

TEST REPORT

FCC SAR Part 1 Test for SM-A266U
Certification

APPLICANT
SAMSUNG Electronics Co., Ltd.

REPORT NO.
HCT-SR-2501-FC005-R1

DATE OF ISSUE
February 4, 2025

Tested by
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TEST REPORT

FCC Part 1 SAR Test
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Feb. 04, 2025

FCC ID
A3LSMA266U

Applicant SAMSUNG Electronics Co., Ltd
129, Samsung-ro, Yeongtong-gu, Suwon-Si, Gyeonggi-do, 16677, Korea

Product Name Mobile Phone
Model Name SM-A266U
Additional Model Name SM-A266U1, SM-S266V

Date of Test Dec. 03, 2024~ Jan. 07, 2025

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)
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	Jan. 15, 2025	Initial Release
1	Feb. 04, 2025	Typo Revised Page 11

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 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)
- April 2018 TCBC Workshop Notes (LTE UL CA, DL CA SAR Test Exclusion)
- April 2022 TCBC Workshop Notes (Sum-Peak Location Separation Ratio)

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-A266U
Additional Model Name	SM-A266U1, SM-S266V
Equipment Type	Mobile Phone
FCC ID	A3LSMA266U
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 Hotspot	1 g Body Worn	10 g Extremity
GSM/GPRS/EDGE 850	824.2 MHz ~ 848.8 MHz	PCE	0.30	1.09	1.09	N/A
GSM/GPRS/EDGE 1900	1 850.2 MHz ~ 1 909.8 MHz	PCE	0.26	0.71	0.71	N/A
UMTS Band 5	826.4 MHz ~ 846.6 MHz	PCE	0.20	0.66	0.66	N/A
UMTS Band 4	1 712.4 MHz ~ 1 752.6 MHz	PCE	0.10	1.09	0.79	N/A
UMTS Band 2	1 852.4 MHz ~ 1 907.6 MHz	PCE	0.36	1.15	0.80	N/A
LTE FDD Band 2 (PCS)	1 850.7 MHz ~ 1 909.3 MHz	PCE	0.50	0.77	0.51	N/A
LTE FDD Band 4 (AWS)	1 710.7 MHz ~ 1 754.3 MHz	PCE	N/A	N/A	N/A	N/A
LTE FDD Band 5 (Cell)	824.7 MHz ~ 848.3 MHz	PCE	N/A	N/A	N/A	N/A
LTE FDD Band 7	2 502.5 MHz ~ 2 567.5 MHz	PCE	0.23	1.19	1.00	N/A
LTE FDD Band 12	699.7 MHz ~ 715.3 MHz	PCE	0.23	0.23	0.23	N/A
LTE FDD Band 13	779.5 MHz ~ 784.5 MHz	PCE	0.20	0.38	0.38	N/A
LTE FDD Band 14	790.5 MHz ~ 795.5 MHz	PCE	0.22	0.45	0.45	N/A
LTE FDD Band 25 (PCS)	1 850.7 MHz ~ 1 914.3 MHz	PCE	0.40	0.97	0.97	N/A
LTE FDD Band 26 (Cell)	814.7 MHz ~ 848.3 MHz	PCE	0.13	0.55	0.55	N/A
LTE FDD Band 30	2 307.5 MHz ~ 2 312.5 MHz	PCE	0.30	1.02	0.89	N/A
LTE TDD Band 38	2 572.5 MHz ~ 2 617.5 MHz	PCE	N/A	N/A	N/A	N/A
LTE TDD Band 41	2 498.5 MHz ~ 2 687.5 MHz	PCE	0.12	0.47	0.33	N/A
LTE TDD Band 48	3 552.5 MHz ~ 3 697.5 MHz	CBE	0.51	0.42	0.42	N/A
LTE FDD Band 66 (AWS)	1 710.7 MHz ~ 1 779.3 MHz	PCE	0.75	1.11	0.77	N/A
LTE FDD Band 71	665.5 MHz ~ 695.5 MHz	PCE	0.17	0.31	0.31	N/A
NR FDD Band n2 (PCS)	1 852.5 MHz ~ 1 907.5 MHz	PCE	0.57	0.91	0.75	N/A
NR FDD Band n5	826.5 MHz ~ 846.5 MHz	PCE	0.21	0.43	0.43	N/A
NR FDD Band n25 (PCS)	1 852.5 MHz ~ 1 912.5 MHz	PCE	0.44	1.12	1.03	N/A
NR FDD Band n30	2 307.5 MHz ~ 2 312.5 MHz	PCE	0.23	0.99	0.99	N/A
NR TDD Band n41	2 506.02 MHz ~ 2 679.99 MHz	PCE	0.38	0.55	0.53	N/A
NR TDD Band n48	3 555 MHz ~ 3 695.01 MHz	CBE	0.54	0.96	0.69	N/A
NR FDD Band n66	1 712.5 MHz ~ 1 777.5 MHz	PCE	0.71	1.07	0.86	N/A
NR FDD Band n71	665.5 MHz ~ 695.5 MHz	PCE	0.16	0.24	0.20	N/A
NR TDD Band n77	3 445.01 MHz ~ 3 544.98 MHz 3 705 MHz ~ 3 975 MHz	PCE	0.56	0.67	0.67	N/A
NR TDD Band n78	3 445.01 MHz ~ 3 544.98 MHz 3 705 MHz ~ 3 975 MHz	PCE	N/A	N/A	N/A	N/A
2.4 GHz WLAN	2 412 MHz ~ 2 462 MHz	DTS	0.43	0.44	0.44	N/A
U-NII-1	5 180 MHz ~ 5 240 MHz	NII	N/A	N/A	N/A	N/A
U-NII-2A	5 260 MHz ~ 5 320 MHz	NII	0.16	0.35	0.35	N/A
U-NII-2C	5 500 MHz ~ 5 720 MHz	NII	0.22	0.29	0.29	N/A
U-NII-3	5 745 MHz ~ 5 825 MHz	NII	0.10	0.25	0.25	N/A
U-NII-4	5 845 MHz ~ 5 885 MHz	NII	<0.10	0.16	0.16	N/A
Bluetooth	2 402 MHz ~ 2 480 MHz	DSS	0.21	0.50	0.33	N/A
NFC	13.56 MHz	DXX	N/A	N/A	N/A	<0.10
Simultaneous SAR per KDB 690783 D01v01r03			1.57	1.54	1.54	<0.10
Date(s) of Tests:	Dec. 03, 2024~ Jan. 07, 2025					

4. Device Under Test Description

4.1 DUT specification

Device Wireless specification overview		
Band & Mode	Operating Mode	Tx Frequency
GSM850	Voice / Data	824.2 MHz ~ 848.8 MHz
GSM1900	Voice / Data	1 850.2 MHz ~ 1 909.8 MHz
UMTS Band 2	Voice / Data	1 852.4 MHz ~ 1 907.6 MHz
UMTS Band 4	Voice / Data	1 712.4 MHz ~ 1 752.6 MHz
UMTS Band 5	Voice / Data	826.4 MHz ~ 846.6 MHz
LTE FDD Band 2 (PCS)	Voice / Data	1 850.7 MHz ~ 1 909.3 MHz
LTE FDD Band 4 (AWS)	Voice / Data	1 710.7 MHz ~ 1 754.3 MHz
LTE FDD Band 5 (Cell)	Voice / Data	824.7 MHz ~ 848.3 MHz
LTE FDD Band 7	Voice / Data	2 502.5 MHz ~ 2 567.5 MHz
LTE FDD Band 12	Voice / Data	699.7 MHz ~ 715.3 MHz
LTE FDD Band 13	Voice / Data	779.5 MHz ~ 784.5 MHz
LTE FDD Band 14	Voice / Data	790.5 MHz ~ 795.5 MHz
LTE FDD Band 25	Voice / Data	1 850.7 MHz ~ 1 914.3 MHz
LTE FDD Band 26	Voice / Data	814.7 MHz ~ 848.3 MHz
LTE FDD Band 30	Voice / Data	2 307.5 MHz ~ 2 312.5 MHz
LTE TDD Band 38	Voice / Data	2 572.5 MHz ~ 2 617.5 MHz
LTE TDD Band 41	Voice / Data	2 498.5 MHz ~ 2 687.5 MHz
LTE TDD Band 48	Voice / Data	3 552.5 MHz ~ 3 697.5 MHz
LTE FDD Band 66 (AWS)	Voice / Data	1 710.7 MHz ~ 1 779.3 MHz
LTE FDD Band 71	Voice / Data	665.5 MHz ~ 695.5 MHz
NR FDD Band n2 (PCS)	Voice / Data	1 852.5 MHz ~ 1 907.5 MHz
NR FDD Band n5	Voice / Data	826.5 MHz ~ 846.5 MHz
NR FDD Band n25 (PCS)	Voice / Data	1 852.5 MHz ~ 1 912.5 MHz
NR FDD Band n30	Voice / Data	2 307.5 MHz ~ 2 312.5 MHz
NR TDD Band n41	Voice / Data	2 501.01 MHz ~ 2 685 MHz
NR TDD Band n48	Voice / Data	3 555 MHz ~ 3 695.01 MHz
NR FDD Band n66	Voice / Data	1 712.5 MHz ~ 1 777.5 MHz
NR FDD Band n71	Voice / Data	665.5 MHz ~ 695.5 MHz
NR TDD Band n77	Voice / Data	3 705 MHz ~ 3 975 MHz
NR TDD Band n77 DoD	Voice / Data	3 445.01 MHz ~ 3 544.98 MHz
NR TDD Band n78	Voice / Data	3 705 MHz ~ 3 795 MHz
NR TDD Band n78 DoD	Voice / Data	3 455.01 MHz ~ 3 544.98 MHz
U-NII-1	Voice / Data	5 180 MHz ~ 5 240 MHz
U-NII-2A	Voice / Data	5 260 MHz ~ 5 320 MHz
U-NII-2C	Voice / Data	5 500 MHz ~ 5 720 MHz
U-NII-3	Voice / Data	5 745 MHz ~ 5 825 MHz
U-NII-4	Voice / Data	5 845 MHz ~ 5 885 MHz
2.4 GHz WLAN	Voice / Data	2 412 MHz ~ 2 462 MHz
Bluetooth / LE 5.3	Data	2 402 MHz ~ 2 480 MHz
NFC	Data	13.56 MHz

Device Description		
Battery	EB-BA166ASY (ATL)	
Device Serial Numbers	Mode	Serial Number
	GSM850, GSM1900, UMTS Band 2,4,5	XKI2321M,
	LTE Band 12,13,14,26,71 NR Band n2,5,30,71	XKL22530M,
	LTE Band 2,66,25,30,7 NR Band n41, n48 SRS2/3, n77 SRS 2/3	XKI2345M
	LTE Band 41, 48	XKP0611M
	NR Band n7,25,30,41, 48, 66,71, 77 n48 SRS4, n77 SRS4	XKP0612M
	WLAN 2.4G, 5G, BT, NFC	XXP0546M, XLO1175M, XLK1972M, XLO1165M
	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 device is enabled with the Samsung S.LSI proprietary TAS (Time Average SAR) algorithm to control and manage transmitting power in real time and to ensure that the time-averaged RF exposure from 2G/3G/4G/5G NR WWAN and WLAN/BT is in compliance with FCC requirements.

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 SAR Char. Report shows SAR characterization of WWAN radios for 2G/3G/4G and 5G Sub-6 NR respectively. Characterization is achieved by determining Plimit for 2G/3G/4G and 5G Sub-6 NR and WLAN/BT correspond to the exposure design targets after accounting for all device design related uncertainties, i.e. SAR_design_target (< FCC SAR limit) for sub-6 radio. The SAR characterization is denoted as SAR Char in this report. Section 2.3 includes a nomenclature of the specific terms used in this report.

The compliance test under the static transmission scenario and simultaneous transmission analysis are reported in Part 1 report. The validation of the time-averaging algorithm and compliance under the dynamic (time- varying) transmission scenario for WWAN technologies are reported in Part 2 report.

.Both WWAN Mode and WLAN/BT Mode of this DUT are applied with S.LSI TAS algorithm, but they are not interworked with each other, and the output power is controlled by operating the TAS algorithm independently in each mode to meet the FCC limit.

The Samsung S.LSI 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 and WLAN/BT Mode 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			Plim values in grey indicate Plim > Pmax			Maximum Tune-up Output Power (Frame Averaged Power) [dBm]
Plimit corresponding to 1 W/kg (1g) SAR_Design_target						
SAR Exposure Position			Body-worn	Head (RCV ON)	Hotspot (Hotspot on)	
Averaging volume			1g	1g	1g	
seperation Distance			5 mm	0 mm	5 mm	
Mode	Band	Antenna	Non Head	Head	Non Head	
GSM/GPRS/EDGE	850	Ant.A	22.8	31.1	22.8	
GSM/GPRS/EDGE	1900	Ant.B	16.8	29.6	16.8	
UMTS	2	Ant.B	18.0	28.2	18.0	
UMTS	4	Ant.B	19.0	34.0	19.0	
UMTS	5	Ant.A	20.0	31.7	20.0	
LTE FDD	25(2)	Ant.B	18.0	29.0	18.0	
LTE FDD	2 Upper	Ant.D	20.0	20.0	20.0	
LTE FDD	4,66	Ant.B	19.0	31.1	19.0	
LTE FDD	66(4) Upper	Ant.D	19.0	19.0	19.0	
LTE FDD	7	Ant.B	18.0	30.3	18.0	
LTE FDD	12	Ant.A	20.0	31.4	20.0	
LTE FDD	13	Ant.A	20.0	31.9	20.0	
LTE FDD	14	Ant.A	20.0	31.6	20.0	
LTE FDD	26(5)	Ant.A	19.0	33.8	19.0	
LTE FDD	30	Ant.B	18.0	29.2	18.0	
LTE TDD PC3	41(38)	Ant.B	16.0	32.3	16.0	
LTE TDD PC3	48	Ant.E	17.0	17.0	17.0	
LTE FDD	71	Ant.A	20.0	32.7	20.0	
NR FDD	25(2)	Ant.B	18.5	28.8	18.5	
NR FDD	2 Upper	Ant.D	19.0	19.0	19.0	
NR FDD	5	Ant.A	19.0	32.4	19.0	
NR FDD	30	Ant.B	18.0	30.3	18.0	
NR FDD	66	Ant.B	19.0	31.0	19.0	
NR FDD	66 Upper	Ant.D	19.0	19.0	19.0	
NR FDD	71	Ant.A	19.0	33.0	19.0	
NR TDD	41 PC2	Ant.B	16.0	35.8	16.0	
NR TDD	41 PC3	Ant.B	16.0	35.8	16.0	
NR TDD	48	Ant.E	17.0	17.0	17.0	
NR TDD SRS 2	48 SRS2	Ant.H	13.5	13.5	13.5	
NR TDD SRS 3	48 SRS3	Ant.B	14.0	14.0	14.0	
NR TDD SRS 4	48 SRS4	Ant.I	13.0	13.0	13.0	
NR TDD	77 PC2	Ant.E	16.0	16.0	16.0	
NR TDD SRS 2	77 PC2 SRS2	Ant.H	13.0	13.0	13.0	
NR TDD SRS 3	77 PC2 SRS3	Ant.B	14.5	14.5	14.5	
NR TDD SRS 4	77 PC2 SRS4	Ant.I	12.5	12.5	12.5	
NR TDD	77 DoD PC2	Ant.E	16.0	16.0	16.0	
NR TDD SRS 2	77 DoD PC2 SRS2	Ant.H	13.0	13.0	13.0	
NR TDD SRS 3	77 DoD PC2 SRS3	Ant.B	14.5	14.5	14.5	
NR TDD SRS 4	77 DoD PC2 SRS4	Ant.I	12.5	12.5	12.5	
NR TDD	77(78) PC3	Ant.E	16.0	16.0	16.0	
NR TDD SRS 2	77(78) PC3 SRS2	Ant.H	13.0	13.0	13.0	
NR TDD SRS 3	77(78) PC3 SRS3	Ant.B	14.5	14.5	14.5	
NR TDD SRS 4	77(78) PC3 SRS4	Ant.I	12.5	12.5	12.5	
NR TDD	77(78) DoD PC3	Ant.E	16.0	16.0	16.0	
NR TDD SRS 2	77(78) DoD PC3 SRS2	Ant.H	13.0	13.0	13.0	
NR TDD SRS 3	77(78) DoD PC3 SRS3	Ant.B	14.5	14.5	14.5	
NR TDD SRS 4	77(78) DoD PC3 SRS4	Ant.I	12.5	12.5	12.5	
WLAN	2.4	Ant.F	14.0	16.0	14.0	
WLAN	5	Ant.E	13.0	13.0	13.0	
BT	2.4	Ant.F	17.0	23.2	15.7	

Table 4-4 SAR Characterization

*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 Power Reduction for SAR

In this model, the output Power of the DUT in WWAN/WLAN mode is controlled by the application of The Samsung S.LSI proprietary TAS (Time Average SAR) algorithm, with the output Power depending on the RSI of the predefined DUT.

4.3.1 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.

4.3.1.1 2G/3G/4G/5G Nominal Output Power

A. GSM Modes

GSM/GPRS/EDGE 850_Antenna A									
Power Level	Voice (dBm)	Data - Burst Average GMSK (dBm)				Data - Burst Average 8-PSK (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	31.0	29.0	28.0	27.0	24.5	23.0	22.0
RSI = 0 (Non Head)	32.0	32.0	29.0	27.0	26.0	27.0	24.5	23.0	22.0
RSI = 1 (Head)	33.0	33.0	31.0	29.0	28.0	27.0	24.5	23.0	22.0

GSM/GPRS/EDGE 1900									
Power Level	Voice (dBm)	Data - Burst Average GMSK (dBm)				Data - Burst Average 8-PSK (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	30.0	30.0	28.0	26.0	25.0	26.0	24.0	23.0	21.0
RSI = 0 (Non Head)	26.0	26.0	23.0	21.0	20.0	26.0	23.0	22.0	21.0
RSI = 1 (Head)	30.0	30.0	28.0	26.0	25.0	26.0	23.0	22.0	21.0

Tolerance: -1.5 dB ~ +1.0 dB

B. UMTS Modes

UMTS Band 5 (850 MHz)_Antenna A				
Power Level	Modulated Average Output Power (dBm)			
	3GPP UMTS Rel 99	3GPP HSDPA Rel 5	3GPP HSUPA Rel 6	3GPP DC-HSDPA Rel 8
Pmax	23.7	23.0	22.7	22.7
RSI = 0 (Non Head)	20.0	19.0	18.0	19.0
RSI = 1 (Head)	23.7	23.0	22.7	22.7

UMTS Band 4 (1750 MHz)				
Power Level	Modulated Average Output Power (dBm)			
	3GPP UMTS Rel 99	3GPP HSDPA Rel 5	3GPP HSUPA Rel 6	3GPP DC-HSDPA Rel 8
Pmax	23.0	22.5	22.5	22.5
RSI = 0 (Non Head)	19.0	19.0	18.0	19.0
RSI = 1 (Head)	23.0	22.5	22.5	22.5

UMTS Band 2 (1900 MHz)				
Power Level	Modulated Average Output Power (dBm)			
	3GPP UMTS Rel 99	3GPP HSDPA Rel 5	3GPP HSUPA Rel 6	3GPP DC-HSDPA Rel 8
Pmax	22.7	22	22	22
RSI = 0 (Non Head)	18.0	17.0	16.0	17.0
RSI = 1 (Head)	22.7	22	22	22

Tolerance: -1.5 dB ~ +1.0 dB

C. LTE Modes

Mode / Band	Antenna	Modulated Average Output Power (dBm)		
		Pmax	RSI = 0 (Non Head)	RSI = 1 (Head)
LTE Band 71	A	24.0	20.0	24.0
LTE Band 2	B	24.0	18.0	24.0
LTE Band 2_ UPPER	D	24.0	20.0	20.0
LTE Band 4	B	24.0	19.0	24.0
LTE Band 5	A	24.0	19.0	24.0
LTE Band 7	B	23.0	18.0	23.0
LTE Band 12	A	24.0	20.0	24.0
LTE Band 13	A	24.0	20.0	24.0
LTE Band 14	A	24.0	20.0	24.0
LTE Band 25	B	24.0	18.0	24.0
LTE Band 26	A	24.0	19.0	24.0
LTE Band 30	B	23.0	18.0	23.0
LTE Band 38	B	24.0	18.0	24.0
LTE Band 41	B	24.0	18.0	24.0
LTE Band 48_ UPPER	E	21.0	19.0	19.0
LTE Band 66	B	24.0	19.0	24.0
LTE Band 66_ UPPER	D	24.0	19.0	19.0

Tolerance: -1.5 dB ~ +1.0 dB

D. 5G NR SUB 6

Mode / Band	Antenna	Modulated Average Output Power (dBm)		
		Pmax	RSI = 0 (Non Head)	RSI = 1 (Head)
NR Band 2	B	24.0	18.5	24.0
NR Band 2_UPPER	D	24.0	19.0	19.0
NR Band 5	A	24.0	19.0	24.0
NR Band 25	B	24.0	18.5	24.0
NR Band 30	B	23.0	18.0	23.0
NR Band 66	B	24.0	19.0	24.0
NR Band 66_UPPER	D	23.0	19.0	19.0
NR Band 71	A	24.0	19.0	24.0
NR Band 41(PC2)	B	26.0	16.0	26.0
NR Band 41(PC3)	B	23.5	16.0	23.5
NR Band 48 SRS1	E	21.0	17.0	17.0
NR Band 48 SRS2	H	19.5	13.5	13.5
NR Band 48 SRS3	B	20.0	14.0	14.0
NR Band 48 SRS4	I	19.0	13.0	13.0
NR Band 77 SRS1(PC2)	E	25.5	16.0	16.0
NR Band 77 SRS2(PC2)	H	23.0	13.0	13.0
NR Band 77 SRS3(PC2)	B	23.0	14.5	14.5
NR Band 77 SRS4(PC2)	I	22.0	12.5	12.5
NR Band 77 SRS1(PC3)	E	23.0	16.0	16.0
NR Band 77 SRS2(PC3)	H	21.5	13.0	13.0
NR Band 77 SRS3(PC3)	B	21.5	14.5	14.5
NR Band 77 SRS4(PC3)	I	21.0	12.5	12.5
NR Band 77 DoD SRS1(PC2)	E	25.5	16.0	16.0
NR Band 77 DoD SRS2(PC2)	H	23.0	13.0	13.0
NR Band 77 DoD SRS3(PC2)	B	23.0	14.5	14.5
NR Band 77 DoD SRS4(PC2)	I	22.0	12.5	12.5
NR Band 77 DoD SRS1(PC3)	E	23.0	16.0	16.0
NR Band 77 DoD SRS2(PC3)	H	21.5	13.0	13.0
NR Band 77 DoD SRS3(PC3)	B	21.5	14.5	14.5
NR Band 77 DoD SRS4(PC3)	I	21.0	12.5	12.5
NR Band 78 SRS1	E	23.0	16.0	16.0
NR Band 78 SRS2	H	20.0	13.0	13.0
NR Band 78 SRS3	B	20.5	14.5	14.5
NR Band 78 SRS4	I	20.0	12.5	12.5
NR Band 78 DoD SRS1	E	23.0	16.0	16.0
NR Band 78 DoD SRS2	H	20.0	13.0	13.0
NR Band 78 DoD SRS3	B	20.5	14.5	14.5
NR Band 78 DoD SRS4	I	20.0	12.5	12.5

Tolerance: -1.5 dB ~ +1.0 dB

4.3.1.2 Maximum 2.4 GHz, 5 GHz WIFI output power

a. Maximum Power

Mode	Band	SISO				
		a	b	g	n	ac
2.4 GHz	2.45GHz		19	17 11ch : 15	17 11ch : 15	
5 GHz (20MHz)	UNII-1	17			17	17
	UNII-2A	17			17	17
	UNII-2C	17			17	17
	UNII-3	17			17	17
	UNII-4	17			17	17
5 GHz (40MHz)	UNII-1				14	14
	UNII-2A				14 62ch : 13	14 62ch : 13
	UNII-2C				14	14
	UNII-3				14	14
	UNII-4				14	14
5 GHz (80MHz)	UNII-1					12
	UNII-2A					12 58ch : 11
	UNII-2C					12
	UNII-3					12
	UNII-4					12

(Upper Tolerance: target +1.0 dB)

b. Reduced Power – Body SAR

Mode	Band	SISO				
		a	b	g	n	ac
2.4 GHz	2.45GHz		14	14	14	
5 GHz (20MHz)	UNII-1	13			13	13
	UNII-2A	13			13	13
	UNII-2C	13			13	13
	UNII-3	13			13	13
	UNII-4	13			13	13
5 GHz (40MHz)	UNII-1				13	13
	UNII-2A				13	13
	UNII-2C				13	13
	UNII-3				13	13
	UNII-4				13	13
5 GHz (80MHz)	UNII-1					12
	UNII-2A					12
	UNII-2C					58ch : 11
	UNII-3					12
	UNII-4					12

(Upper Tolerance: target +1.0 dB)

c. Reduced Power – RCV On

Mode	Band	SISO				
		a	b	g	n	ac
2.4 GHz	2.45GHz		16	16	16	
5 GHz (20MHz)	UNII-1	13			13	13
	UNII-2A	13			13	13
	UNII-2C	13			13	13
	UNII-3	13			13	13
	UNII-4	13			13	13
5 GHz (40MHz)	UNII-1				13	13
	UNII-2A				13	13
	UNII-2C				13	13
	UNII-3				13	13
	UNII-4				13	13
5 GHz (80MHz)	UNII-1					12
	UNII-2A					12
	UNII-2C					58ch : 11
	UNII-3					12
	UNII-4					12

(Upper Tolerance: target +1.0 dB)

d. Bluetooth Maximum and Reduced Conducted Output Power in Conducted Mode

Mode	Max
BDR	12
EDR	8
BLE	12

(Upper Tolerance: target +1.0 dB)

4.4 LTE Information

	Item.	Description
Frequency Range	LTE FDD Band 2 (PCS)	1 850.7 MHz ~ 1 909.3 MHz
	LTE FDD Band 4 (AWS)	1 710.7 MHz ~ 1 754.3 MHz
	LTE FDD Band 5 (Cell)	824.7 MHz ~ 848.3 MHz
	LTE FDD Band 7	2 502.5 MHz ~ 2 567.5 MHz
	LTE FDD Band 12	699.7 MHz ~ 715.3 MHz
	LTE FDD Band 13	779.5 MHz ~ 784.5 MHz
	LTE FDD Band 14	790.5 MHz ~ 795.5 MHz
	LTE FDD Band 25	1 850.7 MHz ~ 1 914.3 MHz
	LTE FDD Band 26	814.7 MHz ~ 848.3 MHz
	LTE FDD Band 30	2 307.5 MHz ~ 2 312.5 MHz
	LTE TDD Band 38	2 572.5 MHz ~ 2 617.5 MHz
	LTE TDD Band 41	2 498.5 MHz ~ 2 687.5 MHz
	LTE TDD Band 48	3 552.5 MHz ~ 3 697.5 MHz
	LTE FDD Band 66 (AWS)	1 710.7 MHz ~ 1 779.3 MHz
	LTE FDD Band 71	665.5 MHz ~ 695.5 MHz
Channel Bandwidths	LTE FDD Band 2 (PCS)	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE FDD Band 4 (AWS)	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE FDD Band 5 (Cell)	1.4 MHz, 3 MHz, 5 MHz, 10 MHz
	LTE FDD Band 7	5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE FDD Band 12	1.4 MHz, 3 MHz, 5 MHz, 10 MHz
	LTE FDD Band 13	5 MHz, 10 MHz
	LTE FDD Band 14	5 MHz, 10 MHz
	LTE FDD Band 25	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE FDD Band 26	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz
	LTE FDD Band 30	5 MHz, 10 MHz
	LTE TDD Band 38	5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE TDD Band 41	5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE TDD Band 48	5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE FDD Band 66 (AWS)	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE FDD Band 71	5 MHz, 10 MHz, 15 MHz, 20 MHz

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 7	5 MHz	2 502.5 (20775)	2 535 (21100)	2 567.5 (21425)
	10 MHz	2 505 (20800)	2 535 (21100)	2 565 (21400)
	15 MHz	2 507.5 (20825)	2 535 (21100)	2 562.5 (21375)
	20 MHz	2 510 (20850)	2 535 (21100)	2 560 (21350)
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 14	5 MHz		793 (23330)	
	10 MHz		793 (23330)	
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)	
LTE FDD Band 30	5 MHz	2 307.5 (27685)	2 310 (27710)	2 312.5 (27735)
	10 MHz		2 310 (27710)	
LTE TDD Band 38	5 MHz	2 572.5 (37775)	2 595 (38000)	2 617.5 (38225)
	10 MHz	2 575 (37800)	2 595 (38000)	2 615 (38200)
	15 MHz	2 577.5 (37825)	2 595 (38000)	2 612.5 (38175)
	20 MHz	2 580 (37850)	2 595 (38000)	2 610 (38150)

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 FDD Band 71	5 MHz	665.5 (133147)		680.5 (133297)		695.5 (133447)	
	10 MHz	668 (133172)		680.5 (133297)		693 (133422)	
	15 MHz	670.5 (133197)		680.5 (133297)		690.5 (133397)	
	20 MHz			680.5 (133297)			
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)	
LTE TDD Band 48	5 MHz	3 552.5(55265)	3 600.8(55748)	3 649.2(56232)	3 697.5(56715)		
	10 MHz	3 555(55290)	3 601.7(55757)	3 648.3(56223)	3 695(56690)		
	15 MHz	3 557.5(55315)	3 602.5(55765)	3 647.5(56215)	3 692.5(56665)		
	20 MHz	3 560(55340)	3 603.3(55773)	3 646.7(56207)	3 690(56640)		
UE Category		LTE Rel. 16, DL: Category 18, UL: Category 18					
HPUE Power Class		LTE TDD 41 Power Class 3 : (Duty : 63.3%)					
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 Intra-Band UL-link Carrier aggregations. Detailed information in Technical Description document.					
LTE Release information		It supports only DL carrier aggregation. All other uplink communications are identical to the release 8 specifications. The following LTE Rel.14 Features are not supported: Relay, Hetnet, Enhanced eICI, MDH, cross-carrier Scheduling, Enhanced SC-FDMA,UL-CA.					

4.5 5G NR SUB 6 Information

	Item.	Description
Frequency Range	NR FDD Band n2 (PCS)	1 852.5 MHz ~ 1 907.5 MHz
	NR FDD Band n5	826.5 MHz ~ 846.5 MHz
	NR FDD Band n25 (PCS)	1 852.5 MHz ~ 1 912.5 MHz
	NR FDD Band n30	2 307.5 MHz ~ 2 312.5 MHz
	NR TDD Band n41	2 501.01 MHz ~ 2 685 MHz
	NR TDD Band n48	3 555 MHz ~ 3 695.01 MHz
	NR FDD Band n66	1 712.5 MHz ~ 1 777.5 MHz
	NR FDD Band n71	665.5 MHz ~ 695.5 MHz
	NR TDD Band n77	3 705 MHz ~ 3 975 MHz
	NR TDD Band n77 DoD	3 445.01 MHz ~ 3 544.98 MHz
	NR TDD Band n78	3 705 MHz ~ 3 795 MHz
	NR TDD Band n78 DoD	3 455.01 MHz ~ 3 544.98 MHz
Channel Bandwidths	NR FDD Band n2 (PCS)	5 MHz, 10 MHz, 15 MHz, 20 MHz, 25 MHz, 30 MHz, 35 MHz, 40 MHz
	NR FDD Band n5	5 MHz, 10 MHz, 15 MHz, 20 MHz
	NR FDD Band n25 (PCS)	5 MHz, 10 MHz, 15 MHz, 20 MHz, 25 MHz, 30 MHz, 35 MHz, 40 MHz
	NR FDD Band n30	5 MHz, 10 MHz
	NR TDD Band n41	10 MHz, 15 MHz, 20 MHz, 25 MHz, 30 MHz, 40 MHz, 50 MHz, 60 MHz, 70 MHz, 80 MHz, 90 MHz, 100 MHz
	NR TDD Band n48	10 MHz, 15 MHz, 20 MHz, 30 MHz, 40 MHz,
	NR FDD Band n66	5 MHz, 10 MHz, 15 MHz, 20 MHz, 25 MHz, 30 MHz, 35 MHz, 40 MHz
	NR FDD Band n71	5 MHz, 10 MHz, 15 MHz, 20 MHz
	NR TDD Band n77	10 MHz, 15 MHz, 20 MHz, 25 MHz, 30 MHz, 40 MHz, 50 MHz, 60 MHz, 70 MHz, 80 MHz, 90 MHz, 100 MHz
	NR TDD Band n77 DoD	10 MHz, 15 MHz, 20 MHz, 25 MHz, 30 MHz, 40 MHz, 50 MHz, 60 MHz, 70 MHz, 80 MHz, 90 MHz, 100 MHz
	NR TDD Band n78	10 MHz, 15 MHz, 20 MHz, 25 MHz, 30 MHz, 40 MHz, 50 MHz, 60 MHz, 70 MHz, 80 MHz, 90 MHz, 100 MHz
	NR TDD Band n78 DoD	10 MHz, 15 MHz, 20 MHz, 25 MHz, 30 MHz, 40 MHz, 50 MHz, 60 MHz, 70 MHz, 80 MHz, 90 MHz, 100 MHz

Ch. No.& Freq.(MHz)		Low / Low-Mid		Mid		Mid-High / High	
NR FDD Band n2 (PCS)	5 MHz	1 852.5(370500)		1 880(376000)		1 907.5(381500)	
	10 MHz	1 855(371000)		1 880(376000)		1 905(381000)	
	15 MHz	1 857.5(371500)		1 880(376000)		1 902.5(380500)	
	20 MHz	1 860(372000)		1 880(376000)		1 900(380000)	
	25 MHz	1 862.5(372500)		1 880(376000)		1 897.5(379500)	
	30 MHz	1 865(373000)		1 880(376000)		1 895(379000)	
	35 MHz	1 867.5(373500)		1 880(376000)		1 892.5(378500)	
	40 MHz	1 870(374000)		1 880(376000)		1 890(378000)	
NR FDD Band n5 (Cell)	5 MHz	826.5 (165300)		836.5(167300)		846.5 (169300)	
	10 MHz			836.5(167300)			
	15 MHz			836.5(167300)			
	20 MHz			836.5(167300)			
NR FDD Band n25	5 MHz	1 852.5(370500)		1 882.5(376500)		1 912.5(382500)	
	10 MHz	1 855(371000)		1 882.5(376500)		1 910(382000)	
	15 MHz	1 857.5(371500)		1 882.5(376500)		1 907.5(381500)	
	20 MHz	1 860(372000)		1 882.5(376500)		1 905(381000)	
	25 MHz	1 862.5(372500)		1 882.5(376500)		1 902.5(380500)	
	30 MHz	1 865(373000)		1 882.5(376500)		1 900(380000)	
	35 MHz			1 882.5(376500)			
	40 MHz			1 882.5(376500)			
NR FDD Band n30	5 MHz			2 310 (462000)			
	10 MHz			2 310 (462000)			
NR TDD Band n48	10 MHz	3 555(637000)		3 602.01(640134)	3 648(643200)	3 695.01(646334)	
	15 MHz	3 557.49(637166)		3 602.49(640166)	3 647.49(643166)	3 692.49(646166)	
	20 MHz	3 560.01(637334)		3 603.33(640222)	3 646.65(643110)	3 690(646000)	
	30 MHz	3 565.02 (637668)		3 605.01(640334)	3 645(643000)	3 684.99(645666)	
	40 MHz	3 570(638000)		3 624.99(641666)		3 679.98(645332)	
NR TDD Band n41	10 MHz	2 501.01(500202)		2 547(509400)	2 592.99(518598)	2 639.01(527802)	2 685(537000)
	15 MHz	2 503.5(500700)		2 548.26(509652)	2 592.99(518598)	2 637.75(527550)	2 682.51(536502)
	20 MHz	2 506.02(501204)		2 549.49(509898)	2 592.99(518598)	2 636.49(527298)	2 679.99(535998)
	25 MHz	2 508.48(501696)		2 550.75(510150)	2 592.99(518598)	2 635.23(527046)	2 677.50(535500)
	30 MHz	2 511(502200)		2 552.01(510402)	2 592.99(518598)	2 634(526800)	2 674.98(534996)
	40 MHz	2 516.01(503202)		2 567.34(513468)		2 618.67(523734)	2 670(534000)
	50 MHz	2 521.02(504204)			2 592.99(518598)		2 664.99(532998)
	60 MHz	2 526(505200)			2 592.99(518598)		2 659.98(531996)
	70 MHz	2 531.01(506202)					2 655(531000)
	80 MHz	2 536.02(507204)					2 649.99(529998)
	90 MHz	2 541(508200)					2 644.98(528996)
	100 MHz				2 592.99(518598)		
NR FDD Band n66	5 MHz	1 712.5(342500)		1 745(349000)		1 777.5(355500)	
	10 MHz	1 715(343000)		1 745(349000)		1 775(355000)	
	15 MHz	1 717.5(343500)		1 745(349000)		1 772.5(354500)	
	20 MHz	1 720(344000)		1 745(349000)		1 770(354000)	
	25 MHz	1 722.5(344500)		1 745(349000)		1 767.5(353500)	
	30 MHz			1 745(349000)			
	35 MHz			1 745(349000)			
	40 MHz			1 745(349000)			

Ch. No.& Freq.(MHz)		Low / Low-Mid		Mid		Mid-High / High	
NR FDD Band n71	5 MHz	665.5(133100)		680.5(136100)		695.5(139100)	
	10 MHz	668(133600)		680.5(136100)		693(138600)	
	15 MHz			680.5(136100)			
	20 MHz			680.5(136100)			
NR TDD Band n77	10 MHz	3 705(647000)	3 759(650600)	3 813(654200)	3 867(657800)	3 921(661400)	3 975(665000)
	15 MHz	3 707.52(647168)	3 760.5(650700)	3 813.51(654234)	3 866.49(657766)	3 919.5(661300)	3 972.48(664832)
	20 MHz	3 710.01(647334)	3 762(650800)	3 813.99(654266)	3 866.01(657734)	3 918(661200)	3 969.99(664666)
	25 MHz	3 712.5(647500)	3 763.5(650900)	3 814.5(654300)	3 865.5(657700)	3 916.5(661100)	3 967.5(664500)
	30 MHz	3 715.02(647668)	3 765(651000)	3 815.01(654334)	3 864.99(657666)	3 915(661000)	3 964.98(664332)
	40 MHz	3 720(648000)	3 768(651200)	3 816(654400)	3 864(657600)	3 912(660800)	3 960(664000)
	50 MHz	3 725.01(648334)	3 782.49(652166)	3 840(656000)		3 897.51(659834)	3 954.99(663666)
	60 MHz	3 730.02(648668)	3 803.34(653556)			3 876.66(658444)	3 949.98(663332)
	70 MHz	3 735(649000)	3 804.99(654336)			3 875.01(658334)	3 945(663000)
	80 MHz	3 740.01(649334)		3 840(656000)			3 939.99(662666)
	90 MHz	3 745.02(649668)		3 840(656000)		3 934.98(662332)	
	100 MHz	3 750(650000)		3 840(656000)		3 930(662000)	
NR TDD Band n77 (DoD)	10 MHz	3 455.01(630334)		3 500.01(633334)		3 544.98(636332)	
	15 MHz	3 457.5(630500)		3 500.01(633334)		3 542.49(636166)	
	20 MHz	3 460.02(630668)		3 500.01(633334)		3 540(636000)	
	25 MHz	3 462.99(630866)		3 500.01(633334)		3 537(635800)	
	30 MHz	3 465(631000)		3 500.01(633334)		3 534.99(635666)	
	40 MHz	3 470.01(631334)				3 529.98(635332)	
	50 MHz	3 475.02(631668)				3 525(635000)	
	60 MHz			3 500.01(633334)			
	70 MHz			3 500.01(633334)			
	80 MHz			3 500.01(633334)			
	90 MHz			3 500.01(633334)			
	100 MHz			3 500.01(633334)			
NR TDD Band n78	10 MHz	3 705(647000)		3 750(650000)		3 795(653000)	
	15 MHz	3 707.5(647166)		3 750(650000)		3 792.48(652832)	
	20 MHz	3 710.01(647334)		3 750(650000)		3 789.99(652666)	
	25 MHz	3 712.5(647500)		3 750(650000)		3 787.5(652500)	
	30 MHz	3 715(647666)		3 750(650000)		3 784.98(652332)	
	40 MHz	3 720(647800)				3 780(652000)	
	50 MHz	3 725.01(648334)				3 774.99(651666)	
	60 MHz			3 750(650000)			
	70 MHz			3 750(650000)			
	80 MHz			3 750(650000)			
	90 MHz			3 750(650000)			
	100 MHz			3 750(650000)			
NR TDD Band n78 (DoD)	10 MHz	3 455.01(630334)		3 500.01(633334)		3 544.98(636332)	
	15 MHz	3 457.5(630500)		3 500.01(633334)		3 542.49(636166)	
	20 MHz	3 460.02(630668)		3 500.01(633334)		3 540(636000)	
	25 MHz	3 462.99(630866)		3 500.01(633334)		3 537(635800)	
	30 MHz	3 465(631000)		3 500.01(633334)		3 534.99(635666)	
	40 MHz	3 470.01(631334)				3 529.98(635332)	
	50 MHz	3 475.02(631668)				3 525(635000)	
	60 MHz			3 500.01(633334)			
	70 MHz			3 500.01(633334)			
	80 MHz			3 500.01(633334)			
	90 MHz			3 500.01(633334)			
	100 MHz			3 500.01(633334)			

Item.	Description
NR FDD Band n2/n5/n25/n30/n66/n71 SCS	15 kHz
NR TDD Band n41/n48/n77/n78 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: $\pi/2$ -BPSK(UL Only), QPSK, 16QAM, 64QAM, 256QAM
Non-Standalone & Standalone are supported. 5G NR FR1 Bands, n2, n5, n25, n30, n41, n48, n66, n71, n77, n78 are supported to NSA and SA Connectivity. n30 is only supported to 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 5/12/13/14/30/48/66
LTE Anchor Bands for NR Band n5 (Cell)	LTE Band 2/7/30/48/66
LTE Anchor Bands for NR Band n25	LTE Band 12/66
LTE Anchor Bands for NR Band n30	N/A
LTE Anchor Bands for NR Band n41	LTE Band 2/66
LTE Anchor Bands for NR Band n48	LTE Band 66
LTE Anchor Bands for NR Band n66 (AWS)	LTE Band 2/5/7/12/13/14/30/48
LTE Anchor Bands for NR Band n71	LTE Band 2/7/48/66
LTE Anchor Bands for NR Band n77	LTE Band 2/5/7/12/13/14/30/66
LTE Anchor Bands for NR Band n78	LTE Band 2/5/7/38/41/66

4.6 DUT Antenna Locations

The overall dimensions of this device are > 9 X 5 cm. A diagram showing device antenna can be found in SAR_setup_photos. Since the diagonal dimension of this device is > 160 mm and < 200 mm, it is considered a “phablet”.

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 BR tethering applications.

Antenna	Mode	Rear	Front	Left	Right	Bottom	Top
Ant A	GSM/GPRS/EDGE 850	Yes	Yes	Yes	Yes	Yes	No
Ant B	GSM/GPRS/EDGE 1900	Yes	Yes	Yes	No	Yes	No
Ant A	UMTS Band 5	Yes	Yes	Yes	Yes	Yes	No
Ant B	UMTS Band 4	Yes	Yes	Yes	No	Yes	No
Ant B	UMTS Band 2	Yes	Yes	Yes	No	Yes	No
Ant B	LTE FDD Band 2 (PCS)	Yes	Yes	Yes	No	Yes	No
Ant D	LTE FDD Band 2 (PCS)	Yes	Yes	Yes	No	No	Yes
Ant B	LTE FDD Band 4 (AWS)	Yes	Yes	Yes	No	Yes	No
Ant A	LTE FDD Band 5	Yes	Yes	Yes	Yes	Yes	No
Ant B	LTE FDD Band 7	Yes	Yes	Yes	No	Yes	No
Ant A	LTE FDD Band 12	Yes	Yes	Yes	Yes	Yes	No
Ant A	LTE FDD Band 13	Yes	Yes	Yes	Yes	Yes	No
Ant A	LTE FDD Band 14	Yes	Yes	Yes	Yes	Yes	No
Ant B	LTE FDD Band 25 (PCS)	Yes	Yes	Yes	No	Yes	No
Ant A	LTE FDD Band 26 (Cell)	Yes	Yes	Yes	Yes	Yes	No
Ant B	LTE FDD Band 30	Yes	Yes	Yes	No	Yes	No
Ant B	LTE TDD Band 38	Yes	Yes	Yes	No	Yes	No
Ant B	LTE TDD Band 41	Yes	Yes	Yes	No	Yes	No
Ant E	LTE TDD Band 48	Yes	Yes	Yes	No	No	Yes
Ant B	LTE FDD Band 66 (AWS)	Yes	Yes	Yes	No	Yes	No
Ant D	LTE FDD Band 66 (AWS)	Yes	Yes	Yes	No	No	Yes
Ant A	LTE FDD Band 71	Yes	Yes	Yes	Yes	Yes	No
Ant B	NR FDD Band n2 (PCS)	Yes	Yes	Yes	No	Yes	No
Ant D	NR FDD Band n2 (PCS)	Yes	Yes	Yes	No	No	Yes
Ant A	NR FDD Band n5	Yes	Yes	Yes	Yes	Yes	No
Ant B	NR FDD Band n25 (PCS)	Yes	Yes	Yes	No	Yes	No
Ant B	NR FDD Band n30	Yes	Yes	Yes	No	Yes	No
Ant B	NR TDD Band n41	Yes	Yes	Yes	No	Yes	No
Ant E	NR TDD Band n48	Yes	Yes	Yes	No	No	Yes
Ant H	NR TDD Band n48 SRS#2	Yes	Yes	No	Yes	No	Yes
Ant B	NR TDD Band n48 SRS#3	Yes	Yes	Yes	No	Yes	No
Ant I	NR TDD Band n48 SRS#4	Yes	Yes	Yes	No	No	Yes
Ant B	NR FDD Band n66	Yes	Yes	Yes	No	Yes	No
Ant D	NR FDD Band n66	Yes	Yes	Yes	No	No	Yes
Ant A	NR FDD Band n71	Yes	Yes	Yes	Yes	Yes	No

Antenna	Mode	Rear	Front	Left	Right	Bottom	Top
Ant E	NR TDD Band n77	Yes	Yes	Yes	No	No	Yes
Ant H	NR TDD Band n77 SRS#2	Yes	Yes	No	Yes	No	Yes
Ant B	NR TDD Band n77 SRS#3	Yes	Yes	Yes	No	Yes	No
Ant I	NR TDD Band n77 SRS#4	Yes	Yes	Yes	No	No	Yes
Ant E	NR TDD Band n77 (DoD)	Yes	Yes	Yes	No	No	Yes
Ant H	NR TDD Band n77 (DoD) SRS#2	Yes	Yes	No	Yes	No	Yes
Ant B	NR TDD Band n77 (DoD) SRS#3	Yes	Yes	Yes	No	Yes	No
Ant I	NR TDD Band n77 (DoD) SRS#4	Yes	Yes	Yes	No	No	Yes
Ant E	NR TDD Band n78	Yes	Yes	Yes	No	No	Yes
Ant H	NR TDD Band n78 SRS#2	Yes	Yes	No	Yes	No	Yes
Ant B	NR TDD Band n78 SRS#3	Yes	Yes	Yes	No	Yes	No
Ant I	NR TDD Band n78 SRS#4	Yes	Yes	Yes	No	No	Yes
Ant E	NR TDD Band n78 (DoD)	Yes	Yes	Yes	No	No	Yes
Ant H	NR TDD Band n78 (DoD) SRS#2	Yes	Yes	No	Yes	No	Yes
Ant B	NR TDD Band n78 (DoD) SRS#3	Yes	Yes	Yes	No	Yes	No
Ant I	NR TDD Band n78 (DoD) SRS#4	Yes	Yes	Yes	No	No	Yes
Ant F	2.4 GHz WLAN	Yes	Yes	Yes	No	No	Yes
Ant F	Bluetooth	Yes	Yes	Yes	No	No	Yes
Ant E	5 GHz WLAN	Yes	Yes	Yes	No	No	Yes
NFC	NFC	Yes	Yes	Yes	No	No	Yes

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.

WWAN	BT	2.4G	5G	Scenario
	Ant. 1	Ant. 1	Ant. 1	
O	X	O	X	WWAN + 2.4GHz Wi-Fi
O	X	X	O	WWAN + 5GHz Wi-Fi
O	O	X	X	WWAN + Bluetooth
O	O	X	O	WWAN + Bluetooth + 5GHz Wi-Fi

Note:

1. UMTS +WLAN scenario also represents the UMTS Voice/DATA + WLAN hotspot scenario.
2. VoIP is supported in GPRS/EDGE
3. The highest reported SAR for each exposure condition is used for SAR summation purpose.
4. Wi-Fi Hotspot is supported for 2.4 GHz/UNII-3 of 5 GHz WLAN.
5. * Pre-installed VOIP applications are considered
6. 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.
7. This device supports VoLTE/ VoWiFi.
8. LTE + 5G NR FR1 Scenarios are supported NSA and SA Connectivity.
9. NFC was evaluated for phablet based on expected usage conditions.

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 and U-NII-2C, 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 802.11ac with the following features:

- a) Up to 80 MHz Bandwidth only for 5 GHz
- b) Up to 20 MHz Bandwidth only for 2.4 GHz
- c) Up to 256 QAM is supported
- d) TDWR and Band gap channels are supported for 5 GHz

Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the diagonal dimension is greater than 160mm and less than 200mm. 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.

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.

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.

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 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.

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 ≤ 0.5 dB 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 KDB 941225 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 5 (824.7 MHz ~ 848.3MHz) is covered by LTE Band 26(814.7 MHz ~ 848.3 MHz), LTE Band 4 (1 710.7 MHz ~ 1 754.3MHz) is covered by LTE Band 66(1 710.7 MHz ~ 1 779.3 MHz), LTE Band 2(1 850.7 MHz ~ 1 909.3MHz) is covered by LTE Band 25(1 850.7 MHz ~ 1 914.3MHz), LTE Band 38(2 572.5 MHz ~ 2 617.5MHz) is covered by LTE Band 41(2 498.5 MHz ~ 2 687.5MHz) 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 MHz ~ 1 907.5MHz) is covered by n25(1 852.5 MHz ~ 1 912.5MHz), n78(3 705 MHz ~ 3 795MHz) is covered by n77(3 705 MHz ~ 3 795MHz), n78 DoD(3 455.01 MHz ~ 3 544.98MHz) is covered by n77 DoD(3 455.01 MHz ~ 3 544.98MHz) of this model each both NR bands have the same target powers.

For the Head SAR in the NR n41 band, it was measured in the PC2 condition, which is a higher power condition.

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 product supported Intra-band LTE Carrier Aggregation for 41C, 48C with two component carriers in the uplink. SAR Measurement and conducted Powers were measured according to Nov 2019 TCBC Workshop guide.

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.

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

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 (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dV) 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.

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

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/m^3)
- = 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 Windows 10 or Windows 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.

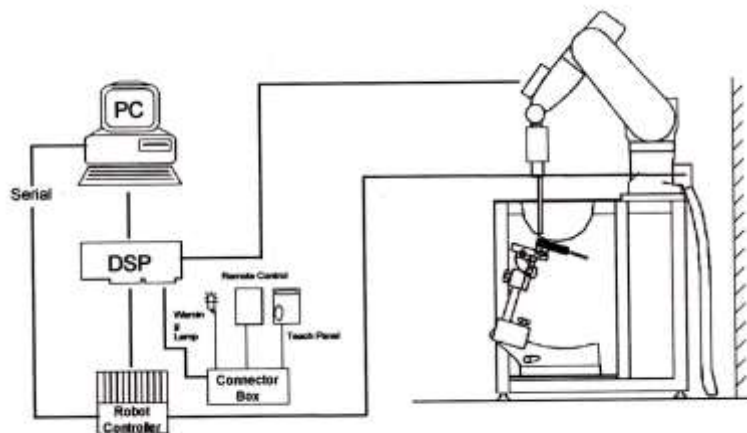


Figure 2. HCT SAR Lab. Test Measurement Set-up

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.

			$\leq 3 \text{ GHz}$	$> 3 \text{ GHz}$
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			$5 \pm 1 \text{ mm}$	$\cdot \delta \cdot \ln(2) \pm 0.5 \text{ mm}$
Maximum probe angle from probe axis to phantom surface normal at the measurement location			$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
Maximum area scan Spatial resolution: $\Delta x_{\text{Area}}, \Delta y_{\text{Area}}$			$\leq 2 \text{ GHz: } \leq 15 \text{ mm}$ $2\text{-}3 \text{ GHz: } \leq 12 \text{ mm}$	$3\text{-}4 \text{ GHz: } \leq 12 \text{ mm}$ $4\text{-}6 \text{ GHz: } \leq 10 \text{ mm}$
			When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan Spatial resolution: $\Delta x_{\text{zoom}}, \Delta y_{\text{zoom}}$			$\leq 2 \text{ GHz: } \leq 8 \text{ mm}$ $2\text{-}3 \text{ GHz: } \leq 5 \text{ mm}^*$	$3\text{-}4 \text{ GHz: } \leq 5 \text{ mm}^*$ $4\text{-}6 \text{ GHz: } \leq 4 \text{ mm}^*$
Maximum zoom scan Spatial resolution normal to phantom surface	uniform grid: $\Delta z_{\text{zoom}}(n)$		$\leq 5 \text{ mm}$	$3\text{-}4 \text{ GHz: } \leq 4 \text{ mm}$ $4\text{-}5 \text{ GHz: } \leq 3 \text{ mm}$ $5\text{-}6 \text{ GHz: } \leq 2 \text{ mm}$
	graded grid	$\Delta z_{\text{zoom}}(1)$: between 1 st two Points closest to phantom surface	$\leq 4 \text{ mm}$	$3\text{-}4 \text{ GHz: } \leq 3 \text{ mm}$ $4\text{-}5 \text{ GHz: } \leq 2.5 \text{ mm}$ $5\text{-}6 \text{ GHz: } \leq 2 \text{ mm}$
		$\Delta z_{\text{zoom}}(n>1)$: between subsequent Points	$\leq 1.5 \cdot \Delta z_{\text{zoom}}(n-1)$	
Minimum zoom scan volume	x, y, z		$\geq 30 \text{ mm}$	$3\text{-}4 \text{ GHz: } \geq 28 \text{ mm}$ $4\text{-}5 \text{ GHz: } \geq 25 \text{ mm}$ $5\text{-}6 \text{ GHz: } \geq 22 \text{ mm}$
Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details. * When zoom scan is required and the reported SAR from the area scan based 1-g SAR estimation procedures of KDB 447498 is $\leq 1.4 \text{ W/kg}$, $\leq 8 \text{ mm}$, $\leq 7 \text{ mm}$ and $\leq 5 \text{ mm}$ zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.				

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 points 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.

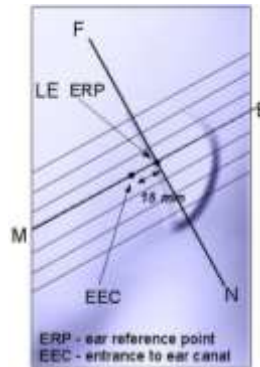


Figure 8-1
Close-up side view of ERP

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 then 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

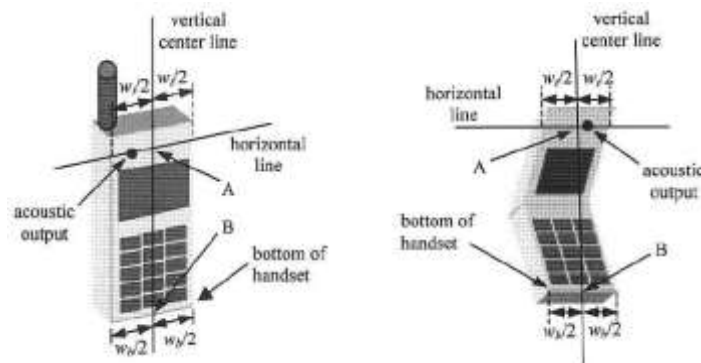


Figure 8-3. Handset vertical and horizontal reference lines

8.3 Device Holder

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

8.4 Position for Touch

Figure 8.4. shows Touch 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.

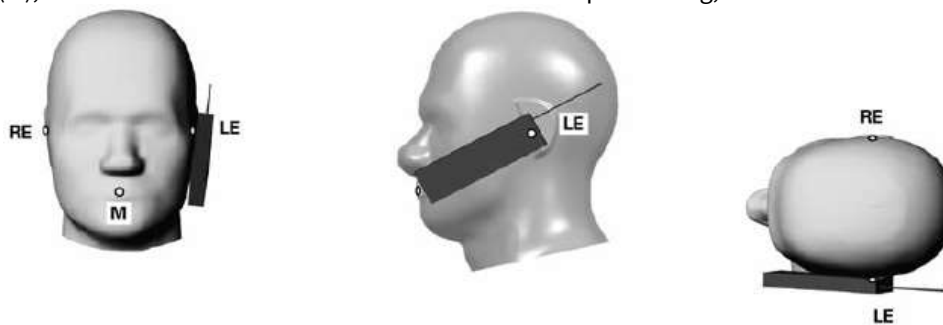


Figure 8.4 Touch/ Touch position of the wireless device

8.5 Definition of the “tilted” position

Figure 8.5. shows tilted position. Place the device in the Touch 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 8.6). 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 $> 1.2 \text{ W/kg}$, the highest reported SAR configuration for that wireless mode and frequency Band should be repeated for that body- worn accessory with a headset attached to the handset.



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 ($L \times W \geq 9\text{cm} \times 5 \text{ cm}$) are based on a composite test separation distance of 5 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 $< 9 \times 5 \text{ cm}$. Therefore Per 941225 D06v02r01, when the device is closed, test separation for hotspot mode is 5 mm.

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

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 made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

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.

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 Touch for power drifts. If 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 D05v02r05 publication. 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	$26336 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$			$20480 \cdot T_s$		
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 $\times (T_s) \times$ 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 = $(5120 \times (1/(15000 \times 2048))) \times 2 + 0.006)/0.01 = 63.33 \%$

Where

$T_s = 1/(15000 \times 2048)$ seconds

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.

2018/01/08 11:00 Idle(Regist) Phone-2 Phone-1
<Fundamental Measurement> Output Main Continuous W-CDMA LTE

Parameter Fundamental UE Report

Reference Signal not found UE Power : -21.5 dBm

Power Measurement (Meas. Count : 11/ 20)

	Avg.	Max.	Min.	Limit
TX Power	*****	*****	*****	dBm 20.3 to 25.7 dBm
Channel Power	*****	*****	*****	dBm

Modulation Analysis View (Meas. Count : 1/ 1)

Common Parameter

Test Parameter TX1 - Max. Power(QPSK/1 RB)

Call Processing On Scenario Normal

Frequency

Frame Structure TDD

Channel Bandwidth FDD Hz

UL Channel & Frequency TDD 20 CH = 2593.000000 MHz

DL Channel & Frequency 40620 CH = 2593.000000 MHz

Operation Band 41

Frequency Separation (0)MHz

Level

Input Level 30.0 dBm

Parameter

Common

Physical Channel

Call Processing

TX Measurement Setup

RX Measurement Setup

Fundamental Measurement

1 2 3 4

2018/01/08 11:01 Idle(Regist) Phone-2 Phone-1
<Fundamental Measurement> Output Main Continuous W-CDMA LTE

Parameter Fundamental UE Report

Reference Signal not found UE Power : -21.5 dBm

Power Measurement (Meas. Count : 11/ 20)

	Avg.	Max.	Min.	Limit
TX Power	*****	*****	*****	dBm 20.3 to 25.7 dBm
Channel Power	*****	*****	*****	dBm

Modulation Analysis View (Meas. Count : 1/ 1)

MCS Index (-)	5	(QPSK)	(5)	(2216)	-	-
MCS Index (5)	5	(QPSK)	(5)	(1864)	4	-
MCS Index (0)	5	(QPSK)	(5)	(2216)	-	2
MCS Index (1,6)	N/A	(-----)	(--)	(-----)	-	2
CFI	3					

TDD subframe 0 1 2 3 4 5 6 7 8 9

Uplink Downlink Configuration 0 : (5ms) D S U U U D S U U U

Special Subframe Configuration 6

Physical Channel Parameter

PSS Power	0.0 dB
SSS Power	0.0 dB
PBCH Power	0.0 dB
PCFICH Power	0.0 dB
PHICH Power	0.0 dB

Parameter

Common

Physical Channel

Call Processing

TX Measurement Setup

RX Measurement Setup

Fundamental Measurement

1 2 3 4

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 MHz (5.47 GHz – 5.85 GHz), 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 GHz – 5.65 GHz 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 next 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 GHz SAR test Requirements

SAR is measured for 2.4 GHz 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 GHz 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 GHz Band, the Initial Test Configuration Procedures should be followed.

10.5.6 OFDM Transmission Mode and SAR Test Channel Selection

For the 2.4 GHz and 5 GHz 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.e., 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 GHz and 5 GHz 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.

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

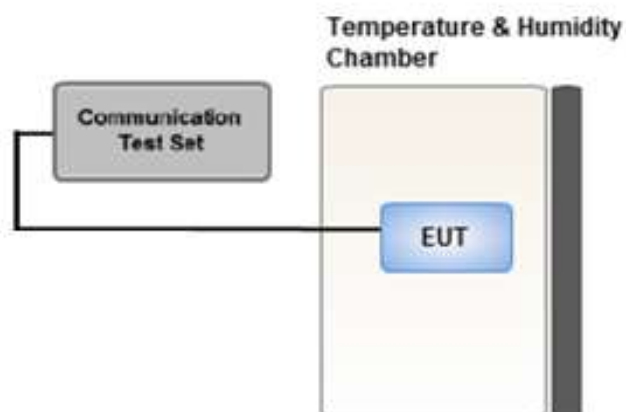
According to ANSI C63.26-2015 Section 5.2.1 when measuring the maximum RF output power from such devices, control over the EUT must be provided either through special test software (provided by manufacturer specifically for compliance testing, but not accessible by an end user) or through use of a base 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 850 Maximum Conducted Output Power

GSM 850 – Antenna A

Measured P_{max} , 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		34.00	34.00	32.00	30.00	29.00	28.00	25.50	24.00	23.00
Nominal		33.00	33.00	31.00	29.00	28.00	27.00	24.50	23.00	22.00
GSM 850	128	33.55	33.60	31.65	29.97	28.94	27.28	25.10	23.75	22.39
	190	33.78	33.77	31.75	29.44	28.95	27.29	25.38	23.87	22.34
	251	33.77	33.77	31.80	28.85	28.66	27.43	25.35	23.85	22.60

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		24.81	24.81	25.82	25.58	25.83	18.81	19.32	19.58	19.83
Nominal		23.81	23.81	24.82	24.58	24.83	17.81	18.32	18.58	18.83
GSM 850	128	24.36	24.41	25.47	25.55	25.77	18.09	18.92	19.33	19.22
	190	24.59	24.58	25.57	25.02	25.78	18.1	19.2	19.45	19.17
	251	24.58	24.58	25.62	24.43	25.49	18.24	19.17	19.43	19.43

GSM Conducted output powers (Frame-Average)

Measured RSI=0

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		33.00	33.00	30.00	28.00	27.00	28.00	25.50	24.00	23.00
Nominal		32.00	32.00	29.00	27.00	26.00	27.00	24.50	23.00	22.00
GSM 850	128	32.08	32.09	29.07	26.97	25.75				
	190	32.19	32.20	29.25	27.50	25.93				
	251	32.54	32.56	29.32	27.52	25.97				

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		23.81	23.81	23.82	23.58	23.83	18.81	19.32	19.58	19.83
Nominal		22.81	22.81	22.82	22.58	22.83	17.81	18.32	18.58	18.83
GSM 850	128	22.89	22.90	22.89	22.55	22.58				
	190	23.00	23.01	23.07	23.08	22.76				
	251	23.35	23.37	23.14	23.10	22.80				

GSM Conducted output powers (Frame-Average)

11.1.1 GSM 850 Maximum Conducted Output Power

11.1.2 GSM 1900 Maximum Conducted Output Power

GSM1900 – Antenna B

Measured P_{max} , 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		31.00	31.00	29.00	27.00	26.00	27.00	25.00	24.00	22.00
Nominal		30.00	30.00	28.00	26.00	25.00	26.00	24.00	23.00	21.00
GSM 1900	512	30.77	30.76	28.33	26.41	25.38	26.27	24.34	23.13	21.84
	661	30.65	30.64	28.14	26.39	25.38	26.50	24.39	23.22	21.74
	810	30.82	30.82	28.41	26.48	25.50	26.62	24.54	23.19	21.92

GSM Conducted output powers (Burst-Average)

Mode / Band		GSM Conducted Output Powers (Burst Average)								
		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		21.81	21.81	22.82	22.58	22.83	17.81	18.82	19.58	18.83
Nominal		20.81	20.81	21.82	21.58	21.83	16.81	17.82	18.58	17.83
GSM 1900	512	21.58	21.57	22.15	21.99	22.21	17.08	18.16	18.71	18.67
	661	21.46	21.45	21.96	21.97	22.21	17.31	18.21	18.80	18.57
	810	21.63	21.63	22.23	22.06	22.33	17.43	18.36	18.77	18.75

GSM Conducted output powers (Frame-Average)

Measured RSI=0

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		27.00	27.00	24.00	22.00	21.00	27.00	24.00	23.00	22.00
Nominal		26.00	26.00	23.00	21.00	20.00	26.00	23.00	22.00	21.00
GSM 1900	512	25.87	25.82	23.09	20.51	19.70				
	661	25.91	25.90	23.17	20.96	19.75				
	810	25.78	26.02	23.04	20.71	19.87				

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		17.81	17.81	17.82	17.58	17.83	17.81	18.82	19.58	18.83
Nominal		16.81	16.81	16.82	16.58	16.83	16.81	17.82	18.58	17.83
GSM 1900	512	16.68	16.63	16.91	16.09	16.53				
	661	16.72	16.71	16.99	16.54	16.58				
	810	16.59	16.83	16.86	16.29	16.70				

GSM Conducted output powers (Frame-Average)

Note:

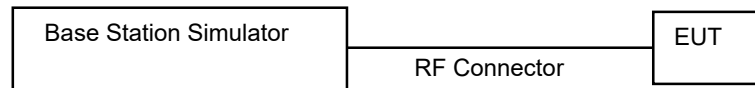
Time slot average factor is as follows:

1 Tx slot = 9.19 dB, Frame-Average output power = Burst-Average output power – 9.19 dB

2 Tx slot = 6.18 dB, Frame-Average output power = Burst-Average output power – 6.18 dB

3 Tx slot = 4.42 dB, Frame-Average output power = Burst-Average output power – 4.42 dB

4 Tx slot = 3.17 dB, Frame-Average output power = Burst-Average output power – 3.17 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 Band 5 Maximum Conducted Output Power

UMTS Band 5 Maximum Conducted Output Power – Antenna A

Measured P_{max} , RSI = 1

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	24.15	24.13	24.23	-
99		12.2 kbps AMR	24.14	24.23	24.20	-
5	HSDPA	Subtest 1	23.02	23.03	23.18	0
5		Subtest 2	22.61	22.57	22.62	0
5		Subtest 3	22.10	22.06	22.16	0.5
5		Subtest 4	21.59	21.52	21.62	0.5
6	HSUPA	Subtest 1	22.08	22.05	22.12	0
6		Subtest 2	20.01	19.99	20.10	2
6		Subtest 3	21.08	21.06	21.13	1
6		Subtest 4	20.03	20.00	20.12	2
6		Subtest 5	23.04	23.03	23.14	0
8	DC-HSDPA	Subtest1	22.85	22.82	22.65	0
8		Subtest2	22.54	22.31	22.30	0
8		Subtest3	21.05	21.05	20.80	0.5
8		Subtest4	21.40	21.30	21.22	0.5

UMTS Average Conducted output powers

Measured RSI = 0

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	19.60	19.56	19.64	-
99		12.2 kbps AMR	19.62	19.62	19.65	-
5	HSDPA	Subtest 1	18.52	18.51	18.59	0
5		Subtest 2	19.03	19.03	19.13	0
5		Subtest 3	19.57	19.55	19.58	0
5		Subtest 4	19.03	19.05	19.10	0
6	HSUPA	Subtest 1	17.60	17.58	17.65	0
6		Subtest 2	17.59	17.57	17.65	0
6		Subtest 3	17.60	17.53	17.65	0
6		Subtest 4	17.57	17.56	17.64	0
6		Subtest 5	18.56	18.48	18.57	0
8	DC-HSDPA	Subtest1	18.30	18.33	18.13	0
8		Subtest2	18.83	18.81	18.66	0
8		Subtest3	18.38	18.31	18.20	0
8		Subtest4	18.81	18.88	18.84	0

UMTS Average Conducted output powers

11.2.2 UMTS Band 4 Maximum Conducted Output Power

UMTS Band 4 Maximum Conducted Output Power – Antenna B

Measured P_{max} , RSI = 1

3GPP Release Version	Mode	3GPP 34.121	UMTS Band 4 [dBm]			3GPP MPR
		Subtest	UL 1312 DL 1537	UL 1412 DL 1637	UL 1513 DL 1738	
99	UMTS	12.2 kbps RMC	23.30	23.32	23.62	-
99		12.2 kbps AMR	23.15	23.28	23.58	-
5	HSDPA	Subtest 1	23.05	23.05	23.34	0
5		Subtest 2	22.58	22.57	22.87	0
5		Subtest 3	22.01	21.98	22.36	0.5
5		Subtest 4	22.02	22.00	22.31	0.5
6	HSUPA	Subtest 1	22.14	22.06	21.81	0
6		Subtest 2	19.58	19.53	19.81	2
6		Subtest 3	22.03	21.96	22.31	1
6		Subtest 4	19.83	19.81	19.36	2
6		Subtest 5	23.01	22.94	23.23	0
8	DC-HSDPA	Subtest1	22.85	22.79	23.04	0
8		Subtest2	22.43	22.30	22.56	0
8		Subtest3	21.43	21.42	21.41	0.5
8		Subtest4	21.77	21.66	21.96	0.5

UMTS Average Conducted output powers

Measured RSI = 0

3GPP Release Version	Mode	3GPP 34.121	UMTS Band 4 [dBm]			3GPP MPR
		Subtest	UL 1312 DL 1537	UL 1412 DL 1637	UL 1513 DL 1738	
99	UMTS	12.2 kbps RMC	19.53	19.56	19.87	-
99		12.2 kbps AMR	19.52	19.54	19.86	-
5	HSDPA	Subtest 1	18.37	18.35	18.60	0
5		Subtest 2	18.91	18.82	19.17	0
5		Subtest 3	19.42	19.42	19.70	0
5		Subtest 4	19.42	19.44	19.71	0
6	HSUPA	Subtest 1	17.46	17.38	17.18	0
6		Subtest 2	16.96	16.93	17.17	0
6		Subtest 3	18.41	18.37	18.62	0
6		Subtest 4	17.24	17.19	16.78	0
6		Subtest 5	18.37	18.34	18.59	0
8	DC-HSDPA	Subtest1	18.26	18.16	18.26	0
8		Subtest2	18.66	18.45	18.80	0
8		Subtest3	18.63	18.51	18.77	0
8		Subtest4	19.28	19.11	19.33	0

UMTS Average Conducted output powers

11.2.3 UMTS Band 2 Maximum Conducted Output Power

UMTS Band 2 Maximum Conducted Output Power – Antenna B

Measured P_{max} , 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	22.83	22.84	23.01	-
99		12.2 kbps AMR	22.75	22.82	23.00	-
5	HSDPA	Subtest 1	22.77	22.83	22.98	0
5		Subtest 2	22.42	22.40	22.49	0
5		Subtest 3	21.94	21.91	22.01	0.5
5		Subtest 4	21.37	21.37	21.54	0.5
6	HSUPA	Subtest 1	21.83	21.81	21.94	0
6		Subtest 2	19.31	19.30	19.35	2
6		Subtest 3	21.85	21.84	21.94	1
6		Subtest 4	19.77	19.72	19.82	2
6		Subtest 5	22.73	22.68	22.78	0
8	DC-HSDPA	Subtest 1	22.63	22.86	22.95	0
8		Subtest2	22.57	22.80	22.63	0
8		Subtest3	21.31	21.25	21.42	0.5
8		Subtest4	21.37	21.28	21.45	0.5

UMTS Average Conducted output powers

Measured RSI = 0

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	17.09	17.11	17.22	-
99		12.2 kbps AMR	17.08	17.09	17.20	-
5	HSDPA	Subtest 1	15.97	16.00	16.09	0
5		Subtest 2	16.42	16.43	16.53	0
5		Subtest 3	17.00	16.95	17.06	0
5		Subtest 4	16.46	16.44	16.56	0
6	HSUPA	Subtest 1	14.97	14.97	15.12	0
6		Subtest 2	14.52	14.55	14.56	0
6		Subtest 3	16.02	16.00	16.11	0
6		Subtest 4	14.93	14.96	15.07	0
6		Subtest 5	15.96	15.95	16.04	0
8	DC-HSDPA	Subtest 1	15.57	15.55	15.57	0
8		Subtest2	16.12	15.96	16.07	0
8		Subtest3	16.09	15.95	16.01	0
8		Subtest4	16.05	15.93	16.07	0

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 D05v02r05, are included, and the measurement results of other bandwidths are listed in Appendix J.

LTE B4/B5/B12/B13/B14/B26/B30/B71 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 FDD Band 2 Maximum Conducted Output Power

LTE FDD Band 2 Conducted Power _ Measured P_{max} , RSI = 1 _ Antenna B

LTE FDD Band 2 _ 20 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 MHz	18900 Ch. 1880 MHz	19100 Ch. 1900 MHz		
20 MHz	QPSK	1	0	23.99	24.01	23.86	0	0
		1	49	23.96	23.98	23.85	0	0
		1	99	23.89	23.93	23.78	0	0
		50	0	23.01	23.09	22.89	0-1	1
		50	25	22.99	23.07	22.90	0-1	1
		50	49	22.97	23.08	22.92	0-1	1
		100	0	23.01	23.05	22.88	0-1	1
	16QAM	1	0	23.21	23.40	23.15	0-1	1
		1	49	23.33	23.28	23.03	0-1	1
		1	99	23.27	23.31	23.18	0-1	1
		50	0	22.01	22.06	21.94	0-2	2
		50	25	22.02	22.07	21.89	0-2	2
		50	49	22.01	22.04	21.89	0-2	2
		100	0	22.03	22.04	21.87	0-2	2
	64QAM	1	0	22.24	22.23	22.10	0-2	2
		1	49	22.31	22.30	22.09	0-2	2
		1	99	22.22	22.25	22.05	0-2	2
		50	0	21.07	21.11	20.90	0-3	3
		50	25	20.99	21.08	20.90	0-3	3
		50	49	21.00	21.04	20.87	0-3	3
		100	0	20.97	21.03	20.83	0-3	3
	256QAM	1	0	19.07	19.14	18.90	0-5	5
		1	49	19.03	19.14	18.91	0-5	5
		1	99	19.01	19.13	18.93	0-5	5
		50	0	18.95	18.99	18.82	0-5	5
		50	25	18.96	18.99	18.80	0-5	5
		50	49	18.90	18.97	18.80	0-5	5
		100	0	18.95	19.00	18.81	0-5	5

LTE FDD Band 2 Conducted Power _ Measured RSI = 0 _ Antenna B

LTE FDD Band 2 _ 20 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 MHz	18900 Ch. 1880 MHz	19100 Ch. 1900 MHz		
20 MHz	QPSK	1	0	18.06	18.05	17.90	0	0
		1	49	18.27	18.09	17.95	0	0
		1	99	18.06	18.09	17.96	0	0
		50	0	18.10	18.12	17.95	0-1	0
		50	25	18.16	18.17	18.00	0-1	0
		50	49	18.17	18.13	18.01	0-1	0
		100	0	18.16	18.13	17.99	0-1	0
	16QAM	1	0	18.46	18.39	18.34	0-1	0
		1	49	18.05	17.95	17.84	0-1	0
		1	99	18.46	18.42	18.19	0-1	0
		50	0	18.22	18.16	18.04	0-2	0
		50	25	18.23	18.17	18.00	0-2	0
		50	49	18.21	18.20	18.04	0-2	0
		100	0	18.16	18.16	18.00	0-2	0
	64QAM	1	0	18.30	18.28	18.23	0-2	0
		1	49	18.62	18.52	18.38	0-2	0
		1	99	18.31	18.20	18.16	0-2	0
		50	0	18.21	18.13	18.05	0-3	0
		50	25	18.25	18.20	18.06	0-3	0
		50	49	18.20	18.17	18.02	0-3	0
		100	0	18.13	18.15	17.99	0-3	0
	256QAM	1	0	18.28	18.22	18.30	0-5	3
		1	49	18.52	18.37	18.62	0-5	3
		1	99	18.19	18.15	18.30	0-5	3
		50	0	18.13	18.04	18.20	0-5	3
		50	25	18.20	18.06	18.25	0-5	3
		50	49	18.17	18.01	18.20	0-5	3
		100	0	18.14	17.98	18.12	0-5	3

LTE FDD Band 2 (Upper) Conducted Power _ Measured P_{max} _ Antenna D

LTE FDD Band 2 (Upper) _ 20 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 MHz	18900 Ch. 1880 MHz	19100 Ch. 1900 MHz		
20 MHz	QPSK	1	0	23.09	23.34	23.05	0	0
		1	49	23.38	23.59	23.38	0	0
		1	99	23.32	23.51	23.35	0	0
		50	0	22.28	22.46	22.39	0-1	1
		50	25	22.33	22.50	22.39	0-1	1
		50	49	22.38	22.57	22.46	0-1	1
		100	0	23.23	23.43	23.28	0-1	1
	16QAM	1	0	22.45	22.72	22.63	0-1	1
		1	49	22.88	23.10	22.97	0-1	1
		1	99	22.65	22.85	22.80	0-1	1
		50	0	21.34	21.53	21.44	0-2	2
		50	25	21.37	21.52	21.42	0-2	2
		50	49	21.40	21.61	21.49	0-2	2
		100	0	22.43	22.72	22.64	0-2	2
	64QAM	1	0	21.34	21.62	21.50	0-2	2
		1	49	21.47	21.71	21.60	0-2	2
		1	99	21.69	21.75	21.61	0-2	2
		50	0	20.35	20.48	20.37	0-3	3
		50	25	20.36	20.50	20.42	0-3	3
		50	49	20.41	20.53	20.46	0-3	3
		100	0	21.32	21.52	21.47	0-3	3
	256QAM	1	0	18.18	18.40	18.26	0-5	5
		1	49	18.31	18.49	18.43	0-5	5
		1	99	18.39	18.49	18.44	0-5	5
		50	0	18.20	18.39	18.30	0-5	5
		50	25	18.21	18.39	18.29	0-5	5
		50	49	18.26	18.42	18.32	0-5	5
		100	0	18.18	18.36	18.22	0-5	5

LTE FDD Band 2 (Upper) Conducted Power _ Measured RSI = 0, RSI = 1_ Antenna D

LTE FDD Band 2 (Upper) _ 20 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 MHz	18900 Ch. 1880 MHz	19100 Ch. 1900 MHz		
20 MHz	QPSK	1	0	19.30	19.70	19.35	0	0
		1	49	19.49	19.69	19.60	0	0
		1	99	19.48	19.63	19.56	0	0
		50	0	19.43	19.72	19.56	0-1	0
		50	25	19.47	19.66	19.57	0-1	0
		50	49	19.49	19.71	19.61	0-1	0
		100	0	19.45	19.63	19.54	0-1	0
	16QAM	1	0	19.66	19.85	19.75	0-1	0
		1	49	19.85	19.98	19.94	0-1	0
		1	99	19.80	19.93	19.80	0-1	0
		50	0	19.45	19.66	19.53	0-2	0
		50	25	19.50	19.67	19.59	0-2	0
		50	49	19.54	19.70	19.61	0-2	0
		100	0	19.47	19.64	19.55	0-2	0
	64QAM	1	0	19.55	19.72	19.59	0-2	0
		1	49	19.69	19.80	19.69	0-2	0
		1	99	19.66	19.77	19.78	0-2	0
		50	0	19.48	19.62	19.57	0-3	0
		50	25	19.48	19.66	19.59	0-3	0
		50	49	19.57	19.72	19.61	0-3	0
		100	0	19.48	19.62	19.52	0-3	0
	256QAM	1	0	18.03	18.15	17.98	0-5	1
		1	49	17.96	18.20	17.92	0-5	1
		1	99	18.15	18.24	18.20	0-5	1
		50	0	17.95	18.13	18.03	0-5	1
		50	25	18.00	18.13	18.04	0-5	1
		50	49	17.99	18.15	18.09	0-5	1
		100	0	17.96	18.15	18.04	0-5	1

11.3.2 LTE FDD Band 4 Maximum Conducted Output Power

LTE FDD Band 4 Conducted Power _ Measured P_{max} , RSI = 1 _ Antenna B

LTE FDD Band 4 _ 20 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20050 ch. 1720 MHz	20175 ch. 1732.5 MHz	20300 ch. 1 745 MHz		
20 MHz	QPSK	1	0	23.98	23.70	23.71	0	0
		1	49	23.98	23.76	23.76	0	0
		1	99	23.90	23.71	23.68	0	0
		50	0	23.16	22.85	22.85	0-1	1
		50	25	23.12	22.87	22.87	0-1	1
		50	49	23.07	22.84	22.85	0-1	1
		100	0	23.04	22.83	22.82	0-1	1
	16QAM	1	0	23.21	23.03	22.99	0-1	1
		1	49	23.26	23.10	23.10	0-1	1
		1	99	23.29	23.01	22.99	0-1	1
		50	0	22.08	21.89	21.87	0-2	2
		50	25	22.05	21.85	21.83	0-2	2
		50	49	22.04	21.80	21.80	0-2	2
		100	0	22.02	21.78	21.80	0-2	2
	64QAM	1	0	22.12	21.95	21.96	0-2	2
		1	49	22.19	21.99	22.00	0-2	2
		1	99	22.13	21.88	21.89	0-2	2
		50	0	21.06	20.84	20.82	0-3	3
		50	25	21.06	20.83	20.82	0-3	3
		50	49	20.99	20.81	20.80	0-3	3
		100	0	20.97	20.77	20.75	0-3	3
	256QAM	1	0	19.17	18.94	18.90	0-5	5
		1	49	19.12	18.85	18.91	0-5	5
		1	99	19.11	18.90	18.88	0-5	5
		50	0	19.04	18.82	18.83	0-5	5
		50	25	19.01	18.77	18.80	0-5	5
		50	49	19.00	18.77	18.77	0-5	5
		100	0	19.03	18.82	18.79	0-5	5

LTE FDD Band 4 Conducted Power _ Measured RSI = 0 _ Antenna B

LTE FDD Band 4 _ 20 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20050 ch. 1720 MHz	20175 ch. 1732.5 MHz	20300 ch. 1 745 MHz		
20 MHz	QPSK	1	0	19.29	19.03	19.01	0	0
		1	49	19.37	19.14	19.02	0	0
		1	99	19.19	19.03	19.07	0	0
		50	0	19.38	19.05	19.05	0-1	0
		50	25	19.32	19.01	19.02	0-1	0
		50	49	19.31	19.04	19.03	0-1	0
		100	0	19.36	19.03	19.05	0-1	0
	16QAM	1	0	19.67	19.31	19.32	0-1	0
		1	49	19.59	19.32	19.25	0-1	0
		1	99	19.51	19.34	19.22	0-1	0
		50	0	19.30	19.03	19.05	0-2	0
		50	25	19.31	19.05	19.04	0-2	0
		50	49	19.36	18.97	19.00	0-2	0
		100	0	19.26	19.02	18.99	0-2	0
	64QAM	1	0	19.44	19.18	19.19	0-2	0
		1	49	19.45	19.29	19.18	0-2	0
		1	99	19.43	19.14	19.20	0-2	0
		50	0	19.37	19.10	19.05	0-3	0
		50	25	19.33	19.04	19.07	0-3	0
		50	49	19.31	19.01	19.05	0-3	0
		100	0	19.23	19.03	18.99	0-3	0
	256QAM	1	0	17.64	17.68	17.57	0-5	2
		1	49	17.38	17.53	17.50	0-5	2
		1	99	17.61	17.56	17.65	0-5	2
		50	0	17.52	17.53	17.62	0-5	2
		50	25	17.54	17.53	17.53	0-5	2
		50	49	17.50	17.61	17.58	0-5	2
		100	0	17.45	17.53	17.56	0-5	2

11.3.3 LTE FDD Band 5 Maximum Conducted Output Power

LTE FDD Band 5 Conducted Power _ Measured P_{max} , RSI = 1 _ Antenna A

LTE FDD Band 5 _ 10 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20450	20525	20600		
				829 MHz	836.5 MHz	844 MHz		
10 MHz	QPSK	1	0	24.07	24.26	24.18	0	0
		1	24	24.04	24.14	24.25	0	0
		1	49	23.99	24.09	24.16	0	0
		25	0	23.20	23.38	23.34	0-1	1
		25	12	23.16	23.33	23.35	0-1	1
		25	24	23.17	23.28	23.37	0-1	1
		50	0	23.23	23.38	23.41	0-1	1
	16QAM	1	0	23.41	23.57	23.52	0-1	1
		1	24	23.18	23.43	23.33	0-1	1
		1	49	23.27	23.55	23.41	0-1	1
		25	0	22.16	22.32	22.36	0-2	2
		25	12	22.12	22.26	22.32	0-2	2
		25	24	22.16	22.27	22.32	0-2	2
		50	0	22.19	22.36	22.37	0-2	2
	64QAM	1	0	22.33	22.41	22.55	0-2	2
		1	24	22.26	22.42	22.45	0-2	2
		1	49	22.24	22.39	22.36	0-2	2
		25	0	21.15	21.29	21.34	0-3	3
		25	12	21.15	21.26	21.31	0-3	3
		25	24	21.07	21.28	21.27	0-3	3
		50	0	21.19	21.34	21.37	0-3	3
	256QAM	1	0	19.42	19.41	19.43	0-5	5
		1	24	19.31	19.30	19.29	0-5	5
		1	49	19.33	19.34	19.34	0-5	5
		25	0	19.24	19.26	19.25	0-5	5
		25	12	19.23	19.27	19.26	0-5	5
		25	24	19.19	19.20	19.16	0-5	5
		50	0	19.30	19.29	19.33	0-5	5

LTE FDD Band 5 Conducted Power _ Measured RSI = 0 _ Antenna A

LTE FDD Band 5 _ 10 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20450	20525	20600		
				829 MHz	836.5 MHz	844 MHz		
10 MHz	QPSK	1	0	18.23	18.41	18.51	0	0
		1	24	18.14	18.39	18.36	0	0
		1	49	18.09	18.28	18.29	0	0
		25	0	18.20	18.44	18.42	0-1	0
		25	12	18.16	18.42	18.46	0-1	0
		25	24	18.16	18.38	18.41	0-1	0
		50	0	18.22	18.38	18.47	0-1	0
	16QAM	1	0	18.40	18.73	18.72	0-1	0
		1	24	18.38	18.53	18.67	0-1	0
		1	49	18.34	18.56	18.68	0-1	0
		25	0	18.18	18.41	18.41	0-2	0
		25	12	18.12	18.37	18.39	0-2	0
		25	24	18.15	18.33	18.34	0-2	0
		50	0	18.14	18.37	18.40	0-2	0
	64QAM	1	0	18.35	18.53	18.49	0-2	0
		1	24	18.40	18.58	18.62	0-2	0
		1	49	18.31	18.52	18.58	0-2	0
		25	0	18.22	18.36	18.41	0-3	0
		25	12	18.19	18.36	18.38	0-3	0
		25	24	18.14	18.31	18.38	0-3	0
		50	0	18.19	18.34	18.37	0-3	0
	256QAM	1	0	17.87	18.03	18.16	0-5	1
		1	24	17.91	18.12	18.07	0-5	1
		1	49	17.79	17.97	18.07	0-5	1
		25	0	17.79	17.94	17.96	0-5	1
		25	12	17.72	17.92	17.96	0-5	1
		25	24	17.72	17.90	17.93	0-5	1
		50	0	17.76	17.96	18.00	0-5	1

11.3.4 LTE FDD Band 7 Maximum Conducted Output Power

LTE FDD Band 7 Conducted Power Measured P_{max} , RSI = 1 _ Antenna B

LTE FDD Band 7 _ 20 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20850 Ch. 2510 MHz	21100 Ch. 2535 MHz	21350 Ch. 2560 MHz		
20 MHz	QPSK	1	0	23.00	22.62	22.70	0	0
		1	49	22.99	22.59	22.59	0	0
		1	99	22.69	22.59	22.63	0	0
		50	0	22.06	21.85	21.89	0-1	1
		50	25	22.01	21.82	21.92	0-1	1
		50	49	21.96	21.78	21.91	0-1	1
		100	0	21.96	21.74	21.86	0-1	1
	16QAM	1	0	22.07	21.82	21.98	0-1	1
		1	49	22.28	22.07	22.09	0-1	1
		1	99	21.89	21.91	21.88	0-1	1
		50	0	20.96	20.74	20.84	0-2	2
		50	25	20.90	20.71	20.82	0-2	2
		50	49	20.89	20.70	20.82	0-2	2
		100	0	20.84	20.64	20.76	0-2	2
	64QAM	1	0	20.81	20.64	20.80	0-2	2
		1	49	20.96	20.76	20.99	0-2	2
		1	99	20.84	20.69	20.77	0-2	2
		50	0	19.87	19.69	19.77	0-3	3
		50	25	19.88	19.67	19.77	0-3	3
		50	49	19.82	19.69	19.76	0-3	3
		100	0	19.79	19.57	19.70	0-3	3
	256QAM	1	0	18.00	17.77	17.88	0-5	5
		1	49	18.33	18.12	18.23	0-5	5
		1	99	17.89	17.74	17.80	0-5	5
		50	0	17.88	17.69	17.75	0-5	5
		50	25	17.85	17.61	17.79	0-5	5
		50	49	17.82	17.64	17.72	0-5	5
		100	0	17.85	17.66	17.74	0-5	5

LTE FDD Band 7 Conducted Power _ Measured RSI = 0 _ Antenna B

LTE FDD Band 7 _ 20 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20850 Ch. 2510 MHz	21100 Ch. 2535 MHz	21350 Ch. 2560 MHz		
20 MHz	QPSK	1	0	17.91	17.67	17.68	0	0
		1	49	17.71	17.83	17.82	0	0
		1	99	17.56	17.72	17.55	0	0
		50	0	18.20	17.84	17.82	0-1	0
		50	25	17.79	17.87	17.80	0-1	0
		50	49	17.77	17.85	17.77	0-1	0
		100	0	17.54	17.68	17.73	0-1	0
	16QAM	1	0	17.86	17.89	18.02	0-1	0
		1	49	18.04	18.25	18.13	0-1	0
		1	99	17.79	17.96	17.82	0-1	0
		50	0	17.72	17.79	17.78	0-2	0
		50	25	17.70	17.78	17.78	0-2	0
		50	49	17.74	17.77	17.72	0-2	0
		100	0	17.80	17.83	18.06	0-2	0
	64QAM	1	0	17.64	17.75	17.90	0-2	0
		1	49	17.71	17.85	17.88	0-2	0
		1	99	17.69	17.93	17.74	0-2	0
		50	0	17.69	17.76	17.77	0-3	0
		50	25	17.73	17.80	17.77	0-3	0
		50	49	17.73	17.82	17.76	0-3	0
		100	0	17.68	17.78	17.87	0-3	0
	256QAM	1	0	17.75	17.74	17.88	0-5	0
		1	49	17.86	18.01	17.92	0-5	0
		1	99	17.82	17.91	17.81	0-5	0
		50	0	17.75	17.78	17.77	0-5	0
		50	25	17.68	17.79	17.74	0-5	0
		50	49	17.73	17.77	17.72	0-5	0
		100	0	17.79	17.87	17.90	0-5	0

11.3.5 LTE FDD Band 12 Maximum Conducted Output Power

LTE FDD Band 12 Conducted Power _ Measured P_{max} , RSI = 0 (RCV) _ Antenna A

LTE FDD Band 12 _ 10 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				23095 Ch. 707.5 MHz		
10 MHz	QPSK	1	0	24.14	0	0
		1	24	24.05	0	0
		1	49	24.03	0	0
		25	0	23.20	0-1	1
		25	12	23.18	0-1	1
		25	24	23.13	0-1	1
		50	0	23.23	0-1	1
	16QAM	1	0	23.41	0-1	1
		1	24	23.32	0-1	1
		1	49	23.29	0-1	1
		25	0	22.16	0-2	2
		25	12	22.15	0-2	2
		25	24	22.12	0-2	2
		50	0	22.17	0-2	2
	64QAM	1	0	22.30	0-2	2
		1	24	22.28	0-2	2
		1	49	22.23	0-2	2
		25	0	21.17	0-3	3
		25	12	21.13	0-3	3
		25	24	21.12	0-3	3
		50	0	21.15	0-3	3
	256QAM	1	0	19.17	0-5	5
		1	24	18.95	0-5	5
		1	49	19.08	0-5	5
		25	0	19.06	0-5	5
		25	12	19.02	0-5	5
		25	24	19.16	0-5	5
		50	0	18.99	0-5	5

LTE FDD Band 12 Conducted Power _ Measured RSI = 0 _ Antenna A

LTE FDD Band 12 _ 10 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				23095 Ch. 707.5 MHz		
10 MHz	QPSK	1	0	20.52	0	0
		1	24	20.51	0	0
		1	49	20.39	0	0
		25	0	20.64	0-1	0
		25	12	20.55	0-1	0
		25	24	20.54	0-1	0
		50	0	20.56	0-1	0
	16QAM	1	0	20.80	0-1	0
		1	24	20.66	0-1	0
		1	49	20.66	0-1	0
		25	0	20.59	0-2	0
		25	12	20.56	0-2	0
		25	24	20.49	0-2	0
		50	0	20.52	0-2	0
	64QAM	1	0	20.63	0-2	0
		1	24	20.77	0-2	0
		1	49	20.56	0-2	0
		25	0	20.59	0-3	0
		25	12	20.57	0-3	0
		25	24	20.51	0-3	0
		50	0	20.50	0-3	0
	256QAM	1	0	20.50	0-5	0
		1	24	20.50	0-5	0
		1	49	20.50	0-5	0
		25	0	20.50	0-5	0
		25	12	20.50	0-5	0
		25	24	20.50	0-5	0
		50	0	20.50	0-5	0

11.3.6 LTE FDD Band 13 Maximum Conducted Output Power

LTE FDD Band 13 Conducted Power _ Measured P_{max} , RSI = 1 _ Antenna A

LTE FDD Band 13 _ 10 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				23230 Ch. 782 MHz		
10 MHz	QPSK	1	0	24.20	0	0
		1	24	24.07	0	0
		1	49	24.16	0	0
		25	0	23.32	0-1	1
		25	12	23.26	0-1	1
		25	24	23.29	0-1	1
		50	0	23.37	0-1	1
	16QAM	1	0	23.35	0-1	1
		1	24	23.24	0-1	1
		1	49	23.32	0-1	1
		25	0	22.25	0-2	2
		25	12	22.16	0-2	2
		25	24	22.19	0-2	2
		50	0	22.26	0-2	2
	64QAM	1	0	22.34	0-2	2
		1	24	22.21	0-2	2
		1	49	22.36	0-2	2
		25	0	21.20	0-3	3
		25	12	21.17	0-3	3
		25	24	21.19	0-3	3
		50	0	21.27	0-3	3
	256QAM	1	0	19.13	0-5	5
		1	24	18.97	0-5	5
		1	49	19.10	0-5	5
		25	0	19.07	0-5	5
		25	12	19.04	0-5	5
		25	24	19.11	0-5	5
		50	0	19.03	0-5	5

LTE FDD Band 13 Conducted Power _ Measured RSI = 0 _ Antenna A

LTE FDD Band 13 _ 10 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				23230 Ch. 782 MHz		
10 MHz	QPSK	1	0	19.60	0	0
		1	24	19.49	0	0
		1	49	19.57	0	0
		25	0	19.58	0-1	0
		25	12	19.55	0-1	0
		25	24	19.55	0-1	0
		50	0	19.60	0-1	0
	16QAM	1	0	19.92	0-1	0
		1	24	19.70	0-1	0
		1	49	19.86	0-1	0
		25	0	19.61	0-2	0
		25	12	19.56	0-2	0
		25	24	19.58	0-2	0
		50	0	19.60	0-2	0
	64QAM	1	0	19.71	0-2	0
		1	24	19.80	0-2	0
		1	49	19.79	0-2	0
		25	0	19.61	0-3	0
		25	12	19.55	0-3	0
		25	24	19.59	0-3	0
		50	0	19.61	0-3	0
	256QAM	1	0	19.61	0-5	0
		1	24	19.61	0-5	0
		1	49	19.14	0-5	0
		25	0	19.04	0-5	0
		25	12	18.98	0-5	0
		25	24	19.06	0-5	0
		50	0	19.05	0-5	0

11.3.7 LTE FDD Band 14 Maximum Conducted Output Power

LTE FDD Band 14 Conducted Power _ Measured P_{max} , RSI = 1 _ Antenna A

LTE FDD Band 14 _ 10 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				23330 Ch. 793 MHz		
10 MHz	QPSK	1	0	24.27	0	0
		1	24	24.21	0	0
		1	49	24.10	0	0
		25	0	23.48	0-1	1
		25	12	23.45	0-1	1
		25	24	23.43	0-1	1
		50	0	23.49	0-1	1
	16QAM	1	0	23.53	0-1	1
		1	24	23.38	0-1	1
		1	49	23.18	0-1	1
		25	0	22.39	0-2	2
		25	12	22.36	0-2	2
		25	24	22.29	0-2	2
		50	0	22.40	0-2	2
	64QAM	1	0	22.47	0-2	2
		1	24	22.38	0-2	2
		1	49	22.28	0-2	2
		25	0	21.36	0-3	3
		25	12	21.34	0-3	3
		25	24	21.30	0-3	3
		50	0	21.37	0-3	3
	256QAM	1	0	19.13	0-5	5
		1	24	18.98	0-5	5
		1	49	19.02	0-5	5
		25	0	19.11	0-5	5
		25	12	19.00	0-5	5
		25	24	19.16	0-5	5
		50	0	19.02	0-5	5

LTE FDD Band 14 Conducted Power _ Measured RSI = 0 _ Antenna A

LTE FDD Band 14 _ 10 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				23330 Ch. 793 MHz		
10 MHz	QPSK	1	0	19.67	0	0
		1	24	19.75	0	0
		1	49	19.49	0	0
		25	0	19.82	0-1	0
		25	12	19.79	0-1	0
		25	24	19.70	0-1	0
		50	0	19.74	0-1	0
	16QAM	1	0	19.91	0-1	0
		1	24	19.91	0-1	0
		1	49	19.74	0-1	0
		25	0	19.80	0-2	0
		25	12	19.76	0-2	0
		25	24	19.67	0-2	0
		50	0	19.76	0-2	0
	64QAM	1	0	19.78	0-2	0
		1	24	19.99	0-2	0
		1	49	19.70	0-2	0
		25	0	19.80	0-3	0
		25	12	19.74	0-3	0
		25	24	19.72	0-3	0
		50	0	19.78	0-3	0
	256QAM	1	0	19.78	0-5	0
		1	24	19.78	0-5	0
		1	49	19.12	0-5	0
		25	0	19.24	0-5	0
		25	12	19.20	0-5	0
		25	24	19.14	0-5	0
		50	0	19.22	0-5	0

11.3.8 LTE FDD Band 25 Maximum Conducted Output Power

LTE FDD Band 25 Conducted Power_ Measured P_{max} , RSI = 1 _ Antenna B

LTE FDD Band 25 _ 20 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26140 Ch. 1860 MHz	26365 Ch. 1882.5 MHz	26590 Ch. 1905 MHz		
20 MHz	QPSK	1	0	23.95	24.03	23.72	0	0
		1	49	24.01	23.97	23.89	0	0
		1	99	23.93	23.91	23.75	0	0
		50	0	22.97	23.05	22.97	0-1	1
		50	25	22.99	23.04	22.93	0-1	1
		50	49	22.99	23.03	22.98	0-1	1
		100	0	22.99	23.06	22.95	0-1	1
	16QAM	1	0	23.25	23.38	23.19	0-1	1
		1	49	23.27	23.37	23.19	0-1	1
		1	99	23.28	23.36	23.09	0-1	1
		50	0	22.00	22.08	21.95	0-2	2
		50	25	22.02	22.07	21.93	0-2	2
		50	49	22.00	22.07	21.91	0-2	2
		100	0	22.00	22.03	21.94	0-2	2
	64QAM	1	0	22.20	22.27	22.08	0-2	2
		1	49	22.27	22.28	22.17	0-2	2
		1	99	22.24	22.24	22.07	0-2	2
		50	0	21.04	21.06	20.97	0-3	3
		50	25	20.97	21.08	20.96	0-3	3
		50	49	21.03	21.05	20.95	0-3	3
		100	0	21.00	21.04	20.90	0-3	3
	256QAM	1	0	19.10	19.15	19.00	0-5	5
		1	49	19.02	19.02	18.94	0-5	5
		1	99	19.01	19.14	18.95	0-5	5
		50	0	18.93	19.02	18.86	0-5	5
		50	25	18.91	18.97	18.79	0-5	5
		50	49	18.93	18.96	18.82	0-5	5
		100	0	18.94	18.94	18.84	0-5	5

LTE FDD Band 25 Conducted Power_ Measured RSI = 0 _ Antenna B

LTE FDD Band 25 _ 20 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26140 Ch. 1860 MHz	26365 Ch. 1882.5 MHz	26590 Ch. 1905 MHz		
20 MHz	QPSK	1	0	18.22	18.30	18.20	0	0
		1	49	18.21	18.29	18.19	0	0
		1	99	18.03	18.08	18.07	0	0
		50	0	18.10	18.19	18.15	0-1	0
		50	25	18.04	18.12	18.09	0-1	0
		50	49	18.07	18.13	18.10	0-1	0
		100	0	18.08	18.17	18.16	0-1	0
	16QAM	1	0	18.38	18.40	18.36	0-1	0
		1	49	18.54	18.55	18.60	0-1	0
		1	99	18.52	18.43	18.48	0-1	0
		50	0	18.12	18.16	18.15	0-2	0
		50	25	18.06	18.15	18.13	0-2	0
		50	49	18.11	18.14	18.10	0-2	0
		100	0	18.38	18.51	18.48	0-2	0
	64QAM	1	0	18.32	18.39	18.37	0-2	0
		1	49	18.41	18.36	18.31	0-2	0
		1	99	18.35	18.45	18.35	0-2	0
		50	0	18.12	18.18	18.16	0-3	0
		50	25	18.11	18.18	18.14	0-3	0
		50	49	18.12	18.19	18.16	0-3	0
		100	0	18.20	18.36	18.38	0-3	0
	256QAM	1	0	18.24	18.27	18.26	0-5	0
		1	49	18.10	18.12	18.08	0-5	0
		1	99	18.22	18.24	18.21	0-5	0
		50	0	18.11	18.19	18.14	0-5	0
		50	25	18.10	18.12	18.14	0-5	0
		50	49	18.09	18.12	18.14	0-5	0
		100	0	18.19	18.26	18.24	0-5	0

11.3.9 LTE FDD Band 26 Maximum Conducted Output Power

LTE FDD Band 26 Conducted Power _ Measured P_{max} , RSI = 1 _ Antenna A

LTE FDD Band 26 _ 15 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				26865 Ch. 831.5 MHz		
15 MHz	QPSK	1	0	24.09	0	0
		1	36	24.05	0	0
		1	74	24.01	0	0
		36	0	23.23	0-1	1
		36	18	23.20	0-1	1
		36	39	23.17	0-1	1
		75	0	23.26	0-1	1
	16QAM	1	0	23.43	0-1	1
		1	36	23.32	0-1	1
		1	74	23.41	0-1	1
		36	0	22.24	0-2	2
		36	18	22.16	0-2	2
		36	39	22.16	0-2	2
		75	0	22.17	0-2	2
	64QAM	1	0	22.40	0-2	2
		1	36	21.88	0-2	2
		1	74	22.28	0-2	2
		36	0	21.22	0-3	3
		36	18	21.20	0-3	3
		36	39	21.17	0-3	3
		75	0	21.18	0-3	3
	256QAM	1	0	19.16	0-5	5
		1	36	18.96	0-5	5
		1	74	19.07	0-5	5
		36	0	19.06	0-5	5
		36	18	18.99	0-5	5
		36	39	19.11	0-5	5
		75	0	19.04	0-5	5

LTE FDD Band 26 Conducted Power _ Measured RSI = 0 _ Antenna A

LTE FDD Band 26 _ 15 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				26865 Ch. 831.5 MHz		
15 MHz	QPSK	1	0	18.58	0	0
		1	36	18.55	0	0
		1	74	18.35	0	0
		36	0	18.57	0-1	0
		36	18	18.54	0-1	0
		36	39	18.48	0-1	0
		75	0	18.51	0-1	0
	16QAM	1	0	18.88	0-1	0
		1	36	18.63	0-1	0
		1	74	18.69	0-1	0
		36	0	18.62	0-2	0
		36	18	18.52	0-2	0
		36	39	18.47	0-2	0
		75	0	18.53	0-2	0
	64QAM	1	0	18.79	0-2	0
		1	36	18.49	0-2	0
		1	74	18.48	0-2	0
		36	0	18.55	0-3	0
		36	18	18.57	0-3	0
		36	39	18.45	0-3	0
		75	0	18.53	0-3	0
	256QAM	1	0	18.31	0-5	0
		1	36	18.29	0-5	0
		1	74	18.22	0-5	0
		36	0	18.29	0-5	0
		36	18	18.28	0-5	0
		36	39	18.24	0-5	0
		75	0	18.25	0-5	0

11.3.10 LTE FDD Band 30 Maximum Conducted Output Power

LTE FDD Band 30 Conducted Power_ Measured P_{max} , RSI = 1 _ Antenna B

LTE TDD Band 30 _ 10 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
					27710 Ch. 2310 MHz			
10 MHz	QPSK	1	0		23.10		0	0
		1	24		23.21		0	0
		1	49		22.72		0	0
		25	0		22.41		0-1	1
		25	12		22.41		0-1	1
		25	24		22.45		0-1	1
		50	0		22.49		0-1	1
	16QAM	1	0		22.33		0-1	1
		1	24		22.35		0-1	1
		1	49		22.04		0-1	1
		25	0		21.27		0-2	2
		25	12		21.20		0-2	2
		25	24		21.21		0-2	2
		50	0		21.26		0-2	2
	64QAM	1	0		20.99		0-2	2
		1	24		21.11		0-2	2
		1	49		20.88		0-2	2
		25	0		20.14		0-3	3
		25	12		20.13		0-3	3
		25	24		20.11		0-3	3
		50	0		20.17		0-3	3
	256QAM	1	0		18.35		0-5	5
		1	24		18.23		0-5	5
		1	49		18.31		0-5	5
		25	0		18.21		0-5	5
		25	12		18.19		0-5	5
		25	24		18.19		0-5	5
		50	0		18.25		0-5	5

LTE FDD Band 30 Conducted Power_ Measured RSI=0 _Antenna B

LTE TDD Band 30 _ 10 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				27710 Ch. 2310 MHz		
10 MHz	QPSK	1	0	17.65	0	0
		1	24	17.76	0	0
		1	49	17.52	0	0
		25	0	17.69	0-1	0
		25	12	17.64	0-1	0
		25	24	17.64	0-1	0
		50	0	17.67	0-1	0
	16QAM	1	0	17.85	0-1	0
		1	24	17.99	0-1	0
		1	49	17.77	0-1	0
		25	0	17.64	0-2	0
		25	12	17.61	0-2	0
		25	24	17.59	0-2	0
		50	0	17.82	0-2	0
	64QAM	1	0	17.69	0-2	0
		1	24	17.74	0-2	0
		1	49	17.68	0-2	0
		25	0	17.61	0-3	0
		25	12	17.58	0-3	0
		25	24	17.56	0-3	0
		50	0	17.72	0-3	0
	256QAM	1	0	17.88	0-5	0
		1	24	17.95	0-5	0
		1	49	17.86	0-5	0
		25	0	17.75	0-5	0
		25	12	17.72	0-5	0
		25	24	17.73	0-5	0
		50	0	17.88	0-5	0

11.3.11 LTE TDD Band 38 Maximum Conducted Output Power

LTE TDD Band 38 Conducted Power_ Measured P_{max} , RSI = 1 _ Antenna B

LTE TDD Band 38 _ 20 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				37850 2580 MHz	38000 Ch. 2595 MHz	38150 2610 MHz		
20 MHz	QPSK	1	0	24.28	24.60	24.42	0	0
		1	49	24.37	24.54	24.42	0	0
		1	99	24.25	24.39	24.33	0	0
		50	0	23.38	23.61	23.53	0-1	1
		50	25	23.36	23.56	23.49	0-1	1
		50	49	23.30	23.51	23.44	0-1	1
		100	0	23.34	23.56	23.50	0-1	1
	16QAM	1	0	23.40	23.61	23.53	0-1	1
		1	49	23.27	23.46	23.40	0-1	1
		1	99	23.24	23.42	23.38	0-1	1
		50	0	22.40	22.61	22.55	0-2	2
		50	25	22.36	22.56	22.50	0-2	2
		50	49	22.30	22.50	22.45	0-2	2
		100	0	22.35	22.55	22.51	0-2	2
	64QAM	1	0	22.04	22.26	22.22	0-2	2
		1	49	22.05	22.27	22.19	0-2	2
		1	99	21.91	22.10	22.07	0-2	2
		50	0	21.40	21.61	21.56	0-3	3
		50	25	21.35	21.55	21.51	0-3	3
		50	49	21.32	21.50	21.46	0-3	3
		100	0	21.30	21.50	21.45	0-3	3
	256QAM	1	0	19.11	19.39	19.32	0-5	5
		1	49	19.10	19.33	19.29	0-5	5
		1	99	18.99	19.21	19.18	0-5	5
		50	0	19.34	19.58	19.52	0-5	5
		50	25	19.30	19.53	19.47	0-5	5
		50	49	19.27	19.47	19.43	0-5	5
		100	0	19.27	19.49	19.45	0-5	5

LTE TDD Band 38 Conducted Power_ Measured RSI = 0 _ Antenna B

LTE TDD Band 38 _ 20 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				37850 2580 MHz	38000 Ch. 2595 MHz	38150 2610 MHz		
20 MHz	QPSK	1	0	18.56	18.81	18.69	0	0
		1	49	18.65	18.86	18.82	0	0
		1	99	18.33	18.54	18.52	0	0
		50	0	18.56	18.79	18.75	0-1	0
		50	25	18.50	18.72	18.69	0-1	0
		50	49	18.46	18.66	18.63	0-1	0
		100	0	18.51	18.72	18.69	0-1	0
	16QAM	1	0	18.57	18.80	18.76	0-1	0
		1	49	18.81	18.87	18.54	0-1	0
		1	99	18.38	18.57	18.57	0-1	0
		50	0	18.59	18.80	18.78	0-2	0
		50	25	18.53	18.72	18.71	0-2	0
		50	49	18.49	18.68	18.67	0-2	0
		100	0	18.55	18.75	18.74	0-2	0
	64QAM	1	0	18.26	18.47	18.46	0-2	0
		1	49	18.20	18.39	18.37	0-2	0
		1	99	18.08	18.27	18.28	0-2	0
		50	0	18.62	18.82	18.81	0-3	0
		50	25	18.57	18.77	18.76	0-3	0
		50	49	18.52	18.71	18.71	0-3	0
		100	0	18.53	18.72	18.71	0-3	0
	256QAM	1	0	18.33	18.55	18.54	0-5	0
		1	49	18.46	18.68	18.67	0-5	0
		1	99	18.15	18.34	18.36	0-5	0
		50	0	18.54	18.74	18.73	0-5	0
		50	25	18.49	18.68	18.67	0-5	0
		50	49	18.43	18.62	18.62	0-5	0
		100	0	18.46	18.65	18.63	0-5	0

11.3.12 LTE TDD Band 41 Maximum Conducted Output Power

LTE TDD Band 41 Conducted Power _ Measured P_{max} , RSI = 1 _ Antenna B

LTE TDD Band 41 _ 20 MHz Bandwidth Conducted Power

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 MHz	40185 Ch. 2549.5 MHz	40620 Ch. 2593.0 MHz	41055 Ch. 2636.5 MHz	41490 Ch. 2680.0 MHz		
20 MHz	QPSK	1	0	23.53	23.56	24.32	24.11	24.17	0	0
		1	49	23.71	23.73	24.06	24.27	24.20	0	0
		1	99	23.69	23.67	23.91	24.20	24.09	0	0
		50	0	22.70	22.72	23.29	23.24	23.26	0-1	1
		50	25	22.71	22.73	23.09	23.22	23.24	0-1	1
		50	49	22.70	22.74	23.04	23.20	23.22	0-1	1
		100	0	22.68	22.75	23.09	23.21	23.23	0-1	1
	16QAM	1	0	22.62	22.68	23.15	23.22	23.19	0-1	1
		1	49	22.60	22.68	23.01	23.17	23.15	0-1	1
		1	99	22.66	22.73	22.97	23.14	23.12	0-1	1
		50	0	21.69	21.74	22.15	22.25	22.26	0-2	2
		50	25	21.69	21.75	22.11	22.23	22.22	0-2	2
		50	49	21.69	21.74	22.05	22.21	22.20	0-2	2
		100	0	21.69	21.75	22.10	22.23	22.25	0-2	2
	64QAM	1	0	21.29	21.34	21.82	21.90	21.88	0-2	2
		1	49	21.39	21.48	21.84	21.96	21.94	0-2	2
		1	99	21.33	21.40	21.65	21.83	21.82	0-2	2
		50	0	20.69	20.75	21.16	21.26	21.26	0-3	3
		50	25	20.69	20.75	21.10	21.23	21.25	0-3	3
		50	49	20.68	20.75	21.05	21.21	21.21	0-3	3
		100	0	20.63	20.70	21.06	21.17	21.18	0-3	3
	256QAM	1	0	19.65	18.45	18.95	18.92	18.99	0-5	5
		1	49	18.36	18.51	18.89	18.93	18.95	0-5	5
		1	99	18.37	18.49	18.77	18.89	18.92	0-5	5
		50	0	18.59	18.71	19.14	19.16	19.22	0-5	5
		50	25	18.59	18.70	19.08	19.16	19.19	0-5	5
		50	49	18.60	18.70	19.03	19.13	19.17	0-5	5
		100	0	18.57	18.66	19.05	19.12	19.16	0-5	5

Note; LTE Band 41 has 5 required test channels per FCC KDB 447498 D01v06.

LTE TDD Band 41 Conducted Power (Power Class 3) _ Measured RSI = 0 _ Antenna B

LTE TDD Band 41 _ 20 MHz Bandwidth Conducted Power

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 MHz	40185 Ch. 2549.5 MHz	40620 Ch. 2593.0 MHz	41055 Ch. 2636.5 MHz	41490 Ch. 2680.0 MHz		
20 MHz	QPSK	1	0	18.24	18.15	18.52	18.09	18.09	0	0
		1	49	18.41	18.30	18.60	18.21	18.20	0	0
		1	99	18.22	18.06	18.28	17.94	17.93	0	0
		50	0	18.33	18.18	18.55	18.09	18.15	0-1	0
		50	25	18.32	18.16	18.48	18.06	18.10	0-1	0
		50	49	18.33	18.14	18.43	18.04	18.05	0-1	0
		100	0	18.32	18.16	18.48	18.07	18.09	0-1	0
	16QAM	1	0	18.24	18.14	18.55	18.10	18.11	0-1	0
		1	49	18.57	18.45	18.76	18.37	18.37	0-1	0
		1	99	18.26	18.09	18.32	17.99	17.95	0-1	0
		50	0	18.33	18.19	18.56	18.13	18.15	0-2	0
		50	25	18.32	18.17	18.49	18.09	18.10	0-2	0
		50	49	18.33	18.16	18.45	18.07	18.07	0-2	0
		100	0	18.33	18.19	18.51	18.11	18.11	0-2	0
	64QAM	1	0	17.92	17.82	18.24	17.80	17.79	0-2	0
		1	49	17.96	17.83	18.15	17.77	17.75	0-2	0
		1	99	17.96	17.80	18.03	17.71	17.66	0-2	0
		50	0	18.35	18.22	18.58	18.18	18.18	0-3	0
		50	25	18.36	18.20	18.54	18.18	18.15	0-3	0
		50	49	18.36	18.19	18.48	18.15	18.10	0-3	0
		100	0	18.31	18.16	18.49	18.13	18.09	0-3	0
	256QAM	1	0	18.11	18.00	18.41	18.02	17.96	0-5	0
		1	49	18.33	18.22	18.54	18.19	18.15	0-5	0
		1	99	18.14	17.97	18.20	17.92	17.83	0-5	0
		50	0	18.37	18.24	18.61	18.24	18.19	0-5	0
		50	25	18.37	18.22	18.55	18.21	18.15	0-5	0
		50	49	18.36	18.20	18.48	18.16	18.10	0-5	0
		100	0	18.32	18.18	18.51	18.16	18.11	0-5	0

Note; LTE Band 41 has 5 required test channels per FCC KDB 447498 D01v06.

11.3.13 LTE TDD Band 48 Maximum Conducted Output Power

LTE TDD Band 48 (Upper) Conducted Power_ Measured P_{max} _ Antenna E

LTE TDD Band 48 (Upper) _ 20 MHz Bandwidth Conducted

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]				MPR Allowed Per 3GPP [dB]	MPR [dB]
				55340Ch. 3560.0 MHz	55773 Ch. 3603.3 MHz	56207 Ch. 3646.7 MHz	56640 Ch. 3690.0 MHz		
20 MHz	QPSK	1	0	20.51	20.32	20.72	21.32	0	0
		1	49	20.73	20.49	20.84	21.42	0	0
		1	99	20.73	20.30	20.63	21.41	0	0
		50	0	20.79	20.50	20.84	21.52	0-1	0
		50	25	20.80	20.49	20.81	21.52	0-1	0
		50	49	20.83	20.50	20.78	21.55	0-1	0
		100	0	20.77	20.48	20.80	21.52	0-1	0
	16QAM	1	0	20.55	20.28	20.74	21.40	0-1	0
		1	49	20.69	20.42	20.79	21.58	0-1	0
		1	99	20.66	20.31	20.66	21.44	0-1	0
		50	0	20.75	20.45	20.84	21.53	0-2	0
		50	25	20.77	20.47	20.82	21.53	0-2	0
		50	49	20.79	20.45	20.78	21.55	0-2	0
		100	0	20.74	20.44	20.79	21.53	0-2	0
	64QAM	1	0	20.25	19.96	20.43	21.08	0-2	0
		1	49	20.34	20.05	20.43	21.16	0-2	0
		1	99	20.38	20.02	20.38	21.17	0-2	0
		50	0	19.77	19.47	19.87	20.55	0-3	1
		50	25	19.78	19.48	19.84	20.56	0-3	1
		50	49	19.81	19.48	19.82	20.57	0-3	1
		100	0	19.71	19.40	19.78	20.49	0-3	1
	256QAM	1	0	17.40	17.15	17.60	18.21	0-5	3
		1	49	17.35	17.10	17.44	18.17	0-5	3
		1	99	17.53	17.20	17.53	18.29	0-5	3
		50	0	17.76	17.48	17.87	18.53	0-5	3
		50	25	17.76	17.47	17.83	18.54	0-5	3
		50	49	17.79	17.47	17.80	18.55	0-5	3
		100	0	17.72	17.41	17.79	18.50	0-5	3

LTE TDD Band 48 (Upper) Conducted Power_ Measured RSI = 0, RSI = 1 _ Antenna E

LTE TDD Band 48 (Upper) _ 20 MHz Bandwidth Conducted

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]				MPR Allowed Per 3GPP [dB]	MPR [dB]
				55340 Ch. 3560.0 MHz	55773 Ch. 3603.3 MHz	56207 Ch. 3646.7 MHz	56640 Ch. 3690.0 MHz		
20 MHz	QPSK	1	0	18.88	18.29	18.15	18.62	0	0
		1	49	18.73	18.13	18.08	19.02	0	0
		1	99	18.80	18.15	18.14	18.67	0	0
		50	0	18.98	18.37	18.26	18.80	0-1	0
		50	25	18.97	18.33	18.26	18.78	0-1	0
		50	49	18.97	18.31	18.27	18.77	0-1	0
		100	0	18.97	18.32	18.26	18.78	0-1	0
	16QAM	1	0	18.89	18.30	18.16	18.71	0-1	0
		1	49	18.72	18.07	18.00	18.52	0-1	0
		1	99	18.84	18.19	18.16	18.61	0-1	0
		50	0	18.99	18.36	18.26	18.80	0-2	0
		50	25	18.99	18.33	18.27	18.78	0-2	0
		50	49	18.97	18.30	18.26	18.75	0-2	0
		100	0	18.99	18.33	18.26	18.78	0-2	0
	64QAM	1	0	18.59	17.98	17.84	18.40	0-2	0
		1	49	18.89	18.18	18.08	18.56	0-2	0
		1	99	18.56	17.88	17.87	18.33	0-2	0
		50	0	19.03	18.39	18.29	18.83	0-3	0
		50	25	19.02	18.37	18.28	18.81	0-3	0
		50	49	19.00	18.33	18.29	18.79	0-3	0
		100	0	18.96	18.30	18.24	18.76	0-3	0
	256QAM	1	0	18.77	18.16	18.03	18.76	0-5	0
		1	49	18.94	18.25	18.21	18.76	0-5	0
		1	99	18.74	18.07	18.06	18.40	0-5	0
		50	0	19.05	18.41	18.31	18.40	0-5	0
		50	25	19.05	18.39	18.31	18.40	0-5	0
		50	49	19.03	18.35	18.31	18.40	0-5	0
		100	0	18.99	18.32	18.26	18.74	0-5	0

11.3.14 LTE FDD Band 66 Maximum Conducted Output Power

LTE FDD Band 66 Conducted Power_ Measured P_{max} , RSI = 1 _ Antenna B

LTE FDD Band 66 _ 20 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 MHz	132322 Ch. 1745 MHz	132572 Ch. 1770 MHz		
20 MHz	QPSK	1	0	23.99	23.85	23.96	0	0
		1	49	24.03	23.88	24.09	0	0
		1	99	23.95	23.72	23.98	0	0
		50	0	23.17	22.91	23.23	0-1	1
		50	25	23.10	22.89	23.19	0-1	1
		50	49	23.05	22.85	23.21	0-1	1
		100	0	23.04	22.84	23.19	0-1	1
	16QAM	1	0	23.23	23.04	23.38	0-1	1
		1	49	23.18	23.02	23.39	0-1	1
		1	99	23.22	23.09	23.33	0-1	1
		50	0	22.09	21.90	22.18	0-2	2
		50	25	22.08	21.85	22.19	0-2	2
		50	49	22.09	21.82	22.16	0-2	2
		100	0	22.00	21.81	22.14	0-2	2
	64QAM	1	0	22.13	21.99	22.19	0-2	2
		1	49	22.22	21.99	22.34	0-2	2
		1	99	22.11	21.90	22.18	0-2	2
		50	0	21.07	20.85	21.16	0-3	3
		50	25	21.04	20.82	21.15	0-3	3
		50	49	21.04	20.82	21.17	0-3	3
		100	0	20.97	20.79	21.10	0-3	3
	256QAM	1	0	19.18	18.97	19.21	0-5	5
		1	49	19.09	18.88	19.26	0-5	5
		1	99	19.17	18.93	19.31	0-5	5
		50	0	19.03	18.81	19.14	0-5	5
		50	25	19.03	18.78	19.12	0-5	5
		50	49	19.02	18.79	19.14	0-5	5
		100	0	19.05	18.81	19.11	0-5	5

LTE FDD Band 66 Conducted Power_ Measured RSI = 0 _ Antenna B

LTE FDD Band 66 _ 20 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 MHz	132322 Ch. 1745 MHz	132572 Ch. 1770 MHz		
20 MHz	QPSK	1	0	19.46	19.36	19.63	0	0
		1	49	19.65	19.33	19.60	0	0
		1	99	19.49	19.19	19.44	0	0
		50	0	19.60	19.36	19.57	0-1	0
		50	25	19.56	19.30	19.56	0-1	0
		50	49	19.58	19.25	19.55	0-1	0
		100	0	19.57	19.30	19.56	0-1	0
	16QAM	1	0	19.68	19.57	19.81	0-1	0
		1	49	19.83	19.64	19.80	0-1	0
		1	99	19.82	19.51	19.76	0-1	0
		50	0	19.63	19.32	19.64	0-2	0
		50	25	19.57	19.30	19.54	0-2	0
		50	49	19.52	19.29	19.63	0-2	0
		100	0	19.55	19.26	19.54	0-2	0
	64QAM	1	0	19.67	19.50	19.71	0-2	0
		1	49	19.72	19.53	19.67	0-2	0
		1	99	19.66	19.34	19.69	0-2	0
		50	0	19.64	19.34	19.60	0-3	0
		50	25	19.59	19.34	19.61	0-3	0
		50	49	19.58	19.26	19.54	0-3	0
		100	0	19.58	19.24	19.51	0-3	0
	256QAM	1	0	18.07	18.13	17.89	0-5	1
		1	49	18.01	18.04	17.82	0-5	1
		1	99	18.13	18.05	17.94	0-5	1
		50	0	18.03	18.04	17.81	0-5	1
		50	25	17.98	18.05	17.84	0-5	1
		50	49	18.01	17.89	17.84	0-5	1
		100	0	17.99	17.94	17.83	0-5	1

LTE FDD Band 66 (Upper) Conducted Power_ Measured P_{max} _ Antenna D

LTE FDD Band 66 (Upper)_ 20 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 MHz	132322 Ch. 1745 MHz	132572 Ch. 1770 MHz		
20 MHz	QPSK	1	0	23.94	23.80	23.83	0	0
		1	49	23.80	23.96	24.09	0	0
		1	99	24.19	23.93	23.90	0	0
		50	0	23.31	23.05	23.06	0-1	1
		50	25	23.35	23.07	23.09	0-1	1
		50	49	23.34	23.11	23.15	0-1	1
		100	0	23.34	23.03	23.07	0-1	1
	16QAM	1	0	23.21	23.22	23.07	0-1	1
		1	49	23.60	23.43	23.47	0-1	1
		1	99	23.45	23.32	23.12	0-1	1
		50	0	22.31	22.02	22.01	0-2	2
		50	25	22.23	22.03	22.03	0-2	2
		50	49	22.29	22.07	22.07	0-2	2
		100	0	22.23	21.98	21.98	0-2	2
	64QAM	1	0	22.02	22.07	21.98	0-2	2
		1	49	22.29	22.03	22.08	0-2	2
		1	99	22.37	22.10	21.97	0-2	2
		50	0	21.21	20.98	20.98	0-3	3
		50	25	21.25	21.02	20.99	0-3	3
		50	49	21.27	21.07	21.03	0-3	3
		100	0	21.16	20.91	20.90	0-3	3
	256QAM	1	0	18.54	18.97	18.99	0-5	5
		1	49	18.67	19.24	19.24	0-5	5
		1	99	18.77	19.12	19.10	0-5	5
		50	0	19.11	18.93	18.93	0-5	5
		50	25	19.13	18.98	18.98	0-5	5
		50	49	19.15	18.96	18.99	0-5	5
		100	0	19.16	18.96	18.96	0-5	5

LTE FDD Band 66 (Upper) Conducted Power_ Measured RSI = 0, RSI = 1 _ Antenna D

LTE FDD Band 66 (Upper)_ 20 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 MHz	132322 Ch. 1745 MHz	132572 Ch. 1770 MHz		
20 MHz	QPSK	1	0	19.30	19.20	19.11	0	0
		1	49	19.70	19.42	19.30	0	0
		1	99	19.39	19.19	19.20	0	0
		50	0	19.54	19.37	19.28	0-1	0
		50	25	19.56	19.36	19.32	0-1	0
		50	49	19.81	19.42	19.41	0-1	0
		100	0	19.50	19.31	19.33	0-1	0
	16QAM	1	0	19.60	19.43	19.48	0-1	0
		1	49	19.84	19.72	19.63	0-1	0
		1	99	19.67	19.41	19.41	0-1	0
		50	0	19.52	19.31	19.29	0-2	0
		50	25	19.52	19.33	19.33	0-2	0
		50	49	19.56	19.35	19.32	0-2	0
		100	0	19.50	19.29	19.27	0-2	0
	64QAM	1	0	19.46	19.29	19.33	0-2	0
		1	49	19.62	19.47	19.34	0-2	0
		1	99	19.61	19.45	19.30	0-2	0
		50	0	19.52	19.34	19.28	0-3	0
		50	25	19.54	19.33	19.29	0-3	0
		50	49	19.57	19.35	19.30	0-3	0
		100	0	19.46	19.27	19.26	0-3	0
	256QAM	1	0	18.09	17.85	17.90	0-5	1
		1	49	18.00	17.86	17.79	0-5	1
		1	99	18.18	17.97	17.96	0-5	1
		50	0	18.03	17.83	17.78	0-5	1
		50	25	18.00	17.84	17.79	0-5	1
		50	49	18.03	17.85	17.82	0-5	1
		100	0	18.02	17.86	17.83	0-5	1

11.3.15 LTE FDD Band 71 Maximum Conducted Output Power

LTE FDD Band 71 Conducted Power _ Measured P_{max} , RSI = 1 _ Antenna A

LTE FDD Band 71 _ 20 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				133297 Ch. 680.5 MHz		
20 MHz	QPSK	1	0	24.74	0	0
		1	49	24.56	0	0
		1	99	24.45	0	0
		50	0	23.89	0-1	1
		50	25	23.86	0-1	1
		50	49	23.74	0-1	1
		100	0	23.81	0-1	1
	16QAM	1	0	23.94	0-1	1
		1	49	23.62	0-1	1
		1	99	23.79	0-1	1
		50	0	22.84	0-2	2
		50	25	22.79	0-2	2
		50	49	22.69	0-2	2
		100	0	22.73	0-2	2
	64QAM	1	0	22.91	0-2	2
		1	49	22.76	0-2	2
		1	99	22.68	0-2	2
		50	0	21.80	0-3	3
		50	25	21.76	0-3	3
		50	49	21.70	0-3	3
		100	0	21.71	0-3	3
	256QAM	1	0	19.81	0-5	5
		1	49	19.73	0-5	5
		1	99	19.66	0-5	5
		50	0	19.78	0-5	5
		50	25	19.72	0-5	5
		50	49	19.65	0-5	5
		100	0	19.72	0-5	5

LTE FDD Band 71 Conducted Power _ Measured RSI = 0 _ Antenna A

LTE FDD Band 71 _ 20 MHz Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				133297 Ch. 680.5 MHz		
20 MHz	QPSK	1	0	20.55	0	0
		1	49	20.51	0	0
		1	99	20.35	0	0
		50	0	20.65	0-1	0
		50	25	20.57	0-1	0
		50	49	20.51	0-1	0
		100	0	20.60	0-1	0
	16QAM	1	0	20.83	0-1	0
		1	49	20.76	0-1	0
		1	99	20.60	0-1	0
		50	0	20.61	0-2	0
		50	25	20.58	0-2	0
		50	49	20.47	0-2	0
		100	0	20.55	0-2	0
	64QAM	1	0	20.74	0-2	0
		1	49	20.80	0-2	0
		1	99	20.52	0-2	0
		50	0	20.60	0-3	0
		50	25	20.58	0-3	0
		50	49	20.51	0-3	0
		100	0	20.52	0-3	0
	256QAM	1	0	20.22	0-5	0
		1	49	20.19	0-5	0
		1	99	19.95	0-5	0
		50	0	20.10	0-5	0
		50	25	20.06	0-5	0
		50	49	20.00	0-5	0
		100	0	20.07	0-5	0

The EUT enables maximum power reduction in accordance with 3GPP 36.101. The MPR settings are configured during the manufacture process and are not configurable by the network, carrier, or end user.

11.3.16 LTE Uplink Carrier Aggregation Maximum Conducted Output Power

11.3.16.1 LTE TDD Band 41C Conducted Power _ Measured P_{max} , RSI = 1 _ Antenna B

Combination	PCC							SCC						Tx Power	
	Band	BW	PCC UL Channel	PCC UL Frequency	Mode	RB	offset	Band	BW	SCC UL Channel	SCC UL Frequency	RB	offset	LTE Single Carrier Tx Power (dBm)	LTE Tx Power w/UL CA Enabled(dBm)
41C	41	20	40620	2593	QPSK	1	0	41	20	40422	2573.2	1	99	24.32	23.14

11.3.16.2 LTE TDD Band 41C Conducted Power _ Measured RSI = 0 _ Antenna B

Combination	PCC							SCC						Tx Power	
	Band	BW	PCC UL Channel	PCC UL Frequency	Mode	RB	offset	Band	BW	SCC UL Channel	SCC UL Frequency	RB	offset	LTE Single Carrier Tx Power (dBm)	LTE Tx Power w/UL CA Enabled(dBm)
41C	41	20	40620	2593	QPSK	50	0	41	20	40422	2573.2	50	49	18.55	17.89

11.3.16.3 LTE TDD Band 48C Conducted Power _ Measured P_{max} _ Antenna E

Combination	PCC							SCC						Tx Power	
	Band	BW	PCC UL Channel	PCC UL Frequency	Mode	RB	offset	Band	BW	SCC UL Channel	SCC UL Frequency	RB	offset	LTE Single Carrier Tx Power (dBm)	LTE Tx Power w/UL CA Enabled(dBm)
48C	48	20	56640	3690	QPSK	1	0	48	20	56442	3670.2	1	99	21.32	21.22

11.3.16.4 LTE TDD Band 48C Conducted Power _ Measured RSI=0,1 _ Antenna E

Combination	PCC							SCC						Tx Power	
	Band	BW	PCC UL Channel	PCC UL Frequency	Mode	RB	offset	Band	BW	SCC UL Channel	SCC UL Frequency	RB	offset	LTE Single Carrier Tx Power (dBm)	LTE Tx Power with UL CA Enabled(dBm)
48C	48	20	56640	3690	QPSK	1	0	48	20	56442	3670.2	1	99	19.02	18.44
48C	48	20	55340	3560	QPSK	50	49	48	20	55538	3579.8	50	0	18.98	18.58

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 D05v02r05, are included, and the measurement results of other bandwidths are listed in Appendix K.

11.4.1 NR FDD Band n2 Maximum Conducted Power

NR FDD Band n2 Conducted Power_ Measured P_{max} , RSI = 1 _ Antenna B

NR FDD Band n2 _ 40 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						376000	
						1880 MHz	
40 MHz	15	DFT-s OFDM	pi/2 BPSK	1	1	23.83	0
				1	108	23.96	0
				1	214	23.86	0
				108	0	23.42	0.5
				108	54	23.95	0
				108	108	23.49	0.5
				216	0	23.45	0.5
			QPSK	1	1	23.93	0
				1	108	23.96	0
				1	214	23.92	0
				108	0	23.01	1
				108	54	24.04	0
				108	108	23.05	1
				216	0	23.01	1
			16QAM	1	1	23.02	1
			64QAM	1	1	21.49	2.5
			256QAM	1	1	19.25	4.5
		CP	QPSK	1	1	22.42	1.5

NR FDD Band n2 Conducted Power_ Measured RSI = 0 _ Antenna B

NR FDD Band n2 _ 40 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						376000	
						1880 MHz	
40 MHz	15	DFT-s OFDM	pi/2 BPSK	1	1	18.98	0
				1	108	19.09	0
				1	214	18.76	0
				108	0	19.04	0
				108	54	19.07	0
				108	108	18.98	0
				216	0	19.07	0
			QPSK	1	1	19.07	0
				1	108	18.51	0
				1	214	18.71	0
				108	0	19.01	0
				108	54	19.02	0
				108	108	19.00	0
				216	0	19.03	0
			16QAM	1	1	18.99	0
			64QAM	1	1	19.05	0
			256QAM	1	1	18.01	0
		CP	QPSK	1	1	19.04	0

NR FDD Band n2 Conducted Power_ Measured Pmax _ Antenna D

NR FDD Band n2 _ 40 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
							376000		
							1 880 MHz		
40 MHz	15	DFT-s OFDM	pi/2 BPSK	1	1		23.59		0
				1	108		23.84		0
				1	214		23.64		0
				108	0		23.34		0.5
				108	54		23.79		0
				108	108		23.35		0.5
				216	0		23.30		0.5
			QPSK	1	1		23.71		0
				1	108		23.83		0
				1	214		23.70		0
				108	0		22.91		1
				108	54		23.89		0
				108	108		22.90		1
				216	0		22.86		1
			16QAM	1	1		22.86		1
			64QAM	1	1		21.39		2.5
			256QAM	1	1		19.17		4.5
		CP	QPSK	1	1		22.20		1.5

NR FDD Band n2 Conducted Power_ Measured RSI = 0, RSI=1 _ Antenna D

NR FDD Band n2 _ 40 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						376000	
						1880 MHz	
40 MHz	15	DFT-s OFDM	pi/2 BPSK	1	1	19.02	0
				1	108	19.23	0
				1	214	19.16	0
				108	0	19.27	0
				108	54	19.28	0
				108	108	19.31	0
				216	0	19.27	0
			QPSK	1	1	19.24	0
				1	108	19.44	0
				1	214	19.28	0
				108	0	19.43	0
				108	54	19.36	0
				108	108	19.42	0
				216	0	19.37	0
			16QAM	1	1	19.43	0
			64QAM	1	1	19.28	0
			256QAM	1	1	19.30	0
		CP	QPSK	1	1	19.27	0

11.4.2. NR FDD Band n5 Maximum Conducted Power

NR FDD Band n5 Conducted Power_ Measured P_{max} , RSI = 1 _ Antenna A

NR FDD Band n5_ 20 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						167300	
						836.5 MHz	
20 MHz	15	DFT-s OFDM	pi/2 BPSK	1	1	24.19	0
				1	53	24.36	0
				1	104	24.04	0
				50	0	23.72	0.5
				50	28	24.21	0
				50	56	23.66	0.5
				100	0	23.70	0.5
			QPSK	1	1	24.26	0
				1	53	24.86	0
				1	104	24.11	0
				50	0	23.26	0
				50	28	24.26	0
				50	56	23.22	0
				100	0	23.27	0
			16QAM	1	1	23.32	1
			64QAM	1	1	21.67	2.5
			256QAM	1	1	19.69	4.5
		CP	QPSK	1	1	22.78	1.5

NR FDD Band n5 Conducted Power_ Measured RSI = 0 _Antenna A

NR FDD Band n5_ 20 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						167300	
						836.5 MHz	
20 MHz	15	DFT-s OFDM	pi/2 BPSK	1	1	18.54	0
				1	53	18.97	0
				1	104	18.73	0
				50	0	18.69	0
				50	28	18.81	0
				50	56	18.84	0
				100	0	18.81	0
			QPSK	1	1	18.63	0
				1	53	18.88	0
				1	104	18.80	0
				50	0	18.73	0
				50	28	18.80	0
				50	56	18.85	0
				100	0	18.81	0
			16QAM	1	1	18.61	0
			64QAM	1	1	18.80	0
			256QAM	1	1	18.39	0
		CP	QPSK	1	1	18.57	0

11.4.3. NR FDD Band n25 Maximum Conducted Power

NR FDD Band n25 Conducted Power_ Measured P_{max} , RSI = 1 _ Antenna B

NR FDD Band n25 _ 40 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						376500	
						1882.5 MHz	
40 MHz	15	DFT-s OFDM	pi/2 BPSK	1	1	23.85	0
				1	108	23.97	0
				1	214	23.91	0
				108	0	23.40	0.5
				108	54	23.99	0
				108	108	23.45	0.5
				216	0	23.46	0.5
			QPSK	1	1	23.97	0
				1	108	24.32	0
				1	214	24.00	0
				108	0	22.96	1
				108	54	24.04	0
				108	108	23.01	1
				216	0	23.03	1
			16QAM	1	1	22.94	1
			64QAM	1	1	21.57	2.5
			256QAM	1	1	19.33	4.5
		CP	QPSK	1	1	22.38	1.5

NR FDD Band n25 Conducted Power_ Measured RSI = 0 _ Antenna B

NR FDD Band n25 _ 40 Mhz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						376500	
						1882.5 Mhz	
40 Mhz	15	DFT-s OFDM	pi/2 BPSK	1	1	17.62	0
				1	108	17.58	0
				1	214	17.52	0
				108	0	17.59	0.5
				108	54	17.67	0
				108	108	17.67	0.5
				216	0	17.62	0.5
			QPSK	1	1	17.67	0
				1	108	17.62	0
				1	214	17.57	0
				108	0	17.65	1
				108	54	17.66	0
				108	108	17.61	1
				216	0	17.64	1
			16QAM	1	1	17.74	1
			64QAM	1	1	17.61	1
			256QAM	1	1	17.64	1
		CP	QPSK	1	1	17.63	1

11.4.4. NR FDD Band n30 Maximum Conducted Power

NR FDD Band n30 Conducted Power_ Measured P_{max} , RSI = 1 _ Antenna B

NR FDD Band n30_ 10 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						462000	
						2310 MHz	
10 MHz	15	DFT-s OFDM	pi/2 BPSK	1	1	22.81	0
				1	26	22.83	0
				1	50	22.87	0
				25	0	22.42	0.5
				25	14	22.86	0
				25	27	22.42	0.5
			QPSK	50	0	22.41	0.5
				1	1	22.98	0
				1	26	23.02	0
				1	50	22.54	0
				25	0	21.98	1
				25	14	22.93	0
				25	27	21.97	1
				50	0	21.95	1
			16QAM	1	1	22.06	1
			64QAM	1	1	20.51	2.5
			256QAM	1	1	18.43	4.5
		CP	QPSK	1	1	21.50	1.5

NR FDD Band n30 Conducted Power_ Measured RSI= 0_ Antenna B

NR FDD Band n30_ 10 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						462000	
						2310 MHz	
10 MHz	15	DFT-s OFDM	pi/2 BPSK	1	1	17.04	0
				1	26	17.10	0
				1	50	17.02	0
				25	0	17.07	0.5
				25	14	17.04	0
				25	27	17.07	0.5
				50	0	17.07	0.5
			QPSK	1	1	17.16	0
				1	26	17.07	0
				1	50	17.09	0
				25	0	17.15	1
				25	14	17.10	0
				25	27	17.11	1
				50	0	17.11	1
			16QAM	1	1	17.15	1
			64QAM	1	1	17.28	1
			256QAM	1	1	17.14	1
		CP	QPSK	1	1	17.18	1.5

11.4.5. NR TDD Band n41 Maximum Conducted Power

NR TDD Band n41(PC2) Conducted Power_ Measured P_{max} , RSI = 1 _ Antenna B

NR TDD Band n41 (PC2)_100 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)				MPR [dB]
								518598 MHz		
100 MHz	30	DFT-s	pi/2 BPSK	1	1			25.42		0
				1	137			25.70		0
				1	271			25.85		0
				135	0			24.85		0.5
				135	69			25.70		0
				135	138			25.15		0.5
				270	0			25.13		0.5
			QPSK	1	1			25.40		0
				1	137			25.68		0
				1	271			25.80		0
				135	0			24.35		1
				135	69			25.69		0
				135	138			24.65		1
				270	0			24.65		1
			16QAM	1	1			24.38		1
			64QAM	1	1			22.85		2.5
			256QAM	1	1			20.76		4.5
		CP	QPSK	1	1			23.82		1.5

NR TDD Band n41(PC3) Conducted Power_ Measured P_{max} , RSI = 1 _ Antenna B

NR TDD Band n41 (PC3)_100 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)				MPR [dB]
								518598 MHz		
100 MHz	30	DFT-s	pi/2 BPSK	1	1			23.20		0
				1	137			23.37		0
				1	271			23.63		0
				135	0			22.43		0.5
				135	69			23.33		0
				135	138			22.94		0.5
				270	0			22.81		0.5
			QPSK	1	1			22.92		0
				1	137			23.34		0
				1	271			23.60		0
				135	0			21.94		1
				135	69			23.34		0
				135	138			22.44		1
				270	0			22.32		1
			16QAM	1	1			21.97		1
			64QAM	1	1			20.41		2.5
			256QAM	1	1			18.37		4.5
		CP	QPSK	1	1			22.01		1.5

NR TDD Band n41 Conducted Power_ Measured RSI = 0 _Antenna B

NR TDD Band n41 _100 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)				MPR [dB]
								518598		
								2592.99 MHz		
100 MHz	30	DFT-s	pi/2 BPSK	1	1			15.95		0
				1	137			16.01		0
				1	271			16.37		0
				135	0			15.40		0
				135	69			15.87		0
				135	138			15.58		0
				270	0			15.68		0
			QPSK	1	1			15.49		0
				1	137			15.71		0
				1	271			16.07		0
				135	0			15.39		0
				135	69			15.70		0
				135	138			15.51		0
				270	0			15.69		0
			16QAM	1	1			15.52		0
			64QAM	1	1			15.46		0
			256QAM	1	1			15.75		0
		CP	QPSK	1	1			15.50		0

11.4.6. NR TDD Band n48 Maximum Conducted Power

NR TDD Band n48 Conducted Power_ Measured P_{max} _ Antenna E

NR TDD Band n48 _ 40 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]				MPR [dB]
						638000	641666		645332	
						3570 MHz	3624.99 MHz		3679.98 MHz	
40 MHz	30	DFT-s OFDM	pi/2 BPSK	1	1	21.07	20.56		20.70	0
				1	53	21.48	20.57		21.26	0
				1	104	21.03	20.75		21.26	0
				50	0	21.37	20.45		20.83	0.5
				50	28	21.50	20.45		21.12	0
				50	56	21.36	20.62		21.33	0.5
				100	0	21.46	20.43		21.09	0.5
			QPSK	1	1	21.19	20.58		20.66	0
				1	53	21.49	20.49		21.12	0
				1	104	21.08	20.78		21.21	0
				50	0	21.37	20.45		20.84	0
				50	28	20.30	20.46		21.13	0
				50	56	21.36	20.63		21.33	0
				100	0	21.47	20.44		21.08	0
			16QAM	1	1	21.10	20.49		20.69	0
			64QAM	1	1	20.86	20.09		20.18	1
			256QAM	1	1	18.81	18.11		18.18	2
		CP	QPSK	1	1	21.17	20.49		20.69	0

NR TDD Band n48 Conducted Power_ Measured RSI = 0, RSI = 1 _ Antenna E

NR TDD Band n48 _ 40 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]				MPR [dB]
						638000	641666		645332	
						3570 MHz	3624.99 MHz		3679.98 MHz	
40 MHz	30	DFT-s OFDM	pi/2 BPSK	1	1	16.71	16.33		17.24	0
				1	53	16.77	16.21		17.13	0
				1	104	16.19	16.10		17.15	0
				50	0	16.74	16.26		17.17	0
				50	28	16.79	16.26		17.15	0
				50	56	16.56	16.05		17.08	0
				100	0	16.77	16.50		17.10	0
			QPSK	1	1	16.72	16.35		17.19	0
				1	53	16.77	16.28		17.10	0
				1	104	16.14	16.30		17.08	0
				50	0	16.75	16.25		17.19	0
				50	28	16.79	16.17		17.16	0
				50	56	16.57	16.05		17.15	0
				100	0	16.77	16.24		17.16	0
			16QAM	1	1	16.76	16.37		17.24	0
			64QAM	1	1	16.69	16.32		17.10	0
			256QAM	1	1	15.53	16.34		17.23	0
		CP	QPSK	1	1	16.76	16.08		17.18	0

11.4.7. NR FDD Band n66 Maximum Conducted Power

NR FDD Band n66 Conducted Power_ Measured P_{max} , RSI = 1 _ Antenna B

NR FDD Band n66 _ 40 Mhz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						349000	
						1745 Mhz	
40 Mhz	15	DFT-s OFDM	pi/2 BPSK	1	1	23.62	0
				1	108	24.08	0
				1	214	24.19	0
				108	0	23.31	0.5
				108	54	24.11	0
				108	108	23.68	0.5
				216	0	23.62	0.5
			QPSK	1	1	23.78	0
				1	108	24.19	0
				1	214	24.28	0
				108	0	22.87	1
				108	54	24.17	0
				108	108	23.23	1
				216	0	23.12	1
			16QAM	1	1	22.79	1
			64QAM	1	1	21.37	2.5
			256QAM	1	1	19.15	4.5
		CP	QPSK	1	1	22.14	1.5

NR FDD Band n66 Conducted Power_ Measured RSI = 0 _ Antenna B

NR FDD Band n66 _ 40 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						349000	
						1745 MHz	
40 MHz	15	DFT-s OFDM	pi/2 BPSK	1	1	19.35	0
				1	108	19.47	0
				1	214	19.59	0
				108	0	19.21	0
				108	54	19.41	0
				108	108	19.63	0
				216	0	19.37	0
			QPSK	1	1	19.39	0
				1	108	19.48	0
				1	214	19.64	0
				108	0	19.28	0
				108	54	19.43	0
				108	108	19.64	0
				216	0	19.37	0
			16QAM	1	1	19.49	0
			64QAM	1	1	19.45	0
			256QAM	1	1	18.62	1
		CP	QPSK	1	1	19.47	0

NR FDD Band n66 Conducted Power_ Measured Pmax_ Antenna D

NR FDD Band n66 _ 40 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
							349000		
							1745 MHz		
40 MHz	15	DFT-s OFDM	pi/2 BPSK	1	1		23.06		0
				1	108		23.33		0
				1	214		23.26		0
				108	0		22.61		0.5
				108	54		23.30		0
				108	108		22.85		0.5
			QPSK	216	0		22.82		0.5
				1	1		23.39		0
				1	108		23.40		0
				1	214		23.33		0
				108	0		22.22		1
				108	54		23.39		0
				108	108		22.45		1
				216	0		22.37		1
			16QAM	1	1		22.46		1
			64QAM	1	1		20.84		2.5
			256QAM	1	1		18.62		4.5
		CP	QPSK	1	1		21.86		1.5

NR FDD Band n66 Conducted Power_ Measured RSI = 0, RSI = 1 _ Antenna D

NR FDD Band n66 _ 40 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						349000	
						1745 MHz	
40 MHz	15	DFT-s OFDM	pi/2 BPSK	1	1	19.03	0
				1	108	19.31	0
				1	214	19.16	0
				108	0	19.08	0
				108	54	19.22	0
				108	108	19.32	0
				216	0	19.14	0
			QPSK	1	1	19.17	0
				1	108	19.31	0
				1	214	19.27	0
				108	0	19.05	0
				108	54	19.26	0
				108	108	19.32	0
				216	0	19.20	0
			16QAM	1	1	19.32	0
			64QAM	1	1	19.17	0
			256QAM	1	1	19.11	0
		CP	QPSK	1	1	19.45	0

11.4.8. NR FDD Band n71 Maximum Conducted Power

NR FDD Band n71 Conducted Power_ Measured Pmax, RSI = 1 _ Antenna A

NR FDD Band n71 _ 20 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)	MPR [dB]
						136100	
						680.5 MHz	
20 MHz	15	DFT-s OFDM	pi/2 BPSK	1	1	24.40	0
				1	53	24.81	0
				1	104	24.77	0
				50	0	24.11	0.5
				50	28	24.69	0
				50	56	24.32	0.5
				100	0	24.22	0.5
			QPSK	1	1	24.54	0
				1	53	24.86	0
				1	104	24.85	0
				50	0	23.65	1
				50	28	24.75	0
				50	56	23.85	1
				100	0	23.76	1
			16QAM	1	1	23.54	1
			64QAM	1	1	22.09	2.5
			256QAM	1	1	19.95	4.5
		CP	QPSK	1	1	23.06	1.5

NR FDD Band n71 Conducted Power_ Measured RSI = 0 _ Antenna A

NR FDD Band n71 _ 20 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)	MPR [dB]
						136100	
						680.5 MHz	
20 MHz	15	DFT-s OFDM	pi/2 BPSK	1	1	18.95	0
				1	53	19.10	0
				1	104	18.65	0
				50	0	18.97	0
				50	28	18.92	0
				50	56	18.83	0
				100	0	18.92	0
			QPSK	1	1	18.93	0
				1	53	18.96	0
				1	104	18.66	0
				50	0	18.98	0
				50	28	18.92	0
				50	56	18.80	0
				100	0	18.95	0
			16QAM	1	1	18.99	0
			64QAM	1	1	19.00	0
			256QAM	1	1	18.87	0
		CP	QPSK	1	1	18.93	0

11.4.9. NR TDD Band n77 Maximum Conducted Power

NR TDD Band n77(PC2) Conducted Power_ Measured Pmax _ Antenna E

NR TDD Band n77(PC2)_ 100 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)					MPR [dB]
						650000				662000	
						3 750 MHz				3 930 MHz	
100 MHz	30	DFT-s OFDM	pi/2 BPSK	1	1	25.78				25.94	0
				1	137	26.13				26.07	0
				1	271	25.78				25.60	0
				135	0	24.98				25.11	0.5
				135	69	26.13				26.11	0
				135	138	25.05				24.73	0.5
				270	0	25.65				25.64	0.5
			QPSK	1	1	25.83				25.92	0
				1	137	26.18				26.10	0
				1	271	25.81				25.62	0
				135	0	24.49				24.62	1
				135	69	26.16				26.12	0
				135	138	24.57				24.24	1
				270	0	25.17				25.17	1
			16QAM	1	1	24.69				24.91	1
			64QAM	1	1	23.34				23.41	2.5
			256QAM	1	1	21.35				21.54	4.5
		CP	QPSK	1	1	24.32				24.46	1.5

NR TDD Band n77(PC2) Conducted Power_ Measured Pmax _ Antenna E

NR TDD Band n77(PC2)_ 100 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)					MPR [dB]
						650000				662000	
						3 750 MHz				3 930 MHz	
100 MHz	30	DFT-s OFDM	pi/2 BPSK	1	1	23.54				23.53	0
				1	137	23.70				23.72	0
				1	271	23.28				23.53	0
				135	0	23.40				23.33	0.5
				135	69	23.72				23.72	0
				135	138	22.65				22.66	0.5
				270	0	23.25				23.22	0.5
			QPSK	1	1	23.55				23.51	0
				1	137	23.71				23.71	0
				1	271	23.27				23.53	0
				135	0	22.90				22.85	1
				135	69	23.73				23.73	0
				135	138	22.13				22.17	1
				270	0	22.76				22.72	1
			16QAM	1	1	22.55				22.51	1
			64QAM	1	1	21.04				21.13	2.5
			256QAM	1	1	19.02				19.05	4.5
		CP	QPSK	1	1	22.00				22.00	1.5

NR TDD Band n77 Conducted Power_ Measured RSI = 0, RSI = 1 _ Antenna E

NR TDD Band n77_ 100 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)					MPR [dB]
						650000				662000	
						3750 MHz				3930 MHz	
100 MHz	30	DFT-s OFDM	pi/2 BPSK	1	1	15.78				15.69	0
				1	137	15.33				15.22	0
				1	271	15.37				15.05	0
				135	0	16.11				15.74	0
				135	69	15.30				15.19	0
				135	138	15.12				15.13	0
				270	0	15.29				15.22	0
			QPSK	1	1	15.77				15.67	0
				1	137	15.32				15.21	0
				1	271	15.36				15.03	0
				135	0	16.13				15.75	0
				135	69	15.31				15.21	0
				135	138	15.31				15.11	0
				270	0	15.31				15.25	0
			16QAM	1	1	15.70				15.64	0
			64QAM	1	1	15.83				15.83	0
			256QAM	1	1	15.78				15.68	0
		CP	QPSK	1	1	15.76				15.69	0

11.4.10. NR TDD Band n77 DoD Maximum Conducted Power

NR TDD Band n77 DoD(PC2) Conducted Power_ Measured Pmax_ Antenna E

NR TDD Band n77 DoD(PC2)_100 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
							633334		
100MHz	30	DFT-s	pi/2 BPSK	1	1		3500.01 MHz		0
				1	137		25.70		0
				1	271		25.55		0
				1	271		25.33		0
				135	0		24.64		0.5
				135	69		25.56		0
				135	138		25.05		0.5
				270	0		25.11		0.5
			QPSK	1	1		25.74		0
				1	137		25.58		0
				1	271		25.37		0
				135	0		24.17		1
				135	69		25.58		0
				135	138		24.57		1
				270	0		24.64		1
			16QAM	1	1		24.79		1
			64QAM	1	1		23.46		2.5
			256QAM	1	1		21.24		4.5
		CP	QPSK	1	1		24.28		1.5

NR TDD Band n77 DoD(PC3) Conducted Power_ Measured Pmax_ Antenna E

NR TDD Band n77 DoD(PC3)_100 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
							633334		
							3500.01 MHz		
100MHz	30	DFT-s	pi/2 BPSK	1	1		23.07		0
				1	137		23.12		0
				1	271		23.52		0
				135	0		22.22		0.5
				135	69		23.17		0
				135	138		22.73		0.5
				270	0		22.63		0.5
			QPSK	1	1		23.05		0
				1	137		23.18		0
				1	271		23.45		0
				135	0		21.81		1
				135	69		23.19		0
				135	138		22.25		1
				270	0		22.18		1
			16QAM	1	1		22.15		1
			64QAM	1	1		20.56		2.5
			256QAM	1	1		18.59		4.5
		CP	QPSK	1	1		21.04		1.5

NR TDD Band n77 DoD Conducted Power_ Measured RSI = 0, RSI = 1 _ Antenna E

NR TDD Band n77 DoD_100 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)		MPR [dB]
							633334	
							3500.01 MHz	
100 MHz	30	DFT-s	pi/2 BPSK	1	1		15.22	0
				1	137		15.94	0
				1	271		15.82	0
				135	0		15.57	0
				135	69		15.90	0
				135	138		15.82	0
				270	0		15.84	0
			QPSK	1	1		15.25	0
				1	137		15.88	0
				1	271		15.75	0
				135	0		15.57	0
				135	69		15.88	0
				135	138		15.84	0
				270	0		15.84	0
			16QAM	1	1		15.30	0
			64QAM	1	1		15.38	0
			256QAM	1	1		15.18	0
		CP	QPSK	1	1		15.26	0

11.4.11. NR TDD Band n78 Maximum Conducted Power

NR TDD Band n78 Conducted Power_ Measured Pmax_ Antenna E

NR TDD Band n78_100 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
							650000		
							3750 MHz		
100 MHz	30	DFT-s	pi/2 BPSK	1	1		23.24		0
				1	137		23.58		0
				1	271		23.26		0
				135	0		22.41		0.5
				135	69		23.59		0
				135	138		22.52		0.5
				270	0		23.11		0.5
			QPSK	1	1		23.25		0
				1	137		23.66		0
				1	271		23.30		0
				135	0		21.95		1
				135	69		23.61		0
				135	138		22.03		1
				270	0		22.63		1
			16QAM	1	1		22.25		1
			64QAM	1	1		20.81		2.5
			256QAM	1	1		18.70		4.5
		CP	QPSK	1	1		21.74		1.5

NR TDD Band n78 Conducted Power_ Measured RSI = 0, RSI = 1 _ Antenna E

NR TDD Band n78 _100 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
							650000		
							3750 MHz		
100 MHz	30	DFT-s	pi/2 BPSK	1	1		15.78		0
				1	137		15.37		0
				1	271		15.42		0
				135	0		16.14		0
				135	69		15.31		0
				135	138		15.97		0
				270	0		15.35		0
			QPSK	1	1		15.78		0
				1	137		15.32		0
				1	271		15.36		0
				135	0		16.12		0
				135	69		15.30		0
				135	138		15.31		0
				270	0		15.32		0
			16QAM	1	1		15.97		0
			64QAM	1	1		15.86		0
			256QAM	1	1		15.75		0
		CP	QPSK	1	1		15.77		0

11.4.12. NR TDD Band n78 DoD Maximum Conducted Power

NR TDD Band n78 DoD Conducted Power_ Measured Pmax_ Antenna E

NR TDD Band n78 DoD_100 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
							633334		
							3500.01 MHz		
100 MHz	30	DFT-s	pi/2 BPSK	1	1		23.00		0
				1	137		22.86		0
				1	271		22.65		0
				135	0		21.95		0.5
				135	69		22.86		0
				135	138		22.36		0.5
				270	0		22.42		0.5
			QPSK	1	1		23.03		0
				1	137		22.90		0
				1	271		22.67		0
				135	0		21.46		1
				135	69		22.88		0
				135	138		21.88		1
				270	0		21.93		1
			16QAM	1	1		22.20		1
			64QAM	1	1		20.55		2.5
			256QAM	1	1		18.49		4.5
		CP	QPSK	1	1		21.50		1.5

NR TDD Band n78 DoD Conducted Power_ Measured RSI = 0, RSI = 1 _Antenna E

NR TDD Band n78 DoD_100 MHz Bandwidth Conducted Power

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
							633334		
							3500.01 MHz		
100MHz	30	DFT-s	pi/2 BPSK	1	1		15.24		0
				1	137		15.93		0
				1	271		15.82		0
				135	0		15.59		0
				135	69		15.91		0
				135	138		15.84		0
				270	0		15.89		0
			QPSK	1	1		15.30		0
				1	137		15.98		0
				1	271		15.84		0
				135	0		15.58		0
				135	69		15.92		0
				135	138		15.83		0
				270	0		15.87		0
			16QAM	1	1		15.38		0
			64QAM	1	1		15.25		0
			256QAM	1	1		15.22		0
		CP	QPSK	1	1		15.29		0

11.4.3 NR Band SRS Conducted Power

[NR TDD Band n48 SRS Conducted Power]

Measured Pmax Conducted Power

NR TDD Band n48_ 40 MHz Bandwidth Conducted Power_ Antenna: Sub6(Ant H), SRS2

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]			MPR [dB]
			638000	641666	645334	
			3570 MHz	3624.99 MHz	3680.01 MHz	
40 MHz	30	CW	18.54	18.35	18.61	0

NR TDD Band n48_ 40 MHz Bandwidth Conducted Power_ Antenna: Main2(Ant H), SRS3

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]			MPR [dB]
			638000	641666	645334	
			3570 MHz	3624.99 MHz	3680.01 MHz	
40 MHz	30	CW	19.31	19.03	19.84	0

NR TDD Band n48_ 40 MHz Bandwidth Conducted Power_ Antenna: Sub7(Ant I), SRS4

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]			MPR [dB]
			638000	641666	645334	
			3570 MHz	3624.99 MHz	3680.01 MHz	
40 MHz	30	CW	18.25	18.21	18.75	0

Measured RSI0,1

NR TDD Band n48_ 40 MHz Bandwidth Conducted Power_ Antenna: Sub6(Ant H), SRS2

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]			MPR [dB]
			638000	641666	645334	
			3570 MHz	3624.99 MHz	3680.01 MHz	
40 MHz	30	CW	13.79	13.54	14.19	0

NR TDD Band n48_ 40 MHz Bandwidth Conducted Power_ Antenna: Main2(Ant H), SRS3

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]			MPR [dB]
			638000	641666	645334	
			3570 MHz	3624.99 MHz	3680.01 MHz	
40 MHz	30	CW	14.11	13.93	14.91	0

NR TDD Band n48_ 40 MHz Bandwidth Conducted Power_ Antenna: Sub7(Ant I), SRS4

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]			MPR [dB]
			638000	641666	645334	
			3570 MHz	3624.99 MHz	3680.01 MHz	
40 MHz	30	CW	13.34	13.11	13.92	0

[NR TDD Band n77 SRS Conducted Power]

Measured Pmax Conducted Power_PC2

NR TDD Band n77_100 MHz Bandwidth Conducted Power_Antenna: Sub6(Ant H), SRS2

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]		MPR [dB]
			650000	662000	
			3750 MHz	3930 MHz	
100 MHz	30	CW	22.53	22.04	0

NR TDD Band n77_100 MHz Bandwidth Conducted Power_Antenna: Main2(Ant H), SRS3

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]		MPR [dB]
			650000	662000	
			3750 MHz	3930 MHz	
100 MHz	30	CW	23.54	23.70	0

NR TDD Band n77_100 MHz Bandwidth Conducted Power_Antenna: Sub7(Ant I), SRS4

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]		MPR [dB]
			650000	662000	
			3750 MHz	3930 MHz	
100 MHz	30	CW	22.67	21.74	0

Measured RSI0,1

NR TDD Band n77_100 MHz Bandwidth Conducted Power_Antenna: Sub6(Ant H), SRS2

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]		MPR [dB]
			650000	662000	
			3750 MHz	3930 MHz	
100 MHz	30	CW	13.82	13.23	0

NR TDD Band n77_100 MHz Bandwidth Conducted Power_Antenna: Main2(Ant H), SRS3

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]		MPR [dB]
			650000	662000	
			3750 MHz	3930 MHz	
100 MHz	30	CW	14.81	15.43	0

NR TDD Band n77_100 MHz Bandwidth Conducted Power_Antenna: Sub7(Ant I), SRS4

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]		MPR [dB]
			650000	662000	
			3750 MHz	3930 MHz	
100 MHz	30	CW	13.48	13.22	0

[NR TDD Band n77 DoD SRS Conducted Power]

Measured Pmax Conducted Power_PC2

NR TDD Band n77_100 MHz Bandwidth Conducted Power_Antenna: Sub6(Ant H), SRS2

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]	MPR [dB]
			633334	
			3500.01 MHz	
100 MHz	30	CW	22.15	0

NR TDD Band n77_100 MHz Bandwidth Conducted Power_Antenna: Main2(Ant H), SRS3

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]	MPR [dB]
			633334	
			3500.01 MHz	
100 MHz	30	CW	22.47	0

NR TDD Band n77_100 MHz Bandwidth Conducted Power_Antenna: Sub7(Ant I), SRS4

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]	MPR [dB]
			633334	
			3500.01 MHz	
100 MHz	30	CW	21.43	0

Measured RSI0,1

NR TDD Band n77_100 MHz Bandwidth Conducted Power_Antenna: Sub6(Ant H), SRS2

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]	MPR [dB]
			633334	
			3500.01 MHz	
100 MHz	30	CW	12.18	0

NR TDD Band n77_100 MHz Bandwidth Conducted Power_Antenna: Main2(Ant H), SRS3

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]	MPR [dB]
			633334	
			3500.01 MHz	
100 MHz	30	CW	13.85	0

NR TDD Band n77_100 MHz Bandwidth Conducted Power_Antenna: Sub7(Ant I), SRS4

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]	MPR [dB]
			633334	
			3500.01 MHz	
100 MHz	30	CW	11.57	0

[NR TDD Band n78 SRS Conducted Power]

Measured Pmax Conducted Power

NR TDD Band n78_100 MHz Bandwidth Conducted Power_Antenna: Sub6(Ant H), SRS2

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]	MPR [dB]
			650000	
			3750 MHz	
100 MHz	30	CW	20.97	0

NR TDD Band n78_100 MHz Bandwidth Conducted Power_Antenna: Main2(Ant H), SRS3

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]	MPR [dB]
			650000	
			3750 MHz	
100 MHz	30	CW	21.49	0

NR TDD Band n78_100 MHz Bandwidth Conducted Power_Antenna: Sub7(Ant I), SRS4

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]	MPR [dB]
			650000	
			3750 MHz	
100 MHz	30	CW	20.72	0

Measured RSI0,1

NR TDD Band n78_100 MHz Bandwidth Conducted Power_Antenna: Sub6(Ant H), SRS2

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]	MPR [dB]
			650000	
			3750 MHz	
100 MHz	30	CW	13.91	0

NR TDD Band n78_100 MHz Bandwidth Conducted Power_Antenna: Main2(Ant H), SRS3

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]	MPR [dB]
			650000	
			3750 MHz	
100 MHz	30	CW	14.66	0

NR TDD Band n78_100 MHz Bandwidth Conducted Power_Antenna: Sub7(Ant I), SRS4

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]	MPR [dB]
			650000	
			3750 MHz	
100 MHz	30	CW	13.42	0

[NR TDD Band n78 DoD SRS Conducted Power]

Measured Pmax Conducted Power

NR TDD Band n78_100 MHz Bandwidth Conducted Power_Antenna: Sub6(Ant H), SRS2

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]	MPR [dB]
			633334	
			3500.01 MHz	
100 MHz	30	CW	20.14	0

NR TDD Band n78_100 MHz Bandwidth Conducted Power_Antenna: Main2(Ant H), SRS3

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]	MPR [dB]
			633334	
			3500.01 MHz	
100 MHz	30	CW	20.44	0

NR TDD Band n78_100 MHz Bandwidth Conducted Power_Antenna: Sub7(Ant I), SRS4

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]	MPR [dB]
			633334	
			3500.01 MHz	
100 MHz	30	CW	19.43	0

Measured RSI0,1

NR TDD Band n78_100 MHz Bandwidth Conducted Power_Antenna: Sub6(Ant H), SRS2

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]	MPR [dB]
			633334	
			3500.01 MHz	
100 MHz	30	CW	12.06	0

NR TDD Band n78_100 MHz Bandwidth Conducted Power_Antenna: Main2(Ant H), SRS3

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]	MPR [dB]
			633334	
			3500.01 MHz	
100 MHz	30	CW	13.78	0

NR TDD Band n78_100 MHz Bandwidth Conducted Power_Antenna: Sub7(Ant I), SRS4

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]	MPR [dB]
			633334	
			3500.01 MHz	
100 MHz	30	CW	11.52	0

[NR TDD Band n77 SRS Conducted Power]

Measured Pmax Conducted Power_PC3

NR TDD Band n77_100 MHz Bandwidth Conducted Power_Antenna: Sub6(Ant H), SRS2

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]		MPR [dB]
			650000	662000	
			3750 MHz	3930 MHz	
100 MHz	30	CW	21.53	21.07	0

NR TDD Band n77_100 MHz Bandwidth Conducted Power_Antenna: Main2(Ant H), SRS3

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]		MPR [dB]
			650000	662000	
			3750 MHz	3930 MHz	
100 MHz	30	CW	22.41	22.32	0

NR TDD Band n77_100 MHz Bandwidth Conducted Power_Antenna: Sub7(Ant I), SRS4

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]		MPR [dB]
			650000	662000	
			3750 MHz	3930 MHz	
100 MHz	30	CW	21.67	20.74	0

[NR TDD Band n77 DoD SRS Conducted Power]

Measured Pmax Conducted Power_PC3

NR TDD Band n77_100 MHz Bandwidth Conducted Power_Antenna: Sub6(Ant H), SRS2

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]		MPR [dB]
			633334		
			3500.01 MHz		
100 MHz	30	CW	20.78		0

NR TDD Band n77_100 MHz Bandwidth Conducted Power_Antenna: Main2(Ant H), SRS3

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]		MPR [dB]
			633334		
			3500.01 MHz		
100 MHz	30	CW	20.98		0

NR TDD Band n77_100 MHz Bandwidth Conducted Power_Antenna: Sub7(Ant I), SRS4

Bandwidth	SCS(kHz)	Modulation	Max. Average Power [dBm]		MPR [dB]
			633334		
			3500.01 MHz		
100 MHz	30	CW	20.49		0

11.5 WIFI Conducted Power measurement method

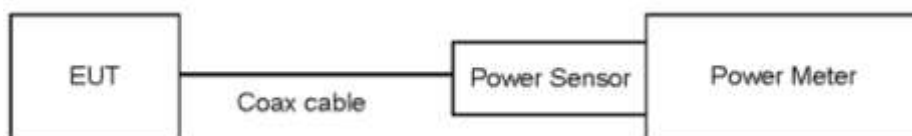
Un-Licensed Bands (DTS Band)

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



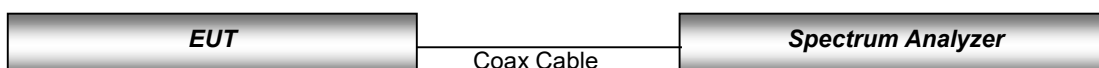
Un-Licensed Bands (NII Band)

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 GHz) Maximum and Reduced Conducted Power

Mode	Frequency [MHz]	Channel	P Max
			IEEE 802.11 (2.4 GHz) Average RF Conducted Power [dBm]
			WIFI 1
802.11b	2 412	1	18.76
	2 437	6	19.18
	2 462	11	18.96

Mode	Frequency [MHz]	Channel	Body
			IEEE 802.11 (2.4 GHz) Average RF Conducted Power [dBm]
			WIFI 1
802.11b	2 412	1	13.93
	2 437	6	14.93
	2 462	11	14.68

Mode	Frequency [MHz]	Channel	RCV ON
			IEEE 802.11 (2.4 GHz) Average RF Conducted Power [dBm]
			WIFI 1
802.11b	2 412	1	15.75
	2 437	6	16.79
	2 462	11	15.98

11.5.2 IEEE 802.11 (5 GHz) Maximum and Reduced Conducted Power

Frequency [MHz]	Channel	P Max
		IEEE 802.11 n (40 MHz BW) Conducted Power [dBm]
		Ant.1
5 190	38	14.02
5 230	46	14.61
5 270	54	14.06
5 310	62	13.70
5 510	102	14.16
5 500	110	14.01
5 710	142	14.19
5 755	151	14.06
5 795	159	14.04
5 835	167	13.16
5 875	175	14.01

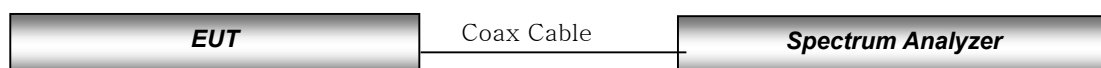
Frequency [MHz]	Channel	Plimit (RCV ON, Body)
		IEEE 802.11 n (40 MHz BW) Conducted Power [dBm]
		Ant.1
5 190	38	13.99
5 230	46	13.97
5 270	54	13.61
5 310	62	13.70
5 510	102	13.96
5 590	118	13.91
5 630	126	13.92
5 710	142	13.86
5 755	151	13.74
5 795	159	13.65
5 835	167	13.01
5 875	175	13.84

Note:

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 Maximum Conducted Power

11.6.1 Bluetooth Maximum Conducted Power Pmax

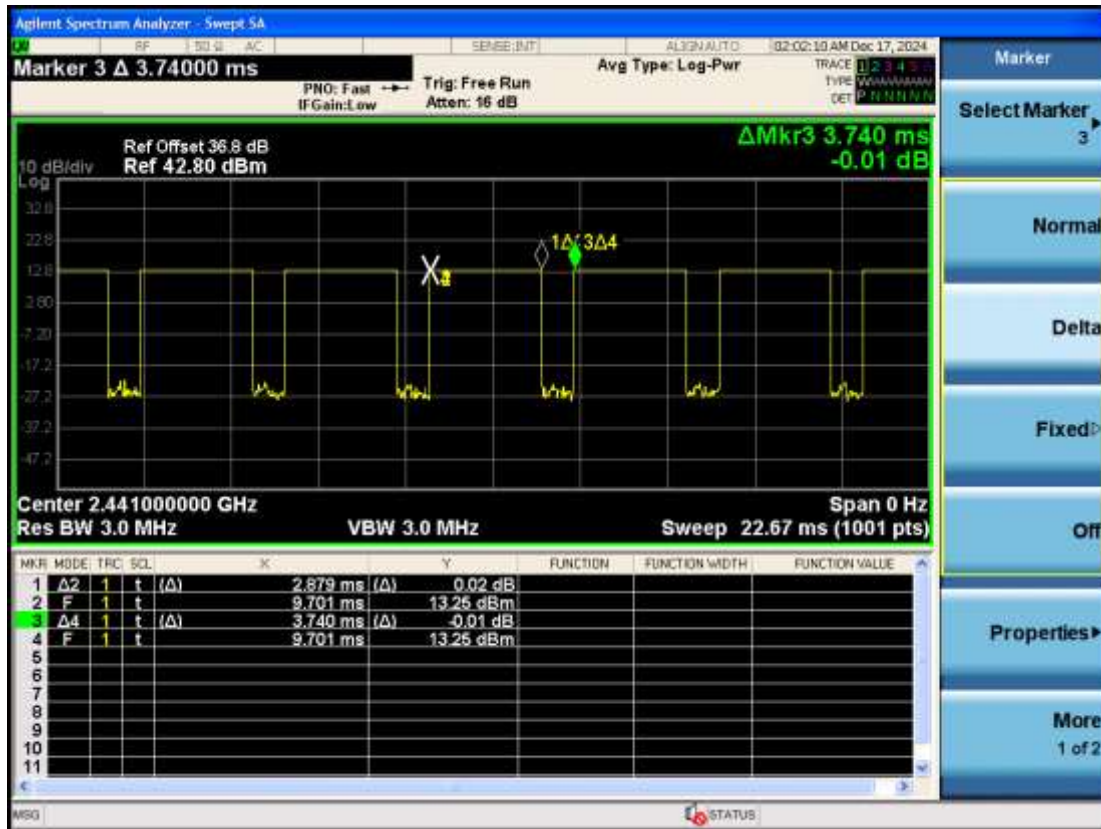
The Burst Averaged-conducted power

Mode	Channel	Max. Average Conducted Power [dBm]
		Ant.1
DH5	0	11.13
	39	11.03
	78	11.85
2-DH5	0	8.01
	39	8.52
	78	7.15
3-DH5	0	7.92
	39	8.49
	78	7.73

The Burst Averaged-conducted power

Mode	Channel	Max. Average Conducted Power [dBm]
		Ant.1
1M 37 Packet	37	11.26
	17	11.13
	39	11.93
1M 255 Packet	37	11.18
	17	11.10
	39	11.84
2M 37 Packet	0	11.59
	17	11.13
	36	12.36
2M 255 Packet	0	11.59
	17	11.11
	36	12.34
125K 37 Packet	37	11.28
	17	11.08
	39	12.02
125K 255 Packet	37	11.23
	17	11.13
	39	11.96
500K 37 Packet	37	11.32
	17	11.16
	39	12.07
500K 255 Packet	37	11.28
	17	11.12
	39	11.88

Bluetooth DH 5 Mode



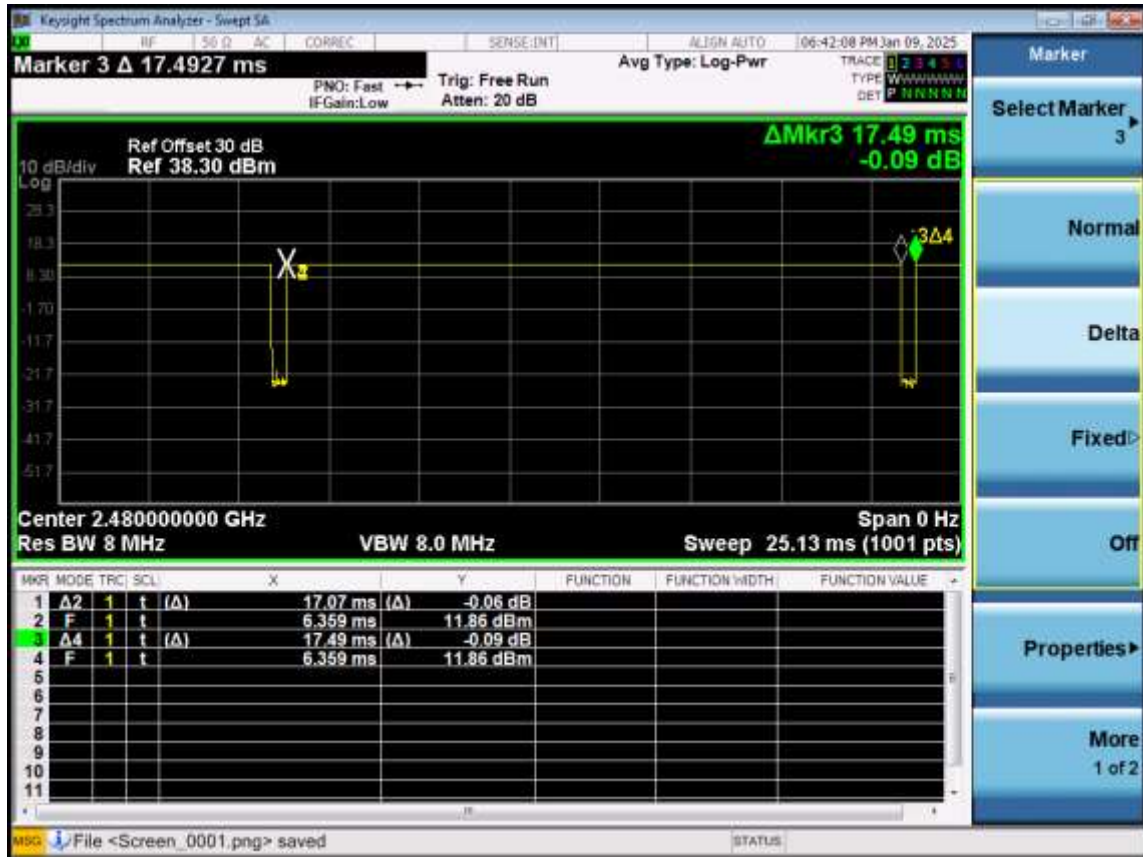
Duty Cycle

$$= (\text{BT-On time} / \text{BT-Full time}) = (2.879 / 3.740) = 0.770 \text{ (DH5)}$$

BT DH5 Maximum Duty Factor:

The theoretical maximum duty cycle defined by chipset manufacturer is 79.0 %. 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 77.0%, 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 125K Mode



Duty Cycle

$$= (\text{BT-On time} / \text{BT-Full time}) = (17.07 / 17.49) = 0.976 \text{ (125K)}$$

BT LE 125k(255) Maximum Duty Factor:

The theoretical maximum duty cycle defined by chipset manufacturer is 97.5 % 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 97.6%, 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.

◆ GSM/ UMTS/ LTE/ WLAN/ NFC Band

Table for Head Tissue Verification									
Date of Tests	Tissue Temp. (°C)	Tissue Type	Freq. (MHz)	Measured Conductivity σ (S/m)	Measured Dielectric Constant, ϵ	Target Conductivity σ (S/m)	Target Dielectric Constant, ϵ	% dev σ	% dev ϵ
01/07/2025	23.3	13H	12	0.730	54.360	0.750	55.000	- 2.67	- 1.16
			13	0.735	54.500	0.750	55.000	- 2.00	- 0.91
			14	0.740	54.500	0.750	55.000	- 1.33	- 0.91
12/06/2024	20.9	750H	705	0.858	43.300	0.889	42.174	- 3.49	+ 2.67
			710	0.863	43.200	0.890	42.148	- 3.03	+ 2.50
			750	0.906	42.640	0.893	41.940	+ 1.46	+ 1.67
12/03/2024	20.3	750H	705	0.869	41.140	0.889	42.174	- 2.25	- 2.45
			710	0.871	41.120	0.890	42.148	- 2.13	- 2.44
			750	0.905	40.430	0.893	41.940	+ 1.34	- 3.60
12/09/2024	20.9	750H	750	0.905	42.450	0.893	41.940	+ 1.34	+ 1.22
			785	0.931	41.950	0.896	41.758	+ 3.91	+ 0.46
12/10/2024	20.1	750H	750	0.905	42.440	0.893	41.940	+ 1.34	+ 1.19
			785	0.931	41.960	0.896	41.758	+ 3.91	+ 0.48
12/19/2024	21.2	835H	820	0.927	42.350	0.899	41.577	+ 3.11	+ 1.86
			835	0.932	42.300	0.900	41.500	+ 3.56	+ 1.93
			850	0.938	42.250	0.916	41.500	+ 2.38	+ 1.81
12/09/2024	21.4	835H	820	0.907	40.570	0.899	41.577	+ 0.89	- 2.42
			835	0.924	40.340	0.900	41.500	+ 2.67	- 2.80
			850	0.940	40.110	0.916	41.500	+ 2.62	- 3.35
12/05/2024	21.3	835H	820	0.906	41.590	0.899	41.577	+ 0.78	+ 0.03
			835	0.922	41.300	0.900	41.500	+ 2.44	- 0.48
			850	0.936	41.070	0.916	41.500	+ 2.18	- 1.04
12/07/2024	22.3	1800H	1710	1.304	40.550	1.348	40.144	- 3.26	+ 1.01
			1750	1.342	40.450	1.371	40.080	- 2.12	+ 0.92
			1800	1.387	40.300	1.400	40.000	- 0.93	+ 0.75
12/16/2024	21.3	1800H	1710	1.331	41.260	1.348	40.144	- 1.26	+ 2.78
			1750	1.372	41.100	1.371	40.080	+ 0.07	+ 2.54
			1800	1.425	40.870	1.400	40.000	+ 1.79	+ 2.18
12/17/2024	20.8	1800H	1710	1.311	39.790	1.348	40.144	- 2.74	- 0.88
			1750	1.346	39.690	1.371	40.080	- 1.82	- 0.97
			1800	1.394	39.530	1.400	40.000	- 0.43	- 1.18
12/30/2024	19.5	1900H	1850	1.394	39.350	1.400	40.000	- 0.43	- 1.63
			1900	1.444	39.140	1.400	40.000	+ 3.14	- 2.15
			1910	1.454	39.100	1.400	40.000	+ 3.86	- 2.25

Date of Tests	Tissue Temp. (°C)	Tissue Type	Freq. (MHz)	Measured Conductivity σ (S/m)	Measured Dielectric Constant, ϵ	Target Conductivity σ (S/m)	Target Dielectric Constant, ϵ	% dev σ	% dev ϵ
12/10/2024	20.6	1900H	1850	1.393	40.260	1.400	40.000	- 0.50	+ 0.65
			1900	1.448	40.100	1.400	40.000	+ 3.43	+ 0.25
			1910	1.455	40.080	1.400	40.000	+ 3.93	+ 0.20
12/18/2024	21.8	1900H	1850	1.397	40.230	1.400	40.000	- 0.21	+ 0.57
			1900	1.452	40.070	1.400	40.000	+ 3.71	+ 0.17
			1910	1.458	40.050	1.400	40.000	+ 4.14	+ 0.13
12/12/2024	19.2	1900H	1850	1.363	40.670	1.400	40.000	- 2.64	+ 1.68
			1900	1.411	40.460	1.400	40.000	+ 0.79	+ 1.15
			1910	1.421	40.410	1.400	40.000	+ 1.50	+ 1.02
12/04/2024	21.1	2300H	2300	1.692	39.110	1.667	39.470	+ 1.50	- 0.91
			2310	1.701	39.070	1.676	39.452	+ 1.49	- 0.97
12/07/2024	21.0	2450H	2400	1.720	39.240	1.756	39.290	- 2.05	- 0.13
			2450	1.786	39.940	1.800	39.200	- 0.78	+ 1.89
			2500	1.897	40.520	1.855	39.140	+ 2.26	+ 3.53
12/27/2024	21.0	2450H	2400	1.679	38.920	1.756	39.290	- 4.38	- 0.94
			2450	1.744	39.630	1.800	39.200	- 3.11	+ 1.10
			2500	1.855	40.210	1.855	39.140	0.00	+ 2.73
12/11/2024	21.1	2600H	2500	1.878	39.300	1.855	39.140	+ 1.24	+ 0.41
			2600	2.006	39.160	1.964	39.010	+ 2.14	+ 0.38
			2690	2.114	38.340	2.062	38.894	+ 2.52	- 1.42
12/17/2024	20.9	2600H	2500	1.775	39.590	1.855	39.140	- 4.31	+ 1.15
			2600	2.046	39.620	1.964	39.010	+ 4.18	+ 1.56
			2690	2.112	38.330	2.062	38.894	+ 2.42	- 1.45
12/20/2024	20.7	3500H-3700H	3500	2.857	36.590	2.913	37.930	- 1.92	- 3.53
			3550	2.896	36.510	2.964	37.870	- 2.29	- 3.59
			3650	2.969	36.370	3.066	37.760	- 3.16	- 3.68
			3700	3.005	36.270	3.118	37.770	- 3.62	- 3.97
12/30/2024	20.0	5180H-5320H	5180	4.532	34.970	4.635	36.010	- 2.22	- 2.89
			5250	4.620	34.720	4.706	35.930	- 1.83	- 3.37
			5280	4.662	34.650	4.737	35.894	- 1.58	- 3.47
			5320	4.720	34.620	4.778	35.846	- 1.21	- 3.42
12/31/2024	20.9	5180H-5320H	5180	4.588	35.320	4.635	36.010	- 1.01	- 1.92
			5250	4.677	35.070	4.706	35.930	- 0.62	- 2.39
			5280	4.721	35.010	4.737	35.894	- 0.34	- 2.46
			5320	4.779	34.970	4.778	35.846	+ 0.02	- 2.44

Date of Tests	Tissue Temp. (°C)	Tissue Type	Freq. (MHz)	Measured Conductivity σ (S/m)	Measured Dielectric Constant, ϵ	Target Conductivity σ (S/m)	Target Dielectric Constant, ϵ	% dev σ	% dev ϵ
12/20/2024	20.0	5500H-5600H	5500	4.878	34.470	4.963	35.640	- 1.71	- 3.28
			5600	4.970	34.270	5.065	35.530	- 1.88	- 3.55
			5750	5.187	34.120	5.219	35.360	- 0.61	- 3.51
12/31/2024	20.9	5500H-5600H	5500	4.938	34.810	4.963	35.640	- 0.50	- 2.33
			5600	5.032	34.620	5.065	35.530	- 0.65	- 2.56
			5750	5.252	34.470	5.219	35.360	+ 0.63	- 2.52
12/20/2024	20.0	5750H-5825H	5750	5.187	34.120	5.219	35.360	- 0.61	- 3.51
			5800	5.129	34.110	5.270	35.300	- 2.68	- 3.37
			5825	5.103	34.070	5.296	35.270	- 3.64	- 3.40
12/31/2024	20.9	5750H-5825H	5750	5.252	34.470	5.219	35.360	+ 0.63	- 2.52
			5800	5.193	34.470	5.270	35.300	- 1.46	- 2.35
			5825	5.166	34.420	5.296	35.270	- 2.45	- 2.41
12/20/2024	20.0	5800H-5885H	5800	5.129	34.110	5.270	35.300	- 2.68	- 3.37
			5835	5.095	34.040	5.306	35.258	- 3.98	- 3.45
			5845	5.090	34.000	5.316	35.246	- 4.25	- 3.54
			5855	5.090	33.960	5.326	35.235	- 4.43	- 3.62
			5865	5.088	33.960	5.337	35.225	- 4.67	- 3.59
			5875	5.092	33.870	5.347	35.215	- 4.77	- 3.82
			5885	5.098	33.820	5.357	35.205	- 4.83	- 3.93
12/31/2024	20.9	5800H-5885H	5800	5.193	34.470	5.270	35.300	- 1.46	- 2.35
			5835	5.160	34.400	5.306	35.258	- 2.75	- 2.43
			5845	5.152	34.360	5.316	35.246	- 3.09	- 2.51
			5855	5.150	34.320	5.326	35.235	- 3.30	- 2.60
			5865	5.150	34.270	5.337	35.225	- 3.50	- 2.71
			5875	5.154	34.230	5.347	35.215	- 3.61	- 2.80
			5885	5.162	34.180	5.357	35.205	- 3.64	- 2.91

◆ 5G NR SUB 6 Band

Table for Head Tissue Verification									
Date of Tests	Tissue Temp. (°C)	Tissue Type	Freq. (MHz)	Measured Conductivity σ (S/m)	Measured Dielectric Constant, ϵ	Target Conductivity σ (S/m)	Target Dielectric Constant, ϵ	% dev σ	% dev ϵ
12/19/2024	21.2	750H	705	0.911	41.845	0.889	42.174	+ 2.47	- 0.78
			710	0.912	41.780	0.890	42.148	+ 2.47	- 0.87
			750	0.919	41.190	0.893	41.940	+ 2.91	- 1.79
12/06/2024	22.5	835H	820	0.913	43.190	0.899	41.577	+ 1.56	+ 3.88
			835	0.918	43.140	0.900	41.500	+ 2.00	+ 3.95
			850	0.923	43.090	0.916	41.500	+ 0.76	+ 3.83
12/12/2024	21.1	1800H	1710	1.316	40.630	1.348	40.144	- 2.37	+ 1.21
			1750	1.341	40.660	1.371	40.080	- 2.19	+ 1.45
			1800	1.377	40.620	1.400	40.000	- 1.64	+ 1.55
12/16/2024	21.9	1800H	1710	1.317	41.440	1.348	40.144	- 2.30	+ 3.23
			1750	1.355	41.260	1.371	40.080	- 1.17	+ 2.94
			1800	1.405	40.950	1.400	40.000	+ 0.36	+ 2.38
12/26/2024	21.3	1900H	1850	1.398	40.210	1.400	40.000	- 0.14	+ 0.52
			1900	1.453	40.050	1.400	40.000	+ 3.79	+ 0.13
			1910	1.460	40.030	1.400	40.000	+ 4.29	+ 0.08
12/11/2024	21.7	1900H	1850	1.380	40.840	1.400	40.000	- 1.43	+ 2.10
			1900	1.408	40.710	1.400	40.000	+ 0.57	+ 1.77
			1910	1.414	40.690	1.400	40.000	+ 1.00	+ 1.72
01/02/2025	23.1	2300H	2300	1.687	39.070	1.667	39.470	+ 1.20	- 1.01
			2310	1.696	39.030	1.676	39.452	+ 1.19	- 1.07
12/11/2024	21.7	2 600H	2500	1.918	38.430	1.855	39.140	+ 3.40	- 1.81
			2600	2.031	38.040	1.964	39.010	+ 3.41	- 2.49
			2690	2.137	37.680	2.062	38.894	+ 3.63	- 3.12
12/10/2024	20.6	3500H-3700H	3500	2.897	37.910	2.913	37.930	- 0.55	- 0.05
			3550	2.945	37.830	2.964	37.870	- 0.64	- 0.11
			3650	3.038	37.670	3.066	37.760	- 0.91	- 0.24
			3700	3.086	37.590	3.118	37.770	- 1.03	- 0.48
12/23/2024	21.5	3500H-3700H	3500	2.917	36.640	2.913	37.930	+ 0.14	- 3.40
			3550	2.956	36.580	2.964	37.870	- 0.27	- 3.41
			3650	3.034	36.480	3.066	37.760	- 1.04	- 3.39
			3700	3.070	36.390	3.118	37.770	- 1.54	- 3.65
12/24/2024	21.4	3500H-3700H	3500	2.899	36.810	2.913	37.930	- 0.48	- 2.95
			3550	2.938	36.750	2.964	37.870	- 0.88	- 2.96
			3650	3.017	36.640	3.066	37.760	- 1.60	- 2.97
			3700	3.053	36.550	3.118	37.770	- 2.08	- 3.23

Table for Head Tissue Verification									
Date of Tests	Tissue Temp. (°C)	Tissue Type	Freq. (MHz)	Measured Conductivity σ (S/m)	Measured Dielectric Constant, ϵ	Target Conductivity σ (S/m)	Target Dielectric Constant, ϵ	% dev σ	% dev ϵ
12/12/2024	21.1	3500H	3400	2.862	36.801	2.810	38.040	+ 1.84	- 3.26
			3500	2.934	36.636	2.913	37.930	+ 0.72	- 3.41
			3550	2.973	36.586	2.964	37.870	+ 0.30	- 3.39
12/23/2024	20.7	3500H	3 400	2.850	36.800	2.810	38.040	+ 1.42	- 3.26
			3 500	2.920	36.600	2.913	37.930	+ 0.24	- 3.51
			3 550	2.950	36.500	2.964	37.870	- 0.47	- 3.62
12/24/2024	20.8	3500H	3 400	2.830	37.000	2.810	38.040	+ 0.71	- 2.73
			3 500	2.900	36.800	2.913	37.930	- 0.45	- 2.98
			3 550	2.940	36.800	2.964	37.870	- 0.81	- 2.83
12/12/2024	21.1	3700H-3970	3700	3.085	36.400	3.118	37.700	- 1.06	- 3.45
			3750	3.132	36.220	3.169	37.640	- 1.17	- 3.77
			3800	3.245	36.320	3.220	37.590	+ 0.78	- 3.38
			3900	3.355	36.240	3.233	37.470	+ 3.77	- 3.28
			3970	3.313	35.940	3.394	37.390	- 2.39	- 3.88
12/23/2024	20.7	3700H-3970	3700	3.068	36.340	3.118	37.700	- 1.60	- 3.61
			3750	3.116	36.170	3.169	37.640	- 1.67	- 3.91
			3800	3.227	36.280	3.220	37.590	+ 0.22	- 3.48
			3900	3.334	36.220	3.233	37.470	+ 3.12	- 3.34
			3970	3.291	35.910	3.394	37.390	- 3.03	- 3.96
12/24/2024	20.8	3700H-3970	3700	3.052	36.560	3.118	37.700	- 2.12	- 3.02
			3750	3.099	36.400	3.169	37.640	- 2.21	- 3.29
			3800	3.208	36.510	3.220	37.590	- 0.37	- 2.87
			3900	3.311	36.460	3.233	37.470	+ 2.41	- 2.70
			3970	3.268	36.140	3.394	37.390	- 3.71	- 3.34

12.2 System Verification

◆ GSM/ UMTS/ LTE/ WLAN Band

Input Power: 50 mW

Freq.	Date	Probe	Dipole	Liquid	Amb. Temp.	Liquid Temp.	1 W Target SAR _{1g} (SPEAG)	50 mW Measured SAR _{1g}	1 W Normalized SAR _{1g}	Deviation	Limit
[MHz]		(S/N)	(S/N)		[°C]	[°C]	[W/kg]	[W/kg]	[W/kg]	[%]	[%]
750	12/06/2024	7751	1014	Head	21.0	20.9	8.59	0.43	8.60	+ 0.12	± 10
750	12/03/2024	7751		Head	20.4	20.3	8.59	0.429	8.58	- 0.12	± 10
750	12/09/2024	7751		Head	21.0	20.9	8.59	0.429	8.58	- 0.12	± 10
750	12/10/2024	7751		Head	20.2	20.1	8.59	0.43	8.60	+ 0.12	± 10
835	12/19/2024	7370	441	Head	21.3	21.2	9.73	0.525	10.50	+ 7.91	± 10
835	12/09/2024	3797		Head	21.5	21.4	9.73	0.492	9.84	+ 1.13	± 10
835	12/05/2024	7751		Head	21.4	21.3	9.73	0.52	10.40	+ 6.89	± 10
1 800	12/07/2024	3797	2d007	Head	22.4	22.3	39.00	1.89	37.80	- 3.08	± 10
1 800	12/16/2024	7751		Head	21.4	21.3	39.00	1.82	36.40	- 6.67	± 10
1 800	12/17/2024	7655		Head	20.9	20.8	39.00	2.03	40.60	+ 4.10	± 10
1 900	12/30/2024	7655	5d032	Head	19.6	19.5	40.20	2.14	42.80	+ 6.47	± 10
1 900	12/10/2024	7655		Head	20.7	20.6	40.20	2.16	43.20	+ 7.46	± 10
1 900	12/18/2024	7655		Head	21.9	21.8	40.20	2.16	43.20	+ 7.46	± 10
1 900	12/12/2024	7751		Head	19.3	19.2	40.20	1.95	39.00	- 2.99	± 10
2 300	12/04/2024	7751	1010	Head	21.2	21.1	48.30	2.38	47.60	- 1.45	± 10
2 450	12/07/2024	7751	743	Head	21.1	21.0	51.80	2.47	49.40	- 4.63	± 10
2 450	12/27/2024	7751		Head	21.1	21.0	51.80	2.45	49.00	- 5.41	± 10
2 600	12/11/2024	7751	1015	Head	21.2	21.1	56.40	2.63	52.60	- 6.74	± 10
2 600	12/17/2024	7751		Head	21.0	20.9	56.40	2.62	52.40	- 7.09	± 10
3 500	12/20/2024	7751	1132	Head	20.8	20.7	66.50	3.19	63.80	- 4.06	± 10
5 250	12/30/2024	7751	1107	Head	20.1	20.0	78.80	3.94	78.80	+ 0.00	± 10
5 250	12/31/2024	7751		Head	21.0	20.9	78.80	3.99	79.80	+ 1.27	± 10
5 600	12/30/2024	7751		Head	20.1	20.0	81.20	4.20	84.00	+ 3.45	± 10
5 600	12/31/2024	7751		Head	21.0	20.9	81.20	4.25	85.00	+ 4.68	± 10
5 750	12/30/2024	7751		Head	20.1	20.0	77.40	3.64	72.80	- 5.94	± 10
5 750	12/31/2024	7751		Head	21.0	20.9	77.40	3.70	74.00	- 4.39	± 10
5 800	12/30/2024	7751		Head	20.1	20.0	76.90	3.87	77.40	+ 0.65	± 10
5 800	12/31/2024	7751		Head	21.0	20.9	76.90	3.91	78.20	+ 1.69	± 10

◆ 5G NR SUB 6 Band

Input Power: 50 mW

Freq.	Date	Probe (S/N)	Dipole (S/N)	Liquid	Amb. Temp.	Liquid Temp.	1 W Target SAR _{1g} (SPEAG)	50 mW Measured SAR _{1g}	1 W Normalized SAR _{1g}	Deviation	Limit
[MHz]					[°C]	[°C]	[W/kg]	[W/kg]	[W/kg]	[%]	[%]
750	12/19/2024	7655	1014	Head	21.3	21.2	8.59	0.443	8.86	+ 3.14	± 10
835	12/06/2024	7655	441	Head	22.6	22.5	9.73	0.498	9.96	+ 2.36	± 10
1 800	12/12/2024	7655	2d007	Head	21.2	21.1	39.00	2.02	40.40	+ 3.59	± 10
1 800	12/16/2024	7655		Head	22.0	21.9	39.00	2.050	41.00	+ 5.13	± 10
1 900	12/26/2024	7370	5d032	Head	21.4	21.3	40.20	1.95	39.00	- 2.99	± 10
1 900	12/11/2024	7655		Head	21.8	21.7	40.20	2.10	42.00	+ 4.48	± 10
2 300	01/02/2025	7370	1010	Head	23.2	23.1	48.30	2.32	46.40	- 3.93	± 10
2 600	12/11/2024	7370	1015	Head	21.8	21.7	56.40	2.82	56.40	+ 0.00	± 10
3 500	12/10/2024	3903	1132	Head	20.7	20.6	66.50	3.49	69.80	+ 4.96	± 10
3 500	12/23/2024	7370		Head	21.6	21.5	66.50	3.51	70.20	+ 5.56	± 10
3 500	12/24/2024	7370		Head	21.5	21.4	66.50	3.50	70.00	+ 5.26	± 10
3 500	12/12/2024	3903		Head	21.2	21.1	66.50	3.52	70.40	+ 5.86	± 10
3 500	12/23/2024	7751		Head	20.8	20.7	66.50	3.34	66.80	+ 0.45	± 10
3 500	12/24/2024	7751		Head	20.9	20.8	66.50	3.29	65.80	- 1.05	± 10
3 700	12/10/2024	3903	1105	Head	20.7	20.6	67.10	3.14	62.80	- 6.41	± 10
3 700	12/23/2024	7370		Head	21.6	21.5	67.10	3.12	62.40	- 7.00	± 10
3 700	12/24/2024	7370		Head	21.5	21.4	67.10	3.31	66.20	- 1.34	± 10
3 700	12/12/2024	3903		Head	21.2	21.1	67.10	3.14	62.80	- 6.41	± 10
3 700	12/23/2024	7751		Head	20.8	20.7	67.10	3.25	65.00	- 3.13	± 10
3 700	12/24/2024	7751		Head	20.9	20.8	67.10	3.22	64.40	- 4.02	± 10
3 900	12/12/2024	3903	1086	Head	21.2	21.1	69.70	3.23	64.60	- 7.32	± 10
3 900	12/23/2024	7751		Head	20.8	20.7	69.70	3.39	67.80	- 2.73	± 10
3 900	12/24/2024	7751		Head	20.9	20.8	69.70	3.37	67.40	- 3.30	± 10

◆ System Verification Results – Extremity SAR

Input Power: 50 mW

Freq.	Date	Probe (S/N)	Dipole (S/N)	Liquid	Amb. Temp.	Liquid Temp.	1 W Target SAR _{10g} (SPEAG)	50 mW Measured SAR _{10g}	1 W Normalized SAR _{10g}	Deviation	Limit
[MHz]					[°C]	[°C]	[W/kg]	[W/kg]	[W/kg]	[%]	[%]
13	01/07/2025	3076	1016	Head	23.4	23.3	0.343	0.018	0.36	4.96	± 10

12.3 SAR Test System Verification Procedure

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

- Cabling the system, using the verification kit equipment.
- 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.

Note;

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

13. SAR 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	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dBm)	(dBm)	(dB)			(W/kg)		(W/kg)	
836.6	190	GSM Voice	A	34.0	33.78	-0.12	Left Touch	1:8.3	0.224	1.052	0.236	-
836.6	190	GSM Voice	A	34.0	33.78	-0.19	Left Tilt	1:8.3	0.111	1.052	0.117	-
836.6	190	GSM Voice	A	34.0	33.78	0.07	Right Touch	1:8.3	0.282	1.052	0.297	-
836.6	190	GSM Voice	A	34.0	33.78	0.13	Right Tilt	1:8.3	0.134	1.052	0.141	-
836.6	190	GPRS 4Tx	A	29.0	28.95	-0.02	Left Touch	1:2.08	0.217	1.012	0.220	-
836.6	190	GPRS 4Tx	A	29.0	28.95	-0.12	Left Tilt	1:2.08	0.109	1.012	0.110	-
836.6	190	GPRS 4Tx	A	29.0	28.95	-0.12	Right Touch	1:2.08	0.296	1.012	0.300	A1
836.6	190	GPRS 4Tx	A	29.0	28.95	-0.07	Right Tilt	1:2.08	0.147	1.012	0.149	-
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	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dBm)	(dBm)	(dB)			(W/kg)		(W/kg)	
1 880	661	GSM Voice	A	31.0	30.65	-0.12	Left Touch	1:8.3	0.237	1.084	0.257	A2
1 880	661	GSM Voice	A	31.0	30.65	0.07	Left Tilt	1:8.3	0.110	1.084	0.119	-
1 880	661	GSM Voice	A	31.0	30.65	-0.13	Right Touch	1:8.3	0.186	1.084	0.202	-
1 880	661	GSM Voice	A	31.0	30.65	-0.10	Right Tilt	1:8.3	0.132	1.084	0.143	-
1 880	661	GPRS 4Tx	A	26.0	25.38	0.01	Left Touch	1:2.08	0.182	1.153	0.210	-
1 880	661	GPRS 4Tx	A	26.0	25.38	0.19	Left Tilt	1:2.08	0.082	1.153	0.095	-
1 880	661	GPRS 4Tx	A	26.0	25.38	-0.19	Right Touch	1:2.08	0.148	1.153	0.171	-
1 880	661	GPRS 4Tx	A	26.0	25.38	-0.11	Right Tilt	1:2.08	0.108	1.153	0.125	-
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	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dBm)	(dBm)	(dB)			(W/kg)		(W/kg)	
836.6	4183	RMC	A	24.7	24.13	0.10	Left Touch	1:1	0.176	1.140	0.201	A3
836.6	4183	RMC	A	24.7	24.13	-0.05	Left Tilt	1:1	0.100	1.140	0.114	-
836.6	4183	RMC	A	24.7	24.13	-0.06	Right Touch	1:1	0.175	1.140	0.200	-
836.6	4183	RMC	A	24.7	24.13	-0.04	Right Tilt	1:1	0.058	1.140	0.066	-
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	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dBm)	(dBm)	(dB)			(W/kg)		(W/kg)	
1 732.4	1412	RMC	A	24.0	23.32	-0.11	Left Touch	1:1	0.086	1.169	0.101	A4
1 732.4	1412	RMC	A	24.0	23.32	0.09	Left Tilt	1:1	0.056	1.169	0.065	-
1 732.4	1412	RMC	A	24.0	23.32	-0.10	Right Touch	1:1	0.068	1.169	0.079	-
1 732.4	1412	RMC	A	24.0	23.32	0.10	Right Tilt	1:1	0.056	1.169	0.065	-
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	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dBm)	(dBm)	(dB)			(W/kg)		(W/kg)	
1 880	9400	RMC	A	23.7	22.84	-0.11	Left Touch	1:1	0.293	1.219	0.357	A5
1 880	9400	RMC	A	23.7	22.84	0.01	Left Tilt	1:1	0.176	1.219	0.215	-
1 880	9400	RMC	A	23.7	22.84	-0.10	Right Touch	1:1	0.282	1.219	0.344	-
1 880	9400	RMC	A	23.7	22.84	-0.06	Right Tilt	1:1	0.179	1.219	0.218	-
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 2 (PCS) Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.															
1 880	18900	QPSK	D	20	21.0	19.70	-0.15	Left Touch	0	1	0	1:1	0.249	1.349	0.336	-
1 880	18900	QPSK	D	20	21.0	19.72	-0.03	Left Touch	1	50	0	1:1	0.253	1.343	0.340	-
1 880	18900	QPSK	D	20	21.0	19.70	0.12	Left Tilt	0	1	0	1:1	0.286	1.349	0.386	-
1 880	18900	QPSK	D	20	21.0	19.72	0.05	Left Tilt	1	50	0	1:1	0.298	1.343	0.400	-
1 880	18900	QPSK	D	20	21.0	19.70	-0.10	Right Touch	0	1	0	1:1	0.356	1.349	0.480	-
1 880	18900	QPSK	D	20	21.0	19.72	0.08	Right Touch	1	50	0	1:1	0.363	1.343	0.488	-
1 880	18900	QPSK	D	20	21.0	19.70	0.06	Right Tilt	0	1	0	1:1	0.361	1.349	0.487	-
1 880	18900	QPSK	D	20	21.0	19.72	0.14	Right Tilt	1	50	0	1:1	0.369	1.343	0.496	A6

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 7 Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.															
2 510	20850	QPSK	B	20	24.0	23.00	0.00	Left Touch	0	1	0	1:1	0.185	1.259	0.233	A7
2 510	20850	QPSK	B	20	23.0	22.06	-0.17	Left Touch	1	50	0	1:1	0.145	1.242	0.180	-
2 510	20850	QPSK	B	20	24.0	23.00	-0.02	Left Tilt	0	1	0	1:1	0.047	1.259	0.059	-
2 510	20850	QPSK	B	20	23.0	22.06	-0.11	Left Tilt	1	50	0	1:1	0.039	1.242	0.048	-
2 510	20850	QPSK	B	20	24.0	23.00	0.11	Right Touch	0	1	0	1:1	0.104	1.259	0.131	-
2 510	20850	QPSK	B	20	23.0	22.06	0.11	Right Touch	1	50	0	1:1	0.080	1.242	0.099	-
2 510	20850	QPSK	B	20	24.0	23.00	0.18	Right Tilt	0	1	0	1:1	0.075	1.259	0.094	-
2 510	20850	QPSK	B	20	23.0	22.06	-0.17	Right Tilt	1	50	0	1:1	0.066	1.242	0.082	-

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	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	24.14	0.16	Left Touch	0	1	0	1:1	0.160	1.219	0.195	-
707.5	23095	QPSK	A	10	24.0	23.20	-0.07	Left Touch	1	25	0	1:1	0.123	1.202	0.148	-
707.5	23095	QPSK	A	10	25.0	24.14	0.12	Left Tilt	0	1	0	1:1	0.092	1.219	0.112	-
707.5	23095	QPSK	A	10	24.0	23.20	0.07	Left Tilt	1	25	0	1:1	0.070	1.202	0.084	-
707.5	23095	QPSK	A	10	25.0	24.14	-0.19	Right Touch	0	1	0	1:1	0.187	1.219	0.228	A8
707.5	23095	QPSK	A	10	24.0	23.20	0.14	Right Touch	1	25	0	1:1	0.140	1.202	0.168	-
707.5	23095	QPSK	A	10	25.0	24.14	0.04	Right Tilt	0	1	0	1:1	0.101	1.219	0.123	-
707.5	23095	QPSK	A	10	24.0	23.20	0.03	Right Tilt	1	25	0	1:1	0.076	1.202	0.091	-
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	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	24.20	0.02	Left Touch	0	1	0	1:1	0.138	1.202	0.166	-
782	23230	QPSK	A	10	24.0	23.32	0.18	Left Touch	1	25	0	1:1	0.111	1.169	0.130	-
782	23230	QPSK	A	10	25.0	24.20	-0.01	Left Tilt	0	1	0	1:1	0.084	1.202	0.101	-
782	23230	QPSK	A	10	24.0	23.32	-0.12	Left Tilt	1	25	0	1:1	0.062	1.169	0.072	-
782	23230	QPSK	A	10	25.0	24.20	-0.17	Right Touch	0	1	0	1:1	0.168	1.202	0.202	A9
782	23230	QPSK	A	10	24.0	23.32	0.15	Right Touch	1	25	0	1:1	0.139	1.169	0.162	-
782	23230	QPSK	A	10	25.0	24.20	0.13	Right Tilt	0	1	0	1:1	0.081	1.202	0.097	-
782	23230	QPSK	A	10	24.0	23.32	0.13	Right Tilt	1	25	0	1:1	0.069	1.169	0.081	-
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 14 Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.															
793	23330	QPSK	A	10	25.0	24.27	-0.15	Left Touch	0	1	0	1:1	0.111	1.183	0.131	-
793	23330	QPSK	A	10	24.0	23.48	0.12	Left Touch	1	25	0	1:1	0.120	1.127	0.135	-
793	23330	QPSK	A	10	25.0	24.27	0.01	Left Tilt	0	1	0	1:1	0.083	1.183	0.098	-
793	23330	QPSK	A	10	24.0	23.48	0.17	Left Tilt	1	25	0	1:1	0.067	1.127	0.076	-
793	23330	QPSK	A	10	25.0	24.27	-0.19	Right Touch	0	1	0	1:1	0.186	1.183	0.220	A10
793	23330	QPSK	A	10	24.0	23.48	0.11	Right Touch	1	25	0	1:1	0.156	1.127	0.176	-
793	23330	QPSK	A	10	25.0	24.27	0.13	Right Tilt	0	1	0	1:1	0.094	1.183	0.111	-
793	23330	QPSK	A	10	24.0	23.48	0.15	Right Tilt	1	25	0	1:1	0.076	1.127	0.086	-
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 Size	RB offset	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.															
1 882.5	26365	QPSK	B	20	25.0	24.03	0.10	Left Touch	0	1	0	1:1	0.321	1.250	0.401	A11
1 882.5	26365	QPSK	B	20	24.0	23.05	0.02	Left Touch	1	50	0	1:1	0.251	1.245	0.312	-
1 882.5	26365	QPSK	B	20	25.0	24.03	0.00	Left Tilt	0	1	0	1:1	0.148	1.250	0.185	-
1 882.5	26365	QPSK	B	20	24.0	23.05	0.00	Left Tilt	1	50	0	1:1	0.109	1.245	0.136	-
1 882.5	26365	QPSK	B	20	25.0	24.03	-0.12	Right Touch	0	1	0	1:1	0.215	1.250	0.269	-
1 882.5	26365	QPSK	B	20	24.0	23.05	-0.12	Right Touch	1	50	0	1:1	0.174	1.245	0.217	-
1 882.5	26365	QPSK	B	20	25.0	24.03	0.03	Right Tilt	0	1	0	1:1	0.155	1.250	0.194	-
1 882.5	26365	QPSK	B	20	24.0	23.05	-0.01	Right Tilt	1	50	0	1:1	0.115	1.245	0.143	-
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 Size	RB offset	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)				(W/kg)		(W/kg)	
831.5	26865	QPSK	A	15	25.0	24.09	-0.18	Left Touch	0	1	0	1:1	0.067	1.233	0.083	-
831.5	26865	QPSK	A	15	24.0	23.23	0.15	Left Touch	1	36	0	1:1	0.062	1.194	0.074	-
831.5	26865	QPSK	A	15	25.0	24.09	0.12	Left Tilt	0	1	0	1:1	0.025	1.233	0.031	-
831.5	26865	QPSK	A	15	24.0	23.23	0.18	Left Tilt	1	36	0	1:1	0.033	1.194	0.039	-
831.5	26865	QPSK	A	15	25.0	24.09	0.10	Right Touch	0	1	0	1:1	0.106	1.233	0.131	A12
831.5	26865	QPSK	A	15	24.0	23.23	-0.10	Right Touch	1	36	0	1:1	0.086	1.194	0.103	-
831.5	26865	QPSK	A	15	25.0	24.09	-0.17	Right Tilt	0	1	0	1:1	0.053	1.233	0.065	-
831.5	26865	QPSK	A	15	24.0	23.23	0.01	Right Tilt	1	36	0	1:1	0.041	1.194	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 30 Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)				(W/kg)		(W/kg)	
2 310	27710	QPSK	B	10	24.0	23.21	-0.16	Left Touch	0	1	24	1:1	0.251	1.199	0.301	A13
2 310	27710	QPSK	B	10	23.0	22.45	0.00	Left Touch	1	25	24	1:1	0.216	1.135	0.245	-
2 310	27710	QPSK	B	10	24.0	23.21	-0.18	Left Tilt	0	1	24	1:1	0.070	1.199	0.084	-
2 310	27710	QPSK	B	10	23.0	22.45	0.11	Left Tilt	1	25	24	1:1	0.078	1.135	0.089	-
2 310	27710	QPSK	B	10	24.0	23.21	-0.15	Right Touch	0	1	24	1:1	0.138	1.199	0.165	-
2 310	27710	QPSK	B	10	23.0	22.45	0.15	Right Touch	1	25	24	1:1	0.121	1.135	0.137	-
2 310	27710	QPSK	B	10	24.0	23.21	-0.14	Right Tilt	0	1	24	1:1	0.148	1.199	0.177	-
2 310	27710	QPSK	B	10	23.0	22.45	0.02	Right Tilt	1	25	24	1:1	0.130	1.135	0.148	-
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 (Power Class 3) Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB	RB	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.	
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)	Size	offset		(W/kg)		(W/kg)		
2 593	40620	QPSK	B	20	25.0	24.32	0.19	Left Touch	0	1	0	1:1.58	0.101	1.169	0.118	A14	
2 593	40620	QPSK	B	20	24.0	23.29	0.11	Left Touch	1	50	0	1:1.58	0.071	1.178	0.084	-	
2 593	40620	QPSK	B	20	25.0	24.32	0.05	Left tilt	0	1	0	1:1.58	0.030	1.169	0.035	-	
2 593	40620	QPSK	B	20	24.0	23.29	-0.01	Left tilt	1	50	0	1:1.58	0.021	1.178	0.025	-	
2 593	40620	QPSK	B	20	25.0	24.32	-0.10	Right touch	0	1	0	1:1.58	0.057	1.169	0.067	-	
2 593	40620	QPSK	B	20	24.0	23.29	-0.07	Right touch	1	50	0	1:1.58	0.046	1.178	0.054	-	
2 593	40620	QPSK	B	20	25.0	24.32	0.02	Right Tilt	0	1	0	1:1.58	0.044	1.169	0.051	-	
2 593	40620	QPSK	B	20	24.0	23.29	0.12	Right Tilt	1	50	0	1:1.58	0.035	1.178	0.041	-	
Uplink Carrier Aggregation																	
PCC	2 593	40620	QPSK	B	20	25.0	23.14	0.19	Left Touch	0	1	0	1:1.58	0.065	1.535	0.100	-
SCC	2 573.2	40422	QPSK	B	20					0	1	99					
ANSI/ IEEE C95.1 - 2005– Safety Limit									Head								
Spatial Peak									1.6 W/kg								
Uncontrolled Exposure/ General Population									Averaged over 1 gram								

LTE TDD Band 48 Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.	
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)	(dB)				(W/kg)	(W/kg)		
3 690	56640	QPSK	E	20	20.0	19.02	0.13	Left Touch	0	1	49	1:1.58	0.136	1.253	0.170	-	
3 560	55340	QPSK	E	20	20.0	18.98	0.08	Left Touch	0	50	0	1:1.58	0.120	1.265	0.152	-	
3 690	56640	QPSK	E	20	20.0	19.02	0.16	Left Tilt	0	1	49	1:1.58	0.103	1.253	0.129	-	
3 560	55340	QPSK	E	20	20.0	18.98	0.08	Left Tilt	0	50	0	1:1.58	0.067	1.265	0.085	-	
3 690	56640	QPSK	E	20	20.0	19.02	-0.13	Right Touch	0	1	49	1:1.58	0.354	1.253	0.444	-	
3 560	55340	QPSK	E	20	20.0	18.98	0.12	Right Touch	0	50	0	1:1.58	0.347	1.265	0.439	-	
3 690	56640	QPSK	E	20	20.0	19.02	0.00	Right Tilt	0	1	49	1:1.58	0.235	1.253	0.294	-	
3 560	55340	QPSK	E	20	20.0	18.98	0.05	Right Tilt	0	50	0	1:1.58	0.206	1.265	0.261	-	
3 690	56640	QPSK	E	20	20.0	19.02	-0.18	Right Touch	0	1	0	1:1.58	0.405	1.253	0.507	A15	
Uplink Carrier Aggregation																	
PCC	3 690	56640	QPSK	E	20	20.0	18.44	-0.17	Right Touch	0	1	0	1:1.58	0.358	1.432	0.513	-
SCC	3 670.2	56442	QPSK	E	20	20.0				0	1	99					
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak								Head 1.6 W/kg									
Uncontrolled Exposure/ General Population								Averaged over 1 gram									

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	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)				(W/kg)		(W/kg)	
1 770	132572	QPSK	B	20	25.0	24.09	0.08	Left Touch	0	1	49	1:1	0.198	1.233	0.244	-
1 770	132572	QPSK	B	20	24.0	23.23	0.10	Left Touch	1	50	0	1:1	0.172	1.194	0.205	-
1 770	132572	QPSK	B	20	25.0	24.09	0.12	Left Tilt	0	1	49	1:1	0.120	1.233	0.148	-
1 770	132572	QPSK	B	20	24.0	23.23	0.00	Left Tilt	1	50	0	1:1	0.103	1.194	0.123	-
1 770	132572	QPSK	B	20	25.0	24.09	-0.19	Right Touch	0	1	49	1:1	0.201	1.233	0.248	-
1 770	132572	QPSK	B	20	24.0	23.23	-0.16	Right Touch	1	50	0	1:1	0.164	1.194	0.196	-
1 770	132572	QPSK	B	20	25.0	24.09	0.06	Right Tilt	0	1	49	1:1	0.115	1.233	0.142	-
1 770	132572	QPSK	B	20	24.0	23.23	0.13	Right Tilt	1	50	0	1:1	0.096	1.194	0.115	-
1 720	132072	QPSK	D	20	20.0	19.70	-0.03	Left Touch	0	1	49	1:1	0.522	1.072	0.560	-
1 720	132072	QPSK	D	20	20.0	19.81	-0.00	Left Touch	0	50	49	1:1	0.531	1.045	0.555	-
1 720	132072	QPSK	D	20	20.0	19.70	0.02	Left Tilt	0	1	49	1:1	0.660	1.072	0.708	-
1 720	132072	QPSK	D	20	20.0	19.81	0.08	Left Tilt	0	50	49	1:1	0.663	1.045	0.693	-
1 720	132072	QPSK	D	20	20.0	19.70	0.08	Right Touch	0	1	49	1:1	0.700	1.072	0.750	-
1 720	132072	QPSK	D	20	20.0	19.81	0.14	Right Touch	0	50	49	1:1	0.719	1.045	0.751	A16
1 720	132072	QPSK	D	20	20.0	19.70	-0.06	Right Tilt	0	1	49	1:1	0.673	1.072	0.721	-
1 720	132072	QPSK	D	20	20.0	19.81	0.06	Right Tilt	0	50	49	1:1	0.702	1.045	0.734	-
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 71 Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)				(W/kg)		(W/kg)	
680.5	133297	QPSK	A	20	25.0	24.74	0.17	Left Touch	0	1	0	1:1	0.139	1.062	0.148	-
680.5	133297	QPSK	A	20	24.0	23.89	0.19	Left Touch	1	50	0	1:1	0.116	1.026	0.119	-
680.5	133297	QPSK	A	20	25.0	24.74	0.15	Left Tilt	0	1	0	1:1	0.072	1.062	0.076	-
680.5	133297	QPSK	A	20	24.0	23.89	0.12	Left Tilt	1	50	0	1:1	0.062	1.026	0.064	-
680.5	133297	QPSK	A	20	25.0	24.74	0.13	Right Touch	0	1	0	1:1	0.160	1.062	0.170	A17
680.5	133297	QPSK	A	20	24.0	23.89	0.13	Right Touch	1	50	0	1:1	0.138	1.026	0.142	-
680.5	133297	QPSK	A	20	25.0	24.74	-0.13	Right Tilt	0	1	0	1:1	0.070	1.062	0.074	-
680.5	133297	QPSK	A	20	24.0	23.89	0.00	Right Tilt	1	50	0	1:1	0.062	1.026	0.064	-
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 n2 Head SAR

Frequency		OFDM Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)				(W/kg)		(W/kg)	
1 880	376000	DFT-s QPSK	D	40	20.0	19.44	-0.17	Left Touch	0	1	108	1:1	0.315	1.138	0.358	-
1 880	376000	DFT-s QPSK	D	40	20.0	19.43	-0.02	Left Touch	0	108	0	1:1	0.311	1.140	0.355	-
1 880	376000	DFT-s QPSK	D	40	20.0	19.44	-0.04	Left Tilt	0	1	108	1:1	0.381	1.138	0.434	-
1 880	376000	DFT-s QPSK	D	40	20.0	19.43	-0.02	Left Tilt	0	108	0	1:1	0.385	1.140	0.439	-
1 880	376000	DFT-s QPSK	D	40	20.0	19.44	0.00	Right Touch	0	1	108	1:1	0.482	1.138	0.549	-
1 880	376000	DFT-s QPSK	D	40	20.0	19.43	-0.19	Right Touch	0	108	0	1:1	0.473	1.140	0.539	-
1 880	376000	DFT-s QPSK	D	40	20.0	19.44	0.04	Right Tilt	0	1	108	1:1	0.482	1.138	0.549	A18
1 880	376000	DFT-s QPSK	D	40	20.0	19.43	0.01	Right Tilt	0	108	0	1:1	0.481	1.140	0.548	-
1 880	376000	CP QPSK	D	40	20.0	19.27	-0.07	Right Tilt	0	1	1	1:1	0.479	1.183	0.567	-
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 Head SAR

Frequency		OFDM Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)				(W/kg)		(W/kg)	
836.5	167300	DFT-s QPSK	A	20	25.0	24.86	-0.16	Left Touch	0	1	53	1:1	0.133	1.033	0.137	-
836.5	167300	DFT-s QPSK	A	20	25.0	24.26	0.04	Left Touch	0	50	28	1:1	0.148	1.186	0.176	-
836.5	167300	DFT-s QPSK	A	20	25.0	24.86	0.16	Left Tilt	0	1	53	1:1	0.087	1.033	0.090	-
836.5	167300	DFT-s QPSK	A	20	25.0	24.26	0.09	Left Tilt	0	50	28	1:1	0.084	1.186	0.100	-
836.5	167300	DFT-s QPSK	A	20	25.0	24.86	-0.19	Right Touch	0	1	53	1:1	0.178	1.033	0.184	-
836.5	167300	DFT-s QPSK	A	20	25.0	24.26	0.18	Right Touch	0	50	28	1:1	0.178	1.186	0.211	A19
836.5	167300	DFT-s QPSK	A	20	25.0	24.86	0.18	Right Tilt	0	1	53	1:1	0.085	1.033	0.088	-
836.5	167300	DFT-s QPSK	A	20	25.0	24.26	0.02	Right Tilt	0	50	28	1:1	0.091	1.186	0.108	-
836.5	167300	CP QPSK	A	20	23.5	22.78	-0.03	Right Touch	1.5	1	1	1:1	0.125	1.180	0.148	-
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	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)				(W/kg)		(W/kg)	
1 882.5	376500	DFT-s QPSK	B	40	25.0	24.32	0.18	Left Touch	0	1	108	1:1	0.353	1.169	0.413	A20
1 882.5	376500	DFT-s QPSK	B	40	24.0	24.04	0.17	Left Touch	0	108	54	1:1	0.352	1.247	0.439	-
1 882.5	376500	DFT-s QPSK	B	40	25.0	24.32	-0.04	Left Tilt	0	1	108	1:1	0.184	1.169	0.215	-
1 882.5	376500	DFT-s QPSK	B	40	24.0	24.04	0.14	Left Tilt	0	108	54	1:1	0.143	1.247	0.178	-
1 882.5	376500	DFT-s QPSK	B	40	25.0	24.32	-0.19	Right Touch	0	1	108	1:1	0.330	1.169	0.386	-
1 882.5	376500	DFT-s QPSK	B	40	24.0	24.04	0.19	Right Touch	0	108	54	1:1	0.235	1.247	0.293	-
1 882.5	376500	DFT-s QPSK	B	40	25.0	24.32	-0.16	Right Tilt	0	1	108	1:1	0.195	1.169	0.228	-
1 882.5	376500	DFT-s QPSK	B	40	24.0	24.32	0.11	Right Tilt	0	108	54	1:1	0.142	1.169	0.166	-
1 882.5	376500	CP QPSK	B	40	23.5	22.38	0.07	Left Touch	1.5	1	1	1:1	0.226	1.294	0.292	-
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 n30 Head SAR

Frequency		OFDM Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)				(W/kg)		(W/kg)	
2 310	462000	DFT-s QPSK	B	10	24.0	23.02	0.10	Left Touch	0	1	26	1:1	0.184	1.253	0.231	A21
2 310	462000	DFT-s QPSK	B	10	24.0	22.93	-0.02	Left Touch	0	25	14	1:1	0.180	1.279	0.230	-
2 310	462000	DFT-s QPSK	B	10	24.0	23.02	0.13	Left Tilt	0	1	26	1:1	0.058	1.253	0.073	-
2 310	462000	DFT-s QPSK	B	10	24.0	22.93	0.10	Left Tilt	0	25	14	1:1	0.049	1.279	0.063	-
2 310	462000	DFT-s QPSK	B	10	24.0	23.02	0.12	Right Touch	0	1	26	1:1	0.113	1.253	0.142	-
2 310	462000	DFT-s QPSK	B	10	24.0	22.93	0.05	Right Touch	0	25	14	1:1	0.113	1.279	0.145	-
2 310	462000	DFT-s QPSK	B	10	24.0	23.02	0.05	Right Tilt	0	1	26	1:1	0.080	1.253	0.100	-
2 310	462000	DFT-s QPSK	B	10	24.0	22.93	0.19	Right Tilt	0	25	14	1:1	0.081	1.279	0.104	-
2 310	462000	CP QPSK	B	10	22.5	21.50	0.13	Left Touch	1.5	1	1	1:1	0.145	1.259	0.183	-
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		OFDM Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	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	27.0	25.80	-0.05	Left Touch	0	1	271	1:1	0.100	1.318	0.132	-
2 592.99	518598	DFT-s QPSK	B	100	27.0	25.69	0.14	Left Touch	0	135	69	1:1	0.271	1.352	0.366	A22
2 592.99	518598	DFT-s QPSK	B	100	27.0	25.80	0.16	Left tilt	0	1	271	1:1	0.029	1.318	0.038	-
2 592.99	518598	DFT-s QPSK	B	100	27.0	25.69	-0.14	Left tilt	0	135	69	1:1	0.053	1.352	0.072	-
2 592.99	518598	DFT-s QPSK	B	100	27.0	25.80	-0.17	Right touch	0	1	271	1:1	0.067	1.318	0.088	-
2 592.99	518598	DFT-s QPSK	B	100	27.0	25.69	-0.13	Right touch	0	135	69	1:1	0.134	1.352	0.181	-
2 592.99	518598	DFT-s QPSK	B	100	27.0	25.80	-0.19	Right Tilt	0	1	271	1:1	0.054	1.318	0.071	-
2 592.99	518598	DFT-s QPSK	B	100	27.0	25.69	-0.11	Right Tilt	0	135	69	1:1	0.080	1.352	0.108	-
2 592.99	518598	CP QPSK	B	100	25.5	23.82	-0.15	Left Touch	1.5	1	1	1:1	0.258	1.472	0.380	-
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 n48 Head SAR

Frequency		OFDM Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)				(W/kg)		(W/kg)	
3 680.01	645334	DFT-s QPSK	E	40	18.0	17.19	0.10	Left Touch	0	1	1	1:1	0.099	1.205	0.119	-
3 680.01	645334	DFT-s QPSK	E	40	18.0	17.19	-0.19	Left Touch	0	50	0	1:1	0.131	1.205	0.158	-
3 680.01	645334	DFT-s QPSK	E	40	18.0	17.19	0.16	Left Tilt	0	1	1	1:1	0.079	1.205	0.095	-
3 680.01	645334	DFT-s QPSK	E	40	18.0	17.19	-0.10	Left Tilt	0	50	0	1:1	0.079	1.205	0.095	-
3 680.01	645334	DFT-s QPSK	E	40	18.0	17.19	-0.12	Right Touch	0	1	1	1:1	0.414	1.205	0.499	-
3 680.01	645334	DFT-s QPSK	E	40	18.0	17.19	-0.10	Right Touch	0	50	0	1:1	0.447	1.205	0.539	A23
3 680.01	645334	DFT-s QPSK	E	40	18.0	17.19	-0.17	Right Tilt	0	1	1	1:1	0.248	1.205	0.299	-
3 680.01	645334	DFT-s QPSK	E	40	18.0	17.19	0.12	Right Tilt	0	50	0	1:1	0.292	1.205	0.352	-
3 680.01	645334	CP QPSK	E	40	18.0	17.18	-0.18	Right Touch	0	1	1	1:1	0.364	1.208	0.440	-
3 680.01	645334	DFT-s QPSK	H	40	14.5	14.19	0.10	Left Touch	0	1	1-	1:1	0.027	1.074	0.029	-
3 680.01	645334	DFT-s QPSK	H	40	14.5	14.19	-0.10	Left Tilt	0	1	1-	1:1	0.022	1.074	0.024	-
3 680.01	645334	DFT-s QPSK	H	40	14.5	14.19	-0.10	Right Touch	0	1	1-	1:1	0.024	1.074	0.026	-
3 680.01	645334	DFT-s QPSK	H	40	14.5	14.19	-0.10	Right Tilt	0	1	1-	1:1	0.022	1.074	0.024	-
3 680.01	645334	DFT-s QPSK	B	40	15.0	14.91	-	Left Touch	0	1	1-	1:1	0.000	1.052	0.000	-
3 680.01	645334	DFT-s QPSK	B	40	15.0	14.91	-	Left Tilt	0	1	1-	1:1	0.000	1.052	0.000	-
3 680.01	645334	DFT-s QPSK	B	40	15.0	14.91	-	Right Touch	0	1	1-	1:1	0.000	1.052	0.000	-
3 680.01	645334	DFT-s QPSK	B	40	15.0	14.91	-	Right Tilt	0	1	1-	1:1	0.000	1.052	0.000	-
3 680.01	645334	DFT-s QPSK	I	40	14.0	13.92	0.10	Left Touch	0	1	1-	1:1	0.034	1.019	0.035	-
3 680.01	645334	DFT-s QPSK	I	40	14.0	13.92	-0.09	Left Tilt	0	1	1-	1:1	0.034	1.019	0.035	-
3 680.01	645334	DFT-s QPSK	I	40	14.0	13.92	-0.18	Right Touch	0	1	1-	1:1	0.022	1.019	0.022	-
3 680.01	645334	DFT-s QPSK	I	40	14.0	13.92	0.13	Right Tilt	0	1	1-	1:1	0.025	1.019	0.025	-
ANSI/ IEEE C95.1 - 2005- Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Head 1.6 W/kg Averaged over 1 gram								

@Note. Ant. H, B, I SRS was tested with DFT-s OFDM QPSK 1RB 1offset as CW was the Limitation of the manufacturer's S/W tool setup.

NR FDD Band n66 Head SAR

Frequency		OFDM Mode	Ant.	Band width (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.															
1 745	349000	DFT-s QPSK	B	40	25.0	24.28	-0.02	Left Touch	0	1	214	1:1	0.160	1.180	0.189	-
1 745	349000	DFT-s QPSK	B	40	25.0	24.17	-0.09	Left Touch	0	108	54	1:1	0.208	1.211	0.252	-
1 745	349000	DFT-s QPSK	B	40	25.0	24.28	-0.01	Left Tilt	0	1	214	1:1	0.145	1.180	0.171	-
1 745	349000	DFT-s QPSK	B	40	25.0	24.17	0.00	Left Tilt	0	108	54	1:1	0.143	1.211	0.173	-
1 745	349000	DFT-s QPSK	B	40	25.0	24.28	0.01	Right Touch	0	1	214	1:1	0.215	1.180	0.254	-
1 745	349000	DFT-s QPSK	B	40	25.0	24.17	-0.14	Right Touch	0	108	54	1:1	0.215	1.211	0.260	-
1 745	349000	DFT-s QPSK	B	40	25.0	24.28	0.04	Right Tilt	0	1	214	1:1	0.114	1.180	0.135	-
1 745	349000	DFT-s QPSK	B	40	25.0	24.17	0.16	Right Tilt	0	108	54	1:1	0.115	1.211	0.139	-
1 745	349000	CP QPSK	B	40	23.5	22.14	0.12	Right Touch	1.5	1	1	1:1	0.127	1.368	0.174	-
1 745	349000	DFT-s QPSK	D	40	20.0	19.44	-0.01	Left Touch	0	1	108	1:1	0.334	1.138	0.380	-
1 745	349000	DFT-s QPSK	D	40	20.0	19.51	-0.15	Left Touch	0	108	108	1:1	0.294	1.119	0.329	-
1 745	349000	DFT-s QPSK	D	40	20.0	19.44	0.13	Left Tilt	0	1	108	1:1	0.502	1.138	0.571	-
1 745	349000	DFT-s QPSK	D	40	20.0	19.51	0.03	Left Tilt	0	108	108	1:1	0.478	1.119	0.535	-
1 745	349000	DFT-s QPSK	D	40	20.0	19.44	-0.19	Right Touch	0	1	108	1:1	0.626	1.138	0.712	-
1 745	349000	DFT-s QPSK	D	40	20.0	19.51	-0.10	Right Touch	0	108	108	1:1	0.637	1.119	0.713	-
1 745	349000	DFT-s QPSK	D	40	20.0	19.44	0.02	Right Tilt	0	1	108	1:1	0.547	1.138	0.622	-
1 745	349000	DFT-s QPSK	D	40	20.0	19.51	0.10	Right Tilt	0	108	108	1:1	0.511	1.119	0.572	-
1 745	349000	CP QPSK	D	40	20.0	19.60	-0.13	Right Touch	0	1	1	1:1	0.649	1.096	0.711	A24
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 n71 Head SAR

Frequency		OFDM Mode	Ant.	Band width (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.															
680.5	136100	DFT-s QPSK	A	20	25.0	24.86	0.04	Left Touch	0	1	53	1:1	0.106	1.033	0.109	-
680.5	136100	DFT-s QPSK	A	20	25.0	24.75	-0.04	Left Touch	0	50	28	1:1	0.102	1.059	0.108	-
680.5	136100	DFT-s QPSK	A	20	25.0	24.86	0.05	Left Tilt	0	1	53	1:1	0.054	1.033	0.056	-
680.5	136100	DFT-s QPSK	A	20	25.0	24.75	-0.03	Left Tilt	0	50	28	1:1	0.057	1.059	0.060	-
680.5	136100	DFT-s QPSK	A	20	25.0	24.86	0.01	Right Touch	0	1	53	1:1	0.155	1.033	0.160	-
680.5	136100	DFT-s QPSK	A	20	25.0	24.75	0.04	Right Touch	0	50	28	1:1	0.155	1.059	0.164	A25
680.5	136100	DFT-s QPSK	A	20	25.0	24.86	-0.16	Right Tilt	0	1	53	1:1	0.063	1.033	0.065	-
680.5	136100	DFT-s QPSK	A	20	25.0	24.75	-0.12	Right Tilt	0	50	28	1:1	0.062	1.059	0.066	-
680.5	136100	CP QPSK	A	20	23.5	23.06	-0.13	Right Touch	1.5	1	1	1:1	0.093	1.107	0.103	-
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 n77 Head SAR

Frequency		OFDM Mode	Ant.	Band width (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.															
3 750	650000	DFT-s QPSK	E	100	17.0	15.77	-0.15	Left Touch	0	1	1	1:1	0.093	1.327	0.123	-
3 750	650000	DFT-s QPSK	E	100	17.0	16.13	-0.12	Left Touch	0	135	0	1:1	0.114	1.222	0.139	-
3 750	650000	DFT-s QPSK	E	100	17.0	15.77	0.05	Left Tilt	0	1	1	1:1	0.069	1.327	0.092	-
3 750	650000	DFT-s QPSK	E	100	17.0	16.13	-0.14	Left Tilt	0	135	0	1:1	0.087	1.222	0.106	-
3 750	650000	DFT-s QPSK	E	100	17.0	15.77	-0.10	Right Touch	0	1	1	1:1	0.332	1.327	0.441	-
3 750	650000	DFT-s QPSK	E	100	17.0	16.13	-0.18	Right Touch	0	135	0	1:1	0.286	1.222	0.349	-
3 750	650000	DFT-s QPSK	E	100	17.0	15.31	-0.12	Right Touch	0	270	0	1:1	0.264	1.476	0.390	-
3 930	662000	DFT-s QPSK	E	100	17.0	15.67	0.08	Right Touch	0	1	1	1:1	0.287	1.358	0.390	-
3 930	662000	DFT-s QPSK	E	100	17.0	15.75	0.03	Right Touch	0	135	0	1:1	0.318	1.334	0.424	-
3 750	650000	DFT-s QPSK	E	100	17.0	15.77	-0.17	Right Tilt	0	1	1	1:1	0.294	1.327	0.390	-
3 750	650000	DFT-s QPSK	E	100	17.0	16.13	-0.18	Right Tilt	0	135	0	1:1	0.286	1.222	0.349	-
3 750	650000	CP QPSK	E	100	17.0	15.76	-0.16	Right Touch	0	1	1	1:1	0.421	1.330	0.560	A26
3500.01	633334	DFT-s QPSK	E	100	17.0	15.88	0.15	Right Touch	0	1	137	1:1	0.285	1.294	0.369	-
3500.01	633334	DFT-s QPSK	E	100	17.0	15.88	0.09	Right Touch	0	135	67	1:1	0.289	1.294	0.374	-
3 750	650000	DFT-s QPSK	H	100	14.0	13.82	0.14	Left Touch	0	1	1	1:1	0.020	1.042	0.021	-
3 750	650000	DFT-s QPSK	H	100	14.0	13.82	0.03	Left Tilt	0	1	1	1:1	0.016	1.042	0.017	-
3 750	650000	DFT-s QPSK	H	100	14.0	13.82	0.08	Right Touch	0	1	1	1:1	0.019	1.042	0.020	-
3 750	650000	DFT-s QPSK	H	100	14.0	13.82	0.11	Right Tilt	0	1	1	1:1	0.019	1.042	0.020	-
3 500.01	633334	DFT-s QPSK	H	100	14.0	12.18	0.12	Left Touch	0	1	1	1:1	0.009	1.521	0.014	-
3 930	662000	DFT-s QPSK	B	100	15.5	15.43	0.01	Left Touch	0	1	1	1:1	0.020	1.016	0.020	-
3 930	662000	DFT-s QPSK	B	100	15.5	15.43	0.19	Left Tilt	0	1	1	1:1	0.015	1.016	0.015	-
3 930	662000	DFT-s QPSK	B	100	15.5	15.43	-0.14	Right Touch	0	1	1	1:1	0.002	1.016	0.002	-
3 930	662000	DFT-s QPSK	B	100	15.5	15.43	-0.13	Right Tilt	0	1	1	1:1	0.000	1.016	0.000	-
3 500.01	633334	DFT-s QPSK	B	100	15.5	13.85	-0.11	Left Touch	0	1	1	1:1	0.002	1.462	0.003	-
3 750	650000	DFT-s QPSK	I	100	13.5	13.48	0.14	Left Touch	0	1	1	1:1	0.017	1.005	0.017	-
3 750	650000	DFT-s QPSK	I	100	13.5	13.48	0.16	Left Tilt	0	1	1	1:1	0.020	1.005	0.020	-
3 750	650000	DFT-s QPSK	I	100	13.5	13.48	0.00	Right Touch	0	1	1	1:1	0.005	1.005	0.005	-
3 750	650000	DFT-s QPSK	I	100	13.5	13.48	-0.17	Right Tilt	0	1	1	1:1	0.006	1.005	0.006	-
3 500.01	633334	DFT-s QPSK	I	100	13.5	11.57	0.04	Left Tilt	0	1	1	1:1	0.151	1.560	0.236	-
ANSI/ IEEE C95.1 - 2005- Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Head 1.6 W/kg Averaged over 1 gram							

@Note. Ant. H, B, I SRS was tested with DFT-s OFDM QPSK 1RB 1offset as CW was the Limitation of the manufacturer's S/W tool setup.

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)	(Mbps)	(dBm)	(dBm)	(dB)			(W/kg)	(W/kg)		(Duty)	(W/kg)	
2 437	6	802.11b	F	20	1	17.0	16.79	0.05	Left Touch	99.1	0.235	0.123	1.050	1.009	0.130	-
2 437	6	802.11b	F	20	1	17.0	16.79	-0.12	Left Tilt	99.1	0.051	0.033	1.050	1.009	0.035	-
2 437	6	802.11b	F	20	1	17.0	16.79	-0.15	Right Touch	99.1	0.908	0.408	1.050	1.009	0.432	A27
2 437	6	802.11b	F	20	1	17.0	16.79	-0.09	Right Tilt	99.1	0.139	0.080	1.050	1.009	0.085	-
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)	
5 310	62	802.11n	E	40	MCS0	14.0	13.70	-0.15	Left Touch	87.0	0.072	0.057	1.014	1.149	0.070	-
5 310	62	802.11n	E	40	MCS0	14.0	13.70	0.01	Left Tilt	87.0	0.068	0.051	1.014	1.149	0.063	-
5 310	62	802.11n	E	40	MCS0	14.0	13.70	0.13	Right Touch	87.0	0.176	0.131	1.014	1.149	0.161	-
5 310	62	802.11n	E	40	MCS0	14.0	13.70	0.09	Right Tilt	87.0	0.159	0.127	1.014	1.149	0.156	-
5 510	102	802.11n	E	40	MCS0	14.0	13.96	0.05	Left Touch	87.0	0.052	0.031	1.009	1.149	0.036	-
5 510	102	802.11n	E	40	MCS0	14.0	13.96	0.07	Left Tilt	87.0	0.061	0.038	1.009	1.149	0.044	-
5 510	102	802.11n	E	40	MCS0	14.0	13.96	0.02	Right Touch	87.0	0.202	0.188	1.009	1.149	0.218	A28
5 510	102	802.11n	E	40	MCS0	14.0	13.96	-0.11	Right Tilt	87.0	0.140	0.153	1.009	1.149	0.177	-
5 755	151	802.11n	E	40	MCS0	14.0	13.74	0.13	Left Touch	87.0	0.066	0.036	1.062	1.149	0.044	-
5 755	151	802.11n	E	40	MCS0	14.0	13.74	-0.16	Left Tilt	87.0	0.045	0.038	1.062	1.149	0.046	-
5 755	151	802.11n	E	40	MCS0	14.0	13.74	-0.03	Right Touch	87.0	0.097	0.079	1.062	1.149	0.096	-
5 755	151	802.11n	E	40	MCS0	14.0	13.74	0.16	Right Tilt	87.0	0.133	0.077	1.062	1.149	0.094	-
5 875	175	802.11n	E	40	MCS0	14.0	13.84	0.07	Left Touch	87.0	0.104	0.056	1.038	1.149	0.067	-
5 875	175	802.11n	E	40	MCS0	14.0	13.84	-0.07	Left Tilt	87.0	0.087	0.054	1.038	1.149	0.064	-
5 875	175	802.11n	E	40	MCS0	14.0	13.84	0.17	Right Touch	87.0	0.105	0.075	1.038	1.149	0.089	-
5 875	175	802.11n	E	40	MCS0	14.0	13.84	-0.03	Right Tilt	87.0	0.110	0.071	1.038	1.149	0.085	-
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 (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Meas. SAR	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
MHz	Ch.							(W/kg)				
2 480	78	DH5	F	13.0	11.85	0.02	Left Touch	0.051	1.303	1.013	0.067	-
2 480	78	DH5	F	13.0	11.85	0.05	Left Tilt	0.010	1.303	1.013	0.013	-
2 480	78	DH5	F	13.0	11.85	-0.04	Right Touch	0.016	1.303	1.013	0.021	-
2 480	78	DH5	F	13.0	11.85	0.03	Right Tilt	0.003	1.303	1.013	0.004	-
2 480	39	LE 125k(255)	F	13.0	11.96	-0.11	Left Touch	0.047	1.271	1.004	0.060	-
2 480	39	LE 125k(255)	F	13.0	11.96	0.18	Left Tilt	0.018	1.271	1.004	0.023	-
2 480	39	LE 125k(255)	F	13.0	11.96	-0.13	Right Touch	0.164	1.271	1.004	0.209	A29
2 480	39	LE 125k(255)	F	13.0	11.96	-0.11	Right Tilt	0.040	1.271	1.004	0.051	-
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 Body/Hotspot SAR Measurement Results

GSM 850 Body/Hotspot SAR													
Frequency		Mode	Ant.	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dBm)	(dBm)	(dB)			(mm)	(W/kg)		(W/kg)	
836.6	190	GPRS 4Tx	A	27.0	25.93	-0.16	Rear	1:2.07	5	0.811	1.279	1.037	-
824.2	128	GPRS 4Tx	A	27.0	25.75	0.09	Rear	1:2.07	5	0.660	1.334	0.880	-
848.8	251	GPRS 4Tx	A	27.0	25.97	-0.01	Rear	1:2.07	5	0.863	1.268	1.094	B1
836.6	190	GPRS 4Tx	A	27.0	25.93	-0.02	Front	1:2.07	5	0.434	1.279	0.555	-
836.6	190	GPRS 4Tx	A	27.0	25.93	-0.09	Left	1:2.07	5	0.121	1.279	0.155	-
836.6	190	GPRS 4Tx	A	27.0	25.93	-0.04	Right	1:2.07	5	0.289	1.279	0.370	-
836.6	190	GPRS 4Tx	A	27.0	25.93	0.13	Bottom	1:2.07	5	0.618	1.279	0.790	-
836.6	190	GSM Voice	A	33.0	32.19	-0.08	Rear	1:8.3	5	0.737	1.210	0.888	-
824.2	128	GSM Voice	A	33.0	32.08	0.12	Rear	1:8.3	5	0.641	1.240	0.792	-
848.8	251	GSM Voice	A	33.0	32.54	-0.03	Rear	1:8.3	5	0.575	1.110	0.639	-
836.6	190	GSM Voice	A	33.0	32.19	-0.17	Front	1:8.3	5	0.647	1.210	0.780	-
848.8	251	GPRS 4Tx	A	27.0	25.93	-0.04	Rear	1:2.07	5	0.788	1.280	1.008	#
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 Variability measurement.

GSM 1900 Body/Hotspot SAR													
Frequency		Mode	Ant.	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dBm)	(dBm)	(dB)			(mm)	(W/kg)		(W/kg)	
1880	661	GPRS 4Tx	B	21.0	19.75	0.17	Rear	1:2.07	5	0.530	1.334	0.707	B2
1880	661	GPRS 4Tx	B	21.0	19.75	0.11	Front	1:2.07	5	0.303	1.334	0.404	-
1880	661	GPRS 4Tx	B	21.0	19.75	0.15	Left	1:2.07	5	0.254	1.334	0.339	-
1880	661	GPRS 4Tx	B	21.0	19.75	0.13	Right	1:2.07	5	0.076	1.334	0.101	-
1880	661	GPRS 4Tx	B	21.0	19.75	0.02	Bottom	1:2.07	5	0.495	1.334	0.660	-
1880	661	GSM Voice	B	27.0	25.91	0.11	Rear	1:8.3	5	0.536	1.285	0.689	-
1880	661	GSM Voice	B	27.0	25.91	0.18	Front	1:8.3	5	0.353	1.285	0.454	-
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 Body/Hotspot SAR

Frequency		Mode	Ant.	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dBm)	(dBm)	(dB)			(mm)	(W/kg)		(W/kg)	
836.6	4183	RMC	A	21.0	19.56	0.13	Rear	1:1	5	0.471	1.393	0.656	B3
836.6	4183	RMC	A	21.0	19.56	0.00	Front	1:1	5	0.262	1.393	0.365	-
836.6	4183	RMC	A	21.0	19.56	0.10	Left	1:1	5	0.064	1.393	0.089	-
836.6	4183	RMC	A	21.0	19.56	0.10	Right	1:1	5	0.146	1.393	0.203	-
836.6	4183	RMC	A	21.0	19.56	0.16	Bottom	1:1	5	0.378	1.393	0.527	-
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 Body/Hotspot SAR

Frequency		Mode	Ant.	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dBm)	(dBm)	(dB)			(mm)	(W/kg)		(W/kg)	
1 732.4	1412	RMC	A	20.00	19.56	-0.04	Rear	1:1	5	0.716	1.107	0.793	-
1 732.4	1412	RMC	A	20.00	19.56	-0.02	Front	1:1	5	0.273	1.107	0.302	-
1 732.4	1412	RMC	A	20.00	19.56	0.02	Left	1:1	5	0.273	1.107	0.302	-
1 732.4	1412	RMC	A	20.00	19.56	0.03	Right	1:1	5	0.071	1.107	0.079	-
1 732.4	1412	RMC	A	20.00	19.56	-0.06	Bottom	1:1	5	0.918	1.107	1.016	-
1 712.4	1312	RMC	A	20.00	19.53	0.06	Bottom	1:1	5	0.977	1.114	1.088	B4
1 752.6	1513	RMC	A	20.00	19.87	0.05	Bottom	1:1	5	0.933	1.030	0.961	-
1 712.4	1312	RMC	A	20.00	19.53	0.05	Bottom	1:1	5	0.974	1.114	1.085	-
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 Variability measurement.

UMTS Band 2 Body/Hotspot SAR

Frequency		Mode	Ant.	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dBm)	(dBm)	(dB)			(mm)	(W/kg)		(W/kg)	
1 880.0	9400	RMC	A	19.00	17.12	0.11	Rear	1:1	5	0.501	1.545	0.773	-
1 880.0	9400	RMC	A	19.00	17.12	-0.05	Front	1:1	5	0.518	1.545	0.799	-
1 880.0	9400	RMC	A	19.00	17.12	0.13	Left	1:1	5	0.290	1.545	0.447	-
1 880.0	9400	RMC	A	19.00	17.12	0.19	Right	1:1	5	0.104	1.545	0.160	-
1 880.0	9400	RMC	A	19.00	17.12	0.11	Bottom	1:1	5	0.688	1.545	1.061	-
1 852.4	9262	RMC	A	19.00	17.09	0.12	Bottom	1:1	5	0.619	1.552	0.961	-
1 907.6	9538	RMC	A	19.00	17.22	0.15	Bottom	1:1	5	0.761	1.507	1.147	B5
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 2 (PCS) Body/Hotspot SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)										
1 880	18900	QPSK	D	20	21.0	19.70	-0.13	Rear	0	1	0	1:1	5	0.373	1.349	0.503	-
1 880	18900	QPSK	D	20	21.0	19.72	0.12	Rear	0	50	0	1:1	5	0.377	1.343	0.506	-
1 880	18900	QPSK	D	20	21.0	19.70	-0.17	Front	0	1	0	1:1	5	0.158	1.349	0.213	-
1 880	18900	QPSK	D	20	21.0	19.72	0.09	Front	0	50	0	1:1	5	0.161	1.343	0.216	-
1 880	18900	QPSK	D	20	21.0	19.70	-0.19	Left	0	1	0	1:1	5	0.059	1.349	0.080	-
1 880	18900	QPSK	D	20	21.0	19.72	0.01	Left	0	50	0	1:1	5	0.061	1.343	0.082	-
1 880	18900	QPSK	D	20	21.0	19.70	0.19	Top	0	1	0	1:1	5	0.564	1.349	0.761	-
1 880	18900	QPSK	D	20	21.0	19.72	0.17	Top	0	50	0	1:1	5	0.570	1.343	0.766	B6
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 7 Body/Hotspot SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)										
2 510	20850	QPSK	B	20	19.0	17.91	0.04	Rear	0	1	0	1:1	5	0.749	1.285	0.962	-
2 535	21100	QPSK	B	20	19.0	17.83	-0.01	Rear	0	1	49	1:1	5	0.630	1.309	0.825	-
2 560	21350	QPSK	B	20	19.0	17.82	-0.03	Rear	0	1	49	1:1	5	0.563	1.312	0.739	-
2 510	20850	QPSK	B	20	19.0	18.20	0.12	Rear	0	50	0	1:1	5	0.830	1.202	0.998	-
2 535	21100	QPSK	B	20	19.0	17.87	0.12	Rear	0	50	25	1:1	5	0.697	1.297	0.904	-
2 560	21350	QPSK	B	20	19.0	17.82	0.02	Rear	0	50	0	1:1	5	0.602	1.312	0.790	-
2 560	21350	QPSK	B	20	19.0	17.73	0.13	Rear	0	100	0	1:1	5	0.598	1.340	0.801	-
2 510	20850	QPSK	B	20	19.0	17.91	0.19	Front	0	1	0	1:1	5	0.493	1.285	0.634	-
2 510	20850	QPSK	B	20	19.0	18.20	0.13	Front	0	50	0	1:1	5	0.521	1.202	0.626	-
2 510	20850	QPSK	B	20	19.0	17.91	-0.01	Left	0	1	0	1:1	5	0.210	1.285	0.270	-
2 510	20850	QPSK	B	20	19.0	18.20	-0.02	Left	0	50	0	1:1	5	0.219	1.202	0.263	-
2 510	20850	QPSK	B	20	19.0	17.91	0.16	Right	0	1	0	1:1	5	0.115	1.285	0.148	-
2 510	20850	QPSK	B	20	19.0	18.20	0.10	Right	0	50	0	1:1	5	0.124	1.202	0.149	-
2 510	20850	QPSK	B	20	19.0	17.91	0.00	Bottom	0	1	0	1:1	5	0.707	1.285	0.908	-
2 535	21100	QPSK	B	20	19.0	17.83	0.01	Bottom	0	1	49	1:1	5	0.599	1.309	0.784	-
2 560	21350	QPSK	B	20	19.0	17.82	0.04	Bottom	0	1	49	1:1	5	0.681	1.312	0.893	-
2 510	20850	QPSK	B	20	19.0	18.20	0.02	Bottom	0	50	0	1:1	5	0.991	1.202	1.191	B7
2 535	21100	QPSK	B	20	19.0	17.87	0.01	Bottom	0	50	25	1:1	5	0.824	1.297	1.069	-
2 560	21350	QPSK	B	20	19.0	17.82	0.01	Bottom	0	50	0	1:1	5	0.741	1.312	0.972	-
2 560	21350	QPSK	B	20	19.0	17.73	0.02	Bottom	0	100	0	1:1	5	0.729	1.340	0.977	-
2 510	20850	QPSK	B	20	19.0	18.20	0.11	Bottom	0	50	0	1:1	5	0.939	1.202	1.129	#
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 Variability measurement.

LTE FDD Band 12 Body/Hotspot SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	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	21.0	20.52	0.01	Rear	0	1	0	1:1	5	0.206	1.117	0.230	B8
707.5	23095	QPSK	A	10	21.0	20.64	0.03	Rear	0	25	0	1:1	5	0.204	1.086	0.222	-
707.5	23095	QPSK	A	10	21.0	20.52	0.06	Front	0	1	0	1:1	5	0.114	1.117	0.127	-
707.5	23095	QPSK	A	10	21.0	20.64	0.07	Front	0	25	0	1:1	5	0.120	1.086	0.130	-
707.5	23095	QPSK	A	10	21.0	20.52	-0.09	Left	0	1	0	1:1	5	0.044	1.117	0.049	-
707.5	23095	QPSK	A	10	21.0	20.64	-0.08	Left	0	25	0	1:1	5	0.045	1.086	0.049	-
707.5	23095	QPSK	A	10	21.0	20.52	0.00	Right	0	1	0	1:1	5	0.102	1.117	0.114	-
707.5	23095	QPSK	A	10	21.0	20.64	0.06	Right	0	25	0	1:1	5	0.100	1.086	0.109	-
707.5	23095	QPSK	A	10	21.0	20.52	-0.03	Bottom	0	1	0	1:1	5	0.183	1.117	0.204	-
707.5	23095	QPSK	A	10	21.0	20.64	-0.02	Bottom	0	25	0	1:1	5	0.180	1.086	0.195	-
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 Body/Hotspot SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	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	21.0	19.60	-0.14	Rear	0	1	0	1:1	5	0.277	1.380	0.382	B9
782	23230	QPSK	A	10	21.0	19.58	0.00	Rear	1	25	0	1:1	5	0.272	1.387	0.377	-
782	23230	QPSK	A	10	21.0	19.60	0.00	Front	0	1	0	1:1	5	0.143	1.380	0.197	-
782	23230	QPSK	A	10	21.0	19.58	0.00	Front	1	25	0	1:1	5	0.144	1.387	0.200	-
782	23230	QPSK	A	10	21.0	19.60	0.09	Left	0	1	0	1:1	5	0.057	1.380	0.079	-
782	23230	QPSK	A	10	21.0	19.58	-0.12	Left	1	25	0	1:1	5	0.057	1.387	0.079	-
782	23230	QPSK	A	10	21.0	19.60	-0.01	Right	0	1	0	1:1	5	0.138	1.380	0.190	-
782	23230	QPSK	A	10	21.0	19.58	-0.06	Right	1	25	0	1:1	5	0.129	1.387	0.179	-
782	23230	QPSK	A	10	21.0	19.60	-0.03	Bottom	0	1	0	1:1	5	0.228	1.380	0.315	-
782	23230	QPSK	A	10	21.0	19.58	-0.08	Bottom	1	25	0	1:1	5	0.218	1.387	0.302	-
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 14 Body/Hotspot SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)				(mm)	(W/kg)		(W/kg)	
793	23330	QPSK	A	10	21.0	19.75	-0.10	Rear	0	1	24	1:1	5	0.337	1.334	0.450	B10
793	23330	QPSK	A	10	21.0	19.82	-0.01	Rear	1	25	0	1:1	5	0.323	1.312	0.424	-
793	23330	QPSK	A	10	21.0	19.75	-0.02	Front	0	1	24	1:1	5	0.146	1.334	0.195	-
793	23330	QPSK	A	10	21.0	19.82	0.01	Front	1	25	0	1:1	5	0.147	1.312	0.193	-
793	23330	QPSK	A	10	21.0	19.75	-0.10	Left	0	1	24	1:1	5	0.044	1.334	0.059	-
793	23330	QPSK	A	10	21.0	19.82	-0.09	Left	1	25	0	1:1	5	0.048	1.312	0.063	-
793	23330	QPSK	A	10	21.0	19.75	-0.02	Right	0	1	24	1:1	5	0.082	1.334	0.109	-
793	23330	QPSK	A	10	21.0	19.82	-0.01	Right	1	25	0	1:1	5	0.083	1.312	0.109	-
793	23330	QPSK	A	10	21.0	19.75	-0.03	Bottom	0	1	24	1:1	5	0.231	1.334	0.308	-
793	23330	QPSK	A	10	21.0	19.82	0.00	Bottom	1	25	0	1:1	5	0.226	1.312	0.297	-
ANSI/ IEEE C95.1 - 2005- Safety Limit									Body								
Spatial Peak									1.6 W/kg								
Uncontrolled Exposure/ General Population									Averaged over 1 gram								

LTE FDD Band 25 (PCS) Body/Hotspot SAR

Frequency		Mode	Ant.	Band width	Tune- Up Limit	Meas. Power	Power Drift	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)						(mm)	(W/kg)		(W/kg)	
1 882.5	26365	QPSK	B	20	19.0	18.30	0.03	Rear	0	1	0	1:1	5	0.703	1.318	0.826	-
1 860	26140	QPSK	B	20	19.0	18.22	-0.02	Rear	0	1	0	1:1	5	0.651	1.343	0.779	-
1 905	26590	QPSK	B	20	19.0	18.20	0.06	Rear	0	1	0	1:1	5	0.725	1.349	0.871	-
1 882.5	26365	QPSK	B	20	19.0	18.19	0.01	Rear	0	50	0	1:1	5	0.708	1.352	0.853	-
1 860	26140	QPSK	B	20	19.0	18.10	-0.01	Rear	0	50	0	1:1	5	0.709	1.380	0.872	-
1 905	26590	QPSK	B	20	19.0	18.15	0.00	Rear	0	50	0	1:1	5	0.796	1.365	0.968	B11
1 882.5	26365	QPSK	B	20	19.0	18.17	0.06	Rear	0	100	0	1:1	5	0.744	1.358	0.901	-
1 882.5	26365	QPSK	B	20	19.0	18.30	0.16	Front	0	1	0	1:1	5	0.652	1.318	0.766	-
1 882.5	26365	QPSK	B	20	19.0	18.19	0.05	Front	0	50	0	1:1	5	0.678	1.352	0.817	-
1 860	26140	QPSK	B	20	19.0	18.10	0.02	Front	0	50	0	1:1	5	0.640	1.380	0.787	-
1 905	26590	QPSK	B	20	19.0	18.15	-0.03	Front	0	50	0	1:1	5	0.709	1.365	0.862	-
1 882.5	26365	QPSK	B	20	19.0	18.17	0.17	Front	0	100	0	1:1	5	0.671	1.358	0.813	-
1 882.5	26365	QPSK	B	20	19.0	18.30	0.08	Left	0	1	0	1:1	5	0.254	1.318	0.298	-
1 882.5	26365	QPSK	B	20	19.0	18.19	0.10	Left	0	50	0	1:1	5	0.261	1.352	0.315	-
1 882.5	26365	QPSK	B	20	19.0	18.30	-0.02	Right	0	1	0	1:1	5	0.106	1.318	0.125	-
1 882.5	26365	QPSK	B	20	19.0	18.19	-0.03	Right	0	50	0	1:1	5	0.102	1.352	0.123	-
1 882.5	26365	QPSK	B	20	19.0	18.30	-0.01	Bottom	0	1	0	1:1	5	0.684	1.318	0.804	-
1 860	26140	QPSK	B	20	19.0	18.22	0.04	Bottom	0	1	0	1:1	5	0.612	1.343	0.733	-
1 905	26590	QPSK	B	20	19.0	18.20	-0.04	Bottom	0	1	0	1:1	5	0.765	1.349	0.920	-
1 882.5	26365	QPSK	B	20	19.0	18.19	0.03	Bottom	0	50	0	1:1	5	0.694	1.352	0.836	-
1 860	26140	QPSK	B	20	19.0	18.10	0.00	Bottom	0	50	0	1:1	5	0.630	1.380	0.775	-
1 905	26590	QPSK	B	20	19.0	18.15	-0.02	Bottom	0	50	0	1:1	5	0.787	1.365	0.957	-
1 882.5	26365	QPSK	B	20	19.0	18.17	0.02	Bottom	0	100	0	1:1	5	0.702	1.358	0.850	-
ANSI/ IEEE C95.1 - 2005- Safety Limit									Body								
Spatial Peak									1.6 W/kg								
Uncontrolled Exposure/ General Population									Averaged over 1 gram								

LTE FDD Band 26 (Cell) Body/Hotspot SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)						(mm)	(W/kg)		(W/kg)	
8 31.5	26865	QPSK	A	15	20.0	18.58	0.00	Rear	0	1	0	1:1	5	0.383	1.387	0.531	-
8 31.5	26865	QPSK	A	15	20.0	18.57	0.03	Rear	0	36	0	1:1	5	0.397	1.390	0.552	B12
8 31.5	26865	QPSK	A	15	20.0	18.58	0.06	Front	0	1	0	1:1	5	0.198	1.387	0.275	-
8 31.5	26865	QPSK	A	15	20.0	18.57	-0.01	Front	0	36	0	1:1	5	0.172	1.390	0.239	-
8 31.5	26865	QPSK	A	15	20.0	18.58	-0.08	Left	0	1	0	1:1	5	0.052	1.387	0.072	-
8 31.5	26865	QPSK	A	15	20.0	18.57	0.03	Left	0	36	0	1:1	5	0.052	1.390	0.072	-
8 31.5	26865	QPSK	A	15	20.0	18.58	-0.02	Right	0	1	0	1:1	5	0.119	1.387	0.165	-
8 31.5	26865	QPSK	A	15	20.0	18.57	0.17	Right	0	36	0	1:1	5	0.114	1.390	0.158	-
8 31.5	26865	QPSK	A	15	20.0	18.58	-0.01	Bottom	0	1	0	1:1	5	0.282	1.387	0.391	-
8 31.5	26865	QPSK	A	15	20.0	18.57	0.02	Bottom	0	36	0	1:1	5	0.293	1.390	0.407	-
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 30 Body/Hotspot SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)						(mm)	(W/kg)		(W/kg)	
2 310	27710	QPSK	B	10	19.0	17.76	-0.03	Rear	0	1	24	1:1	5	0.667	1.330	0.887	-
2 310	27710	QPSK	B	10	19.0	17.69	-0.02	Rear	0	25	0	1:1	5	0.647	1.352	0.875	-
2 310	27710	QPSK	B	10	19.0	17.67	-0.01	Rear	0	50	0	1:1	5	0.575	1.358	0.781	-
2 310	27710	QPSK	B	10	19.0	17.76	0.11	Front	0	1	24	1:1	5	0.393	1.330	0.523	-
2 310	27710	QPSK	B	10	19.0	17.69	0.07	Front	0	25	0	1:1	5	0.428	1.352	0.579	-
2 310	27710	QPSK	B	10	19.0	17.76	-0.09	Left	0	1	24	1:1	5	0.241	1.330	0.321	-
2 310	27710	QPSK	B	10	19.0	17.69	0.06	Left	0	25	0	1:1	5	0.266	1.352	0.360	-
2 310	27710	QPSK	B	10	19.0	17.76	-0.12	Right	0	1	24	1:1	5	0.096	1.330	0.128	-
2 310	27710	QPSK	B	10	19.0	17.69	-0.19	Right	0	25	0	1:1	5	0.104	1.352	0.141	-
2 310	27710	QPSK	B	10	19.0	17.76	0.02	Bottom	0	1	24	1:1	5	0.544	1.330	0.724	-
2 310	27710	QPSK	B	10	19.0	17.69	-0.01	Bottom	0	25	0	1:1	5	0.755	1.352	1.021	B13
2 310	27710	QPSK	B	10	19.0	17.67	0.00	Bottom	0	50	0	1:1	5	0.607	1.358	0.824	-
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 Body/Hotspot SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB	RB	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.	
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)	Size	offset		(mm)	(W/kg)		(W/kg)		
2 593	40620	QPSK	B	20	19.0	18.60	-0.07	Rear	0	1	49	1:1.58	5	0.293	1.096	0.321	-	
2 593	40620	QPSK	B	20	19.0	18.55	-0.13	Rear	0	50	0	1:1.58	5	0.299	1.109	0.332	-	
2 593	40620	QPSK	B	20	19.0	18.60	0.16	Front	0	1	49	1:1.58	5	0.099	1.109	0.110	-	
2 593	40620	QPSK	B	20	19.0	18.55	0.17	Front	0	50	0	1:1.58	5	0.101	1.096	0.111	-	
2 593	40620	QPSK	B	20	19.0	18.60	-0.16	Left	0	1	49	1:1.58	5	0.065	1.109	0.072	-	
2 593	40620	QPSK	B	20	19.0	18.55	-0.14	Left	0	50	0	1:1.58	5	0.065	1.096	0.071	-	
2 593	40620	QPSK	B	20	19.0	18.60	0.03	Bottom	0	1	49	1:1.58	5	0.319	1.109	0.354	-	
2 593	40620	QPSK	B	20	19.0	18.55	-0.05	Bottom	0	50	0	1:1.58	5	0.326	1.096	0.357	-	
Uplink Carrier Aggregation																		
PCC	2 593	40620	QPSK	B	20	19.0	17.89	-0.11	Bottom	0	50	0	1:1.58	5	0.360	1.096	0.465	B14
SCC	2 573.2	40422	QPSK	B	20					0	50	49	1:1.58					
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 48 Body/Hotspot SAR

Frequency			Mode	Ant.	Band width	Tune- Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB	RB	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.	(MHz)			(dBm)	(dBm)	(dB)	(dB)		(dB)	Size	offset		(mm)	(W/kg)		(W/kg)	
3 690	56640	QPSK	E	20	20.0	19.02	0.18	Rear	0	1	49	1:1.58	5	0.303	1.253	0.380	-	
3 560	55340	QPSK	E	20	20.0	18.98	0.12	Rear	0	50	0	1:1.58	5	0.324	1.265	0.410	-	
3 690	56640	QPSK	E	20	20.0	19.02	0.15	Front	0	1	49	1:1.58	5	0.169	1.253	0.212	-	
3 560	55340	QPSK	E	20	20.0	18.98	-0.13	Front	0	50	0	1:1.58	5	0.158	1.265	0.200	-	
3 690	56640	QPSK	E	20	20.0	19.02	-0.13	Left	0	1	49	1:1.58	5	0.124	1.253	0.155	-	
3 560	55340	QPSK	E	20	20.0	18.98	-0.13	Left	0	50	0	1:1.58	5	0.127	1.265	0.161	-	
3 690	56640	QPSK	E	20	20.0	19.02	0.12	Top	0	1	49	1:1.58	5	0.165	1.253	0.207	-	
3 560	55340	QPSK	E	20	20.0	18.98	-0.16	Top	0	50	0	1:1.58	5	0.197	1.265	0.249	-	
3 560	55340	QPSK	E	20	20.0	18.97	-0.13	Rear	0	50	49	1:1.58	5	0.328	1.268	0.416	B15	
Uplink Carrier Aggregation																		
PCC	3 560	55340	QPSK	E	20	20.0	18.58	0.16	Rear	0	50	49	1:1.58	5	0.269	1.387	0.373	-
SCC	3 579.8	55538	QPSK	E	20	20.0				0	50	0	1:1.58					
ANSI/IEEE C95.1 - 2005– Safety Limit Spatial Peak										Body 1.6 W/kg								
Uncontrolled Exposure/General Population										Averaged over 1 gram								

LTE FDD Band 66 (AWS) Body/Hotspot SAR

Frequency		Mode	Ant.	Band width (MHz)	Tune- Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.																
1 720	132072	QPSK	B	20	20.0	19.65	-0.02	Rear	0	1	49	1:1	5	0.621	1.084	0.673	-
1 720	132072	QPSK	B	20	20.0	19.60	-0.04	Rear	0	50	0	1:1	5	0.703	1.096	0.770	-
1 720	132072	QPSK	B	20	20.0	19.65	-0.06	Front	0	1	49	1:1	5	0.325	1.084	0.352	-
1 720	132072	QPSK	B	20	20.0	19.60	-0.10	Front	0	50	0	1:1	5	0.346	1.096	0.379	-
1 720	132072	QPSK	B	20	20.0	19.65	0.17	Left	0	1	49	1:1	5	0.239	1.084	0.259	-
1 720	132072	QPSK	B	20	20.0	19.60	0.14	Left	0	50	0	1:1	5	0.240	1.096	0.263	-
1 720	132072	QPSK	B	20	20.0	19.65	0.02	Right	0	1	49	1:1	5	0.069	1.084	0.075	-
1 720	132072	QPSK	B	20	20.0	19.60	0.03	Right	0	50	0	1:1	5	0.077	1.096	0.084	-
1 720	132072	QPSK	B	20	20.0	19.65	-0.13	Bottom	0	1	49	1:1	5	0.623	1.084	0.675	-
1 720	132072	QPSK	B	20	20.0	19.60	0.02	Bottom	0	50	0	1:1	5	0.494	1.096	0.541	-
1 720	132072	QPSK	D	20	20.0	19.70	-0.12	Rear	0	1	49	1:1	5	0.665	1.072	0.713	-
1 720	132072	QPSK	D	20	20.0	19.81	0.11	Rear	0	50	49	1:1	5	0.680	1.045	0.711	-
1 720	132072	QPSK	D	20	20.0	19.70	-0.13	Front	0	1	49	1:1	5	0.356	1.072	0.382	-
1 720	132072	QPSK	D	20	20.0	19.81	0.14	Front	0	50	49	1:1	5	0.367	1.045	0.384	-
1 720	132072	QPSK	D	20	20.0	19.70	0.05	Left	0	1	49	1:1	5	0.144	1.072	0.154	-
1 720	132072	QPSK	D	20	20.0	19.81	0.17	Left	0	50	49	1:1	5	0.143	1.045	0.149	-
1 720	132072	QPSK	D	20	20.0	19.70	0.10	Top	0	1	49	1:1	5	0.908	1.072	0.973	-
1 745	132322	QPSK	D	20	20.0	19.42	0.17	Top	0	1	49	1:1	5	0.861	1.143	0.984	-
1 770	132572	QPSK	D	20	20.0	19.30	0.11	Top	0	1	49	1:1	5	0.908	1.175	1.067	-
1 720	132072	QPSK	D	20	20.0	19.81	0.05	Top	0	50	49	1:1	5	0.938	1.045	0.980	-
1 745	132322	QPSK	D	20	20.0	19.42	0.15	Top	0	50	49	1:1	5	0.916	1.143	1.047	-
1 770	132572	QPSK	D	20	20.0	19.41	0.14	Top	0	50	49	1:1	5	0.958	1.146	1.098	-
1 720	132072	QPSK	D	20	20.0	19.50	0.10	Top	0	100	0	1:1	5	0.941	1.122	1.056	-
1 770	132572	QPSK	D	20	20.0	19.41	0.18	Top	0	50	49	1:1	5	0.971	1.146	1.113	B16#
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 Variability measurement.

LTE FDD Band 71 Body/Hotspot SAR

Frequency		Mode	Ant.	Band width	Tune- Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)				(mm)	(W/kg)		(W/kg)	
680.5	133297	QPSK	A	20	21.0	20.55	-0.02	Rear	0	1	0	1:1	5	0.276	1.109	0.306	-
680.5	133297	QPSK	A	20	21.0	20.65	-0.16	Rear	1	50	0	1:1	5	0.277	1.084	0.300	B17
680.5	133297	QPSK	A	20	21.0	20.55	-0.02	Front	0	1	0	1:1	5	0.112	1.109	0.124	-
680.5	133297	QPSK	A	20	21.0	20.65	-0.07	Front	1	50	0	1:1	5	0.117	1.084	0.127	-
680.5	133297	QPSK	A	20	21.0	20.55	-0.15	Left	0	1	0	1:1	5	0.054	1.109	0.060	-
680.5	133297	QPSK	A	20	21.0	20.65	-0.08	Left	1	50	0	1:1	5	0.052	1.084	0.056	-
680.5	133297	QPSK	A	20	21.0	20.55	-0.02	Right	0	1	0	1:1	5	0.145	1.109	0.161	-
680.5	133297	QPSK	A	20	21.0	20.65	0.04	Right	1	50	0	1:1	5	0.142	1.084	0.154	-
680.5	133297	QPSK	A	20	21.0	20.55	-0.09	Bottom	0	1	0	1:1	5	0.181	1.109	0.201	-
680.5	133297	QPSK	A	20	21.0	20.65	0.04	Bottom	1	50	0	1:1	5	0.182	1.084	0.197	-
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 n2 Body/Hotspot SAR

Frequency		OFDM Mode	Ant.	Band width	Tune- Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)				(mm)	(W/kg)		(W/kg)	
1 880	376000	DFT-s QPSK	D	40	20.0	19.44	0.11	Rear	0	1	108	1:1	5	0.660	1.138	0.751	-
1 880	376000	DFT-s QPSK	D	40	20.0	19.43	0.10	Rear	0	108	0	1:1	5	0.402	1.140	0.458	
1 880	376000	DFT-s QPSK	D	40	20.0	19.44	0.16	Front	0	1	108	1:1	5	0.431	1.138	0.490	-
1 880	376000	DFT-s QPSK	D	40	20.0	19.43	0.19	Front	0	108	0	1:1	5	0.422	1.140	0.481	-
1 880	376000	DFT-s QPSK	D	40	20.0	19.44	0.10	Left	0	1	108	1:1	5	0.107	1.138	0.122	-
1 880	376000	DFT-s QPSK	D	40	20.0	19.43	-0.17	Left	0	108	0	1:1	5	0.095	1.140	0.108	-
1 880	376000	DFT-s QPSK	D	40	20.0	19.44	-0.18	Right	0	1	108	1:1	5	0.158	1.138	0.180	-
1 880	376000	DFT-s QPSK	D	40	20.0	19.43	0.07	Right	0	108	0	1:1	5	0.161	1.140	0.184	-
1 880	376000	DFT-s QPSK	D	40	20.0	19.44	0.15	Top	0	1	108	1:1	5	0.784	1.138	0.892	-
1 880	376000	DFT-s QPSK	D	40	20.0	19.43	-0.01	Top	0	108	0	1:1	5	0.782	1.140	0.891	B18
1 880	376000	DFT-s QPSK	D	40	20.0	19.20	0.18	Top	0	216	0	1:1	5	0.622	1.202	0.748	-
1 880	376000	CP QPSK	D	40	20.0	19.27	-0.02	Top	0	1	1	1:1	5	0.773	1.183	0.914	-
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 Body/Hotspot SAR

Frequency		OFDM Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)						(mm)				
836.5	167300	DFT-s QPSK	A	20	20.0	18.88	0.06	Rear	0	1	53	1:1	5	0.309	1.294	0.400	-
836.5	167300	DFT-s QPSK	A	20	20.0	18.85	0.02	Rear	0	50	56	1:1	5	0.329	1.303	0.429	B19
836.5	167300	DFT-s QPSK	A	20	20.0	18.88	0.16	Front	0	1	53	1:1	5	0.141	1.294	0.182	-
836.5	167300	DFT-s QPSK	A	20	20.0	18.85	-0.10	Front	0	50	56	1:1	5	0.141	1.303	0.184	-
836.5	167300	DFT-s QPSK	A	20	20.0	18.88	0.11	Left	0	1	53	1:1	5	0.052	1.294	0.067	-
836.5	167300	DFT-s QPSK	A	20	20.0	18.85	0.09	Left	0	50	56	1:1	5	0.053	1.303	0.069	-
836.5	167300	DFT-s QPSK	A	20	20.0	18.88	0.17	Right	0	1	53	1:1	5	0.089	1.294	0.115	-
836.5	167300	DFT-s QPSK	A	20	20.0	18.85	-0.17	Right	0	50	56	1:1	5	0.102	1.303	0.133	-
836.5	167300	DFT-s QPSK	A	20	20.0	18.88	0.04	Bottom	0	1	53	1:1	5	0.317	1.294	0.410	-
836.5	167300	DFT-s QPSK	A	20	20.0	18.85	0.02	Bottom	0	50	56	1:1	5	0.325	1.303	0.423	-
836.5	167300	CP QPSK	A	20	20.0	18.57	-0.06	Rear	0	1	1	1:1	5	0.293	1.390	0.407	-
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 SAR

Frequency		OFDM Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)						(mm)				
1882.5	376500	DFT-s QPSK	B	40	19.5	17.67	-0.06	Rear	0	1	1	1:1	5	0.617	1.524	0.940	-
1882.5	376500	DFT-s QPSK	B	40	19.5	17.66	0.00	Rear	0	108	54	1:1	5	0.673	1.528	1.028	-
1882.5	376500	DFT-s QPSK	B	40	19.5	17.64	-0.01	Rear	0	216	0	1:1	5	0.666	1.535	1.022	-
1882.5	376500	DFT-s QPSK	B	40	19.5	17.67	0.16	Front	0	1	1	1:1	5	0.451	1.524	0.687	-
1882.5	376500	DFT-s QPSK	B	40	19.5	17.66	-0.04	Front	0	108	54	1:1	5	0.493	1.528	0.753	-
1882.5	376500	DFT-s QPSK	B	40	19.5	17.67	0.06	Left	0	1	1	1:1	5	0.354	1.524	0.539	-
1882.5	376500	DFT-s QPSK	B	40	19.5	17.66	0.16	Left	0	108	54	1:1	5	0.396	1.528	0.605	-
1882.5	376500	DFT-s QPSK	B	40	19.5	17.67	0.10	Right	0	1	1	1:1	5	0.107	1.524	0.163	-
1882.5	376500	DFT-s QPSK	B	40	19.5	17.66	0.17	Right	0	108	54	1:1	5	0.121	1.528	0.185	-
1882.5	376500	DFT-s QPSK	B	40	19.5	17.67	0.15	Bottom	0	1	1	1:1	5	0.661	1.524	1.007	-
1882.5	376500	DFT-s QPSK	B	40	19.5	17.66	0.15	Bottom	0	108	54	1:1	5	0.728	1.528	1.112	B20
1882.5	376500	DFT-s QPSK	B	40	19.5	17.64	0.13	Bottom	0	216	0	1:1	5	0.727	1.535	1.116	-
1882.5	376500	CP QPSK	B	40	19.5	17.63	0.16	Bottom	0	1	1	1:1	5	0.660	1.538	0.807	-
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 n30 Body/Hotspot SAR

Frequency		OFDM Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)										
2 310	462000	DFT-s QPSK	B	10	19.0	17.16	-0.07	Rear	0	1	1	1:1	5	0.585	1.528	0.894	-
2 310	462000	DFT-s QPSK	B	10	19.0	17.15	-0.17	Rear	0	25	0	1:1	5	0.645	1.531	0.987	B21
2 310	462000	DFT-s QPSK	B	10	19.0	17.10	-0.08	Rear	0	50	0	1:1	5	0.612	1.549	0.948	-
2 310	462000	DFT-s QPSK	B	10	19.0	17.16	-0.07	Front	0	1	1	1:1	5	0.363	1.528	0.555	-
2 310	462000	DFT-s QPSK	B	10	19.0	17.15	0.00	Front	0	25	0	1:1	5	0.354	1.531	0.542	-
2 310	462000	DFT-s QPSK	B	10	19.0	17.16	-0.10	Left	0	1	1	1:1	5	0.217	1.528	0.332	-
2 310	462000	DFT-s QPSK	B	10	19.0	17.15	-0.10	Left	0	25	0	1:1	5	0.217	1.531	0.332	-
2 310	462000	DFT-s QPSK	B	10	19.0	17.16	-0.08	Right	0	1	1	1:1	5	0.057	1.528	0.087	-
2 310	462000	DFT-s QPSK	B	10	19.0	17.15	-0.11	Right	0	25	0	1:1	5	0.056	1.531	0.086	-
2 310	462000	DFT-s QPSK	B	10	19.0	17.16	-0.02	Bottom	0	1	1	1:1	5	0.546	1.528	0.834	-
2 310	462000	DFT-s QPSK	B	10	19.0	17.15	0.05	Bottom	0	25	0	1:1	5	0.544	1.531	0.833	-
2 310	462000	CP QPSK	B	10	19.0	17.10	0.01	Bottom	0	50	0	1:1	5	0.539	1.549	0.835	-
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 41 Body/Hotspot SAR

Frequency		Mode	Ant	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)										
2 592.99	518598	DFT-s QPSK	B	100	17.0	16.07	-0.01	Rear	0	1	271	1:1	5	0.430	1.239	0.533	B22
2 592.99	518598	DFT-s QPSK	B	100	17.0	15.70	-0.10	Rear	0	135	69	1:1	5	0.315	1.349	0.425	-
2 592.99	518598	DFT-s QPSK	B	100	17.0	16.07	-0.03	Front	0	1	271	1:1	5	0.293	1.239	0.363	-
2 592.99	518598	DFT-s QPSK	B	100	17.0	15.70	-0.07	Front	0	135	69	1:1	5	0.217	1.349	0.293	-
2 592.99	518598	DFT-s QPSK	B	100	17.0	16.07	0.06	Left	0	1	271	1:1	5	0.064	1.239	0.079	-
2 592.99	518598	DFT-s QPSK	B	100	17.0	15.70	0.04	Left	0	135	69	1:1	5	0.075	1.349	0.101	-
2 592.99	518598	DFT-s QPSK	B	100	17.0	16.07	0.02	Bottom	0	1	271	1:1	5	0.422	1.239	0.523	-
2 592.99	518598	DFT-s QPSK	B	100	17.0	15.70	-0.04	Bottom	0	135	69	1:1	5	0.407	1.349	0.549	-
2 592.99	518598	CP QPSK	B	100	17.0	15.50	0.06	Bottom	0	1	1	1:1	5	0.353	1.413	0.499	-
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 n48 Body/Hotspot SAR

Frequency		OFDM Mode	Ant.	Band width (MHz)	Tune- Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.																
3 680.01	645334	DFT-s QPSK	E	40	18.0	17.19	0.12	Rear	0	1	1	1:1	5	0.325	1.205	0.392	-
3 680.01	645334	DFT-s QPSK	E	40	18.0	17.19	-0.18	Rear	0	50	0	1:1	5	0.388	1.205	0.468	-
3 680.01	645334	DFT-s QPSK	E	40	18.0	17.19	-0.01	Front	0	1	1	1:1	5	0.118	1.205	0.142	-
3 680.01	645334	DFT-s QPSK	E	40	18.0	17.19	0.12	Front	0	50	0	1:1	5	0.074	1.205	0.089	-
3 680.01	645334	DFT-s QPSK	E	40	18.0	17.19	0.06	Left	0	1	1	1:1	5	0.124	1.205	0.149	-
3 680.01	645334	DFT-s QPSK	E	40	18.0	17.19	0.09	Left	0	50	0	1:1	5	0.131	1.205	0.158	-
3 680.01	645334	DFT-s QPSK	E	40	18.0	17.19	-0.06	Top	0	1	1	1:1	5	0.173	1.205	0.208	-
3 680.01	645334	DFT-s QPSK	E	40	18.0	17.19	-0.19	Top	0	50	0	1:1	5	0.208	1.205	0.251	-
3 680.01	645334	CP QPSK	E	40	18.0	17.18	-0.11	Rear	0	1	1	1:1	5	0.489	1.208	0.591	-
3 680.01	645334	DFT-s QPSK	H	40	14.5	14.19	0.00	Rear	0	1	1	1:1	5	0.231	1.074	0.248	-
3 680.01	645334	DFT-s QPSK	H	40	14.5	14.19	0.00	Front	0	1	1	1:1	5	0.017	1.074	0.018	-
3 680.01	645334	DFT-s QPSK	H	40	14.5	14.19	0.04	Right	0	1	1	1:1	5	0.00228	1.074	0.002	-
3 680.01	645334	DFT-s QPSK	H	40	14.5	14.19	-0.02	Top	0	1	1	1:1	5	0.034	1.074	0.036	-
3 680.01	645334	DFT-s QPSK	B	40	15.0	14.91	0.00	Rear	0	1	1	1:1	5	0.103	1.021	0.105	-
3 680.01	645334	DFT-s QPSK	B	40	15.0	14.91	0.00	Front	0	1	1	1:1	5	0.043	1.021	0.044	-
3 680.01	645334	DFT-s QPSK	B	40	15.0	14.91	0.10	Left	0	1	1	1:1	5	0.00289	1.021	0.003	-
3 680.01	645334	DFT-s QPSK	B	40	15.0	14.91	0.04	Bottom	0	1	1	1:1	5	0.155	1.021	0.158	-
3 680.01	645334	DFT-s QPSK	I	40	14.0	13.92	0.00	Rear	0	1	1	1:1	5	0.672	1.019	0.685	-
3 680.01	645334	DFT-s QPSK	I	40	14.0	13.92	0.00	Front	0	1	1	1:1	5	0.016	1.019	0.016	-
3 680.01	645334	DFT-s QPSK	I	40	14.0	13.92	0.04	Left	0	1	1	1:1	5	0.000	1.019	0.000	-
3 680.01	645334	DFT-s QPSK	I	40	14.0	13.92	0.17	Top	0	1	1	1:1	5	0.071	1.019	0.072	-
3 570.00	638000	DFT-s QPSK	I	40	14.0	13.34	0.00	Rear	0	1	1	1:1	5	0.557	1.164	0.648	-
3 624.9	641666	DFT-s QPSK	I	40	14.0	13.11	0.00	Rear	0	1	1	1:1	5	0.780	1.227	0.957	B23
ANSI/ IEEE C95.1 - 2005- Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Body 1.6 W/kg Averaged over 1 gram								

@Note. Ant. H, B, I SRS was tested with DFT-s OFDM QPSK 1RB 1offset as CW was the limit of the setup.

NR FDD Band n66 Body / Hotspot SAR

Frequency		OFDM Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	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	B	40	20.0	19.64	-0.07	Rear	0	1	214	1:1	5	0.765	1.086	0.831	-
1 745	349000	DFT-s QPSK	B	40	20.0	19.64	-0.01	Rear	0	108	108	1:1	5	0.765	1.086	0.831	-
1 745	349000	DFT-s QPSK	B	40	20.0	19.37	0.09	Rear	0	216	0	1:1	5	0.743	1.156	0.859	-
1 745	349000	DFT-s QPSK	B	40	20.0	19.64	-0.14	Front	0	1	214	1:1	5	0.524	1.086	0.569	-
1 745	349000	DFT-s QPSK	B	40	20.0	19.64	0.03	Front	0	108	108	1:1	5	0.521	1.086	0.566	-
1 745	349000	DFT-s QPSK	B	40	20.0	19.64	0.09	Left	0	1	214	1:1	5	0.359	1.086	0.390	-
1 745	349000	DFT-s QPSK	B	40	20.0	19.64	0.18	Left	0	108	108	1:1	5	0.355	1.086	0.386	-
1 745	349000	DFT-s QPSK	B	40	20.0	19.64	0.14	Right	0	1	214	1:1	5	0.126	1.086	0.137	-
1 745	349000	DFT-s QPSK	B	40	20.0	19.64	0.10	Right	0	108	108	1:1	5	0.120	1.086	0.130	-
1 745	349000	DFT-s QPSK	B	40	20.0	19.64	0.04	Bottom	0	1	214	1:1	5	0.895	1.086	0.972	-
1 745	349000	DFT-s QPSK	B	40	20.0	19.64	0.06	Bottom	0	108	108	1:1	5	0.985	1.086	1.070	-
1 745	349000	DFT-s QPSK	B	40	20.0	19.37	0.16	Bottom	0	216	0	1:1	5	0.868	1.156	1.003	-
1 745	349000	CP QPSK	B	40	20.0	19.47	0.01	Bottom	0	1	1	1:1	5	0.927	1.130	1.048	-
1 745	349000	DFT-s QPSK	B	40	20.0	19.64	0.07	Bottom	0	108	108	1:1	5	0.986	1.086	1.071	B24#
1 745	349000	DFT-s QPSK	D	40	20.0	19.44	-0.01	Rear	0	1	108	1:1	5	0.516	1.138	0.587	-
1 745	349000	DFT-s QPSK	D	40	20.0	19.51	0.10	Rear	0	108	108	1:1	5	0.428	1.119	0.479	-
1 745	349000	DFT-s QPSK	D	40	20.0	19.44	0.12	Front	0	1	108	1:1	5	0.384	1.138	0.437	-
1 745	349000	DFT-s QPSK	D	40	20.0	19.51	-0.12	Front	0	108	108	1:1	5	0.321	1.119	0.359	-
1 745	349000	DFT-s QPSK	D	40	20.0	19.44	0.14	Left	0	1	108	1:1	5	0.109	1.138	0.124	-
1 745	349000	DFT-s QPSK	D	40	20.0	19.51	0.01	Left	0	108	108	1:1	5	0.105	1.119	0.117	-
1 745	349000	DFT-s QPSK	D	40	20.0	19.44	0.13	Top	0	1	108	1:1	5	0.798	1.138	0.908	-
1 745	349000	DFT-s QPSK	D	40	20.0	19.51	0.14	Top	0	108	108	1:1	5	0.816	1.119	0.913	-
1 745	349000	DFT-s QPSK	D	40	20.0	19.20	0.15	Top	0	216	0	1:1	5	0.799	1.202	0.960	-
1 745	349000	CP QPSK	D	40	20.0	19.60	0.11	Top	0	1	1	1:1	5	0.826	1.096	0.905	-
1 745	349000	CP QPSK	D	40	20.0	19.60	0.09	Top	0	1	1	1:1	5	0.697	1.096	0.764	-
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 Variability measurement.

NR FDD Band n71 Body/Hotspot SAR																	
Frequency		OFDM Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)	(dB)	(mm)		(W/kg)	(W/kg)			
680.5	136100	DFT-s QPSK	A	20	20.0	18.96	0.07	Rear	0	1	53	1:1	5	0.160	1.271	0.203	-
680.5	136100	DFT-s QPSK	A	20	20.0	18.98	0.08	Rear	0	50	0	1:1	5	0.156	1.265	0.197	-
680.5	136100	DFT-s QPSK	A	20	20.0	18.96	-0.02	Front	0	1	53	1:1	5	0.103	1.271	0.131	-
680.5	136100	DFT-s QPSK	A	20	20.0	18.98	0.16	Front	0	50	0	1:1	5	0.098	1.265	0.124	-
680.5	136100	DFT-s QPSK	A	20	20.0	18.96	0.09	Left	0	1	53	1:1	5	0.044	1.271	0.056	-
680.5	136100	DFT-s QPSK	A	20	20.0	18.98	0.02	Left	0	50	0	1:1	5	0.043	1.265	0.054	-
680.5	136100	DFT-s QPSK	A	20	20.0	18.96	0.00	Right	0	1	53	1:1	5	0.131	1.271	0.167	-
680.5	136100	DFT-s QPSK	A	20	20.0	18.98	0.05	Right	0	50	0	1:1	5	0.125	1.265	0.158	-
680.5	136100	DFT-s QPSK	A	20	20.0	18.96	0.05	Bottom	0	1	53	1:1	5	0.185	1.271	0.235	B25
680.5	136100	DFT-s QPSK	A	20	20.0	18.98	0.15	Bottom	0	50	0	1:1	5	0.175	1.265	0.221	-
680.5	136100	CP QPSK	A	20	20.0	18.93	0.05	Bottom	0	1	1	1:1	5	0.165	1.279	0.211	-
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 SAR																	
Frequency		OFDM Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.																
3 750	650000	DFT-s QPSK	E	100	17.0	15.77	-0.12	Rear	0	1	1	1:1	5	0.306	1.327	0.406	-
3 750	650000	DFT-s QPSK	E	100	17.0	16.13	-0.11	Rear	0	135	0	1:1	5	0.387	1.222	0.473	-
3 930	662000	DFT-s QPSK	E	100	17.0	15.67	-0.05	Rear	0	1	1	1:1	5	0.246	1.358	0.334	-
3 930	662000	DFT-s QPSK	E	100	17.0	15.75	0.02	Rear	0	135	0	1:1	5	0.319	1.334	0.426	-
3 750	650000	DFT-s QPSK	E	100	17.0	15.31	0.04	Rear	0	270	0	1:1	5	0.325	1.476	0.480	-
3 750	650000	DFT-s QPSK	E	100	17.0	15.77	0.19	Front	0	1	1	1:1	5	0.081	1.327	0.107	-
3 750	650000	DFT-s QPSK	E	100	17.0	16.13	0.16	Front	0	135	0	1:1	5	0.116	1.222	0.142	-
3 750	650000	DFT-s QPSK	E	100	17.0	15.77	0.03	Left	0	1	1	1:1	5	0.136	1.327	0.180	-
3 750	650000	DFT-s QPSK	E	100	17.0	16.13	-0.11	Left	0	135	0	1:1	5	0.123	1.222	0.150	-
3 750	650000	DFT-s QPSK	E	100	17.0	15.77	0.09	Top	0	1	1	1:1	5	0.140	1.327	0.186	-
3 750	650000	DFT-s QPSK	E	100	17.0	16.13	0.15	Top	0	135	0	1:1	5	0.143	1.222	0.175	-
3 750	650000	CP QPSK	E	100	17.0	15.76	-0.15	Rear	0	1	1	1:1	5	0.236	1.330	0.314	-
3500.01	633334	DFT-s QPSK	E	100	17.0	15.88	0.13	Rear	0	1	137	1:1	5	0.347	1.294	0.449	-
3500.01	633334	DFT-s QPSK	E	100	17.0	15.88	0.16	Rear	0	135	67	1:1	5	0.306	1.294	0.396	-
3 750	650000	DFT-s QPSK	H	100	14.0	13.82	0.10	Rear	0	1	1	1:1	5	0.173	1.042	0.180	-
3 750	650000	DFT-s QPSK	H	100	14.0	13.82	0.17	Front	0	1	1	1:1	5	0.017	1.042	0.018	-
3 750	650000	DFT-s QPSK	H	100	14.0	13.82	-0.13	Right	0	1	1	1:1	5	0.003	1.042	0.003	-
3 750	650000	DFT-s QPSK	H	100	14.0	13.82	-0.19	Top	0	1	1	1:1	5	0.020	1.042	0.021	-
3 500.01	633334	DFT-s QPSK	H	100	14.0	12.18	-0.17	Rear	0	1	1	1:1	5	0.157	1.521	0.239	-
3 930	662000	DFT-s QPSK	B	100	15.5	15.43	-0.10	Rear	0	1	1	1:1	5	0.096	1.016	0.098	-
3 930	662000	DFT-s QPSK	B	100	15.5	15.43	-0.14	Front	0	1	1	1:1	5	0.047	1.016	0.048	-
3 930	662000	DFT-s QPSK	B	100	15.5	15.43	-0.19	Left	0	1	1	1:1	5	0.004	1.016	0.004	-
3 930	662000	DFT-s QPSK	B	100	15.5	15.43	-0.17	Bottom	0	1	1	1:1	5	0.137	1.016	0.139	-
3 500.01	633334	DFT-s QPSK	B	100	15.5	13.85	-0.16	Bottom	0	1	1	1:1	5	0.279	1.462	0.408	-
3 750	650000	DFT-s QPSK	I	100	13.5	13.48	-0.16	Rear	0	1	1	1:1	5	0.489	1.005	0.491	B26
3 930	662000	DFT-s QPSK	I	100	13.5	13.22	-0.17	Rear	0	1	1	1:1	5	0.182	1.005	0.194	-
3 750	650000	DFT-s QPSK	I	100	13.5	13.48	-0.17	Front	0	1	1	1:1	5	0.003	1.005	0.003	-
3 750	650000	DFT-s QPSK	I	100	13.5	13.48	-0.17	Left	0	1	1	1:1	5	0.003	1.005	0.003	-
3 750	650000	DFT-s QPSK	I	100	13.5	13.48	0.13	Top	0	1	1	1:1	5	0.063	1.005	0.063	-
3 500.01	633334	DFT-s QPSK	I	100	13.5	11.57	-0.17	Rear	0	1	1	1:1	5	0.428	1.005	0.668	-
ANSI/ IEEE C95.1 - 2005- Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Body 1.6 W/kg Averaged over 1 gram								

@Note. Ant. H, B, I SRS was tested with DFT-s OFDM QPSK 1RB 1offset as CW was the limit of the setup.

DTS Body/Hotspot 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.																
2 437	6	802.11b	F	20	1	15.0	14.93	0.06	Rear	0.991	5	0.959	0.424	1.016	1.009	0.435	B27
2 437	6	802.11b	F	20	1	15.0	14.93	0.02	Front	0.991	5	0.252	0.212	1.016	1.009	0.217	-
2 437	6	802.11b	F	20	1	15.0	14.93	0.03	Left	0.991	5	0.949	0.397	1.016	1.009	0.407	-
2 437	6	802.11b	F	20	1	15.0	14.93	0.05	Top	0.991	5	0.081	0.067	1.016	1.009	0.069	-
ANSI/ IEEE C95.1 - 2005- Safety Limit Spatial Peak Uncontrolled Exposure/ General Population										Body 1.6 W/kg Averaged over 1 gram							

5 GHz WLAN Body/Hotspot 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.																
5 270	62	802.11n	E	40	MCS0	14.0	13.70	-0.04	Rear	0.870	5	0.308	0.285	1.072	1.149	0.351	B28
5 270	62	802.11n	E	40	MCS0	14.0	13.70	-0.01	Front	0.870	5	0.075	0.062	1.072	1.149	0.076	-
5 270	62	802.11n	E	40	MCS0	14.0	13.70	0.07	Left	0.870	5	0.260	0.174	1.072	1.149	0.214	-
5 270	62	802.11n	E	40	MCS0	14.0	13.70	0.05	Top	0.870	5	0.110	0.087	1.072	1.149	0.107	-
5 510	102	802.11n	E	40	MCS0	14.0	13.96	-0.10	Rear	0.870	5	0.266	0.252	1.009	1.149	0.292	-
5 510	102	802.11n	E	40	MCS0	14.0	13.96	-0.15	Front	0.870	5	0.046	0.036	1.009	1.149	0.042	-
5 510	102	802.11n	E	40	MCS0	14.0	13.96	-0.04	Left	0.870	5	0.269	0.180	1.009	1.149	0.209	-
5 510	102	802.11n	E	40	MCS0	14.0	13.96	0.13	Top	0.870	5	0.156	0.131	1.009	1.149	0.152	-
5 755	151	802.11n	E	40	MCS0	14.0	13.74	-0.04	Rear	0.870	5	0.965	0.205	1.062	1.149	0.250	-
5 755	151	802.11n	E	40	MCS0	14.0	13.74	0.13	Front	0.870	5	0.174	0.033	1.062	1.149	0.040	-
5 755	151	802.11n	E	40	MCS0	14.0	13.74	-0.08	Left	0.870	5	0.434	0.097	1.062	1.149	0.118	-
5 755	151	802.11n	E	40	MCS0	14.0	13.74	0.14	Top	0.870	5	0.000	0.000	1.062	1.149	0.000	-
5 875	175	802.11n	E	40	MCS0	14.0	13.84	-0.07	Rear	0.870	5	0.655	0.133	1.038	1.149	0.159	-
5 875	175	802.11n	E	40	MCS0	14.0	13.84	0.03	Front	0.870	5	0.147	0.025	1.038	1.149	0.030	-
5 875	175	802.11n	E	40	MCS0	14.0	13.84	-0.01	Left	0.870	5	0.386	0.078	1.038	1.149	0.093	-
5 875	175	802.11n	E	40	MCS0	14.0	13.84	-0.12	Top	0.870	5	0.314	0.061	1.038	1.149	0.073	-
ANSI/ IEEE C95.1 - 2005- Safety Limit Spatial Peak Uncontrolled Exposure/ General Population										Body 1.6 W/kg Averaged over 1 gram							

DSS Tethering 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)	
2 480	78	DH5	F	13.0	11.85	-0.13	Rear	5	0.216	1.303	1.013	0.285	-
2 480	78	DH5	F	13.0	11.85	0.04	Front	5	0.070	1.303	1.013	0.092	-
2 480	78	DH5	F	13.0	11.85	-0.06	Left	5	0.290	1.303	1.013	0.383	-
2 480	78	DH5	F	13.0	11.85	0.05	Top	5	0.015	1.303	1.013	0.020	-
2 480	39	LE 125k(255)	F	13.0	11.96	0.12	Rear	5	0.257	1.271	1.004	0.328	-
2 480	39	LE 125k(255)	F	13.0	11.96	0.09	Front	5	0.088	1.271	1.004	0.112	-
2 480	39	LE 125k(255)	F	13.0	11.96	-0.10	Left	5	0.391	1.271	1.004	0.499	B29
2 480	39	LE 125k(255)	F	13.0	11.96	-0.10	Top	5	0.020	1.271	1.004	0.026	-
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

The 1g SAR test for Body worn and Hotspot conditions in WWAN mode and WLAN/BT mode of this DUT is performed at 5 mm separation distance, so 10g Phablet SAR is not required per FCC KDB 941225 D07 UMPC Mini Tablet v01r02.

13.1.4 Phablet SAR Measurement Results

NFC Phablet SAR _10g							
Frequency	Mode	Data Rate	Power Drift	Test Position	Distance	Meas. SAR	Plot No.
MHz		(Kbps)	(dB)		(mm)	(W/kg)	
13.56	NFC (Type A)	106	0.01	Rear	0	0.062	C1
13.56	NFC (Type B)	106	0.05	Rear	0	0.059	-
13.56	NFC (Type F)	106	-0.02	Rear	0	0.054	-
13.56	NFC (Type A)	106	N/A	Front	0	0	-
13.56	NFC (Type A)	106	N/A	Left	0	0	-
13.56	NFC (Type A)	106	N/A	Top	0	0	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population			Hand 4.0 W/kg Averaged over 10 gram				

13.3 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 5 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. The 1g SAR test for Body worn and Hotspot in WWAN mode and WLAN/BT mode of this DUT is performed at 5 mm separation distance, so 10g Phablet SAR is not required per FCC KDB 941225 D07 UMPC Mini Tablet v01r02.
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.

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 LTE Carrier Aggregation (CA) in Uplink for LTE Band 41C, 48C with two component carriers in the uplink. SAR measurements and conducted powers were evaluated per Fall 2017 TCBC Workshop notes (LTE Carrier aggregation).
For LTE Band per 2018 TCBC Workshop notes, SAR was first measured with only a single carrier active in the uplink (carrier aggregation not active). For each exposure condition, the uplink CA scenario with two component carriers was additionally tested for the configuration with the highest SAR when carrier aggregation was not active.
Because the maximum output for UL CA of LTE Band 41C, 48C is $\leq$ standalone LTE mode (without CA), SAR for LTE Band 41C, 48C Up link CA was performed at the highest standalone SAR configuration without CA and also UL CA SAR is not required for all required test channels, Because the reported SAR for UL CA configuration is < 1.4 W/kg.
The SCC was configured with the closest available contiguous channel. The two component carriers were configured so the resource blocks are physically allocated side by side to achieve the maximum output power.
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. NR 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 TDD 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.
6. SRS was tested with DFT-s OFDM QPSK 1RB 1offset as CW was the Limitation of the manufacturer's S/W tool(FTM) setup.

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.
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.

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. In the technical documentation, the maximum duty factor of the declared BT was applied to the SAR results. 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.

14. Simultaneous SAR Analysis

This device contains transmitters that may operate simultaneously. Therefore, simultaneous transmission analysis is required. Per KDB Publication 447498 D01v06 section 4.3.2 and IEEE 1528-2013 section 6.3.4.1.2, 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 $\leq 1.6\text{W/kg}$ for 1g SAR and $\leq 4\text{ W/kg}$ 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.

When operating in the same antenna group, Samsung S.LSI TAS algorithm in WWAN directly adds the time-averaged RF exposure from 4G and time-averaged RF exposure from 5G NR. S.LSI algorithm controls the total RF exposure from both 4G and 5G NR to not exceed FCC limit. Therefore, simultaneous transmission compliance between 4G+5G operations within an antenna group is demonstrated in the Part 2 Report during algorithm validation.

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 14.5 contains analysis to demonstrate the AG0 and AG1 are operate mutually exclusive.

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:

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 2 antennas (A, B) and AG1 having 4 antennas (D, E, H, I). 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

$$[\text{Max.SAR.AG0} + \text{Max.SAR.AG1}] + [\text{Max.WLAN} + \text{Max.Bluetooth}] \leq 1.6 \text{ (for 1g SAR or 4.0 for 10g)}$$

If sum result with both antenna group and BT/WAN exceeds the FCC SAR limit of 1.6 W/kg 1g, 4.0W/kg 10g, can use below contents.

If the sum result with each antenna group and BT/WLAN 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.

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

AG0	
Ant.A	GSM850, UMTS 5, LTE 12/13/14/26/71, NR n5/n71
Ant.B	GSM1900, UMTS 2/4, LTE 2/7/30/41/66 NR n2/n25/n30/n41/n66/n48/n77/n77 DoD SRS3

AG1	
Ant.D	LTE 2/66 Upper NR n2/66 Upper
Ant.E	NR Band 48,77,77DoD SRS1
Ant.H	NR Band 48,77,77DoD SRS2
Ant.I	NR Band 48,77,77DoD SRS4

WLAN/BT	
Ant.E	WLAN 5 GHz
Ant.F	WLAN 2.4 GHz, BT

14.2 Head SAR Simultaneous Transmission Analysis

The Maximum measurement result for AG0			
Position	Ant.A	Ant.B	Max.AG0
Left Touch	0.236	0.439	0.439
Left Tilt	0.117	0.215	0.215
Right Touch	0.300	0.386	0.386
Right Tilt	0.149	0.228	0.228

The Maximum measurement result for AG1					
Position	Ant.D	Ant.E	Ant.H	Ant.I	Max.AG1
Left Touch	0.560	0.170	0.029	0.035	0.560
Left Tilt	0.708	0.129	0.024	0.236	0.708
Right Touch	0.751	0.560	0.026	0.022	0.751
Right Tilt	0.734	0.390	0.024	0.025	0.734

The measurement result for WLAN/ BT			
Position	WLAN2.4G SISO(Ant.F)	WLAN5G SISO(Ant.E)	BlueTooth (Ant.F)
Left Touch	0.130	0.070	0.067
Left Tilt	0.035	0.064	0.023
Right Touch	0.432	0.218	0.209
Right Tilt	0.085	0.177	0.051

The Maximum measurement result for WLAN/BT			
Position	WLAN2.4G SISO(Ant.F)	WLAN5G SISO(Ant.E)+BT	Max.WLAN/BT
Left Touch	0.130	0.137	0.137
Left Tilt	0.035	0.087	0.087
Right Touch	0.432	0.427	0.432
Right Tilt	0.085	0.228	0.228

Simultaneous Transmission analysis for Head SAR				
Position	Max.AG0	Max.AG1	Max.WLAN/BT	AG0+AG1+WLAN/BT
Left Touch	0.439	0.560	0.137	1.136
Left Tilt	0.215	0.708	0.087	1.010
Right Touch	0.386	0.751	0.432	1.569
Right Tilt	0.228	0.734	0.228	1.190

14.3 Hotspot/BodyWorn SAR Simultaneous Transmission Analysis

The Maximum measurement result for AG0			
Position	Ant.A	Ant.B	Max.AG0
Rear	1.094	1.028	1.094
Front	0.780	0.862	0.862
Left	0.155	0.605	0.605
Right	0.370		0.370
Top			0.000
Bottom	0.790	1.191	1.191

The Maximum measurement result for AG1					
Position	Ant.D	Ant.E	Ant.H	Ant.I	Max.AG1
Rear	0.751	0.591	0.248	0.957	0.957
Front	0.490	0.212	0.142	0.016	0.490
Left	0.154	0.180	0.180	0.003	0.180
Right		0.009		0.000	0.009
Top	1.113	0.251	0.186	0.072	1.113
Bottom					0.000

The measurement result for WLAN/ BT			
Position	WLAN2.4G SISO(Ant.F)	WLAN5G SISO(Ant.E)	BlueTooth (Ant.F)
Rear	0.435	0.351	0.327
Front	0.217	0.076	0.112
Left	0.407	0.214	0.499
Right			
Top	0.069	0.152	0.025
Bottom			

The Maximum measurement result for WLAN/BT			
Position	WLAN2.4G SISO(Ant.F)	WLAN5G SISO(Ant.E)+BT	Max.WLAN/BT
Rear	0.435	0.678	0.678
Front	0.217	0.188	0.188
Left	0.407	0.713	0.713
Right			0.000
Top	0.069	0.177	0.177
Bottom			0.000

Simultaneous Transmission Analysis for Body SAR				
Position	Max.AG0	Max.AG1	Max.WLAN/BT	AG0+AG1+WLAN/BT
Rear	1.094	0.957	0.678	See Sec. 14.5
Front	0.862	0.490	0.188	1.540
Left	0.605	0.180	0.713	1.498
Right	0.370	0.009		0.379
Top		1.113	0.177	1.290
Bottom	1.191			1.191

14.4 Phablet SAR Simultaneous Transmission Analysis

Position	NFC	Worst
Rear	0.062	0.062
Front	0.000	0.000
Left	0.000	0.000
Right	0.00000127	0.00000127
Top	0.000	0.000
Bottom	0.000	0.000

14.5 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:

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

Where:

SAR₁ 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

SAR₂ is the highest measured or estimated SAR for the second of a pair of simultaneous transmitting antennas, in the same test operating mode and exposure condition as the first

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 $[(X_1 - X_2)^2 + (Y_1 - Y_2)^2 + (Z_1 - Z_2)^2]$

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:

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

14.5.1 Hotspot/BodyWorn(Rear) SPLSR Evaluation

Ant Group 0

Mode/Band	Antenna	X(mm)	Y(mm)	Z(mm)	Reported SAR [W/kg]
GSM850	Ant A	-24.5	-85.0	-208	1.094
GSM1900	Ant B	-2.5	-90.0	-205	0.707
UMTS B5	Ant A	-24.5	-82.5	-204	0.656
UMTS B4	Ant B	5.5	-85.0	-204	0.793
UMTS B2	Ant B	-2.5	-85.0	-206	0.773
LTE B12	Ant A	-32.5	-84.0	-204	0.230
LTE B13	Ant A	-26.5	-76.5	-204	0.382
LTE B14	Ant A	-40	-85.5	-204	0.450
LTE B26	Ant A	-40	-75.0	-204	0.552
LTE B71	Ant A	-52	-73.5	-204	0.306
NR Band 5	Ant A	-47.5	-85.0	-207	0.429
NR Band 71	Ant A	-32.5	-85.0	-207	0.203
LTE Band 7	Ant B	-5	-79.0	-204	0.998
LTE Band 25	Ant B	-2.5	-72.0	-204	0.968
LTE Band 30	Ant B	-5	-79.0	-204	0.887
LTE Band 41	Ant B	-5	-79.0	-204	0.332
LTE Band 66	Ant B	0.5	-73.5	-204	0.770
NR Band 25	Ant B	-17.5	-82.5	-206	1.028
NR Band 30	Ant B	7	-80.0	-208	0.987
NR Band 66	Ant B	-17.5	-82.5	-206	0.859
NR Band 41	Ant B	-17.5	-82.5	-206	0.533
NR Band 48 SRS3	Ant B	7	-80.0	-208	0.105
NR Band 77 SRS3	Ant B	7	-78.0	-208	0.098

Ant Group 1

Mode/Band	Antenna	X(mm)	Y(mm)	Z(mm)	Reported SAR [W/kg]
LTE Band 2 Upper	Ant D	-17.5	65	-207	0.506
LTE Band 66 Upper	Ant D	-17.5	75	-207	0.713
NR Band 2 UPPER	Ant D	-5	76	-209	0.751
NR Band 66 Upper	Ant D	-10	67.5	-207	0.587
LTE Band 48	Ant E	0	74	-204	0.416
NR Band 48	Ant E	7	70.5	-210	0.591
NR Band 77	Ant E	19	76	-208	0.473
NR Band 48 SRS2	Ant H	-5	74	-208	0.248
NR Band 77 SRS2	Ant H	-4	71	-204	0.239
NR Band 48 SRS4	Ant I	-29	72	-209	0.957
NR Band 77 SRS4	Ant I	-45	71	-204	0.668

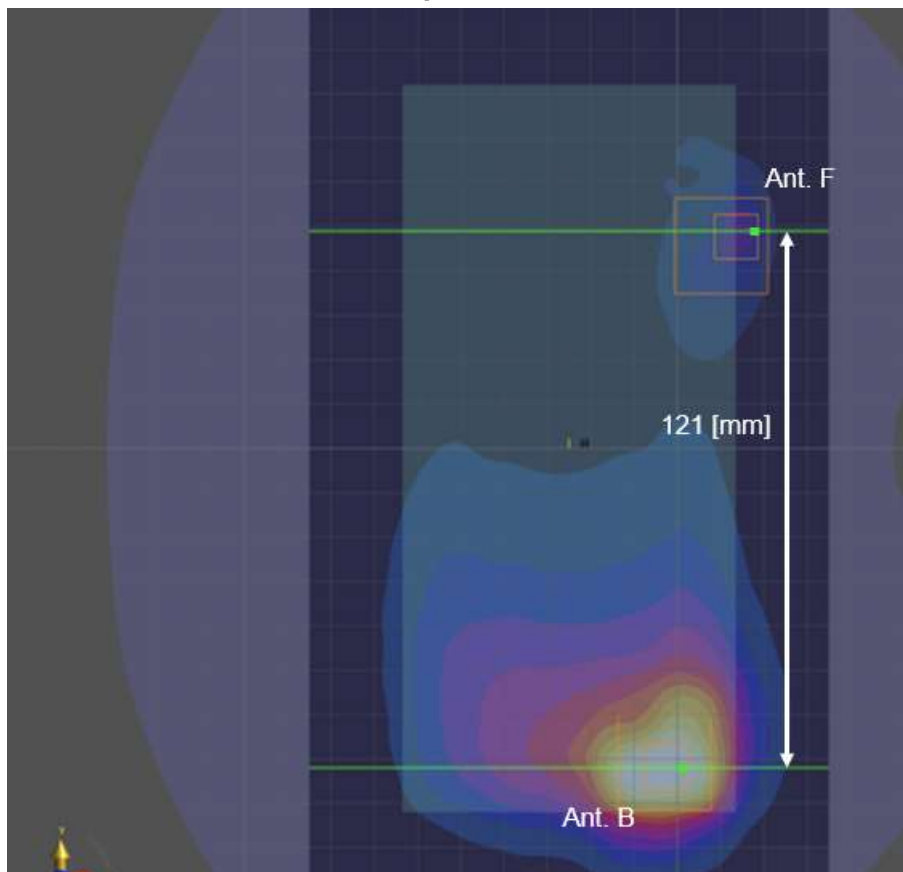
WLAN Group

Mode/Band	Antenna	X(mm)	Y(mm)	Z(mm)	Reported SAR [W/kg]
WLAN2.4 GHz	Ant F	4	59	-204	0.435
WLAN5 GHz	Ant E	2	74	-204	0.351
BT	Ant F	14	49	-204	0.327

Group analysis SPLSR 5 GHz + BT

	AG0	AG1	5 GHz WLAN+BT
Min Y-axis(mm)	-72		
Max SAR(W/kg)	1.094		
Max Y-axis(mm)		65	49
Max SAR(W/kg)		0.957	0.678
AG0, AG1/WLAN Distance(mm)		121	
(AG0+ER)+(AG1+ER) SAR(W/kg)		2.729	
AG0, AG1+5 GHz WLAN+BT(SPLSR)		0.037	

SPLSR Plot for Antenna Group



15. SAR Measurement Variability and Uncertainty

In accordance with KDB procedure 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz, 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 ≥ 2.0 W/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.

Body SAR measurement variability Results

Frequency		Mode,Band/Configuration	Position	Measured SAR (W/kg)	Repeated SAR (W/kg)	SAR Ratio
MHz	Channel					
848.8	251	GSM850 / GPRS 4Tx	Rear	0.863	0.788	1.10
1 712.4	1312	UMTS Band 4 / RMC	Bottom	0.977	0.974	1.00
2 510	20850	LTE Band 7 / QPSK 50RB 0offset	Bottom	0.991	0.939	1.06
1 770	132572	LTE Band 66 / QPSK 50RB 49offset	Top	0.958	0.971	1.00
1 745	349000	NR Band n66 / DFT-s QPSK 108RB 108offset	Bottom	0.985	0.986	1.00
1 745	349000	NR Band n66 / CP QPSK 1RB 1offset	Top	0.826	0.697	1.19

16. 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.

17. 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
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 Lspeag	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
TESTO	175-H1/Thermometer	40331936309	12/26/2024	Annual	12/26/2025
Staubli	CS8Cspeag-TX90	F12/ 5K9GA1/ C/ 01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F12/ 5K9GA1/ A/ 01	N/A	N/A	N/A
Staubli	D2114210603	S-1206 0513	N/A	N/A	N/A
TESTO	175-H1/Thermometer	40331936309	12/26/2023	Annual	12/26/2024
TESTO	175-H1/Thermometer	40331936309	12/26/2024	Annual	12/26/2025
Staubli	CS9spe-TX2-90	F/24/0058554/C/001	N/A	N/A	N/A
Staubli	TX2-90XL spe	F/24/0058554/A/001	N/A	N/A	N/A
Staubli	D2114210603	D21144508	N/A	N/A	N/A
TESTO	175-H1/Thermometer	40331939309	12/26/2023	Annual	12/26/2024
TESTO	175-H1/Thermometer	40331939309	12/26/2024	Annual	12/26/2025
SPEAG	E-Field Probe EX3DV4	3797	01/23/2024	Annual	01/23/2025
SPEAG	E-Field Probe EX3DV4	3903	07/31/2024	Annual	07/31/2025
SPEAG	E-Field Probe EX3DV4	7370	08/22/2024	Annual	08/22/2025
SPEAG	E-Field Probe EX3DV4	7751	09/19/2024	Annual	09/19/2025
SPEAG	E-Field Probe EX3DV4	7655	05/28/2024	Annual	05/28/2025
SPEAG	E-Field Probe ES3DV3	3076	07/17/2024	Annual	07/17/2025
SPEAG	DAE4	648	04/19/2024	Annual	04/19/2025
SPEAG	DAE4	652	01/17/2024	Annual	01/17/2025
SPEAG	DAE4	1629	08/16/2024	Annual	08/16/2025
SPEAG	DAE4	1866	05/02/2024	Annual	05/02/2025
SPEAG	DAE4	869	03/12/2024	Annual	03/12/2025
SPEAG	CLA13	1016	11/19/2024	Annual	11/19/2025
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	01/18/2025
SPEAG	Dipole D2300V2	1010	07/19/2023	Biennial	07/19/2025
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	09/18/2024	Annual	09/18/2025
SPEAG	Dipole D3900V2	1086	05/21/2024	Annual	05/21/2025
SPEAG	Dipole D5 GHz V2	1107	04/19/2024	Annual	04/19/2025
Agilent	Power Meter E4419B	MY41291386	09/11/2024	Annual	09/11/2025
Agilent	Power Meter N1911A	MY45101406	05/21/2024	Annual	05/21/2025
Agilent	Power Sensor 8481A	SG1091286	09/12/2024	Annual	09/12/2025
H.P	Power Sensor 8481A	MY41090675	09/12/2024	Annual	09/12/2025
Agilent	Wideband Power Sensor N1921A	MY55220026	07/30/2024	Annual	07/30/2025
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	141013	01/11/2024	Annual	01/11/2025
SPEAG	DAKS 12	1048	03/20/2024	Annual	03/20/2025
KEYSIGHT	MXA Signal Analyzer	MY49100108	01/09/2024	Annual	01/09/2025

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
H.P	Network Analyzer /8753ES	JP39240221	12/26/2023	Annual	12/26/2024
H.P	Network Analyzer /8753ES	JP39240221	12/23/2024	Annual	12/23/2025
Agilent	WIRELESS COMMUNICATION E5515C	MY48360252	07/29/2024	Annual	07/29/2025
Agilent	WIRELESS COMMUNICATION E5515C	MY50260992	05/22/2024	Annual	05/22/2025
R&S	Wireless Communication Test Set CMW500	115733	03/19/2024	Annual	03/19/2025
Agilent	SIGNAL GENERATOR N5182A	MY47070230	03/19/2024	Annual	03/19/2025
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	09/11/2024	Annual	09/11/2025
MICRO LAB	LP Filter / LA-15N	10453	09/11/2024	Annual	09/11/2025
MICRO LAB	LP Filter / LA-30N	-	09/11/2024	Annual	09/11/2025
MICRO LAB	LP Filter / LA-60N	32011	09/11/2024	Annual	09/11/2025
Agilent	Attenuator (3dB) 8693B	MY39260298	08/20/2024	Annual	08/20/2025
HP	Attenuator (20dB) 8493C	09271	08/20/2024	Annual	08/20/2025
Agilent	Directional Bridge 86205A	3140A04581	04/22/2024	Annual	04/22/2025
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	09/11/2024	Annual	09/11/2025
Anritsu	Radio Communication Test Station MT8000A	6262036812	11/27/2024	Annual	11/27/2025
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	6201502997	05/21/2024	Annual	05/21/2025
Anritsu	Radio Communication Tester MT8821C	6262044720	11/27/2024	Annual	11/27/2025
ROHDE&SCHWARZ	BLUETOOTH TESTER CBT	100272	01/16/2024	Annual	01/16/2025

Note: All measurements were performed within the valid calibration period of the specific equipment.

* 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.

18. 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 absorption and distribution of electromagnetic energy in the body are very complex phenomena that 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.

19. References

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Appendix A. DUT Ant. Information & SETUP PHOTO

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

Report No.
HCT-SR-2501-FC005-P