	6Mbps	19.0	17.87	0.16	Left	93.7	10	0.494	0.221	1.288	1.067	0.304	-
5 785	157	802.11a	G+E	20	6Mbps	19.0	17.87	0.11	Right	93.7	10	0.0466	0.018	1.288	1.067	0.025	-
5 785	157	802.11a	G+E	20	6Mbps	19.0	17.87	0.16	Top	93.7	10	0.201	0.089	1.288	1.067	0.122	-
5 885	177	802.11a	G+E	20	6Mbps	19.0	17.90	-0.15	Rear	93.7	10	0.789	0.319	1.297	1.067	0.442	-
5 885	177	802.11a	G+E	20	6Mbps	19.0	17.90	0.00	Front	93.7	10	0.186	0.074	1.297	1.067	0.102	-

ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population	Body 1.6 W/kg Averaged over 1 gram

6 GHz WLAN BodyWorn SAR

Frequency		Mode	Ant.	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Reported SAR (W/kg)	Plot No.
MHz	Ch.															
6 505	111	802.11ax160	G	160	MCS0	9.0	7.14	-0.09	Rear	99.6	10	0.040	1.535	1.004	0.062	-
6 505	111	802.11ax160	G	160	MCS0	9.0	7.14	0.18	Front	99.6	10	0	1.535	1.004	0.000	-
6 505	111	802.11ax160	E	160	MCS0	9.0	7.13	0.17	Rear	99.6	10	0	1.538	1.004	0.000	-
6 505	111	802.11ax160	E	160	MCS0	9.0	7.13	0.11	Front	99.6	10	0	1.538	1.004	0.000	-
6 505	111	802.11ax160	G+E	160	MCS0	12.0	10.14	0.13	Rear	99.6	10	0.042	1.538	1.004	**0.065**	**B20**
6 505	111	802.11ax160	G+E	160	MCS0	12.0	10.14	0.10	Front	99.6	10	0.004	1.538	1.004	0.006	-

ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population	Body 1.6 W/kg Averaged over 1 gram

DSS Tethering/BodyWorn SAR													
Frequency		Mode	Ant.	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Distance	Meas. SAR	Scaling Factor	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dBm)	(dBm)	(dB)		(mm)	(W/kg)		(Duty)	(W/kg)	
2 441	39	Bluetooth DH5	H	17.0	16.90	-0.12	Rear	10	0.132	1.023	1.010	0.136	-
2 441	39	Bluetooth DH5	H	17.0	16.90	0.14	Front	10	0.152	1.023	1.010	0.157	-
2 441	39	Bluetooth DH5	H	17.0	16.90	0.02	Left	10	0.202	1.023	1.010	0.209	-
2 441	39	Bluetooth DH5	H	17.0	16.90	-0.13	Top	10	0.083	1.023	1.010	0.086	-
2 440	17	Bluetooth LE 1M(255)	H	17.0	16.26	-0.12	Left	10	0.223	1.186	1.010	**0.267**	**B21**
2 480	78	Bluetooth DH5	J	17.0	15.45	0.16	Rear	10	0.123	1.429	1.010	0.178	-
2 480	78	Bluetooth DH5	J	17.0	15.45	0.17	Front	10	0.077	1.429	1.010	0.111	-
2 480	78	Bluetooth DH5	J	17.0	15.45	0.10	Right	10	0.040	1.429	1.010	0.058	-
2 480	78	Bluetooth DH5	J	17.0	15.45	-	Top	10	0	1.429	1.010	0.000	-
2 402	37	Bluetooth LE 1M(255)	J	16.0	14.31	0.15	Rear	10	0.045	1.476	1.010	0.066	-
2 402	0	Bluetooth DH5	H+J	15.0	14.75	0.16	Rear	10	0.060	1.069	1.010	0.065	-
2 402	0	Bluetooth DH5	H+J	15.0	14.75	0.17	Front	10	0.043	1.069	1.010	0.046	-
2 402	0	Bluetooth DH5	H+J	15.0	14.75	0.11	Left	10	0.060	1.069	1.010	0.065	-
2 402	0	Bluetooth DH5	H+J	15.0	14.75	0.16	Right	10	0.030	1.069	1.010	0.032	-
2 402	0	Bluetooth DH5	H+J	15.0	14.75	0.17	Top	10	0.015	1.069	1.010	0.016	-
2 480	39	Bluetooth LE 1M(255)	H+J	15.0	14.34	0.06	Rear	10	0.020	1.186	1.010	0.024	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram					

13.1.3 Phablet SAR Measurement Considerations

Per FCC KDB 648474 D04v01r03, this device is considered a "Phablet" since the diagonal dimension is greater than 160 mm and less than 200 mm. Therefore, extremity SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR >1.2 W/kg. When hotspot mode applies, 10g SAR required only for the surfaces and edges with hotspot mode scaled to the maximum output power (including tolerance) is 1g SAR > 1.2 W/kg.

13.1.4 Phablet SAR Measurement Results

NII Phablet SAR _10g																	
Frequency		Mode	Ant.	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
MHz	Ch.																
5 280	56	802.11a	G	20	6Mbps	16.0	15.48	0.00	Rear	93.7	0	7.56	0.551	1.127	1.067	0.663	-
5 280	56	802.11a	G	20	6Mbps	16.0	15.48	0.00	Front	93.7	0	6.56	0.555	1.127	1.067	0.668	-
5 280	56	802.11a	G	20	6Mbps	16.0	15.48	0.10	Left	93.7	0	10.10	0.870	1.127	1.067	1.046	-
5 280	56	802.11a	G	20	6Mbps	16.0	15.48	0.00	Top	93.7	0	1.61	0.106	1.127	1.067	0.127	-
5 620	124	802.11a	G	20	6Mbps	16.0	15.70	0.00	Rear	93.7	0	4.57	0.670	1.072	1.067	0.767	-
5 620	124	802.11a	G	20	6Mbps	16.0	15.70	0.00	Front	93.7	0	5.45	0.553	1.072	1.067	0.633	-
5 620	124	802.11a	G	20	6Mbps	16.0	15.70	0.00	Left	93.7	0	8.13	0.711	1.072	1.067	0.813	-
5 620	124	802.11a	G	20	6Mbps	16.0	15.70	0.13	Top	93.7	0	2.42	0.176	1.072	1.067	0.201	-
5 885	177	802.11a	G	20	6Mbps	16.0	14.47	0.00	Rear	93.7	0	8.62	0.531	1.422	1.067	0.806	-
5 885	177	802.11a	G	20	6Mbps	16.0	14.47	0.00	Front	93.7	0	2.91	0.313	1.422	1.067	0.475	-
5 885	177	802.11a	G	20	6Mbps	16.0	14.47	0.00	Left	93.7	0	7.82	0.478	1.422	1.067	0.725	-
5 885	177	802.11a	G	20	6Mbps	16.0	14.47	0.00	Top	93.7	0	0.952	0.055	1.422	1.067	0.083	-
5 280	56	802.11a	E	20	6Mbps	16.0	15.93	0.00	Rear	93.7	0	2.63	0.318	1.016	1.067	0.345	-
5 280	56	802.11a	E	20	6Mbps	16.0	15.93	0.00	Front	93.7	0	1.20	0.107	1.016	1.067	0.116	-
5 280	56	802.11a	E	20	6Mbps	16.0	15.93	0.00	Right	93.7	0	0.598	0.027	1.016	1.067	0.029	-
5 280	56	802.11a	E	20	6Mbps	16.0	15.93	0.16	Top	93.7	0	1.19	0.117	1.016	1.067	0.127	-
5 620	124	802.11a	E	20	6Mbps	16.0	15.48	0.00	Rear	93.7	0	2.69	0.254	1.127	1.067	0.306	-
5 620	124	802.11a	E	20	6Mbps	16.0	15.48	0.00	Front	93.7	0	1.02	0.103	1.127	1.067	0.124	-
5 620	124	802.11a	E	20	6Mbps	16.0	15.48	0.00	Right	93.7	0	0.281	0.021	1.127	1.067	0.025	-
5 620	124	802.11a	E	20	6Mbps	16.0	15.48	0.00	Top	93.7	0	0.688	0.069	1.127	1.067	0.083	-
5 885	177	802.11a	E	20	6Mbps	16.0	15.27	0.00	Rear	93.7	0	2.90	0.302	1.183	1.067	0.381	-
5 885	177	802.11a	E	20	6Mbps	16.0	15.27	0.00	Front	93.7	0	1.96	0.174	1.183	1.067	0.220	-
5 885	177	802.11a	E	20	6Mbps	16.0	15.27	0.00	Right	93.7	0	0.51	0.02	1.183	1.067	0.025	-
5 885	177	802.11a	E	20	6Mbps	16.0	15.27	0.12	Top	93.7	0	0.568	0.073	1.183	1.067	0.092	-
5 280	56	802.11a	G+E	20	6Mbps	19.0	18.73	-0.10	Rear	93.7	0	3.71	0.573	1.127	1.067	0.689	-
5 280	56	802.11a	G+E	20	6Mbps	19.0	18.73	0.00	Front	93.7	0	5.52	0.546	1.127	1.067	0.657	-
5 280	56	802.11a	G+E	20	6Mbps	19.0	18.73	0.16	Left	93.7	0	15.3	1.15	1.127	1.067	**1.383**	C1
5 280	56	802.11a	G+E	20	6Mbps	19.0	18.73	0.00	Right	93.7	0	0.774	0.079	1.127	1.067	0.095	-
5 280	56	802.11a	G+E	20	6Mbps	19.0	18.73	0.10	Top	93.7	0	2.07	0.211	1.127	1.067	0.254	-
5 620	124	802.11a	G+E	20	6Mbps	19.0	18.61	0.00	Rear	93.7	0	3.76	0.446	1.127	1.067	0.536	-
5 620	124	802.11a	G+E	20	6Mbps	19.0	18.61	0.00	Front	93.7	0	5.31	0.647	1.127	1.067	0.778	-
5 620	124	802.11a	G+E	20	6Mbps	19.0	18.61	0.00	Left	93.7	0	1.71	1.08	1.127	1.067	1.299	-
5 620	124	802.11a	G+E	20	6Mbps	19.0	18.61	0.00	Right	93.7	0	0.428	0.015	1.127	1.067	0.018	-
5 620	124	802.11a	G+E	20	6Mbps	19.0	18.61	0.00	Top	93.7	0	4.04	0.293	1.127	1.067	0.352	-
5 845	169	802.11a	G+E	20	6Mbps	19.0	18.01	0.00	Rear	93.7	0	2.32	0.288	1.297	1.067	0.399	-
5 845	169	802.11a	G+E	20	6Mbps	19.0	18.01	0.00	Front	93.7	0	3.04	0.368	1.297	1.067	0.509	-
5 845	169	802.11a	G+E	20	6Mbps	19.0	18.01	0.00	Left	93.7	0	7.47	0.64	1.297	1.067	0.886	-
5 845	169	802.11a	G+E	20	6Mbps	19.0	18.01	0.00	Right	93.7	0	0.0933	0.00844	1.297	1.067	0.012	-
5 845	169	802.11a	G+E	20	6Mbps	19.0	18.01	-0.19	Top	93.7	0	1.46	0.091	1.297	1.067	0.126	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population													Hand 4.0 W/kg Averaged over 10 gram				

6 GHz Phablet SAR _10g																
Frequency		Mode	Ant.	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
MHz	Ch.															
6 505	111	802.11ax160	G	160	MCS0	9.0	7.14	0.16	Rear	99.6	0	0.026	1.535	1.004	0.040	-
6 505	111	802.11ax160	G	160	MCS0	9.0	7.14	0.11	Front	99.6	0	0.089	1.535	1.004	**0.137**	
6 505	111	802.11ax160	G	160	MCS0	9.0	7.14	0.19	Left	99.6	0	0.044	1.535	1.004	0.068	-
6 505	111	802.11ax160	G	160	MCS0	9.0	7.14	0.16	Top	99.6	0	0.003	1.535	1.004	0.005	-
6 025	15	802.11ax160	G	160	MCS0	9.0	7.29	-0.18	Front	99.6	0	0.087	1.483	1.004	0.130	-
6 185	47	802.11ax160	G	160	MCS0	9.0	7.83	0.12	Front	99.6	0	**0.102**	1.309	1.004	0.134	C2
6 825	175	802.11ax160	G	160	MCS0	9.0	8.16	0.19	Front	99.6	0	0.075	1.213	1.004	0.091	-
6 985	207	802.11ax160	G	160	MCS0	9.0	7.13	0.17	Front	99.6	0	0.042	1.538	1.004	0.065	-
6 505	111	802.11ax160	E	160	MCS0	9.0	7.13	-0.15	Rear	99.6	0	0.021	1.538	1.004	0.032	-
6 505	111	802.11ax160	E	160	MCS0	9.0	7.13	-0.08	Front	99.6	0	0.044	1.538	1.004	0.068	-
6 505	111	802.11ax160	E	160	MCS0	9.0	7.13	0.17	Right	99.6	0	0	1.538	1.004	0.000	-
6 505	111	802.11ax160	E	160	MCS0	9.0	7.13	-0.06	Top	99.6	0	0.002	1.538	1.004	0.003	-
6 025	15	802.11ax160	E	160	MCS0	9.0	8.06	0.09	Front	99.6	0	0.056	1.242	1.004	0.070	-
6 185	47	802.11ax160	E	160	MCS0	9.0	8.20	0.14	Front	99.6	0	0.047	1.202	1.004	0.057	-
6 825	175	802.11ax160	E	160	MCS0	9.0	7.83	0.11	Front	99.6	0	0.044	1.309	1.004	0.058	-
6 985	207	802.11ax160	E	160	MCS0	9.0	7.39	0.18	Front	99.6	0	0.023	1.449	1.004	0.033	-
6 505	111	802.11ax160	G+E	160	MCS0	12.0	10.14	-0.16	Rear	99.6	0	0.053	1.538	1.004	0.082	-
6 505	111	802.11ax160	G+E	160	MCS0	12.0	10.14	0.13	Front	99.6	0	0.085	1.538	1.004	0.131	-
6 505	111	802.11ax160	G+E	160	MCS0	12.0	10.14	0.12	Left	99.6	0	0.045	1.538	1.004	0.069	-
6 505	111	802.11ax160	G+E	160	MCS0	12.0	10.14	0.05	Right	99.6	0	0	1.538	1.004	0.000	-
6 505	111	802.11ax160	G+E	160	MCS0	12.0	10.14	-0.14	Top	99.6	0	0.005	1.538	1.004	0.008	-
6 025	15	802.11ax160	G+E	160	MCS0	12.0	10.70	0.10	Front	99.6	0	0.089	1.483	1.004	0.133	-
6 185	47	802.11ax160	G+E	160	MCS0	12.0	11.03	0.03	Front	99.6	0	0.098	1.309	1.004	0.129	-
6 825	175	802.11ax160	G+E	160	MCS0	12.0	11.01	0.16	Front	99.6	0	0.078	1.309	1.004	0.103	-
6 985	207	802.11ax160	G+E	160	MCS0	12.0	10.27	-0.16	Front	99.6	0	0.041	1.538	1.004	0.063	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population												Hand 4.0 W/kg Averaged over 10 gram				

NFC Phablet SAR _10g						
Frequency	Mode	Data Rate	Power Drift	Test Position	Distance	Meas. SAR	Plot
MHz		(Kbps)	(dB)		(mm)	(W/kg)	No.
13.56	NFC (Type A)	106	0.14	Rear	0	**0.023**	C3
13.56	NFC (Type B)	106	0.19	Rear	0	0.023	-
13.56	NFC (Type F)	106	-	Rear	0	0	-
13.56	NFC (Type A)	106	-	Front	0	0	-
13.56	NFC (Type A)	106	-	Left	0	0	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population					Hand 4.0 W/kg Averaged over 10 gram		

13.2 Absorbed Power Density Results

13.2.1 Head Absorbed Power Density Results

6 GHz WLAN Absorbed Power Density Head											
Frequency		Mode	Ant.	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Meas. APD 4 ㎠ (mW/cm²)	Plot No.
MHz	Ch.										
6 505	111	802.11ax160	G	160	MCS0	9.0	7.14	0.04	Left Touch	0.0084	-
6 505	111	802.11ax160	G	160	MCS0	9.0	7.14	0.15	Left Tilt	0.0098	-
6 505	111	802.11ax160	G	160	MCS0	9.0	7.14	0.00	Right Touch	**0.0591**	**A20**
6 505	111	802.11ax160	G	160	MCS0	9.0	7.14	-0.10	Right Tilt	0.0195	-
6 025	15	802.11ax160	G	160	MCS0	9.0	7.29	0.10	Right Touch	0.0469	-
6 185	47	802.11ax160	G	160	MCS0	9.0	7.83	-0.15	Right Touch	0.0333	-
6 825	175	802.11ax160	G	160	MCS0	9.0	8.16	0.10	Right Touch	0.0276	-
6 985	207	802.11ax160	G	160	MCS0	9.0	7.13	-0.19	Right Touch	0.0138	-
6 505	111	802.11ax160	E	160	MCS0	9.0	7.13	-0.13	Left Touch	0.0266	-
6 505	111	802.11ax160	E	160	MCS0	9.0	7.13	-0.11	Left Tilt	0.0177	-
6 505	111	802.11ax160	E	160	MCS0	9.0	7.13	0.11	Right Touch	0.0116	-
6 505	111	802.11ax160	E	160	MCS0	9.0	7.13	-0.17	Right Tilt	0.0087	-
6 025	15	802.11ax160	E	160	MCS0	9.0	8.06	-0.17	Left Touch	0.0502	-
6 185	47	802.11ax160	E	160	MCS0	9.0	8.20	-0.17	Left Touch	0.0392	-
6 825	175	802.11ax160	E	160	MCS0	9.0	7.83	0.02	Left Touch	0.0214	-
6 985	207	802.11ax160	E	160	MCS0	9.0	7.39	0.18	Left Touch	0.0066	-
6 505	111	802.11ax160	G+E	160	MCS0	12.0	10.14	-0.16	Left Touch	0.0234	-
6 505	111	802.11ax160	G+E	160	MCS0	12.0	10.14	0.16	Left Tilt	0.0174	-
6 505	111	802.11ax160	G+E	160	MCS0	12.0	10.14	0.13	Right Touch	0.0484	-
6 505	111	802.11ax160	G+E	160	MCS0	12.0	10.14	0.15	Right Tilt	0.0099	-
6 025	15	802.11ax160	G+E	160	MCS0	12.0	10.70	-0.10	Right Touch	0.0523	-
6 185	47	802.11ax160	G+E	160	MCS0	12.0	11.03	-0.17	Right Touch	0.0343	-
6 825	175	802.11ax160	G+E	160	MCS0	12.0	11.01	0.10	Right Touch	0.0368	-
6 985	207	802.11ax160	G+E	160	MCS0	12.0	10.27	-0.17	Right Touch	0.0011	-

13.2.2 BodyWorn Absorbed Power Density Results

6 GHz WLAN Absorbed Power Density BodyWorn												
Frequency		Mode	Ant. No.	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Distance (mm)	Meas. APD 4 ㎠ (mW/cm²)	Plot No.
MHz	Ch.											
6 505	111	802.11ax160	G	160	MCS0	9.0	7.14	-0.09	Rear	10	0.0285	-
6 505	111	802.11ax160	G	160	MCS0	9.0	7.14	0.18	Front	10	0.0006	-
6 505	111	802.11ax160	E	160	MCS0	9.0	7.13	0.17	Rear	10	0.0002	-
6 505	111	802.11ax160	E	160	MCS0	9.0	7.13	0.11	Front	10	0.001	-
6 505	111	802.11ax160	G+E	160	MCS0	12.0	10.14	0.13	Rear	10	**0.0299**	**B20**
6 505	111	802.11ax160	G+E	160	MCS0	12.0	10.14	0.10	Front	10	0.0002	-

13.2.3 Phablet Absorbed Power Density Results

6 GHz WLAN Absorbed Power Density Phablet												
Frequency		Mode	Ant.	Band width (㎒)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Distance (mm)	Meas. APD 4 ㎠ (mW/cm²)	Plot No.
㎒	Ch.											
6 505	111	802.11ax160	G	160	MCS0	9.0	7.14	0.16	Rear	0	0.0068	-
6 505	111	802.11ax160	G	160	MCS0	9.0	7.14	0.11	Front	0	0.214	-
6 505	111	802.11ax160	G	160	MCS0	9.0	7.14	0.19	Left	0	0.106	-
6 505	111	802.11ax160	G	160	MCS0	9.0	7.14	0.16	Top	0	0.0081	-
6 025	15	802.11ax160	G	160	MCS0	9.0	7.29	-0.18	Front	0	0.208	-
6 185	47	802.11ax160	G	160	MCS0	9.0	7.83	0.12	Front	0	**0.241**	D1
6 825	175	802.11ax160	G	160	MCS0	9.0	8.16	0.19	Front	0	0.075	-
6 985	207	802.11ax160	G	160	MCS0	9.0	7.13	0.17	Front	0	0.103	-
6 505	111	802.11ax160	E	160	MCS0	9.0	7.13	-0.15	Rear	0	0.0503	-
6 505	111	802.11ax160	E	160	MCS0	9.0	7.13	-0.08	Front	0	0.108	-
6 505	111	802.11ax160	E	160	MCS0	9.0	7.13	0.17	Right	0	0.0009	-
6 505	111	802.11ax160	E	160	MCS0	9.0	7.13	-0.06	Top	0	0.0050	-
6 025	15	802.11ax160	E	160	MCS0	9.0	8.06	0.09	Front	0	0.137	-
6 185	47	802.11ax160	E	160	MCS0	9.0	8.20	0.14	Front	0	0.117	-
6 825	175	802.11ax160	E	160	MCS0	9.0	7.83	0.11	Front	0	0.109	-
6 985	207	802.11ax160	E	160	MCS0	9.0	7.39	0.18	Front	0	0.0578	-
6 505	111	802.11ax160	G+E	160	MCS0	12.0	10.14	-0.16	Rear	0	0.126	-
6 505	111	802.11ax160	G+E	160	MCS0	12.0	10.14	0.13	Front	0	0.206	-
6 505	111	802.11ax160	G+E	160	MCS0	12.0	10.14	0.12	Left	0	0.111	-
6 505	111	802.11ax160	G+E	160	MCS0	12.0	10.14	0.05	Right	0	0.0005	-
6 505	111	802.11ax160	G+E	160	MCS0	12.0	10.14	-0.14	Top	0	0.0118	-
6 025	15	802.11ax160	G+E	160	MCS0	12.0	10.70	0.10	Front	0	0.210	-
6 185	47	802.11ax160	G+E	160	MCS0	12.0	11.03	0.03	Front	0	0.237	-
6 825	175	802.11ax160	G+E	160	MCS0	12.0	11.01	0.16	Front	0	0.191	-
6 985	207	802.11ax160	G+E	160	MCS0	12.0	10.27	-0.16	Front	0	0.0997	-

13.3 SAR Test Notes

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in IEEE 1528-2013, FCC KDB Procedure.
2. Batteries are fully charged at the beginning of the SAR measurements. A standard battery was used for all SAR measurements.
3. Liquid tissue depth was at least 15.0 cm for all frequencies.
4. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
5. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB 447498 D01v06.
6. Device was tested using a fixed spacing for body-worn accessory testing. A separation distance of 10 mm was considered because the manufacturer has determined that there will be body-worn accessories available in the marketplace for users to support this separation distance.
7. Per FCC KDB 648474 D04v01r03, SAR was evaluated without a headset connected to the device. Since the standalone reported SAR was 1.2 W/kg, no additional SAR evaluation using a headset cable were required.
8. Per KDB 648474 D04v01r03, this device is considered a "Phablet" since the diagonal dimension is > 160 mm and < 200 mm. When hotspot mode applies, extremity SAR is required only for the surfaces and edges with hotspot mode scaled to the maximum output power (with tolerance) is 1 g SAR > 1.2 W/kg.
9. Per FCC KDB 865664 D01v01r04, variability SAR measurement were performed when the measured SAR results for a frequency Band were greater than or equal to 0.8 W/kg for 1g SAR and >2 for 10g SAR Please see Section 15 for variability analysis.
10. This device utilizes power reduction for some wireless mode and technologies, as outlined in sec. 4 The maximum output power allowed for each transmitter and exposure condition was evaluated for SAR compliance based on expected use conditions and simultaneous scenarios.
11. During SAR testing for the Hotspot conditions per KDB 941225 D06v02r01, the actual portable hotspot operation (with actual simultaneous transmission of a transmitter with WiFi) was not activated.
12. Per FCC guidance SAR was performed using 6.5 ㎓ SAR probe calibration factors. Per October 2020 TCBC Workshop notes, 5 channels were tested. Absorbed power density(APD) using a 4 ㎠ averaging area is reported based on SAR measurements.

GSM/GPRS Test Notes:

1. This EUT'S GSM and GPRS device class is B.
2. This device supports GPRS VOIP in the head and the body-worn configurations therefore GPRS was additionally evaluated for head and body-worn compliance.
3. Justification for reduced test configurations per KDB 941225 D01v03r01: The source-based time-averaged output power was evaluated for all multi-slot operations. The multi-slot configuration with the highest frame averaged output power including tolerance was evaluated for SAR.
4. Per FCC KDB 447498 D04v01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is 0.8 W/kg then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is 1/2 dB, instead of the middle channel, the highest output power channel must be used.

UMTS Notes:

1. The 12.2 kbps RMC mode is the primary mode per KDB 941225 D01v03r01.
2. UMTS SAR was tested under RMC 12.2 kbps with HSPA inactive per KDB publication 941225 D01v03r01. AMR and HSPA SAR was not required per the 3G Test Reduction Procedure in KDB Publication 941225 D01v03r01.
3. Per FCC KDB 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is 0.8 W/kg then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the channel highest output power channel was used.

LTE Notes:

1. LTE Considerations: LTE test configurations are determined according to SAR Evaluation Consideration for LTE Devices in FCC KDB 941225 D05v02r05.
2. According to FCC KDB 941225 D05v02r05:
   When the reported SAR is 0.8 W/kg, testing of the 100% RB allocation and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the 1RB, 50%RB and 100%RB allocation with highest output power for that channel.
   Only one channel, and as reported SAR values for 1RB allocation and 50%RB allocation were less than 1.45W/Kg only the highest power RB offset for each allocation was required.
3. MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to target MPR is indicated alongside the SAR results.
4. When Power reduction is applied, MPR is 0 for some modes.
5. A-MPR was disabled for all SAR tests by setting NS=01 on the base station simulator.
6. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) LTE TDD Band 41 SAR measured at the highest output power channel for each test configuration is 0.6 W/kg then testing at the other channels is not required for such test configurations.
7. TDD LTE (Power Class 3) was tested using UL-DL configuration 0 with 6 UL sub frames and 2S sub frames using extended cyclic prefix only and special sub frame configuration 6. SAR tests were performed at maximum output power and worst-case transmission duty factor in extended cyclic prefix. Per 3GPP 36.211 Sec. 4, the duty factor using extended cyclic prefix is 0.633(cf=1.58).
8. Per KDB 941225 D05Av01r02, SAR for LTE Carrier Aggregation operations was not needed because the maximum average output power in LTE CA mode was not > 0.25 dB higher than the maximum output power when downlink CA was not activated.
9. This device supports Power Class 2 and Power Class 3 operations for LTE Band 41. The Highest available duty cycle for Power Class 2 operations is 43.3% using UL-DL configuration 1. Per May TCB Workshop notes, all SAR tests were performed using Power Class 3. SAR with power class 2 at the available duty factor was additionally performed for the power class 3 configuration with the highest SAR configuration for each exposure conditions.
10. SAR test reduction is applied using the following criteria:
    Start with the largest channel Bandwidth and measure SAR for QPSK with 1 RB, and 50 % RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is >0.8 W/kg, testing for other Channels is performed at the highest output power level for 1RB, and 50 % RB configuration for that channel. Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are >0.8 W/kg, testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation <1.45 W/kg. Testing for 16-QAM modulation is not required because the reported SAR for QPSK is <1.45 W/kg and its output power is not more than 0.5 dB higher than that a QPSK. Testing for the other channel Bandwidths is not required because the reported SAR for the highest

channel Bandwidth is <1.45 W/kg and its output power is not more than 0.5 dB higher than that of the highest channel Bandwidth.

NR Notes:

1. This device supports SA and NSA mode for NR implementation. In EN-DC Mode, NR operate with the LTE Bands shown in the NR FR1 checklist acting as anchor Bands.
2. Due to Limitations of the SAR measurement equipment, SAR testing for NR Bands was performed separately using test mode (FTM) software.
3. More detailed specifications of the NR Bands are contained in the technical description document.
4. This device additionally supports some EN-DC conditions where additional LTE carriers are added on the downlink only.
5. For NR modulations and RB Sizes/Offsets were selected for testing such that configurations with the highest output power was evaluated for SAR tests.

WLAN Notes:

1. For held-to-ear and hotspot operations, the initial test position procedures were applied. For initial test position, the highest extrapolated peak SAR will be used. When reported SAR for the initial test position is ≤ 0.4 W/kg for 1g SAR and ≤ 1.0 W/kg for 10g SAR, no additional testing for the remaining test positions was required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR results is ≤ 0.8 W/kg for 1g SAR and ≤ 2.0 W/kg for 10 g SAR or all test position are measured.
2. Per KDB 2482227 D01v02r02 justification for test configurations of 2.4 GHz WiFi Single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11 g/n) was not required due to the maximum allowed powers and the highest reported DSSS SAR.
3. Per KDB 2482227 D01v02r02 justification for test configurations of 5 GHz WiFi Single transmission chain operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed powers. Other transmission mode was not investigated since the highest reported SAR for initial test configuration adjusted by the ration of maximum output powers is less than 1.2 W/kg for 1 g SAR and less than 3.0 W/kg for 10 g SAR.
4. When the maximum reported 1g averaged SAR is ≤ 0.8 W/kg, SAR testing on additional channels was not required. Otherwise, SAR for the next highest output power channel was required until the reported SAR result was ≤ 1.20 W/kg or all test channels were measured.
5. The device was configured to transmit continuously at the required data rated, channel Bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance. Procedures used to measure the duty factor are identical to that in the associated WLAN test reports.
6. WIFI 6 GHz operations are supported by SISO and MIMO both. WLAN Per KDB Publication 248227 D01v02r02, the simultaneous SAR provisions in KDB Publication 447498 D01v06 should be applied to determine simultaneous transmission SAR test exclusion for WIFI MIMO. If the sum of 1g single transmission chain SAR measurements is <1.6 W/kg, no additional SAR measurements for MIMO are required.
7. For testing the WIFI 6 GHz of this DUT, the selection of test channels was based on FCC guidance, with five channels selected across the entire WIFI 6 GHz Bands.
8. The device was configured to transmit continuously at the required data rated, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance. Procedures used to measure the duty factor are identical to that in the associated WLAN test reports.
9. For testing the WIFI 6 GHz of this DUT, the selection of test channels was based on FCC guidance,

with five channels selected across the entire WIFI 6 GHz Bands.

Bluetooth Notes:

1. Bluetooth SAR was measured with the device connected to a call box with hopping disabled with DH5 operation and Tx Tests mode type. Per October 2016 TCBC Workshop Notes, the reported SAR was scaled to 100% transmission duty factor to determine compliance. Please see sec.11 for the time-domain plot and calculation for duty factor of the device.
2. Head and Bluetooth tethering SAR were evaluated for BT BDR tethering applications.

13.4 6㎓ WLAN Power Density Results

6 GHz WLAN Power Density Phablet																		
Frequency		Mode	Ant.	Band width (㎒)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Distance (mm)	Test Position	Duty Cycle	Grid Step (λ)	Scaling Factor for Measurement Uncertainty per IEC 62479	Normal psPD (mW/㎠)	Scaled Normal psPD (mW/㎠)	Total psPD (mW/㎠)	Reported 4 ㎠ psPD (mW/㎠)	Plot No.
㎒	Ch.																	
6 505	111	802.11ax160	G	160	MCS0	9.0	7.14	0.15	2	Rear	99.6	0.044	1.116	0.178	0.199	0.491	0.548	-
6 505	111	802.11ax160	G	160	MCS0	9.0	7.14	-0.09	2	Front	99.6	0.044	1.116	0.102	0.114	0.173	0.193	-
6 505	111	802.11ax160	G	160	MCS0	9.0	7.14	-0.15	2	Left	99.6	0.044	1.116	0.0666	0.074	0.127	0.142	-
6 505	111	802.11ax160	G	160	MCS0	9.0	7.14	0.10	2	Top	99.6	0.044	1.116	0.0162	0.018	0.0293	0.033	-
6 025	15	802.11ax160	G	160	MCS0	9.0	7.29	-0.18	2	Rear	99.6	0.041	1.116	0.163	0.182	0.308	0.344	-
6 185	47	802.11ax160	G	160	MCS0	9.0	7.83	0.08	2	Rear	99.6	0.042	1.116	0.28	0.312	0.496	**0.554**	**E1**
6 825	175	802.11ax160	G	160	MCS0	9.0	8.16	-0.10	2	Rear	99.6	0.046	1.116	0.0871	0.097	0.150	0.167	-
6 985	207	802.11ax160	G	160	MCS0	9.0	7.13	0.14	2	Rear	99.6	0.047	1.116	0.0594	0.066	0.118	0.132	-
6 505	111	802.11ax160	E	160	MCS0	9.0	7.13	-0.12	2	Rear	99.6	0.044	1.116	0.0373	0.042	0.0817	0.091	-
6 505	111	802.11ax160	E	160	MCS0	9.0	7.13	0.10	2	Front	99.6	0.044	1.116	0.0530	0.059	0.118	0.132	-
6 505	111	802.11ax160	E	160	MCS0	9.0	7.13	-0.14	2	Right	99.6	0.044	1.116	0.0123	0.014	0.0191	0.021	-
6 505	111	802.11ax160	E	160	MCS0	9.0	7.13	-0.00	2	Top	99.6	0.044	1.116	0.0208	0.023	0.0476	0.053	-
6 025	15	802.11ax160	E	160	MCS0	9.0	8.06	0.14	2	Front	99.6	0.041	1.116	0.0738	0.082	0.173	0.193	-
6 185	47	802.11ax160	E	160	MCS0	9.0	8.20	0.16	2	Front	99.6	0.042	1.116	0.0831	0.093	0.209	0.233	-
6 825	175	802.11ax160	E	160	MCS0	9.0	7.83	0.12	2	Front	99.6	0.046	1.116	0.0525	0.059	0.138	0.154	-
6 985	207	802.11ax160	E	160	MCS0	9.0	7.39	0.01	2	Front	99.6	0.047	1.116	0.0295	0.033	0.0755	0.084	-
47 CFR §1.1310 – Safety Limit Spatial Average Uncontrolled Exposure/ General Population														Power Density 1mW/㎠ Averaged over 4 ㎠				

13.5 Power Density General Notes

1. manufacturer has confirmed that the device tested have the same The physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
2. Batteries are fully charged at the beginning of the measurements. The DUT was connected to a wall charger for some measurements due to the test duration. It was confirmed that the charger plugged into this DUT did not impact the near-field PD test results
3. DASY6 Module mmWave is optimized for incident Power Density (PD) evaluations EUT at distances as close as 2mm for frequencies in the 6–110 GHz range.
4. The software Module mmWave V3.0+ features the novel Equivalent Source Reconstruction (ESR)method:
   This new method will greatly simplify compliance testing for distances as close as λ/25 (2mm at 6 GHz) from any surface and improve the overall flexibility and precision. With this method, the reconstruction uncertainty (REC) is below 0.6 dB For d ≥ λ/25, corresponding to a test distance of 2mm at 6 GHz. The above-mentioned REC value is valid if the following conditions on the grid resolution (ℓ_{grid}) and grid extent (ν_{grid}) are met:

$$\ell_{\text{grid}} = \begin{cases} 1.25d & \text{for } d < \lambda/10 \\ \lambda/8 & \text{for } d \geq \lambda/10 \end{cases}.$$

$$\nu_{\text{grid}} \geq 2\lambda$$

   Power density was calculated by repeated E-field measurements on two measurement planes separated by λ/4.
5. 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.
6. Per FCC guidance and equipment manufacturer guidance, power density results were scaled according to IEC 62479:2010 for the portion of the measurement uncertainty >30%. Total expanded uncertainty of 1.51 dB(41.6%) was used to determine the psPD measurement scaling factor.

14. Simultaneous SAR Analysis

This device is contained transmitters that may operate simultaneously. Therefore, simultaneous transmission analysis is required. Per KDB Publication 447498 D01v06 4.3.2, simultaneous transmission SAR test exclusion may be applied when the sum of 1g SAR and 10g SAR for all the simultaneous transmitting antennas in a specific a physical test configuration is ≤1.6W/kg for 1g SAR and ≤4 W/kg for 10g SAR. The different test positions in an exposure condition may be considered collectively to determine SAR exclusion according to the sum of 1g or 10g SAR.
This device is enabled with S.LSI Time average SAR algorithm with pre-defined sub6 antenna groups (AG0 and AG1). Simultaneous transmission analysis is performed per antenna groups. Section 14.2 contains analysis to demonstrate the AG0 and AG1 are operate mutually exclusive. Additional analysis is provided below to show compliance between AG0 and AG1.

The simultaneous transmission analysis of each antenna group and WLAN/BT was evaluated based on the maximum Reported SAR of the antenna in each Antenna group and the nearest y-axis coordinate of each antenna Group and WLAN/BT
If the sum result with each antenna exceeds the FCC SAR limit of 1.6 W/kg 1g ,4.0 W/kg 10g, the SPLSR was re-evaluated according to FCC KDB 447498 D01v06 4.3.2.

14.1 Sub6 Antenna Groups

S.LSI Time average SAR(TAS) algorithm operates based on pre-defined sub6 antenna groups (AG). Sub6 Tx antennas in the device are grouped based on spatial variation of RF exposure distributions, where the RF exposure of one AG is mutually exclusive from other AG. This is accomplished by demonstrating either of below conditions for all exposure scenarios:

For EN-DC Mode, LSI Algorithm in WWAN adds directly adds the time-averaged RF exposure (LTE+ sub6 NR). Smart Transmit algorithm controls the total RF exposure (LTE+ sub6 NR) to not exceed FCC limit. Therefore, simultaneous transmission compliance between SAR radio1 + SAR radio2 operations within an antenna group is demonstrated in the Part 2 Report during algorithm validation.

For RSDB Mode, Qualcomm Fast Connect TAS algorithm in WLAN adds the time-averaged RF exposure From WLAN 2.4GHz and the time-averaged RF exposure From WLAN UNII Bands. Qualcomm Fast Connect TAS algorithm controls the total RF exposure (WLAN 2.4GHz+ UNII Bands) to not exceed FCC limit. Therefore, simultaneous transmission compliance between WLAN 2.4GHz + UNII bands operation is demonstrated in the Part 2 Report during algorithm validation.

Sum of SAR of one antenna from each of the sub6 AGs and the RF exposure from radios outside
TAS is less than regulatory limits. This condition must be demonstrated for all antenna combinations of sub6 AGs.
This device supports two sub6 AG: AG0 and AG1, with AG0 having 4 antennas (Main1 Ant, Main2 Ant, Main3 Ant, Main4 Ant.) and AG1 having 3 antenna(Sub1 Ant, Sub2 Ant, Sub5 Ant). The conditions are verified through the following criteria.

The highest reported SAR at Plimit (or Pmax when Plimit > Pmax) for each antenna should be obtained out of all supported WWAN technologies and frequency bands for each exposure condition Demonstrate that the sum of reported SAR of antenna from each of the sub6 AGs and the sum of RF exposure of TAS should be less than the regulatory limit as given below for each RSI.

Obtain the worst-case reported SAR for each antenna group (i.e., maximum reported SAR at Plimit (or Pmax when Plimit > Pmax) out of all supported technologies, frequency bands and antennas in AG0 and AG1), denoted as max.SAR.AG0 and max.SAR.AG1, and obtain the worst-case RF exposure, and demonstrate that the sum of these RF exposures meets
[Max.SAR.AG0 + Max.SAR.AG1] + [Max.WLAN + Max.Bluetooth] ≤ 1.6 (for 1g SAR or 4.0 for 10g)

AG0, AG1,WLAN/BT are described in the table below.

AG0	
ANT A	GSM850/1900, UMTS 2/4/5, LTE 5/12(17)/13/25/26/66(4) NR n5/n25(n2)/n66
ANT B	LTE 41, NR n41
ANT C	NR 77 SRS 1
ANT D	NR n41 SRS 2, NR n77 SRS 3

AG1	
ANT E	NR n41 SRS3
ANT F	LTE 25(2)/41/66(4) NR n25(n2)/n66/n77, NR n41 SRS 1
ANT I	NR n77 SRS 2

WLAN/BT	
ANT E	WLAN 5 GHz,6 GHz(Ant2)
ANT H	WLAN 2.4 GHz, Bluetooth(Ant1)
ANT J	WLAN 2.4 GHz, Bluetooth(Ant2)
ANT G	WLAN 5 GHz,6 GHz(Ant1)

Per S.LSI TAS's the technical document, the Sub6 antenna groups were decoupled by normalizing the maximum measurement results between the module and antenna based on TER, ensuring that the antenna group and module can operate independently while meeting regulatory requirements.

14.2 Head SAR Simultaneous Transmission Analysis

AG0					
Position	ANT A	ANT B	ANT C	ANT D	Worst
Left Touch	0.168	0.122	0	0	0.168
Left Tilt	0.093	0.060	0	0	0.093
Right Touch	0.211	0.042	0	0	0.211
Right Tilt	0.098	0.038	0	0	0.098

AG1				
Position	ANT E	ANT F	ANT I	Worst
Left Touch	0.000	0.460	0.153	0.460
Left Tilt	0.000	0.530	0.016	0.530
Right Touch	0.000	0.762	0.207	0.762
Right Tilt	0.000	0.859	0.024	0.859

14.2.1 WLAN + BT Simultaneous SAR Head Case

Position	2.4 GHz MIMO	5 GHz MIMO	6 GHz MIMO	2.4 GHz Ant.2 +BT Ant1	5 GHz Ant1 +BT Ant1	5 GHz Ant1 +BT Ant2	5 GHz Ant2 +BT Ant1	5 GHz Ant2 +BT Ant2
Left Touch	0.356	0.166	0.065	0.667	0.116	0.226	0.250	0.360
Left Tilt	0.077	0.160	0.043	0.150	0.113	0.058	0.190	0.135
Right Touch	0.507	0.535	0.161	0.801	0.630	0.523	0.399	0.292
Right Tilt	0.315	0.317	0.036	0.293	0.401	0.193	0.337	0.129

Position	5 GHz MIMO +BT Ant1	5 GHz MIMO +BT Ant2	6 GHz Ant.1 +BT Ant1	6 GHz Ant.1 +BT Ant2	6 GHz Ant.2 +BT Ant1	6 GHz Ant.2 +BT Ant2	6 GHz MIMO +BT Ant1
Left Touch	0.232	0.342	0.089	0.199	0.167	0.277	0.131
Left Tilt	0.232	0.177	0.094	0.039	0.132	0.077	0.115
Right Touch	0.826	0.719	0.467	0.360	0.347	0.240	0.452
Right Tilt	0.544	0.336	0.289	0.081	0.272	0.064	0.263

Position	6 GHz MIMO +BT Ant2	5 GHz Ant1 +BT Dual	5 GHz Ant2 +BT Dual	5 GHz MIMO +BT Dual	6 GHz Ant1 +BT Dual	6 GHz Ant2 +BT Dual	6 GHz MIMO +BT Dual	Worst
Left Touch	0.241	0.181	0.315	0.297	0.154	0.232	0.196	0.667
Left Tilt	0.060	0.080	0.157	0.199	0.061	0.099	0.082	0.232
Right Touch	0.345	0.506	0.275	0.702	0.343	0.223	0.328	0.826
Right Tilt	0.055	0.281	0.217	0.424	0.169	0.152	0.143	0.544

14.2.2 WWAN+WLAN 2.4 GHz/5 GHz/6 GHz+BT Simultaneous SAR Head Case

Position	AG0	AG1	WLAN+BT	Summation
Left Touch	0.168	0.460	0.667	1.295
Left Tilt	0.093	0.530	0.232	0.855
Right Touch	0.211	0.762	0.826	**See Sec. 14.3.6**
Right Tilt	0.098	0.859	0.544	**1.501**

14.2.3 WWAN+WLAN 2.4 GHz/5 GHz/6 GHz+BT Simultaneous SAR Head Case

Position	AG0	WLAN+BT	Summation
Left Touch	0.168	0.667	0.835
Left Tilt	0.093	0.232	0.325
Right Touch	0.211	0.826	1.037
Right Tilt	0.098	0.544	0.642

Position	AG1	WLAN+BT	Summation
Left Touch	0.460	0.667	1.127
Left Tilt	0.530	0.232	0.762
Right Touch	0.762	0.826	**1.588**
Right Tilt	0.859	0.544	1.403

14.3 Hotspot SAR Simultaneous Transmission Analysis

AG0					
Position	ANT A	ANT B	ANT C	ANT D	Worst
Rear	0.948	0.424	0.017	0.007	0.948
Front	0.598	0.314	0.013	0.000	0.598
Left	0.178	0.34	0.071		0.340
Right	0.299			0.003	0.299
Top					
Bottom	0.986	0.404	0.01	0.002	0.986

AG1				
Position	ANT E	ANT F	ANT I	Worst
Rear	0.000	0.356	0.094	0.356
Front	0.000	0.288	0.068	0.288
Left		0.096	0.024	0.096
Right	0.004			0.004
Top	0.001	0.64		0.640
Bottom				

14.3.1 WLAN + BT Simultaneous SAR Hotspot Case

Position	2.4 GHz MIMO	5 GHz MIMO	6 GHz MIMO	2.4 GHz Ant.2 +BT Ant1	5 GHz Ant1 +BT Ant1	5 GHz Ant1 +BT Ant2	5 GHz Ant2 +BT Ant1	5 GHz Ant2 +BT Ant2
Rear	0.937	0.504	0.065	0.799	0.321	0.363	0.462	0.504
Front	0.400	0.102	0.006	0.541	0.266	0.220	0.238	0.192
Left	0.500	0.304	0.000	0.267	0.539	0.272	0.267	0.000
Right	0.000	0.025	0.000	0.167	0.000	0.058	0.011	0.069
Top	0.195	0.122	0.000	0.098	0.120	0.034	0.158	0.072
Bottom								

Position	5 GHz MIMO +BT Ant1	5 GHz MIMO +BT Ant2	6 GHz Ant.1 +BT Ant1	6 GHz Ant.1 +BT Ant2	6 GHz Ant.2 +BT Ant1	6 GHz Ant.2 +BT Ant2	6 GHz MIMO +BT Ant1
Rear	0.640	0.682	0.198	0.240	0.136	0.178	0.201
Front	0.259	0.213	0.157	0.111	0.157	0.111	0.163
Left	0.571	0.304	0.267	0.000	0.267	0.000	0.267
Right	0.025	0.083	0.000	0.058	0.000	0.058	0.000
Top	0.208	0.122	0.086	0.000	0.086	0.000	0.086
Bottom							

Position	6 GHz MIMO +BT Ant2	5 GHz Ant1 +BT Dual	5 GHz Ant2 +BT Dual	5 GHz MIMO +BT Dual	6 GHz Ant1 +BT Dual	6 GHz Ant2 +BT Dual	6 GHz MIMO +BT Dual	Worst
Rear	0.243	0.250	0.391	0.569	0.127	0.065	0.130	0.937
Front	0.117	0.155	0.127	0.148	0.046	0.046	0.052	0.541
Left	0.000	0.337	0.065	0.369	0.065	0.065	0.065	0.571
Right	0.058	0.032	0.043	0.057	0.032	0.032	0.032	0.167
Top	0.000	0.050	0.088	0.138	0.016	0.016	0.016	0.208
Bottom								

14.3.2 WWAN+WLAN 2.4 GHz/5 GHz/6 GHz+BT Simultaneous SAR Hotspot Case

Position	AG0	AG1	WLAN+BT	Summation
Rear	0.948	0.356	0.937	**See Sec. 14.3.7**
Front	0.598	0.288	0.541	**1.427**
Left	0.340	0.096	0.571	1.007
Right	0.299	0.004	0.167	0.470
Top		0.640	0.208	0.848
Bottom	0.986			0.986

14.3.3 WWAN+WLAN 2.4 GHz/5 GHz/6 GHz+BT Simultaneous SAR Hotspot Case

Position	AG0	WLAN+BT	Summation
Rear	0.948	0.937	**See Sec. 14.3.8**
Front	0.598	0.541	1.139
Left	0.340	0.571	0.911
Right	0.299	0.167	0.466
Top		0.208	0.208
Bottom	0.986		0.986

Position	AG1	WLAN+BT	Summation
Rear	0.356	0.937	1.293
Front	0.288	0.541	0.829
Left	0.096	0.571	0.667
Right	0.004	0.167	0.171
Top	0.640	0.208	0.848
Bottom			

14.4 Phablet SAR Simultaneous Transmission Analysis

Position	WLAN5 GHz Ant1	WLAN5 GHz Ant2	WLAN5 GHz MIMO	WLAN6 GHz Ant1	WLAN6 GHz Ant2	WLAN6 GHz MIMO	Worst
Rear	0.806	0.381	0.689	0.04	0.032	0.082	0.806
Front	0.668	0.220	0.778	0.137	0.07	0.133	0.778
Left	1.046		1.383	0.068		0.069	1.383
Right		0.029	0.095		0.000	0.000	0.095
Top	0.201	0.127	0.352	0.005	0.003	0.008	0.352
Bottom							

Position	WLAN Worst	NFC	Worst
Rear	0.806	0.023	0.829
Front	0.778	0	0.778
Left	1.383		**1.383**
Right	0.095	0	0.095
Top	0.352	0	0.352
Bottom			

14.3.5 SAR to Peak Location Separation Ratio (SPLSR)

FCC KDB 447498 D01v06 General RF Exposure Guidance introduces a new formula for calculating the SAR a Peak Location Separation Ratio(SPLSR) between pairs of simultaneously transmitting antennas:

$$\boldsymbol{SPLSR_i = (SAR_1 + SAR_2)^{1.5}/R_i}$$

Where:

$\boldsymbol{SAR_1}$ is the highest measured or estimated SAR for the first of a pair of simultaneous transmitting antennas, in a specific test operating mode and exposure condition

$\boldsymbol{SAR_2}$ is the highest measured of estimated SAR for the second of a pair of simultaneous transmitting antennas, in the same test operating mode and exposure condition as the first

$\boldsymbol{R_i}$is the separation distance between the pair of simultaneous transmitting antennas, When the SAR is measured, for both antennas in the pair, it is determined by the actual x, y and z coordinates in the 1-g SAR for each SAR peak location, based on the extrapolated and interpolated result in the zoom scan measurement, using the formula of $\boldsymbol{[(X_1 - X_2)^2 + (Y_1 - Y_2)^2 + (Z_1 - Z_2)^2]}$

In order for a pair of simultaneous transmitting antennas with the sum 1-g of SAR> 1.6 W/kg and with the sum 10-g of SAR >4 W/kg to qualify for exemption from Simultaneous Transmission SAR measurements, it has to satisfy the condition of:

$\boldsymbol{(SAR_1 + SAR_2)^{1.5}/R_i \leq 0.04}$ for 1g SAR and $\boldsymbol{(SAR_1 + SAR_2)^{1.5}/R_i \leq 0.1}$ for 10g SAR

14.3.6 Head SPLSR Evaluation(Right Touch)

Ant Group 0

Mode/Band	Antenna	X(mm)	Y(mm)	Z(mm)	Reported SAR [W/kg]
GSM850	A	85.8	-266	-170	0.158
GSM190	A	68.4	-244	-172	0.065
UMTS 5	A	64	-244	-174	0.146
UMTS 4	A	58.2	-309	-175	0.066
UMTS 2	A	66.5	-302	-175	0.082
LTE 5	A	60.8	-257	-177	0.178
LTE 12	A	61.6	-258	-177	0.176
LTE 13	A	59.4	-249	-176	0.183
LTE 25	A	62.5	-305	-171	0.088
LTE 26	A	59.5	-258	-177	0.196
LTE 41	B	64.8	-309.9	-170.3	0.042
LTE 66	A	62.5	-305	-171	0.107
NR n5	A	60.1	-256.8	-170.7	**0.211**
NR n25	A	63.6	-241	-173	0.062
NR n41	B	105	-208	-138	0.024
NR n66	A	66.6	-238	-171	0.075
NR n41 SRS2	D				0
NR n77 SRS1	C				0
NR n77 SRS3	D				0

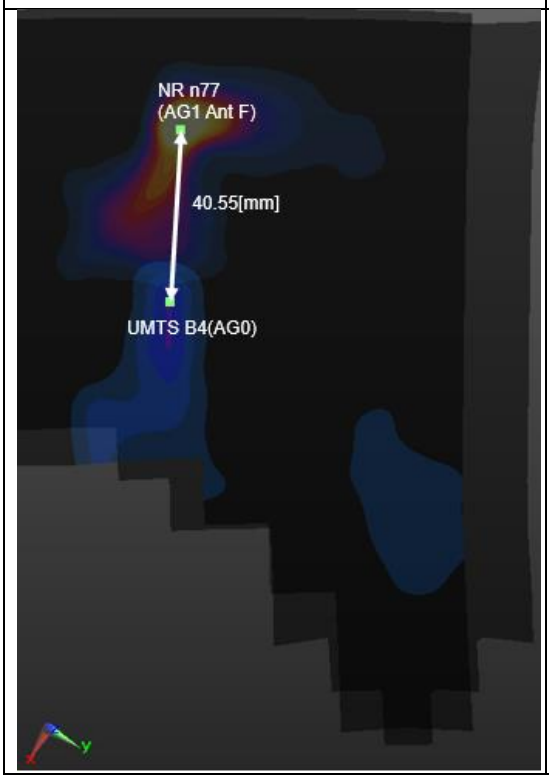
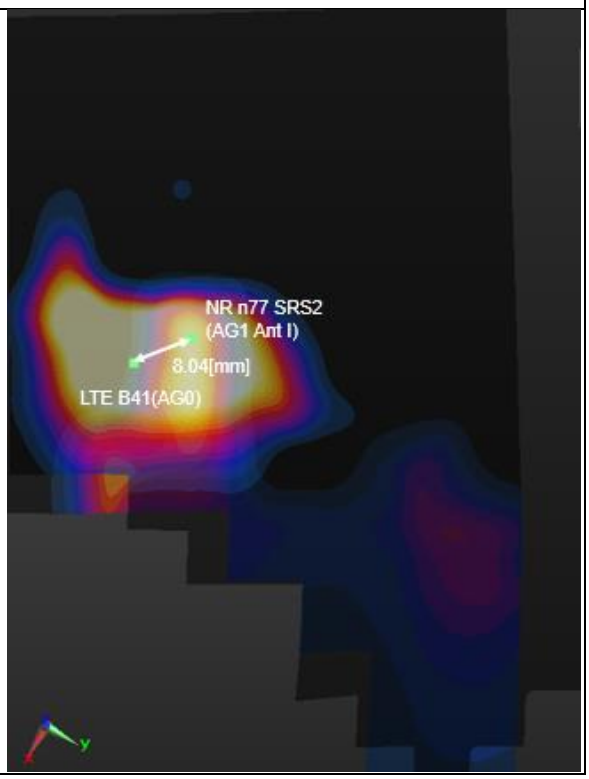
Ant Group 1

Mode/Band	Antenna	X(mm)	Y(mm)	Z(mm)	Reported SAR [W/kg]
LTE 25	F	10.6	-327.1	-170.6	0.534
LTE 41	F	13.5	-328	-172	0.489
LTE 66	F	14.8	-331.5	-170.8	0.688
NR n25	F	12.8	-325.9	-170.9	0.444
NR n66	F	12.8	-325.9	-170.9	**0.762**
NR n77	F	22.5	-328	-172	0.378
NR n41 SRS1	F	17.6	-330	-173	0.342
NR n41 SRS3	E				0
NR n77 SRS2	I	68.5	-317	-171	**0.207**

Group analysis SPLSR

	AG0	AG1		
	AG0 Worst	AG1(E)	AG1(F)	AG1(I)
Max SAR(W/kg)	0.211			
Max SAR(W/kg)			0.762	0.207
AG0, AG1 Distance(mm)			40.55	8.04
AG0, AG1 SPLSR			**0.024**	**0.034**

SPLSR Plot for Antenna Group

AG0Worst+AG1 Ant F	AG0Worst+AG1 Ant I
	

14.3.7 Hotspot SPLSR Evaluation(Rear)

Ant Group 0

Mode/Band	Antenna	X(mm)	Y(mm)	Z(mm)	Reported SAR [W/kg]
GSM850	A	-0.5	-75	-210	0.513
GSM190	A	-15.5	-86	-206	0.465
UMTS 5	A	-3.5	-73.5	-209	0.733
UMTS 4	A	-11	-83	-206	0.385
UMTS 2	A	-8	-81.5	-206	0.353
LTE 5	A	-0.5	-75.5	-210	**0.948**
LTE 12	A	1	-75.5	-210	0.575
LTE 13	A	1	-78.5	-210	0.668
LTE 25	A	-23.5	-87	-204	0.336
LTE 26	A	-0.5	-74	-210	0.832
LTE 41	B	14	-80	-204	0.424
LTE 66	A	-20.5	-84	-204	0.322
NR n5	A	-4	-69	-204	0.737
NR n25	A	-18.5	-83	-206	0.304
NR n41	B	-3.4	-82.8	-206	0.365
NR n66	A	-15.5	-83	-206	0.245
NR n41 SRS2	D	41.6	-72.6	-206	0.007
NR n77 SRS1	C	11.8	-55.8	-204	0.017
NR n77 SRS3	D				0

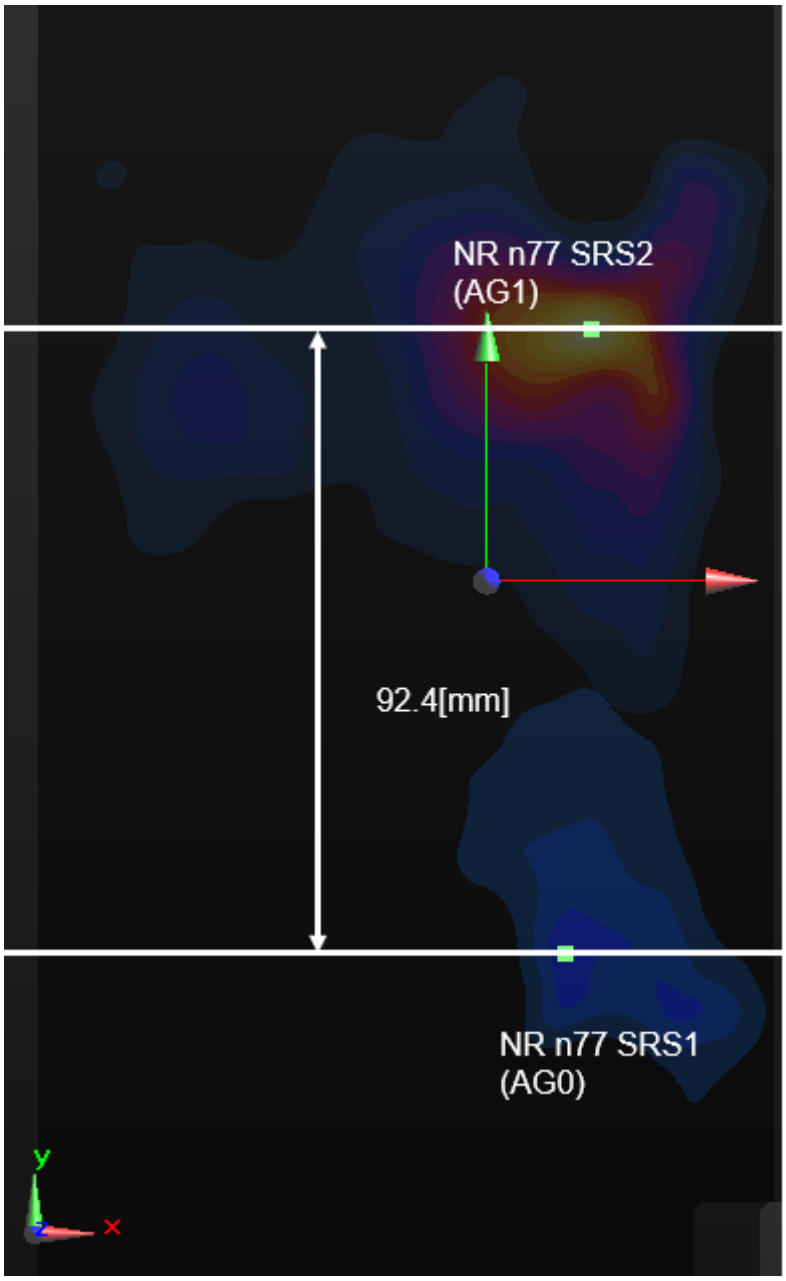
Ant Group 1

Mode/Band	Antenna	X(mm)	Y(mm)	Z(mm)	Reported SAR [W/kg]
LTE 25	F	-37	75	-204	0.155
LTE 41	F	-7	80.4	-206	0.177
LTE 66	F	-14.5	75	-204	0.346
NR n25	F	2	73.5	-204	0.213
NR n66	F	0.5	75	-204	**0.356**
NR n77	F	2.2	66.2	-204	0.219
NR n41 SRS1	F	-9.4	79.2	-206	0.055
NR n41 SRS3	E				0
NR n77 SRS2	I	15.8	36.6	-204	0.094

Group analysis SPLSR

	AG0	AG1
Max Y-axis(mm)	-55.8	
Max SAR(W/kg)	0.948	
Min Y-axis(mm)		36.6
Max SAR(W/kg)		0.356
AG0, AG1 Distance(mm)	92.4	
AG0, AG1 SPLSR	**0.016**	

SPLSR Plot for Antenna Group



14.3.8 Hotspot SPLSR Evaluation(Rear)

Ant Group 0

Mode/Band	Antenna	X(mm)	Y(mm)	Z(mm)	Reported SAR [W/kg]
GSM850	A	-0.5	-75	-210	0.513
GSM190	A	-15.5	-86	-206	0.465
UMTS 5	A	-3.5	-73.5	-209	0.733
UMTS 4	A	-11	-83	-206	0.385
UMTS 2	A	-8	-81.5	-206	0.353
LTE 5	A	-0.5	-75.5	-210	**0.948**
LTE 12	A	1	-75.5	-210	0.575
LTE 13	A	1	-78.5	-210	0.668
LTE 25	A	-23.5	-87	-204	0.336
LTE 26	A	-0.5	-74	-210	0.832
LTE 41	B	14	-80	-204	0.424
LTE 66	A	-20.5	-84	-204	0.322
NR n5	A	-4	-69	-204	0.737
NR n25	A	-18.5	-83	-206	0.304
NR n41	B	-3.4	-82.8	-206	0.365
NR n66	A	-15.5	-83	-206	0.245
NR n41 SRS2	D	41.6	-72.6	-206	0.007
NR n77 SRS1	C	11.8	-55.8	-204	0.017
NR n77 SRS3	D				0

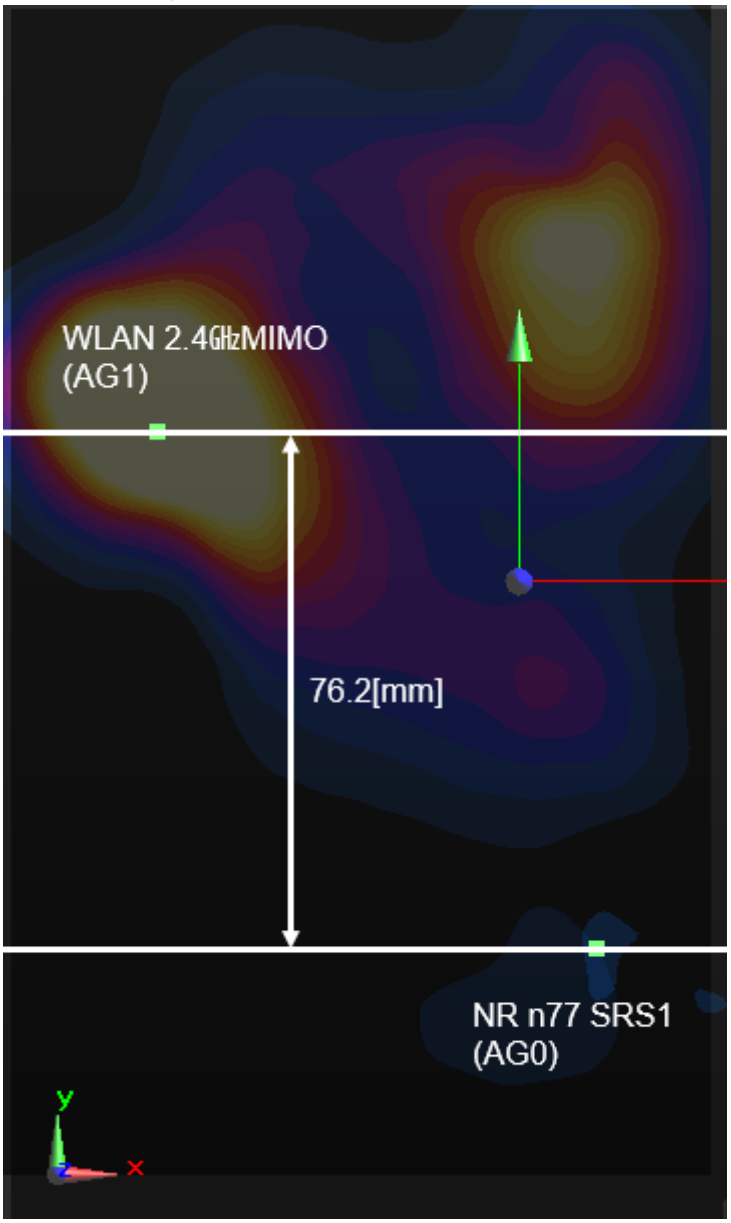
WLAN

Mode/Band	Antenna	X(mm)	Y(mm)	Z(mm)	Reported SAR [W/kg]
WLAN 2.4 GHz Ant1	H	13.4	51.6	-206	0.393
WLAN 2.4 GHz Ant2	J	-61	34.8	-207	0.663
WLAN 2.4 GHz MIIMO	H+J	-55	22.8	-207	0.937
WLAN 5 GHz Ant1	G	32	64	-204	0.185
WLAN 5 GHz Ant2	E	-8	70	-204	0.326
WLAN 5 GHz MIIMO	G+E	-21	71	-204	0.504
WLAN 6 GHz Ant1	G	13.7	53.7	-207	0.062
WLAN 6 GHz Ant2	E				0
WLAN 6 GHz MIIMO	G+E	9.9	58.6	-204	0.065
Bluetooth Ant1	H	13.4	57.6	-206	0.136
Bluetooth Ant2	J	-62.6	20.4	-207	0.178
Bluetooth MIIMO(Dual)	H+J	18.2	55.4	-206	0.065
Worst(2.4 GHz MIIMO)	H+J	**-55**	**22.8**	**-207**	**0.937**

Group analysis SPLSR

	AG0	WLAN
Max Y-axis(mm)	-55.8	
Max SAR(W/kg)	0.948	
Min Y-axis(mm)		20.4
Max SAR(W/kg)		0.937
AG0, AG1 Distance(mm)	76.2	
AG0, AG1 SPLSR	**0.034**	

SPLSR Plot for Antenna Group



14.4 Conclusion

The above numerical summed SAR results is sufficient to show that simultaneous transmission cases will not exceed the SAR limit and therefore no measured volumetric simultaneous SAR summation is required per FCC KDB Publication 447498 D01V06 and IEEE 1528-2013 Section 6.3.4.1

15. SAR Measurement Variability and Uncertainty

In accordance with KDB procedure 865664 D01v01r04 SAR measurement 100 ㎒ to 6 ㎓, SAR additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency Band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR Measurement variability was assessed using the following procedures for each frequency Band:

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg for 1g SAR or < 2.0 W/kg for 10g SAR; steps 2) through 4) do not apply.

2) When the original highest measured 1g SAR is ≥ 0.80 W/kg or 10g SAR ≥ 2.0W/kg, repeat that measurement once.

3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg for 1g SAR or ≥ 3.625 W/kg for 10g SAR (~ 10% from the 1-g SAR limit).

4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥1.5 W/kg for 1g SAR or ≥3.75 W/kg for 10g SAR and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20. 1.08

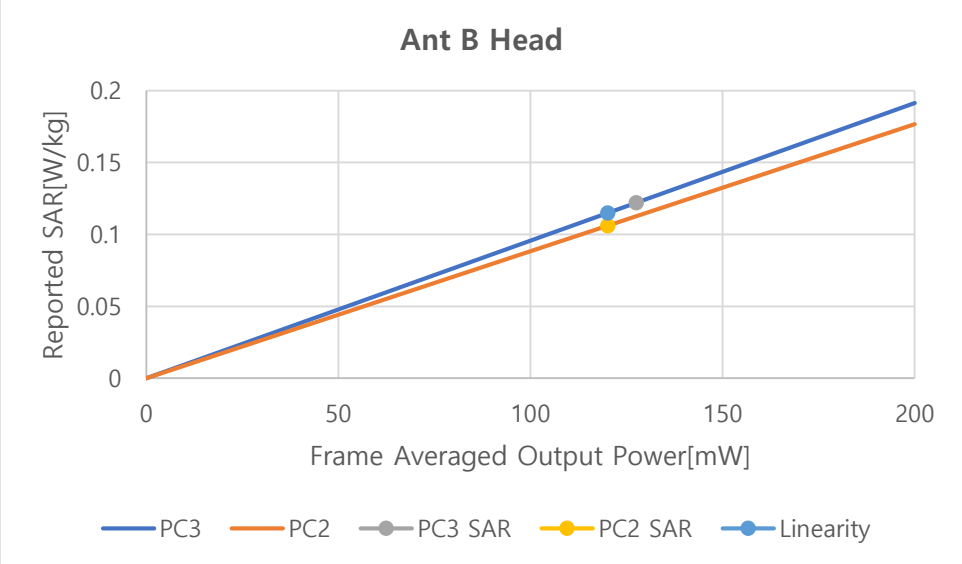
16. LTE TDD Band 41 Power Class 2 and Power class 3 Linearity

This Device Supports Power Class 2 and Power Class 3 operations for LTE Band 41. The Highest available duty cycle for Power Class 2 operations is 43.3 % using UL-DL Configuration 1. Per May 2017 TCB Workshop Notes based on the device behavior, all SAR tests were performed using Power class 3. SAR with power class 2 at the highest power and available duty factor was additionally performed for the power class 2 configuration with the Highest SAR for each exposure condition.

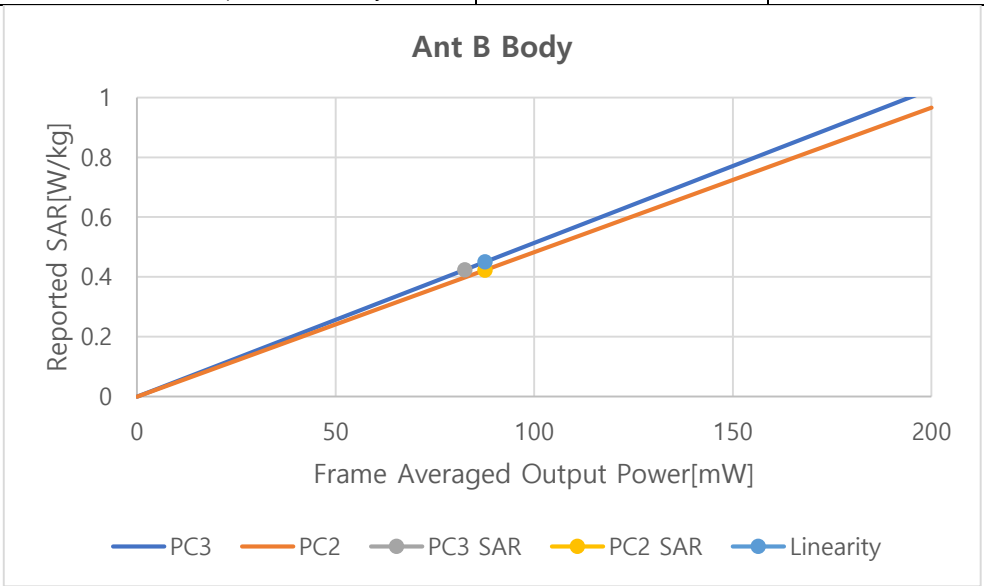
The linearity between the power class 3and Power class 2 SAR Results and the respective frame averaged powers was calculated to determine the results were linear.

Per May 2017 TCB Workshop, no additional SAR measurements were required since the linearity between power classes as less than 10 % and all reported SAR values were < 1.4 W/kg.

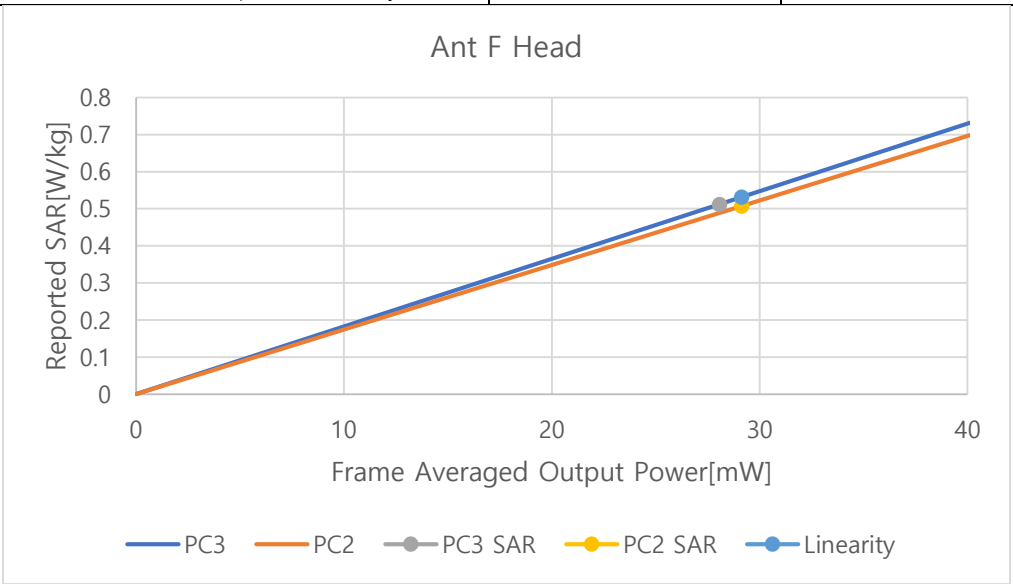
Ant B Head		
LTE TDD Band 41 Linearity Data Table		
	LTE Band41 PC3	LTE Band41 PC2
Maximum Allowed Output Power[dBm]	25.0	26.0
Measured Output Power[dBm]	23.04	24.43
Reported SAR[W/kg]	0.122	0.106
Measured Power[mW]	201.37	277.33
Duty Cycle	63.30%	43.30%
Frame Averaged Output Power[mW]	127.47	120.08
% deviation from expected linearity		-7.77



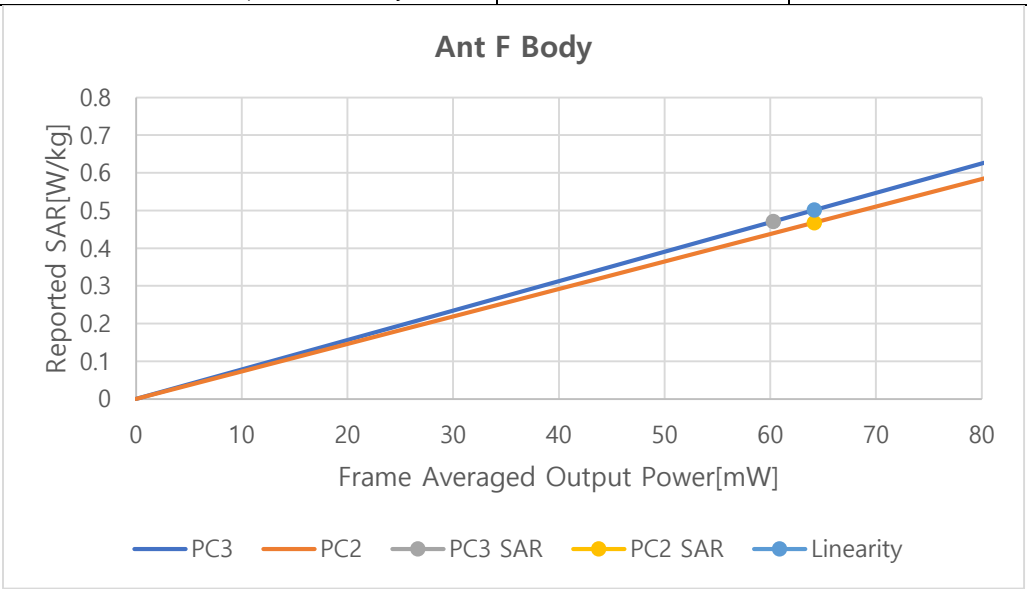
Ant B Hotspot/BodyWorn		
LTE TDD Band 41 Linearity Data Table		
	LTE Band41 PC3	LTE Band41 PC2
Maximum Allowed Output Power[dBm]	22.0	23.6
Measured Output Power[dBm]	21.15	23.06
Reported SAR[W/kg]	0.424	0.423
Measured Power[mW]	130.32	202.3
Duty Cycle	63.30%	43.30%
Frame Averaged Output Power[mW]	82.49	87.6
% deviation from expected linearity		-6.06



Ant F Head		
LTE TDD Band 41 Linearity Data Table		
	LTE Band41 PC3	LTE Band41 PC2
Maximum Allowed Output Power[dBm]	17.5	19.0
Measured Output Power[dBm]	16.47	18.28
Reported SAR[W/kg]	0.512	0.507
Measured Power[mW]	44.36	67.3
Duty Cycle	63.30%	43.30%
Frame Averaged Output Power[mW]	28.08	29.14
% deviation from expected linearity		-4.58



Ant F Hotspot/Body Worn		
LTE TDD Band 41 Linearity Data Table		
	LTE Band41 PC3	LTE Band41 PC2
Maximum Allowed Output Power[dBm]	20.5	22.0
Measured Output Power[dBm]	19.79	21.71
Reported SAR[W/kg]	0.471	0.468
Measured Power[mW]	95.28	148.25
Duty Cycle	63.30%	43.30%
Frame Averaged Output Power[mW]	60.31	64.19
% deviation from expected linearity		-6.64



17. Measurement Uncertainty

The measured SAR was <1.5 W/Kg for 1g SAR and <3.75 W/Kg For 10g SAR for all frequency Bands. Therefore, per KDB Publication 865664 D01v01r04, the extended measurement uncertainty analysis per IEEE1528-2013 was not required.

For SAR Measurement Uncertainty for Frequencies Above 6GHz

Measurement Uncertainty for handset SAR test

According to IEEE 1528 and IEC 62209-1528

(6 - 10 GHz range)

a	*b*	*c*	*d*	*e*	*f*	*g*	*h* = *c* x *f* / *e*	*i* = *c* x *g* / *e*	*k*
Source of uncertainty	**Simbol**	**Uncertainty ± %**	**Probability distribution**	**Div.**	***ci***	***ci***	**Standard Uncertainty**	**Standard Uncertainty**	***vi* or *veff***
Description					**(1 g)**	**(10 g)**	**± % (1 g)**	**± % (10 g)**	
Measurement system									
Probe calibration	CF	18.60	N	2	1	1	9.30	9.30	∞
Probe Calibration Drift	CFdrift	1.70	N	1	1	1	1.00	1.00	∞
Probe Linearity	LIN	4.70	R	1.73	1.00	1.00	2.71	2.71	∞
Broadband Signal	BBS	3.00	R	1.73	1.00	1.00	1.73	1.73	∞
Probe Isotropy	ISO	7.60	R	1.73	1	1	4.39	4.39	∞
Data Acquisition	DAE	2.40	N	1	1	1	2.40	2.40	∞
RF Ambient	AMB	1.80	N	1	1	1	1.80	1.80	∞
Probe Positioning	Δsys	0.20	N	1	0.33	0.33	0.07	0.07	∞
Data Processing	DAT	3.50	N	1	1	1	3.50	3.50	∞
Phantom and Device Errors									
Conductivity (meas.)DAK	LIQ(σ)	2.50	N	1	0.78	0.71	1.95	1.78	∞
Conductivity (temp.)BB	LIQ(Tσ)	3.40	R	1.73	0.78	0.71	1.53	1.39	∞
Phantom Permittivity	EPS	14.00	R	1.73	0.25	0.25	2.02	2.02	∞
Distance DUT - TSL	DAS	2.00	N	1	2	2	4.00	4.00	∞
Device Holder	H	3.60	N	1	1	1	3.60	3.60	∞
DUT Modulation	MOD	2.40	R	1.73	1	1	1.39	1.39	∞
DUT drift	RFdrift	2.50	N	1	1	1	2.50	2.50	∞
Deviation to Target	C(ε, σ)	1.90	N	1	1	0.84	1.90	1.60	∞
SAR scaling	C(R)	0.00	R	1.73	1	1	0.00	0.00	∞
Combined standard uncertainty	u(ΔSAR)		RSS				13.72	13.65	
Expanded uncertainty (95% confidence interval)	U		*k = 2*				**27.44**	**27.30**	

For Power Density Measurements Uncertainty for Frequencies Above 6GHz

DASY6 Uncertainty Budget for PD (avg ≥1cm2) Evaluation Distances to the Antennas ≥ λ/25 in Compliance with IEC/IEEE 63195						
Source of uncertainty Description	Uncertainty (±dB)	Probability distribution	Div.	c_i	Standard Uncertainty (±dB)	(vi) veff
Uncertainty terms dependent on the measurement system						
Calibration	0.49	N	1	1	0.49	∝
Probe correction	0.00	R	1.73	1	0.00	∝
Frequency response (BW ≤ 1 GHz)	0.20	R	1.73	1	0.12	∝
Sensor cross coupling	0.00	R	1.73	1	0.00	∝
Isotropy	0.50	R	1.73	1	0.29	∝
Linearity	0.20	R	1.73	1	0.12	∝
Probe scattering	0.00	R	1.73	1	0.00	∝
Probe positioning offset	0.30	R	1.73	1	0.17	∝
Probe positioning repeatability	0.04	N	1	1	0.04	∝
Sensor mechanical offset	0.00	N	1	1	0.00	∝
Probe spatial resolution	0.00	N	1	1	0.00	∝
Field impedance dependence	0.00	N	1	1	0.00	∝
Measurement drift	0.05	N	1	1	0.05	∝
Amplitude and phase noise	0.04	N	1	1	0.04	∝
Measurement area truncation	0.00	N	1	1	0.00	∝
Data acquisition	0.03	N	1	1	0.03	∝
Sampling	0.00	N	1	1	0.00	∝
Field reconstruction	0.60	N	1	1	0.60	∝
Signal-to-Noise Ratio	0.00	N	1	1	0.00	∝
Spatial averaging	0.10	N	1	1	0.10	∝
Uncertainty terms dependent on the DUT and environmental factors						
Probe coupling with DUT	0.00	R	1.73	1	0.00	∝
Modulation response	0.40	R	1.73	1	0.23	∝
Integration time	0.00	R	1.73	1	0.00	∝
Response time	0.00	N	1.73	1	0.00	∝
Device holder influence	0.10	R	1.73	1	0.06	∝
DUT alignment	0.00	R	1.73	1	0.00	∝
RF ambient conditions	0.04	R	1.73	1	0.02	∝
Laboratory Temperature	0.05	R	1.73	1	0.03	∝
Laboratory Reflections	0.04	R	1.73	1	0.02	∝
Immunity / secondary reception	0.00	R	1.73	1	0.00	∝
Drift of the DUT	-	R	1.73	1	-	∝
Combined uncertainty (k = 1)					0.75	∝
Expanded uncertainty(k = 2)					**1.51**	

18. SAR Test Equipment

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
SPEAG	SAM Phantom	-	N/A	N/A	N/A
SPEAG	ELI Phantom	-	N/A	N/A	N/A
SPEAG	cDASY6 5G Module Phantom		N/A	N/A	N/A
HP	SAR System Control PC	-	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F11/ 5K3RA1/ C/ 01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F11/ 5K3RA1/ A/ 01	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	S-1203 0309	N/A	N/A	N/A
TESTO	175-H1/Thermometer	40331936309	12/26/2023	Annual	12/26/2024
Staubli	CS8Cspeag-TX90	F08/5AJ0A1/C/01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F08/5AJ0A1/A/01	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	S-0008	N/A	N/A	N/A
TESTO	175-H1/Thermometer	40331949309	12/26/2023	Annual	12/26/2024
Staubli	CS8Cspeag-TX90	F13/ 5SD0A1/ C/ 01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F13/ 5SD0A1/ A/ 01	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	001729	N/A	N/A	N/A
TESTO	608-H1/Thermometer	83348029	03/20/2024	Annual	03/20/2025
Staubli	CS9spe-TX2-60	F/21/0029002/C/001	N/A	N/A	N/A
Staubli	TX2-60 Lspeag	F/21/0029002/A/001	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	D21144507C	N/A	N/A	N/A
TESTO	608-H1/Thermometer	83239085	10/24/2023	Annual	10/24/2024
Staubli	CS8Cspeag-TX90	F07/55B8A1/C/01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F07/55B8A1/A/01	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	S-0306	N/A	N/A	N/A
TESTO	608-H1/Thermometer	83348021	03/20/2024	Annual	03/20/2025
SPEAG	DAE4	1720	04/19/2024	Annual	04/19/2025
SPEAG	DAE4	1629	08/21/2023	Annual	08/21/2024
SPEAG	DAE4	1417	02/16/2024	Annual	02/16/2025
SPEAG	DAE4	504	01/30/2024	Annual	01/30/2025
SPEAG	DAE4	1464	06/19/2024	Annual	06/19/2025
SPEAG	E-Field Probe EX3DV4	7681	11/27/2023	Annual	11/27/2024
SPEAG	E-Field Probe EX3DV4	7622	11/24/2023	Annual	11/24/2024
SPEAG	E-Field Probe EX3DV4	3903	07/19/2023	Annual	07/19/2024
SPEAG	E-Field Probe ES3DV3	3076	07/18/2023	Annual	07/18/2024
SPEAG	E-Field Probe EUmmWV4	9464	02/19/2024	Annual	02/19/2025
SPEAG	CLA13	1016	09/21/2023	Annual	09/21/2024
SPEAG	Dipole D750V3	1014	05/20/2024	Annual	05/20/2025
SPEAG	Dipole D835V2	441	04/18/2024	Annual	04/18/2025
SPEAG	Dipole D1800V2	2d007	04/15/2024	Annual	04/15/2025
SPEAG	Dipole D1900V2	5d032	01/18/2024	Annual	01/23/2025
SPEAG	Dipole D2450V2	743	03/14/2024	Annual	03/14/2025
SPEAG	Dipole D2600V2	1015	04/22/2024	Annual	04/22/2025
SPEAG	Dipole D3500V2	1132	01/23/2024	Annual	01/23/2025
SPEAG	Dipole D3700V2	1105	11/20/2023	Annual	11/20/2024
SPEAG	Dipole D3900V2	1086	05/21/2024	Annual	05/21/2025
SPEAG	Dipole D5GHzV2	1107	04/19/2024	Annual	05/17/2025
SPEAG	Dipole D6.5GHzV2	1012	09/21/2023	Annual	09/21/2024
SPEAG	5G Verification source 10GHz	1018	04/17/2024	Annual	04/17/2025

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
Agilent	Power Meter E4419B	MY41291386	09/21/2023	Annual	09/21/2024
Agilent	Power Meter N1911A	MY45101406	05/21/2024	Annual	05/21/2025
Agilent	Power Sensor 8481A	SG1091286	09/21/2023	Annual	09/21/2024
H.P	Power Sensor 8481A	MY41090675	09/21/2023	Annual	09/21/2024
Agilent	Wideband Power Sensor N1921A	MY55220026	07/28/2023	Annual	07/28/2024
Agilent	11636B/Power Divider	58698	01/15/2024	Annual	01/15/2025
SPEAG	DAKS 3.5	1038	01/22/2024	Annual	01/22/2025
SPEAG	Vector Reflectometer	0141013	01/11/2024	Annual	01/11/2025
SPEAG	DAKS 12	1048	03/20/2024	Annual	03/20/2025
SPEAG	Vector Reflectometer	21393001	03/21/2024	Annual	03/21/2025
SPEAG	MXA Signal Analyzer	MY49100108	01/09/2024	Annual	01/09/2025
H.P	Network Analyzer /8753ES	JP39240221	12/26/2023	Annual	12/26/2024
Protek	NETWORK ANALYZER	X11-15305	02/15/2024	Annual	02/15/2025
Agilent	WIRELESS COMMUNICATION E5515C	MY48361100	09/21/2023	Annual	09/21/2024
Agilent	WIRELESS COMMUNICATION E5515C	MY48360252	07/27/2023	Annual	07/27/2024
R&S	Wireless Communication Test Set CMW500	115733	03/19/2024	Annual	03/19/2025
R&S	Wireless Communication Test Set CMW500	139333	12/13/2023	Annual	12/13/2024
Agilent	SIGNAL GENERATOR N5182A	MY47070230	03/19/2024	Annual	03/19/2025
Keysight	PSG Vector Signal Generator	MY50350097	03/05/2024	Annual	03/05/2025
EMPOWER	RF Power Amplifier	1084	05/21/2024	Annual	05/21/2025
EMPOWER	RF Power Amplifier	1041D/C0508	05/21/2024	Annual	05/21/2025
EMPOWER	RF Power Amplifier	1011	09/21/2023	Annual	09/21/2024
MICRO LAB	LP Filter / LA-15N	10453	09/21/2023	Annual	09/21/2024
MICRO LAB	LP Filter / LA-30N	-	09/21/2023	Annual	09/21/2024
MICRO LAB	LP Filter / LA-60N	32011	09/21/2023	Annual	09/21/2024
Agilent	Attenuator (3dB) 8693B	MY39260298	08/22/2023	Annual	08/22/2024
HP	Attenuator (3dB) 33340A	02427	08/22/2023	Annual	08/22/2024
HP	Attenuator (20dB) 8493C	09271	08/22/2023	Annual	08/22/2024
Agilent	Directional Bridge 86205A	3140A04581	04/22/2024	Annual	04/22/2026
OSI	Power Divider	#1	05/21/2024	Annual	05/21/2025
OSI	Power Divider	#2	05/21/2024	Annual	05/21/2025
OSI	Power Divider	#3	05/21/2024	Annual	05/21/2025
OSI	Power Divider	#4	05/21/2024	Annual	05/21/2025
OSI	Power Divider	#5	05/21/2024	Annual	05/21/2025
OSI	Power Divider	#6	05/21/2024	Annual	05/21/2025
OSI	Power Divider	#7	05/21/2024	Annual	05/21/2025
OSI	Power Divider	#8	05/21/2024	Annual	05/21/2025
Agilent	MXA Signal Analyzer N9020A	MY50510407	06/04/2024	Annual	06/04/2025
KEYSIGHT	EXG Vector Signal Generator	MY50350097	03/05/2024	Annual	03/05/2025
HP	Dual Directional Coupler	16072	09/21/2023	Annual	09/21/2024
Narda	DIRECTIONAL COUPLER	07066	01/08/2024	Annual	01/08/2025

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
Anritsu	Radio Communication Test Station MT8000A	6261987928	01/18/2024	Annual	01/18/2025
Anritsu	Radio Communication Test Station MT8000A	6262036812	11/28/2023	Annual	11/28/2024
Anritsu	Radio Communication Test Station MT8000A	6262148305	12/21/2023	Annual	12/21/2024
Anritsu	Radio Communication Tester MT8820C	6201074225	01/17/2024	Annual	01/17/2025
Anritsu	Radio Communication Tester MT8820C	6200695605	03/19/2024	Annual	03/19/2025
Anritsu	Radio Communication Tester MT8821C	6262044720	11/28/2023	Annual	11/28/2024
Anritsu	Radio Communication Tester MT8821C	6201664725	01/17/2024	Annual	01/17/2025
Agilent	WIRELESS COMMUNICATION E5515C	MY50260992	05/22/2024	Annual	05/22/2025
ROHDE&SCHWARZ	BLUETOOTH TESTER CBT	100272	01/16/2024	Annual	01/16/2025

* The E-field probe was calibrated by SPEAG, by the waveguide technique procedure. Dipole Verification measurement is performed by HCT Lab. before each test. The brain/body simulating material is calibrated by HCT using the DAKS 3.5 to determine the conductivity and permittivity (dielectric constant) of the brain/body-equivalent material.

19. Conclusion

The SAR and RF Exposure measurement indicates that the EUT complies with the RF radiation exposure limits of the ANSI/ IEEE C95.1 - 2005.

These measurements were taken to simulate the RF effects exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests. The results and statements relate only to the item(s) tested.

Please note that the abortion and distribution of electromagnetic energy in the body are very complex phenomena the depend on the mass, shape, and size of the body, the orientation of the body with respect to the field vectors, and the electrical properties of both the body and the environment. Other variables that may play a substantial role in possible biological effects are those that characterize the environment (e.g. ambient temperature, air velocity, relative humidity, and body insulation) and those that characterize the individual (e.g. age, gender, activity level, debilitation, or disease). Because various factors may interact with one another to vary the specific biological outcome of an exposure to electromagnetic fields, any protection guide should consider maximal amplification of biological effects as a result of field-body interactions, environmental conditions, and physiological variables.

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communication devices – Human models, instrumentation and procedures – Part 1:Procedure to determine the specific absorption rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 ㎒ to 3 ㎓), July. 2016..

[21] IEC 62209-2, Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures – Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 ㎒ to 6 ㎓) Mar. 2010.

[22] Industry Canada RSS-102 Radio Frequency Exposure Compliance of Radio Communication Apparatus (All Frequency Band) Issue 5, March 2015.

[23] Health Canada Safety Code 6 Limits of Human Exposure to Radio Frequency Electromagnetic Fields in the Frequency rage from 3 kHz – 300 ㎓, 2009

[24] FCC SAR Test procedures for 2G-3G Devices, Mobile Hotspot and UMPC Device KDB 941225 D01.

[25] SAR Measurement Guidance for IEEE 802.11 transmitters, KDB 248227 D01v02r02

[26] SAR Evaluation of Handsets with Multiple Transmitters and Antennas KDB 648474 D03, D04.

[27] SAR Evaluation for Laptop, Notebook, Netbook and Tablet computers KDB 616217 D04.

[28] SAR Measurement and Reporting Requirements for 100 ㎒ – 6 ㎓, KDB 865664 D01, D02.

[29] FCC General RF Exposure Guidance KDB 447498 D01v06.

Appendix A. DUT Ant. Information & SETUP PHOTO

Please refer to test DUT Ant. Information &setup photo file no. as follows:

Report No.
HCT-SR-2407-FC017-P