Testing and Certification

TEST REPORT

Part 1 SAR Test for certification of SM-S721U

APPLICANT

Samsung Electronics. Co., Ltd.

REPORT NO.

HCT-SR-2407-FC004-R2

DATE OF ISSUE

Aug. 09, 2024

Tested by
Yoon Ho, Choi

Technical Manager
Yun Jeang, Heo

HCT CO., LTD.
BongJai Huh / CEO

HCT CO.,LTD . 2-6, 73, 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA Tel. +82 31 645 6300 Fax. +82 31 6456401

HCT CO.,LTD.
2-6, 73, 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383
KOREA
Tel. +82 31 645 6300 Fax. +82 31 645 6401

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FCC Part 1 SAR Test for certification

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FCC ID
A3LSMS721U

Applicant	SAMSUNG Electronics Co., Ltd 129, Samsung-ro, Yeongtong-gu, Suwon-Si, Gyeonggi-do, 16677, Korea
Product Name	Mobile Phone
Model Name	SM-S721U
Additional Model Name	SM-S721U1
Date of Test	Jun. 3, 2024 ~ Aug. 8, 2024
Location of Test	■ Permanent Testing Lab ☐ On Site Testing Lab (Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA)
FCC Rule Part(s)	CFR §2.1093
Test Results	PASS (SAR Limit : 1.6 W/kg) Refer to the clause 3.2 Attestation of test result

REVISION HISTORY

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

Revision No.	Date of Issue	Description
0	Jul. 19, 2024	Initial Release
1	Jul. 29, 2024	Revised TYPO sec.11.5
2	Aug. 09, 2024	Retested with revised Plimit of RSI(1) and SRS1/2/3 for n41, Page 13,14 were revised.

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).

CONTENTS

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)
- May 2017 TCBC Workshop Notes (LTE Band 41 Power Class 2)
- April 2019 TCBC Workshop Notes (IEEE 802.11 ax)
- April 2018 TCBC Workshop Notes (LTE UL CA, DL CA SAR Test Exclusion)

FCC RF Exposure evaluation of U-NII 6 -7 GHz Band of this device were measured by referring to the interim procedures in TCB Workshop document of Oct 2020, IEC/IEEE 62209-1528:2020 and also the App Note of SPEAG, the manufacturer of measuring equipment.

SAR Testing was performed using 6.5 GHz SAR Probe calibration factor according to FCC TCBC Document.

November 2017, October 2018, April 2019, November 2019, October 2020, October 2022, TCBC Workshop Notes.

SPEAG DASY6 System Handbook

SPEAG DASY6 Application Note (Interim Procedures for Operating at 6 -10GHz) (ver.9)

IEEE 1528-2013

IEC TR 63170:2018

IEC 62479:2010

IEC/IEEE 63195-1:2022

2. Test Location

2.1 Test Laboratory

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

2.2 Test Facilities

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

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

3. Information of the EUT

3.1 General Information of the EUT

Model Name	SM-S721U
Additional Model Name	SM-S721U1
Equipment Type	Mobile Phone
FCC ID	A3LSMS721U
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/Body	10 g Extremity
GSM/GPRS/EDGE 850	824.2 ㎒ ~ 848.8 ㎒	PCE	0.15	0.66	N/A
GSM/GPRS/EDGE 1900	1 850.2 ㎒ ~ 1 909.8 ㎒	PCE	0.13	0.57	N/A
UMTS Band 5	826.4 ㎒ ~ 846.6 ㎒	PCE	0.20	0.34	N/A
UMTS Band 4	1 712.4 ㎒ ~ 1 752.6 ㎒	PCE	0.04	0.78	N/A
UMTS Band 2	1 852.4 ㎒ ~ 1 907.6 ㎒	PCE	0.05	0.71	N/A
LTE FDD Band 2 (PCS)	1 850.7 ㎒ ~ 1 909.3 ㎒	PCE	N/A	N/A	N/A
LTE FDD Band 4 (AWS)	1 710.7 ㎒ ~ 1 754.3 ㎒	PCE	N/A	N/A	N/A
LTE FDD Band 5 (Cell)	824.7 ㎒ ~ 848.3 ㎒	PCE	N/A	N/A	N/A
LTE FDD Band 7	2 502.5 ㎒ ~ 2 567.5 ㎒	PCE	0.82	0.67	N/A
LTE FDD Band 12	699.7 ㎒ ~ 715.3 ㎒	PCE	0.15	0.46	N/A
LTE FDD Band 13	779.5 ㎒ ~ 784.5 ㎒	PCE	0.20	0.55	N/A
LTE FDD Band 14	790.5 ㎒ ~ 795.5 ㎒	PCE	0.20	0.64	N/A
LTE FDD Band 25 (PCS)	1 850.7 ㎒ ~ 1 914.3 ㎒	PCE	0.76	0.90	N/A
LTE FDD Band 26 (Cell)	814.7 ㎒ ~ 848.3 ㎒	PCE	0.18	0.59	N/A
LTE FDD Band 30	2 307.5 ㎒ ~ 2 312.5 ㎒	PCE	0.76	0.76	N/A
LTE TDD Band 38	2 572.5 ㎒ ~ 2 617.5 ㎒	PCE	N/A	N/A	N/A
LTE TDD Band 41	2 498.5 ㎒ ~ 2 687.5 ㎒	PCE	0.89	0.48	N/A
LTE TDD Band 48	3 552.5 ㎒ ~ 3 697.5 ㎒	CBE	0.94	0.38	N/A
LTE FDD Band 66 (AWS)	1 710.7 ㎒ ~ 1 779.3 ㎒	PCE	0.76	**1.08**	N/A
LTE FDD Band 71	665.5 ㎒ ~ 695.5 ㎒	PCE	0.15	0.38	N/A
NR FDD Band n2 (PCS)	1 852.5 ㎒ ~ 1 907.5 ㎒	PCE	N/A	N/A	N/A
NR FDD Band n5	826.5 ㎒ ~ 846.5 ㎒	PCE	N/A	N/A	N/A
NR FDD Band n7	2 502.5 ㎒ ~ 2 567.5 ㎒	PCE	0.90	0.69	N/A
NR FDD Band n12	701.5 ㎒ ~ 713.5 ㎒	PCE	0.15	0.43	N/A
NR FDD Band n25 (PCS)	1 852.5 ㎒ ~ 1 912.5 ㎒	PCE	0.79	0.93	N/A
NR FDD Band n26	816.5 ㎒ ~ 846.5 ㎒	PCE	0.17	0.56	N/A
NR FDD Band n30	2 307.5 ㎒ ~ 2 312.5 ㎒	PCE	0.75	0.72	N/A
NR TDD Band n38	2 575 ㎒ ~ 2 615 ㎒	PCE	0.23	0.56	N/A
NR TDD Band n41	2 506.02 ㎒ ~ 2 679.99 ㎒	PCE	0.83	0.24	N/A
NR TDD Band n48	3 555 ㎒ ~ 3 695.01 ㎒	CBE	0.60	0.71	N/A
NR FDD Band n66	1 712.5 ㎒ ~ 1 777.5 ㎒	PCE	0.75	0.96	N/A
NR FDD Band n70	1 697.5 ㎒ ~ 1 707.5 ㎒	PCE	0.10	0.87	N/A
NR FDD Band n71	665.5 ㎒ ~ 695.5 ㎒	PCE	0.11	0.24	N/A
NR TDD Band n77	3 445.01 ㎒ ~ 3 544.98 ㎒ 3 705 ㎒ ~ 3 975 ㎒	PCE	**0.92**	0.57	N/A
NR TDD Band n78	3 445.01 ㎒ ~ 3 544.98 ㎒ 3 705 ㎒ ~ 3 975 ㎒	PCE	N/A	N/A	N/A
2.4 GHz WLAN	2 412 ㎒ ~ 2 462 ㎒	DTS	0.41	0.27	N/A
U-NII-1	5 180 ㎒ ~ 5 240 ㎒	NII	N/A	N/A	N/A
U-NII-2A	5 260 ㎒ ~ 5 320 ㎒	NII	0.29	0.55	0.94
U-NII-2C	5 500 ㎒ ~ 5 720 ㎒	NII	0.31	0.36	0.92
U-NII-3	5 745 ㎒ ~ 5 825 ㎒	NII	0.34	0.37	N/A
U-NII-4	5 845 ㎒ ~ 5 885 ㎒	NII	0.37	0.34	**1.00**
6 ㎓ WLAN	5 925 ㎒ ~ 7 115 ㎒	6CD	0.18	<0.10	0.32
Bluetooth	2 402 ㎒ ~ 2 480 ㎒	DSS/DTS	0.32	0.35	N/A
NFC	13.56 ㎒	DXX	N/A	N/A	<0.10
Simultaneous SAR per KDB 690783 D01v01r03			**1.574**	**1.528**	**1.00**
Date(s) of Tests:	Jun. 3, 2024 ~ Jul. 11, 2024				

The Highest Reported APD/PD					
Band	Tx. Frequency	Equipment Class	APD (4 ㎠)		
			mW/㎠ Head	mW/㎠ Body Worn	mW/㎠ Extremity
6 GHz WLAN	5 925 MHz ~ 7 115 MHz	6CD	0.11	0.04	0.62
Band	Tx. Frequency	Equipment Class	PD (4 ㎠)		
			mW/㎠ psPD		
6 GHz WLAN	5 925 MHz ~ 7 115 MHz	6CD	0.56		
Date(s) of Tests:	Jun. 21, 2024 ~ Jul. 03, 2024				

4. Device Under Test Description

4.1 DUT specification

Device Wireless specification overview		
Band & Mode	Operating Mode	Tx Frequency
GSM850	Voice / Data	824.2 ㎒ ~ 848.8 ㎒
GSM1900	Voice / Data	1 850.2 ㎒ ~ 1 909.8 ㎒
UMTS Band 2	Voice / Data	1 852.4 ㎒ ~ 1 907.6 ㎒
UMTS Band 4	Voice / Data	1 712.4 ㎒ ~ 1 752.6 ㎒
UMTS Band 5	Voice / Data	826.4 ㎒ ~ 846.6 ㎒
LTE FDD Band 2 (PCS)	Voice / Data	1 850.7 ㎒ ~ 1 909.3 ㎒
LTE FDD Band 4 (AWS)	Voice / Data	1 710.7 ㎒ ~ 1 754.3 ㎒
LTE FDD Band 5 (Cell)	Voice / Data	824.7 ㎒ ~ 848.3 ㎒
LTE FDD Band 7	Voice / Data	2 502.5 ㎒ ~ 2 567.5 ㎒
LTE FDD Band 12	Voice / Data	699.7 ㎒ ~ 715.3 ㎒
LTE FDD Band 13	Voice / Data	779.5 ㎒ ~ 784.5 ㎒
LTE FDD Band 14	Voice / Data	790.5 ㎒ ~ 795.5 ㎒
LTE FDD Band 25	Voice / Data	1 850.7 ㎒ ~ 1 914.3 ㎒
LTE FDD Band 26	Voice / Data	814.7 ㎒ ~ 848.3 ㎒
LTE FDD Band 30	Voice / Data	2 307.5 ㎒ ~ 2 312.5 ㎒
LTE TDD Band 38	Voice / Data	2 572.5 ㎒ ~ 2 617.5 ㎒
LTE TDD Band 41	Voice / Data	2 498.5 ㎒ ~ 2 687.5 ㎒
LTE TDD Band 48	Voice / Data	3 552.5 ㎒ ~ 3 697.5 ㎒
LTE FDD Band 66 (AWS)	Voice / Data	1 710.7 ㎒ ~ 1 779.3 ㎒
LTE FDD Band 71	Voice / Data	665.5 ㎒ ~ 695.5 ㎒
NR FDD Band n2 (PCS)	Voice / Data	1 852.5 ㎒ ~ 1 907.5 ㎒
NR FDD Band n5	Voice / Data	826.5 ㎒ ~ 846.5 ㎒
NR FDD Band n7	Voice / Data	2 502.5 ㎒ ~ 2 567.5 ㎒
NR FDD Band n12	Voice / Data	701.5 ㎒ ~ 713.5 ㎒
NR FDD Band n25 (PCS)	Voice / Data	1 852.5 ㎒ ~ 1 912.5 ㎒
NR FDD Band n26	Voice / Data	816.5 ㎒ ~ 846.5 ㎒
NR FDD Band n30	Voice / Data	2 307.5 ㎒ ~ 2 312.5 ㎒
NR TDD Band n38	Voice / Data	2 575 ㎒ ~ 2 615 ㎒
NR TDD Band n41	Voice / Data	2 501.01 ㎒ ~ 2 685 ㎒
NR TDD Band n48	Voice / Data	3 555 ㎒ ~ 3 695.01 ㎒
NR FDD Band n66	Voice / Data	1 712.5 ㎒ ~ 1 777.5 ㎒
NR FDD Band n70	Voice / Data	1 697.5 ㎒ ~ 1 707.5 ㎒
NR FDD Band n71	Voice / Data	665.5 ㎒ ~ 695.5 ㎒
NR TDD Band n77	Voice / Data	3 705 ㎒ ~ 3 975 ㎒
NR TDD Band n77 DoD	Voice / Data	3 445.01 ㎒ ~ 3 544.98 ㎒
NR TDD Band n78	Voice / Data	3 705 ㎒ ~ 3 795 ㎒
NR TDD Band n78 DoD	Voice / Data	3 455.01 ㎒ ~ 3 544.98 ㎒
NR Band n258	Data	24 250 ㎒ ~ 24 450 ㎒; 24 750 ㎒ ~ 25 250 ㎒
NR Band n260	Data	37 000 ㎒ ~ 40 000 ㎒
NR Band n261	Data	27 500 ㎒ ~ 28 350 ㎒
U-NII-1	Voice / Data	5 180 ㎒ ~ 5 240 ㎒
U-NII-2A	Voice / Data	5 260 ㎒ ~ 5 320 ㎒
U-NII-2C	Voice / Data	5 500 ㎒ ~ 5 720 ㎒
U-NII-3	Voice / Data	5 745 ㎒ ~ 5 825 ㎒
U-NII-4	Voice / Data	5 845 ㎒ ~ 5 885 ㎒
U-NII-5	Voice / Data	5 925 ㎒ – 6 425 ㎒
U-NII-6	Voice / Data	6 425 ㎒ – 6 525 ㎒
U-NII-7	Voice / Data	6 525 ㎒ – 6 865 ㎒
U-NII-8	Voice / Data	6 865 ㎒ – 7 115 ㎒
2.4 ㎓ WLAN	Voice / Data	2 412 ㎒ ~ 2 462 ㎒
Bluetooth / LE 5.3	Data	2 402 ㎒ ~ 2 480 ㎒
NFC	Data	13.56 ㎒
WPC	Data	110 ㎑ ~ 148 ㎑

<table>
<tr><th colspan="3">Device Description</th></tr>
<tr><td>Battery</td><td colspan="2">Main: EB-BS721ABY (ATL)</td></tr>
<tr><td rowspan="9">Device Serial Numbers</td><td>Mode</td><td>Serial Number</td></tr>
<tr><td>GSM850, GSM1900, UMTS BAND 2,4,5</td><td>XFA0149M</td></tr>
<tr><td>LTE Band 12,13,14,26,71
NR Band n12,26,70,30,71</td><td>XFA0149M, XFM0304M
XFM0304M</td></tr>
<tr><td>LTE Band 66,25,30,7
NR Band n7,66,25
NR Band n41 SRS2, n48 SRS1/2, n77 SRS 1/2</td><td>XFA0149M, XE01288M</td></tr>
<tr><td>LTE Band 7,25,30,48,66 Ant.F</td><td>XE01373M</td></tr>
<tr><td>NR Band n7,25,30,66,77
NR Band n41 SRS 1/3, n48 SRS3, n77 SRS3</td><td>XFD0501M, XFD0497M</td></tr>
<tr><td>WLAN 2.4G, 5G, BT, NFC</td><td>XFD0473M, XFD0459M</td></tr>
<tr><td>WLAN 6E</td><td>XFD0492M</td></tr>
<tr><td colspan="2">The manufacturer has confirmed that the devices tested have the same physical, mechanical and thermal characteristics are within operational tolerances expected for production units.</td></tr>
</table>

4.2 Time-Averaging Algorithm for RF Exposure Compliance

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

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

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

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

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

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

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

Plim values in green indicate Plimit < Pmax			Plim values in grey indicate Plimt > Pmax			
Plimit corresponding to Head 0.8 W/kg (1g)/ Body 1.0 W/kg (1g) / Head 2W/Kg (10g) Body 2.5W/kg(10g) SAR_Design_target						Pmax
SAR Exposure Position			Head (RCV ON)	Body Phablet		Maximum Tune-up Output Power (Burst Average Power) [dBm]
Averaging volume			1g	1g	10g	
seperation Distance			0 mm	10 mm	0 mm	
Mode	Band	Antenna	RSI = 1	RSI =0		
GSM/GPRS/EDGE	850	A	32.3	26.9		28.5
GSM/GPRS/EDGE	1900	A	30.3	18.8		27.5
UMTS	2	A	36.3	20.0		23.5
UMTS	4	A	37.9	20.0		23.5
UMTS	5	A	31.6	29.2		24.5
LTE FDD	2 Lower	A	32.6	20.0		24.3
LTE FDD	2 Upper	F	17.5	20.0		22.5
LTE FDD	66(4) Lower	A	32.3	19.0		24.3
LTE FDD	66(4) Upper	F	17.5	19.0		22.5
LTE FDD	12	A	33.0	28.6		24.8
LTE FDD	13	A	31.8	28.2		24.8
LTE FDD	14	A	31.8	27.8		24.8
LTE FDD	5(26)	A	32.2	28.1		24.8
LTE FDD	30 Lower	A	38.1	20.0		23.0
LTE FDD	30 Upper	F	16.5	19.0		20.5
LTE FDD	71	A	33.0	27.3		24.8
LTE FDD	7	B	31.8	21.0		24.0
LTE FDD	7 Upper	F	16.0	19.0		22.5
LTE TDD PC3	41	B	34.0	20.0		24.0
LTE TDD PC2	41	B	32.6	20.4		26.0
LTE TDD PC3	41	F	14.5	18.0		20.0
LTE TDD PC2	41	F	14.9	17.4		23.0
LTE TDD	48	F	15.0	18.0		22.0
NR FDD	5	A	32.6	28.6		24.8
NR FDD	25 Lower	A	31.2	20.0		24.3
NR FDD	25 Upper	F	17.0	20.0		22.5
NR FDD	66 Lower	A	32.9	19.0		24.3
NR FDD	66 Upper	F	16.5	19.0		22.5
NR FDD	71	A	34.9	28.7		24.8
NR FDD	12	A	33.0	29.5		24.8
NR FDD	70	A	33.6	20.0		23.5
NR FDD	30	A	38.1	18.0		23.0
NR FDD	30 Upper	F	16.0	18.0		20.5
NR FDD	7	B	34.8	20.0		24.0
NR FDD	7 Upper	F	16.0	19.0		22.5
NR FDD	38	B	30.4	20.0		24.0
NR TDD	41 SRS0	B	19.5	20.0		26.0
NR TDD	41 SRS1	F	13.5	14.0		21.0
NR TDD	41 SRS2	D	14.0	14.0		21.0
NR TDD	41 SRS3	E	13.5	14.5		21.5
NR TDD	48 SRS0	F	15.0	17.0		22.0
NR TDD	48 SRS1	C	13.0	15.0		20.0
NR TDD	48 SRS2	D	14.5	16.5		21.0
NR TDD	48 SRS3	I	15.0	17.0		22.0
NR TDD	77 SRS0	F	15.0	17.0		26.0
NR TDD	77DoD SRS0	F	15.0	17.0		26.0
NR TDD	77 SRS1	C	14.0	16.0		23.5
NR TDD	77DoD SRS1	C	14.0	16.0		23.5
NR TDD	77 SRS2	D	14.0	16.0		23.5
NR TDD	77DoD SRS2	D	14.0	16.0		23.5
NR TDD	77 SRS3	I	15.0	17.0		25.0
NR TDD	77DoD SRS3	I	15.0	17.0		25.0

Plim values in green indicate Plimit < Pmax					Plim values in grey indicate Plimt > Pmax			
Plimit corresponding to 0.6 W/kg (1g) 1.25W/kg(10g) SAR_Design_target							Pmax	
SAR Exposure Position			Head (RCV ON)	Body Phablet		mmwave	Maximum Tune-up Output Power (Burst Average Power) [dBm]	UL:DL Ratio
Averaging volume			1g	1g	10g	1g	10g	
seperation Distance			0 mm	10 mm	0 mm	10 mm	0 mm	
Mode	Band	Antenna	DSI = 1	DSI =0		DSI =2		
WLAN	2.4	H	14.0	16.0		16.0	16.0	19.0	100%
WLAN	2.4	J	14.0	16.0		16.0	16.0	19.0	100%
WLAN	2.4	H+J	14.0	16.0		16.0	16.0	17.0	100%
WLAN	5	H	12.0	15.0		13.0	13.0	17.0	100%
WLAN	5	E	12.0	15.0		13.0	13.0	17.0	100%
WLAN	5	H+E	12.0	15.0		13.0	13.0	17.0	100%
WLAN	6	H	8.0	8.0		8.0	8.0	14.0	100%
WLAN	6	E	8.0	8.0		8.0	8.0	14.0	100%
WLAN	6	H+E	8.0	8.0		8.0	8.0	14.0	100%

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

4.3 Nominal and Maximum Output Power Specifications

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

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

A. GSM Modes

GSM/GPRS/EDGE 850 _Antenna A									
Power Level	Voice (in dBm)	Data - Burst Average GMSK (in dBm)				Data - Burst Average 8-PSK (in dBm)			
	1 TX Slot	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots
Pmax	32.0	32.0	30.0	28.5	27.0	26.0	24.5	23.0	21.5
RSI = 0 (Non Head)	32.0	32.0	30.0	28.5	27.0	26.0	24.5	23.0	21.5
RSI = 1 (Head)	32.0	32.0	30.0	28.5	27.0	26.0	24.5	23.0	21.5

GSM/GPRS/EDGE 1900_ Antenna A									
Power Level	Voice (in dBm)	Data - Burst Average GMSK (in dBm)				Data - Burst Average 8-PSK (in dBm)			
	1 TX Slot	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots
Pmax	30.2	30.2	27.5	25.5	24.0	25.0	23.5	22.5	20.5
RSI = 0 (Non Head)	28.0	28.0	25.0	23.2	21.0	25.0	23.5	22.0	20.0
RSI = 1 (Head)	30.2	30.2	27.5	25.5	24.0	25.0	23.5	22.5	20.5

Tolerance: -1.5 dB ~ +1.0 dB

B. UMTS Modes

UMTS Band 5 (850 ㎒)_Antenna A				
Power Level	Modulated Average Output Power (in dBm)			
	3GPP WCDMA Rel 99	3GPP HSDPA Rel 5	3GPP HSUPA Rel 6	3GPP DC-HSDPA Rel 8
Pmax	24.5	23.5	23.5	23.5
RSI = 0 (Non Head)	24.5	23.5	23.5	23.5
RSI = 1(Head)	24.5	23.5	23.5	23.5
UMTS Band 4 (1750 ㎒)_Antenna A				
Power Level	Modulated Average Output Power (in dBm)			
	3GPP WCDMA Rel 99	3GPP HSDPA Rel 5	3GPP HSUPA Rel 6	3GPP DC-HSDPA Rel 8
Pmax	23.5	22.5	22.5	22.5
RSI = 0 (Non Head)	20.0	19.0	18.0	19.0
RSI = 1(Head)	23.5	22.5	22.5	22.5
UMTS Band 2 (1900 ㎒)_Antenna A				
Power Level	Modulated Average Output Power (in dBm)			
	3GPP WCDMA Rel 99	3GPP HSDPA Rel 5	3GPP HSUPA Rel 6	3GPP DC-HSDPA Rel 8
Pmax	23.5	22.5	22.5	22.5
RSI = 0 (Non Head)	20.0	19.0	18.0	19.0
RSI = 1(Head)	23.5	22.5	22.5	22.5

Tolerance: -1.5 dB ~ +1.0 dB

C. LTE Modes

Mode / Band	Antenna	Modulated Average Output Power (in dBm)		
		Pmax	RSI = 0 (Non Head)	RSI = 1 (Head)
LTE Band 71	A	24.8	24.8	24.8
LTE Band 12	A	24.8	24.8	24.8
LTE Band 13	A	24.8	24.8	24.8
LTE Band 14	A	24.8	24.8	24.8
LTE Band 26 (Cell)	A	24.8	24.8	24.8
LTE Band 5 (Cell)	A	24.8	24.8	24.8
LTE Band 66 (AWS)	A	24.3	19.0	24.3
LTE Band 66 (AWS)_HOPPING	F	22.5	19.0	17.5
LTE Band 4 (AWS)	A	24.3	19.0	24.3
LTE Band 4 (AWS)_HOPPING	F	22.5	19.0	17.5
LTE Band 25 (PCS)	A	24.3	20.0	24.3
LTE Band 25 (PCS)_HOPPING	F	22.5	20.0	17.5
LTE Band 2 (PCS)	A	24.3	20.0	24.3
LTE Band 2 (PCS)_HOPPING	F	22.5	20.0	17.5
LTE Band 30	A	23.0	20.0	23.0
LTE Band 30_HOPPING	F	20.5	19.0	16.5
LTE Band 7	B	24.0	21.0	24.0
LTE Band 7_HOPPING	F	22.5	19.0	16.0
LTE Band 48	F	22.0	20.0	17.0
LTE Band 41 (PC3)	B	24.0	22.0	24.0
LTE Band 41 (PC3)	F	20.0	20.0	16.5
LTE Band 41 (PC2)	B	26.0	24.0	26.0
LTE Band 41 (PC2)	F	23.0	21.0	18.5
LTE Band 38	B	24.0	22.0	24.0
LTE Band 38	F	20.0	20.0	16.5

Tolerance: -1.5 dB ~ +1.0 dB

D. 5G NR SUB 6

Mode / Band	Antenna	Modulated Average Output Power (in dBm)		
		Pmax	RSI = 0 (Non Head)	RSI = 1 (Head)
NR Band n71	A	24.8	24.8	24.8
NR Band n12	A	24.8	24.8	24.8
NR Band n26/n5	A	24.8	24.8	24.8
NR Band n66	A	24.3	19.0	24.3
NR Band n66_HOPPING	F	22.5	19.0	16.5
NR Band n25	A	24.3	20.0	24.3
NR Band n25_HOPPING	F	22.5	20.0	17.0
NR Band n2 (PCS)	A	24.3	20.0	24.3
NR Band n2 (PCS) _HOPPING	F	22.5	20.0	17.0
NR Band n70	A	23.5	20.0	23.5
NR Band n30	A	23.0	18.0	23.0
NR Band n30_HOPPING	F	20.5	18.0	16.0
NR Band n7	B	24.0	20.0	24.0
NR Band n7_HOPPING	F	22.5	19.0	16.0
NR Band n41 Path 1 (PC2 only)	B	26.0	20.0	19.5
NR Band n41 Path 1 (PC2 only)	F	21.0	14.0	13.5
NR Band n41 Path 1 (PC2 only)	E	21.5	14.5	13.5
NR Band n41 Path 1 (PC2 only)	D	21.0	14.0	14.0
NR Band n38 (PC3 only)	B	24.0	20.0	24.0
NR Band n48 (PC3 only)	F	22.0	17.0	15.0
NR Band n48 (PC3 only)	C	20.0	15.0	13.0
NR Band n48 (PC3 only)	I	22.0	17.0	15.0
NR Band n48 (PC3 only)	D	21.0	16.5	14.5
NR Band n77 DoD (PC2 only)	F	26.0	17.0	15.0
NR Band n77 DoD (PC2 only)	C	23.5	16.0	14.0
NR Band n77 DoD (PC2 only)	I	25.0	17.0	15.0
NR Band n77 DoD (PC2 only)	D	23.5	16.0	14.0
NR Band n77 (PC2 only)	F	26.0	17.0	15.0
NR Band n77 (PC2 only)	C	23.5	16.0	14.0
NR Band n77 (PC2 only)	I	25.0	17.0	15.0
NR Band n77 (PC2 only)	D	23.5	16.0	14.0
NR Band n78 (PC2 only)	F	26.0	17.0	15.0
NR Band n78 (PC2 only)	C	23.5	16.0	14.0
NR Band n78 (PC2 only)	I	25.0	17.0	15.0
NR Band n78 (PC2 only)	D	23.5	16.0	14.0

Tolerance: -1.5 dB ~ +1.0 dB

4.3.2 Maximum 2.4 GHz, 5 GHz WIFI output power

Maximum Power Pmax

Mode	Band	SISO(ANT 1)							SISO(ANT 2)						MIMO					
		a	b	g	n	ac	ax(SU)	a	b	g	n	ac	ax(SU)	a	b	g	n	ac	ax(SU)
2.4GHz	2450MHz		19	17 Ch.1 :16 Ch .11 :16	17 Ch.1 :16 Ch .11 :15	17 Ch.1 :16 Ch .11 :15	17 Ch.1 :15.5 Ch .11 :15.5		19	17 Ch.1 :16 Ch .11 :16	17 Ch.1 :16 Ch .11 :15	17 Ch.1 :16 Ch .11 :15	17 Ch.1 :15.5 Ch .11 :15.5			20 Ch.1 :19 Ch .11 :19	20 Ch.1 :19 Ch .11 :18	20 Ch.1 :19 Ch .11 :18	20 Ch.1 :18.5 Ch .11 :18.5
5GHZ (20MHz)	U-NII-1	17			17	17	17	17			17	17	17	20			20	20	20
	U-NII-2-A	17			17	17	17	17			17	17	17	20			20	20	20
	U-NII-2-C	17			17	17	17	17			17	17	17	20			20	20	20
	U-NII-3	17			17	17	17	17			17	17	17	20			20	20	20
	U-NII-4	17			17	17	17	17			17	17	17	20			20	20	20
5GHZ (40MHz)	U-NII-1				16	16	16	16			16	16	16	19			19	19	19
	U-NII-2-A				16	16	16	16			16	16	16	19			19	19	19
	U-NII-2-C				16	16	16 Ch.102 : 15	16			16	16	16 Ch.102 : 15	19			19	19	19 Ch.102 : 18
	U-NII-3				16	16	16	16			16	16	16	19			19	19	19
	U-NII-4				16	16	16	16			16	16	16	19			19	19	19
5GHZ (80MHz)	U-NII-1					15	15					15	15					18	18
	U-NII-2-A					15	15					15	15					18	18
	U-NII-2-C					15	15					15	15					18	18
	U-NII-3					15	15					15	15					18	18
	U-NII-4					15	15					15	15					18	18
5GHZ (160MHz)	U-NII-1 & U-NII-2-A					15	15 Ch .50 : 13.5					15	15 Ch .50 : 13.5					18	18 Ch .50 :16.5
	U-NII-2C					15	15 Ch.114 : 13.5					15	15 Ch.114 : 13.5					18	18 Ch.114 : 16.5
	U-NII-3 & U-NII-4					15	15					15	15					18	18
6GHz-LPI (20MHz)	U-NII-5	9 Ch.2:5					9 Ch.2:5	9 Ch.2:5					9 Ch.2:5	12 Ch.2:8					12 Ch.2:8
	U-NII-6	10					10	10					10	13					13
	U-NII-7	10					10	10					10	13					13
	U-NII-8	10 Ch.233:6					10 Ch.233:6	10 Ch.233:6					10 Ch.233:6	10 Ch.233 :9					10 Ch.233:9
6GHz-LPI (40MHz)	U-NII-5						12						12						15
	U-NII-6						12						12						15
	U-NII-7						12						12						15
	U-NII-8						12						12						15
6GHz-LPI (80MHz)	U-NII-5						14						14						17
	U-NII-6						14						14						17
	U-NII-7						14						14						17
	U-NII-8						14						14						17
6GHz-LPI (160MHz)	U-NII-5						14						14						17
	U-NII-6						14						14						17
	U-NII-7						14						14						17
	U-NII-8						14						14						17
6GHz-SP (20MHz)	U-NII-5	14 Ch.2:5					14 Ch.2:5	14 Ch.2:5					14 Ch.2:5	17 Ch.2:8					17 Ch.2:8
	U-NII-7	14					14	14					14	17					17
6GHz-SP (40MHz)	U-NII-5						14						14						17
	U-NII-7						14						14						17
6GHz-SP (80MHz)	U-NII-5						14						14						17
	U-NII-7						14						14						17
6GHz-SP (160MHz)	U-NII-5						14						14						17
	U-NII-7						14						14						17

(Upper tolerance: target +1.0 dB)

Head [Plimit(DSI=1)]

Mode	Band	SISO(ANT 1)						SISO(ANT 2)						MIMO					
		a	b	g	n	ac	ax(SU)	a	b	g	n	ac	ax(SU)	a	b	g	n	ac	ax(SU)
2.4GHz	2450MHz		14	14	14	14	14		14	14	14	14	14			17	17	17	17
5GHZ (20MHz)	U-NII-1	12			12	12	12	12			12	12	12	15			15	15	15
	U-NII-2-A	12			12	12	12	12			12	12	12	15			15	15	15
	U-NII-2-C	12			12	12	12	12			12	12	12	15			15	15	15
	U-NII-3	12			12	12	12	12			12	12	12	15			15	15	15
	U-NII-4	12			12	12	12	12			12	12	12	15			15	15	15
5GHZ (40MHz)	U-NII-1				12	12	12				12	12	12				15	15	15
	U-NII-2-A				12	12	12				12	12	12				15	15	15
	U-NII-2-C				12	12	12				12	12	12				15	15	15
	U-NII-3				12	12	12				12	12	12				15	15	15
	U-NII-4				12	12	12				12	12	12				15	15	15
5GHZ (80MHz)	U-NII-1					12	12					12	12					15	15
	U-NII-2-A					12	12					12	12					15	15
	U-NII-2-C					12	12					12	12					15	15
	U-NII-3					12	12					12	12					15	15
	U-NII-4					12	12					12	12					15	15
5GHZ (160MHz)	U-NII-1 & U-NII-2-A					12	12					12	12					15	15
	U-NII-2C					12	12					12	12					15	15
	U-NII-3 & U-NII-4					12	12					12	12					15	15
6GHz-LPI (20MHz)	U-NII-5	8 Ch.2:5					8 Ch.2:5	8 Ch.2:5					8 Ch.2:5	11 Ch.2:8					11 Ch.2:8
	U-NII-6	8					8	8					8	11					8
	U-NII-7	8					8	8					8	11					8
	U-NII-8	8 Ch.233:6					8 Ch.233:6	8 Ch.233:6					8 Ch.233:6	11 Ch.233:9					11 Ch.233:9
6GHz-LPI (40MHz)	U-NII-5						8						8						11
	U-NII-6						8						8						11
	U-NII-7						8						8						11
	U-NII-8						8						8						11
6GHz-LPI (80MHz)	U-NII-5						8						8						11
	U-NII-6						8						8						11
	U-NII-7						8						8						11
	U-NII-8						8						8						11
6GHz-LPI (160MHz)	U-NII-5						8						8						11
	U-NII-6						8						8						11
	U-NII-7						8						8						11
	U-NII-8						8						8						11
6GHz-SP (20MHz)	U-NII-5	8 Ch.2:5					8 Ch.2:5	8 Ch.2:5					8 Ch.2:5	11 Ch.2:8					11 Ch.2:8
	U-NII-7	8					8	8					8	11					11
6GHz-SP (40MHz)	U-NII-5						8						8						11
	U-NII-7						8						8						11
6GHz-SP (80MHz)	U-NII-5						8						8						11
	U-NII-7						8						8						11
6GHz-SP (160MHz)	U-NII-5						8						8						11
	U-NII-7						8						8						11

(Upper tolerance: target +1.0dB)

Body [P-Limit(DSI=0)]

Mode	Band	SISO(ANT 1)						SISO(ANT 2)						MIMO					
		a	b	g	n	ac	ax(SU)	a	b	g	n	ac	ax(SU)	a	b	g	n	ac	ax(SU)
2.4GHz	2450MHz		16	16	16 Ch .11 :15	16 Ch .11 :15	16 Ch.1 :15.5 Ch .11 :15.5		16	16	16 Ch .11 :15	16 Ch .11 :15	16 Ch.1 :15.5 Ch .11 :15.5			19	19 Ch .11 :18	19 Ch .11 :18	19 Ch.1 :18.5 Ch .11 :18.5
5GHZ (20MHz)	U-NII-1	15			15	15	15 Ch.36 :14	15			15	15	15 Ch.36 :14	18			18	18	18 Ch.36 :17
	U-NII-2-A	15			15	15	15	15			15	15	15	18			18	18	18
	U-NII-2-C	15			15	15	15 Ch.100 : 14	15			15	15	15 Ch.100 : 14	18			18	18	18 Ch.100 : 17
	U-NII-3	15			15	15	15	15			15	15	15	18			18	18	18
	U-NII-4	15			15	15	15	15			15	15	15	18			18	18	18
5GHZ (40MHz)	U-NII-1				15	15	15				15	15	15				18	18	18
	U-NII-2-A				15	15	15				15	15	15				18	18	18
	U-NII-2-C				15	15	15				15	15	15				18	18	18
	U-NII-3				15	15	15				15	15	15				18	18	18
	U-NII-4				15	15	15				15	15	15				18	18	18
5GHZ (80MHz)	U-NII-1					15	15					15	15					18	18
	U-NII-2-A					15	15					15	15					18	18
	U-NII-2-C					15	15					15	15					18	18
	U-NII-3					15	15					15	15					18	18
	U-NII-4					15	15					15	15					18	18
5GHZ (160MHz)	U-NII-1 & U-NII-2-A					15	15 Ch .50 : 13.5					15	15 Ch .50 : 13.5					18	18 Ch .50 :16.5
	U-NII-2C					15	15 Ch.114 : 13.5					15	15 Ch.114 : 13.5					18	18 Ch.114 : 16.5
	U-NII-3					15	15					15	15					18	18
	U-NII-4					15	15					15	15					18	18
6GHz-LPI (20MHz)	U-NII-5	8 Ch.2:5					8 Ch.2:5	8 Ch.2:5					8 Ch.2:5	11 Ch.2:8					11 Ch.2:8
	U-NII-6	8					8	8					8	11					8
	U-NII-7	8					8	8					8	11					8
	U-NII-8	8 Ch.233:6					8 Ch.233:6	8 Ch.233:6					8 Ch.233:6	11 Ch.233:9					11 Ch.233:9
6GHz-LPI (40MHz)	U-NII-5						8						8						11
	U-NII-6						8						8						11
	U-NII-7						8						8						11
	U-NII-8						8						8						11
6GHz-LPI (80MHz)	U-NII-5						8						8						11
	U-NII-6						8						8						11
	U-NII-7						8						8						11
	U-NII-8						8						8						11
6GHz-LPI (160MHz)	U-NII-5						8						8						11
	U-NII-6						8						8						11
	U-NII-7						8						8						11
	U-NII-8						8						8						11
6GHz-SP (20MHz)	U-NII-5	8 Ch.2:5					8 Ch.2:5	8 Ch.2:5					8 Ch.2:5	11 Ch.2:8					11 Ch.2:8
	U-NII-7	8					8	8					8	11					11
6GHz-SP (40MHz)	U-NII-5						8						8						11
	U-NII-7						8						8						11
6GHz-SP (80MHz)	U-NII-5						8						8						11
	U-NII-7						8						8						11
6GHz-SP (160MHz)	U-NII-5						8						8						11
	U-NII-7						8						8						11

(Upper tolerance: target +1.0dB)

mmwave Active[P-Limit(DSI=2)]

Mode	Band	SISO(ANT 1)						SISO(ANT 2)						MIMO					
		a	b	g	n	ac	ax(SU)	a	b	g	n	ac	ax(SU)	a	b	g	n	ac	ax(SU)
2.4GHz	2450MHz		16	16	16 Ch .11 :15	16 Ch .11 :15	16 Ch.1 :15.5 Ch .11 :15.5		16	16	16 Ch .11 :15	16 Ch .11 :15	16 Ch.1 :15.5 Ch .11 :15.5			19	19 Ch .11 :18	19 Ch .11 :18	19 Ch.1 :18.5 Ch .11 :18.5
5GHZ (20MHz)	U-NII-1	13			13	13	13	13			13	13	13	16			16	16	16
	U-NII-2-A	13			13	13	13	13			13	13	13	16			16	16	16
	U-NII-2-C	13			13	13	13	13			13	13	13	16			16	16	16
	U-NII-3	13			13	13	13	13			13	13	13	16			16	16	16
	U-NII-4	13			13	13	13	13			13	13	13	16			16	16	16
5GHZ (40MHz)	U-NII-1				13	13	13				13	13	13				16	16	16
	U-NII-2-A				13	13	13				13	13	13				16	16	16
	U-NII-2-C				13	13	13				13	13	13				16	16	16
	U-NII-3				13	13	13				13	13	13				16	16	16
	U-NII-4				13	13	13				13	13	13				16	16	16
5GHZ (80MHz)	U-NII-1					13	13					13	13					16	16
	U-NII-2-A					13	13					13	13					16	16
	U-NII-2-C					13	13					13	13					16	16
	U-NII-3					13	13					13	13					16	16
	U-NII-4					13	13					13	13					16	16
5GHZ (160MHz)	U-NII-1 & U-NII-2-A					13	13					13	13					16	16
	U-NII-2C					13	13					13	13					16	16
	U-NII-3					13	13					13	13					16	16
	U-NII-4					13	13					13	13					16	16
6GHz-LPI (20MHz)	U-NII-5	8 Ch.2:5					8 Ch.2:5	8 Ch.2:5					8 Ch.2:5	11 Ch.2:8					11 Ch.2:8
	U-NII-6	8					8	8					8	11					8
	U-NII-7	8					8	8					8	11					8
	U-NII-8	8 Ch.233:6					8 Ch.233:6	8 Ch.233:6					8 Ch.233:6	11 Ch.233:9					11 Ch.233:9
6GHz-LPI (40MHz)	U-NII-5						8						8						11
	U-NII-6						8						8						11
	U-NII-7						8						8						11
	U-NII-8						8						8						11
6GHz-LPI (80MHz)	U-NII-5						8						8						11
	U-NII-6						8						8						11
	U-NII-7						8						8						11
	U-NII-8						8						8						11
6GHz-LPI (160MHz)	U-NII-5						8						8						11
	U-NII-6						8						8						11
	U-NII-7						8						8						11
	U-NII-8						8						8						11
6GHz-SP (20MHz)	U-NII-5	8 Ch.2:5					8 Ch.2:5	8 Ch.2:5					8 Ch.2:5	11 Ch.2:8					11 Ch.2:8
	U-NII-7	8					8	8					8	11					11
6GHz-SP (40MHz)	U-NII-5						8						8						11
	U-NII-7						8						8						11
6GHz-SP (80MHz)	U-NII-5						8						8						11
	U-NII-7						8						8						11
6GHz-SP (160MHz)	U-NII-5						8						8						11
	U-NII-7						8						8						11

Maximum Power 802.11ax RU Tx Power Tables

Tone	ANT1 & ANT2(SISO)/ in dBm												
	2.4G	*5G 20Mhz*	*5G 40Mhz*	*5G 80Mhz*	*5G 160Mhz*	*6G-LPI 20Mhz*	*6G-LPI 40Mhz*	*6G-LPI 80Mhz*	*6G-LPI 160MHz*	*6G-SP 20Mhz*	*6G-SP 40Mhz*	*6G-SP 80Mhz*	*6G-SP 160MHz*
	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index
26T	13	10 UNII1 : 8	10 UNII1 : 8	10 UNII1 : 8	10 UNII1 : 8	-2	-2	-2	-2	13 Ch.2:1	13	13	13
52T	14	13 UNII1 : 11	13 UNII1 : 11	13 UNII1 : 11	13 UNII1 : 11	2	2	2	2	13 Ch.2:4.5	13	13	13
106T	16 Ch.1 :15.5 Ch .11 :15.5	15 UNII1 : 14	15 UNII1 : 14	15 UNII1 : 14	15 UNII1 : 14 Ch.163:14	5	5	5	5	14 Ch.2:7	14	14	14
242T	17 Ch.1 :15.5 Ch .11 :15.5	17 Ch.36:16 Ch.64:16 Ch.100:15	17 Ch.38:16 Ch.102:15	17 Ch.42:15 Ch.58:15.5 Ch.106:14.5 Ch.122:16 Ch.138:15.5 Ch.155:16	17 Ch.50:12.5 Ch.114:14.5 Ch.163:15	10 UNII5 : 9	10 UNII5 : 9	10 UNII5 : 9	10 UNII5 : 9	14 Ch.2:9	14	14	14
484T			16 Ch.62:15 Ch.102:15	16 Ch.42:15 Ch.58:15 Ch.106:14.5	14		12	12	12		14	14	14
996T				15 Ch.58:14 Ch.106:14	15 Ch.50:14 Ch.114:14			14	14			14	14
996T*2					15 Ch.50:13.5 Ch.114:13.5				14				14

(Upper tolerance: target +1.0dB)

e.

Tone	MIMO (ALL) /in dBm											
	2.4G	*5G 20Mhz*	*5G 40Mhz*	*5G 80Mhz*	*5G 160Mhz*	*6G-LPI 20Mhz*	*6G-LPI 40Mhz*	*6G-LPI 80Mhz*	*6G-LPI 160MHz*	*6G-SP 20Mhz*	*6G-SP 40Mhz*	*6G-SP 80Mhz*	*6G-SP 160MHz*
	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index
26T	16	13 UNII1 : 11	13 UNII1 : 11	13 UNII1 : 11	13 UNII1 : 11	1	1	1	1	16	16	16	16
52T	17	16 UNII1 : 14	16 UNII1 : 14	16 UNII1 : 14	16 UNII1 : 14	5	5	5	5	16	16	16	16
106T	19 Ch.1 :18.5 Ch .11 :18.5	18 UNII1 : 17	18 UNII1 : 17	18 UNII1 : 17	18 UNII1 : 17 Ch.163:17	8	8	8	8	17	17	17	17
242T	20 Ch.1 :18.5 Ch .11 :18.5	20 Ch.36:19 Ch.64:19 Ch.100:18	20 Ch.38:19 Ch.102:18	20 Ch.42:18 Ch.58:18.5 Ch.106:17.5 Ch.122:19 Ch.138:18.5 Ch.155:19	20 Ch.50:15.5 Ch.114:17.5 Ch.163:18	13 UNII5 : 12	13 UNII5 : 12	13 UNII5 : 12	13 UNII5 : 12	17 Ch.2:12	17	17	17
484T			19 Ch.62:18 Ch.102:18	19 Ch.42:18 Ch.58:18 Ch.106:17.5	17		15	15	15		17	17	17
996T				18 Ch.58:17 Ch.106:17	18 Ch.50:17 Ch.114:17			17	17			17	17
996T*2					18 Ch.50:16.5 Ch.114:16.5				17				17

(Upper tolerance: target +1.0dB)

Reduced Power 802.11ax RU Tx Power Tables Head [Plimit(DSI=1)]

Tone	ANT1 & ANT2(SISO)/ in dBm												
	2.4G	*5G 20Mhz*	*5G 40Mhz*	*5G 80Mhz*	*5G 160Mhz*	*6G-LPI 20Mhz*	*6G-LPI 40Mhz*	*6G-LPI 80Mhz*	*6G-LPI 160MHz*	*6G-SP 20Mhz*	*6G-SP 40Mhz*	*6G-SP 80Mhz*	*6G-SP 160MHz*
	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index
26T	13	10 UNII1 : 8	10 UNII1 : 8	10 UNII1 : 8	10 UNII1 : 8	-2	-2	-2	-2	8 Ch.2:1	8	8	8
52T	14	12	12	12	12	2	2	2	2	8 Ch.2:4.5	8	8	8
106T	14	12	12	12	12	5	5	5	5	8 Ch.2:7	8	8	8
242T	14	12	12	12	12	8	8	8	8	8	8	8	8
484T			12	12	12		8	8	8		8	8	8
996T				12	12			8	8			8	8
996T*2					12				8				8

(Upper tolerance: target +1.0dB)

Tone	MIMO (ALL) /in dBm												
	2.4G	*5G 20Mhz*	*5G 40Mhz*	*5G 80Mhz*	*5G 160Mhz*	*6G-LPI 20Mhz*	*6G-LPI 40Mhz*	*6G-LPI 80Mhz*	*6G-LPI 160MHz*	*6G-SP 20Mhz*	*6G-SP 40Mhz*	*6G-SP 80Mhz*	*6G-SP 160MHz*
	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index
26T	16	13 UNII1 : 11	13 UNII1 : 11	13 UNII1 : 11	13 UNII1 : 11	1	1	1	1	11 Ch.2:4	11	11	11
52T	17	15	15	15	15	5	5	5	5	11 Ch.2:7.5	11	11	11
106T	17	15	15	15	15	8	8	8	8	11 Ch.2:10	11	11	11
242T	17	15	15	15	15	11	11	11	11	11	11	11	11
484T			15	15	15		11	11	11		11	11	11
996T				15	15			11	11			11	11
996T*2					15				11				11

(Upper tolerance: target +1.0dB)

Reduced Power 802.11ax RU Tx Power Tables PLimit(Body)(DSI=0)]

	ANT1 & ANT2(SISO)/ in dBm												
Tone	*2.4G*	*5G 20Mhz*	*5G 40Mhz*	*5G 80Mhz*	*5G 160Mhz*	*6G-LPI 20Mhz*	*6G-LPI 40Mhz*	*6G-LPI 80Mhz*	*6G-LPI 160MHz*	*6G-SP 20Mhz*	*6G-SP 40Mhz*	*6G-SP 80Mhz*	*6G-SP 160MHz*
	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index
26T	13	10 UNII1 : 8	10 UNII1 : 8	10 UNII1 : 8	10 UNII1 : 8	-2	-2	-2	-2	8 Ch.2:1	8	8	8
52T	14	13 UNII1 : 11	13 UNII1 : 11	13 UNII1 : 11	13 UNII1 : 11	2	2	2	2	8 Ch.2:4.5	8	8	8
106T	16 Ch.1 :15.5 Ch .11 :15.5	15 UNII1 : 14	15 UNII1 : 14	15 UNII1 : 14	15 UNII1 : 14 Ch.163:14	5	5	5	5	8 Ch.2:7	8	8	8
242T	17 Ch.1 :15.5 Ch .11 :15.5	15	15	15 Ch.106:14.5	15 Ch.50:12.5 Ch.114:14.5	8	8	8	8	8	8	8	8
484T			15	15 Ch.106:14.5	14		8	8	8		8	8	8
996T				15 Ch.58:14 Ch.106:14	15 Ch.50:14 Ch.114:14			8	8			8	8
996T*2					15 Ch.50:13.5 Ch.114:13.5				8				8

(Upper tolerance: target +1.0dB)

	MIMO (ALL) /in dBm												
Tone	*2.4G*	*5G 20Mhz*	*5G 40Mhz*	*5G 80Mhz*	*5G 160Mhz*	*6G-LPI 20Mhz*	*6G-LPI 40Mhz*	*6G-LPI 80Mhz*	*6G-LPI 160MHz*	*6G-SP 20Mhz*	*6G-SP 40Mhz*	*6G-SP 80Mhz*	*6G-SP 160MHz*
	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index
26T	16	13 UNII1 : 11	13 UNII1 : 11	13 UNII1 : 11	13 UNII1 : 11	1	1	1	1	11 Ch.2:4	11	11	11
52T	17	16 UNII1 : 14	16 UNII1 : 14	16 UNII1 : 14	16 UNII1 : 14	5	5	5	5	11 Ch.2:7.5	11	11	11
106T	19 Ch.1 :18.5 Ch .11 :18.5	18 UNII1 : 17	18 UNII1 : 17	18 UNII1 : 17	18 UNII1 : 17 Ch.163:17	8	8	8	8	11 Ch.2:10	11	11	11
242T	20 Ch.1 :18.5 Ch .11 :18.5	18	18	18 Ch.106:17.5	18 Ch.50:15.5 Ch.114:17.5	11	11	11	11	11	11	11	11
484T			18	18 Ch.106:17.5	17		11	11	11		11	11	11
996T				18 Ch.58:17 Ch.106:17	18 Ch.50:17 Ch.114:17			11	11			11	11
996T*2					18 Ch.50:16.5 Ch.114:16.5				11				11

(Upper tolerance: target +1.0dB)

mmWave Active [PLimit(DSI=2)]

Tone	ANT1 & ANT2(SISO)/ in dBm												
	2.4G	*5G 20Mhz*	*5G 40Mhz*	*5G 80Mhz*	*5G 160Mhz*	*6G-LPI 20Mhz*	*6G-LPI 40Mhz*	*6G-LPI 80Mhz*	*6G-LPI 160MHz*	*6G-SP 20Mhz*	*6G-SP 40Mhz*	*6G-SP 80Mhz*	*6G-SP 160MHz*
	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index
26T	13	10 UNII1 : 8	10 UNII1 : 8	10 UNII1 : 8	10 UNII1 : 8	-2	-2	-2	-2	8 Ch.2:1	8	8	8
52T	14	13 UNII1 : 11	13 UNII1 : 11	13 UNII1 : 11	13 UNII1 : 11	2	2	2	2	8 Ch.2:4.5	8	8	8
106T	16	13	13	13	13	5	5	5	5	8 Ch.2:7	8	8	8
242T	16 Ch.1 :15.5 Ch .11 :15.5	13	13	13	13	8	8	8	8	8	8	8	8
484T			13	13	13		8	8	8		8	8	8
996T				13	13			8	8			8	8
996T*2					13				8				8

(Upper tolerance: target +1.0dB)

Tone	MIMO (ALL) /in dBm												
	2.4G	*5G 20Mhz*	*5G 40Mhz*	*5G 80Mhz*	*5G 160Mhz*	*6G-LPI 20Mhz*	*6G-LPI 40Mhz*	*6G-LPI 80Mhz*	*6G-LPI 160MHz*	*6G-SP 20Mhz*	*6G-SP 40Mhz*	*6G-SP 80Mhz*	*6G-SP 160MHz*
	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index	Ch & RU index
26T	16	13 UNII1 : 11	13 UNII1 : 11	13 UNII1 : 11	13 UNII1 : 11	1	1	1	1	11 Ch.2:4	11	11	11
52T	17	16 UNII1 : 14	16 UNII1 : 14	16 UNII1 : 14	16 UNII1 : 14	5	5	5	5	11 Ch.2:7.5	11	11	11
106T	19	16	16	16	16	8	8	8	8	11 Ch.2:10	11	11	11
242T	19 Ch.1 :18.5 Ch .11 :18.5	16	16	16	16	11	11	11	11	11	11	11	11
484T			16	16	16		11	11	11		11	11	11
996T				16	16			11	11			11	11
996T*2					16				11				11

(Upper tolerance: target +1.0dB)

4.3.3 Bluetooth Maximum Conducted Output Power in Conducted Mode

Maximum power

Mode	ANT1	ANT2	Dual
Bluetooth(1Mbps) (in dBm)	16.5dBm	13.5dBm	14.5dBm CH78 : 13.5dBm
Bluetooth (EDR) (in dBm)	13.5dBm	11.5dBm	11.5dBm CH78 : 10.5dBm
Bluetooth (LE,1M/2M) (in dBm)	16.5dBm	13.5dBm	14.5dBm CH78 : 13.5dBm
Bluetooth (LE,125k/500k) (in dBm)	9.5dBm CH39 : 8.0dBm		

(Upper tolerance: target +1.0dB)

Reduced power - Receiver active

Mode	ANT1	ANT2	Dual
Bluetooth (1Mbps) (in dBm)	10.0 dBm	8.0 dBm	10.0dBm
Bluetooth (EDR) (in dBm)	10.0 dBm	8.0 dBm	10.0dBm
Bluetooth (LE,1M/2M) (in dBm)	11.0 dBm	9.5dBm	10.0dBm
Bluetooth (LE,125k/500k) (in dBm)	9.5dBm CH39 : 8.0dBm		

(Upper tolerance: target +1.0dB)

4.4 LTE Information

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

Ch. No.& Freq.(MHz)		Low / Low-Mid	Mid	Mid-High / High
LTE FDD Band 2 (PCS)	1.4 MHz	1 850.7 (18607)	1 880.0 (18900)	1 909.3 (19193)
	3 MHz	1 851.5 (18615)	1 880.0 (18900)	1 908.5 (19185)
	5 MHz	1 852.5 (18625)	1 880.0 (18900)	1 907.5 (19175)
	10 MHz	1 855.0 (18650)	1 880.0 (18900)	1 905.0 (19150)
	15 MHz	1 857.5 (18675)	1 880.0 (18900)	1 902.5 (19125)
	20 MHz	1 860.0 (18700)	1 880.0 (18900)	1 900.0 (19100)
LTE FDD Band 4 (AWS)	1.4 MHz	1 710.7 (19957)	1 732.5 (20175)	1 754.3 (20393)
	3 MHz	1 711.5 (19965)	1 732.5 (20175)	1 753.5 (20385)
	5 MHz	1 712.5 (19975)	1 732.5 (20175)	1 752.5 (20375)
	10 MHz	1 715.0 (20000)	1 732.5 (20175)	1 750.0 (20350)
	15 MHz	1 717.5 (20025)	1 732.5 (20175)	1 747.5 (20325)
	20 MHz		1 732.5 (20175)	
LTE FDD Band 5 (Cell)	1.4 MHz	824.7 (20407)	836.5 (20525)	848.3 (20643)
	3 MHz	825.5 (20415)	836.5 (20525)	847.5 (20635)
	5 MHz	826.5 (20425)	836.5 (20525)	846.5 (20625)
	10 MHz		836.5 (20525)	
LTE FDD Band 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 20, UL: Category 18
HPUE Power Class	LTE TDD 41 Power Class 3 : (Duty : 63.3%) Power Class 2 : (Duty:43.3%)
Modulations Supported in UL	QPSK, 16QAM, 64QAM, 256 QAM
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3	Yes
A-MPR disabled for SAR Testing.	Yes
LTE Carrier Aggregation	This device supports Inter-Band & Intra-Band DL-link Carrier aggregations and intra-Band UL-link Carrier aggregations. Detailed information of Down-Link CA is included in the Appendix. I and Technical Description document.
LTE Release information	This device does not support full CA features on 3GPP Release 16. It supports carrier aggregation, downlink MIMO. All other uplink communications are identical to the release 8 specifications. The following LTE Release 16 Features are not supported: Relay, Hetnet, Enhanced elCI, MDH, cross-carrier Scheduling, Enhanced SC-FDMA.

4.5 5G NR SUB 6 Information

Item.		Description
Frequency Range	NR FDD Band n2 (PCS)	1 852.5 ㎒ ~ 1 907.5 ㎒
	NR FDD Band n5	826.5 ㎒ ~ 846.5 ㎒
	NR FDD Band n7	2502.5 ㎒ ~ 2567.5 ㎒
	NR FDD Band n12	701.5 ㎒ ~ 713.5 ㎒
	NR FDD Band n25 (PCS)	1 852.5 ㎒ ~ 1 912.5 ㎒
	NR FDD Band n26	816.5 ㎒ ~ 846.5 ㎒
	NR FDD Band n30	2 307.5 ㎒ ~ 2 312.5 ㎒
	NR TDD Band n38	2 575 ㎒ ~ 2 615 ㎒
	NR TDD Band n41	2 501.01 ㎒ ~ 2 685 ㎒
	NR TDD Band n48	3 555 ㎒ ~ 3 695.01 ㎒
	NR FDD Band n66	1 712.5 ㎒ ~ 1 777.5 ㎒
	NR FDD Band n70	1 697.5 ㎒ ~ 1 707.5 ㎒
	NR FDD Band n71	665.5 ㎒ ~ 695.5 ㎒
	NR TDD Band n77	3 705 ㎒ ~ 3 975 ㎒
	NR TDD Band n77 DoD	3 445.01 ㎒ ~ 3 544.98 ㎒
	NR TDD Band n78	3 705 ㎒ ~ 3 795 ㎒
	NR TDD Band n78 DoD	3 455.01 ㎒ ~ 3 544.98 ㎒
Channel Bandwidths	NR FDD Band n2 (PCS)	5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒, 25 ㎒, 30 ㎒, 35 ㎒, 40 ㎒
	NR FDD Band n5	5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒
	NR FDD Band n7	5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒, 25 ㎒, 30 ㎒, 35 ㎒, 40 ㎒
	NR FDD Band n12	5 ㎒, 10 ㎒, 15 ㎒
	NR FDD Band n25 (PCS)	5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒, 25 ㎒, 30 ㎒, 35 ㎒, 40 ㎒
	NR FDD Band n26	5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒
	NR FDD Band n30	5 ㎒, 10 ㎒
	NR TDD Band n38	10 ㎒, 15 ㎒, 20 ㎒, 25 ㎒, 30 ㎒, 40 ㎒
	NR TDD Band n41	10 ㎒, 15 ㎒, 20 ㎒, 25 ㎒, 30 ㎒, 40 ㎒, 50 ㎒, 60 ㎒, 70 ㎒, 80 ㎒, 90 ㎒, 100 ㎒
	NR TDD Band n48	10 ㎒, 15 ㎒, 20 ㎒, 30 ㎒, 40 ㎒,
	NR FDD Band n66	5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒, 25 ㎒, 30 ㎒, 35 ㎒, 40 ㎒
	NR FDD Band n70	5 ㎒, 10 ㎒, 15 ㎒
	NR FDD Band n71	5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒
	NR TDD Band n77	10 ㎒, 15 ㎒, 20 ㎒, 25 ㎒, 30 ㎒, 40 ㎒, 50 ㎒, 60 ㎒, 70 ㎒, 80 ㎒, 90 ㎒, 100 ㎒
	NR TDD Band n77 DoD	10 ㎒, 15 ㎒, 20 ㎒, 25 ㎒, 30 ㎒, 40 ㎒, 50 ㎒, 60 ㎒, 70 ㎒, 80 ㎒, 90 ㎒, 100 ㎒
	NR TDD Band n78	10 ㎒, 15 ㎒, 20 ㎒, 25 ㎒, 30 ㎒, 40 ㎒, 50 ㎒, 60 ㎒, 70 ㎒, 80 ㎒, 90 ㎒, 100 ㎒
	NR TDD Band n78 DoD	10 ㎒, 15 ㎒, 20 ㎒, 25 ㎒, 30 ㎒, 40 ㎒, 50 ㎒, 60 ㎒, 70 ㎒, 80 ㎒, 90 ㎒, 100 ㎒

Ch. No.& Freq.(MHz)		Low / Low-Mid		Mid		Mid-High / High	
NR FDD Band n2 (PCS)	5 MHz	1852.5(370500)		1880(376000)		1907.5(381500)	
	10 MHz	1855(371000)		1880(376000)		1905(381000)	
	15 MHz	1857.5(371500)		1880(376000)		1902.5(380500)	
	20 MHz	1860(372000)		1880(376000)		1900(380000)	
	25 MHz	1862.5(372500)		1880(376000)		1897.5(379500)	
	30 MHz	1865(373000)		1880(376000)		1895(379000)	
	35 MHz	1867.5(373500)		1880(376000)		1892.5(378500)	
	40 MHz	1870(374000)		1880(376000)		1890(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 n7	5 MHz	2502.5(500500)		2535(507000)		2567.5(513500)	
	10 MHz	2505(501000)		2535(507000)		2565(513000)	
	15 MHz	2507.5(501500)		2535(507000)		2562.5(512500)	
	20 MHz	2510(502000)		2535(507000)		2560(512000)	
	25 MHz	2512.5(502500)		2535(507000)		2557.5(511500)	
	30 MHz	2515(503000)		2535(507000)		2555(511000)	
	35 MHz	2517.5(503500)		2535(507000)		2552.5(510500)	
	40 MHz			2535(507000)			
NR FDD Band n12	5 MHz	701.5 (140300)		707.5 (141500)		713.5 (142700)	
	10 MHz			707.5 (141500)			
	15 MHz			707.5 (141500)			
NR FDD Band n25	5 MHz	1852.5(370500)		1882.5(376500)		1912.5(382500)	
	10 MHz	1855(371000)		1882.5(376500)		1910(382000)	
	15 MHz	1857.5(371500)		1882.5(376500)		1907.5(381500)	
	20 MHz	1860(372000)		1882.5(376500)		1905(381000)	
	25 MHz	1862.5(372500)		1882.5(376500)		1902.5(380500)	
	30 MHz	1865(373000)		1882.5(376500)		1900(380000)	
	35 MHz			1882.5(376500)			
	40 MHz			1882.5(376500)			
NR FDD Band n26	5 MHz	816.5(163300)		831.5(166300)		846.5(169300)	
	10 MHz	819(163800)		831.5(166300)		844(168800)	
	15 MHz	821.5(164300)				841.5(168300)	
	20 MHz			831.5(166300)			
NR FDD Band n30	5 MHz			2310 (462000)			
	10 MHz			2310 (462000)			
NR TDD Band n38	10 MHz	2575(515000)		2595(519000)		2615(523000)	
	15 MHz	2577.5(515500)		2595(519000)		2612.5(522500)	
	20 MHz	2580(516000)		2595(519000)		2610(522000)	
	25 MHz	2582.5(516500)				2607.5(521500)	
	30 MHz	2585(517000)				2605(521000)	
	40 MHz			2595(519000)			
NR TDD Band n48	10 MHz	3555(637000)	3602.01(640134)		3648(643200)		3695.01(646334)
	15 MHz	3557.49(637166)	3602.49(640166)		3647.49(643166)		3692.49(646166)
	20 MHz	3560.01(637334)	3603.33(640222)		3646.65(643110)		3690(646000)
	30 MHz	3565.02 (637668)	3605.01(640334)		3645(643000)		3684.99(645666)
	40 MHz	3570(638000)	3624.99(641666)				3679.98(645332)
NR TDD Band n41	10 MHz	2501.01(500202)	2547(509400)	2592.99(518598)	2639.01(527802)	2685(537000)	
	15 MHz	2503.5(500700)	2548.26(509652	2592.99(518598)	2637.75(527550)	2682.51(536502)	
	20 MHz	2506.02(501204)	2549.49(509898)	2592.99(518598)	2636.49(527298)	2679.99(535998)	
	25 MHz	2508.48(501696)	2550.75(510150)	2592.99(518598)	2635.23(527046)	2677.50(535500)	
	30 MHz	2511(502200)	2552.01(510402)	2592.99(518598)	2634(526800)	2674.98(534996)	
	40 MHz	2516.01(503202)	2567.34(513468)		2618.67(523734)	2670(534000)	
	50 MHz	2521.02(504204)		2592.99(518598)		2664.99(532998)	
	60 MHz	2526(505200)		2592.99(518598)		2659.98(531996)	
	70 MHz	2531.01(506202)				2655(531000)	
	80 MHz	2536.02(507204)				2649.99(529998)	
	90 MHz	2541(508200)				2644.98(528996)	
	100 MHz			2592.99(518598)			

Ch. No.& Freq.(MHz)		Low / Low-Mid		Mid		Mid-High / High	
NR FDD Band n66	5 MHz	1712.5(342500)		1745(349000)		1777.5(355500)	
	10 MHz	1715(343000)		1745(349000)		1775(355000)	
	15 MHz	1717.5(343500)		1745(349000)		1772.5(354500)	
	20 MHz	1720(344000)		1745(349000)		1770(354000)	
	25 MHz	1722.5(344500)		1745(349000)		1767.5(353500)	
	30 MHz			1745(349000)			
	35 MHz	1727.5(345500)		1745(349000)		1762.5(352500)	
	40 MHz	1730(346000)		1745(349000)		1760(352000)	
NR FDD Band n70	5 MHz	1697.5(339500)				1707.5(341500)	
	10 MHz	1700(340000)		1702.5(340500)		1705 (341000)	
	15 MHz			1702.5(340500)			
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	3705(647000)	3759(650600)	3813(654200)	3867(657800)	3921(661400)	3975(665000)
	15 MHz	3707.52(647168)	3760.5(650700)	3813.51(654234	3866.49(657766)	3919.5(661300)	3972.48(664832)
	20 MHz	3710.01 (647334)	3762 (650800)	3813.99(654266)	3866.01 (657734)	3918 (661200)	3969.99 (664666)
	25 MHz	3712.5(647500)	3763.5(650900)	3814.5(654300)	3865.5(657700)	3916.5(661100)	3967.5(664500)
	30 MHz	3715.02 (647668)	3765 (651000)	3815.01(654334)	3864.99 (657666)	3915 (661000)	3964.98 (664332)
	40 MHz	3720 (648000)	3768 (651200)	3816 (654400)	3864 (657600)	3912 (660800)	3960 (664000)
	50 MHz	3725.01 (648334)	3782.49 (652166)	3840 (656000)		3897.51 (659834)	3954.99 (663666)
	60 MHz	3730.02 (648668)	3803.34(653556)			3876.66(658444)	3949.98 (663332)
	70 MHz	3735 (649000)	3804.99 (654336)			3875.01 (658334)	3945(663000)
	80 MHz	3740.01 (649334)		3840 (656000)			3939.99 (662666)
	90 MHz	3745.02 (649668)		3840 (656000)		3934.98 (662332)	
	100 MHz	3750 (650000)		3840 (656000)		3930 (662000)	
NR TDD Band n77 (DoD)	10 MHz	3455.01(630334)		3500.01(633334)		3544.98(636332)	
	15 MHz	3457.5(630500)		3500.01(633334)		3542.49(636166)	
	20 MHz	3460.02 (630668)		3500.01 (633334)		3540 (636000)	
	25 MHz	3462.99(630866)		3500.01(633334)		3537(635800)	
	30 MHz	3465 (631000)		3500.01 (633334)		3534.99 (635666)	
	40 MHz	3470.01 (631334)				3529.98 (635332)	
	50 MHz	3475.02 (631668)				3525 (635000)	
	60 MHz			3500.01 (633334)			
	70 MHz			3500.01 (633334)			
	80 MHz			3500.01 (633334)			
	90 MHz			3500.01 (633334)			
	100 MHz			3500.01 (633334)			
NR TDD Band n78	10 MHz	3705(647000)		3750(650000)		3795(653000)	
	15 MHz	3707.5(647166)		3750(650000)		3792.48(652832)	
	20 MHz	3710.01(647334)		3750(650000)		3789.99(652666)	
	25 MHz	3712.5(647500)		3750(650000)		3787.5(652500)	
	30 MHz	3715(647666)		3750(650000)		3784.98(652332)	
	40 MHz	3720(647800)				3780(652000)	
	50 MHz	3725.01(648334)				3774.99(651666)	
	60 MHz			3750(650000)			
	70 MHz			3750(650000)			
	80 MHz			3750(650000)			
	90 MHz			3750(650000)			
	100 MHz			3750(650000)			

Ch. No.& Freq.(MHz)		Low / Low-Mid	Mid	Mid-High / High
NR TDD Band n78 (DoD)	10 MHz	3455.01(630334)	3500.01(633334)	3544.98(636332)
	15 MHz	3457.5(630500)	3500.01(633334)	3542.49(636166)
	20 MHz	3460.02(630668)	3500.01(633334)	3540(636000)
	25 MHz	3462.99(630866)	3500.01(633334)	3537(635800)
	30 MHz	3465(631000)	3500.01(633334)	3534.99(635666)
	40 MHz	3470.01(631334)		3529.98(635332)
	50 MHz	3475.02(631668)		3525(635000)
	60 MHz		3500.01(633334)	
	70 MHz		3500.01(633334)	
	80 MHz		3500.01(633334)	
	90 MHz		3500.01(633334)	
	100 MHz		3500.01(633334)	

Item.	Description
NR FDD Band n2/n5/n7/n12/n25/n26/n30/n66/n70/n71 SCS	15 kHz
NR TDD Band n38/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: π/2-BPSK(UL Only), QPSK, 16QAM, 64QAM, 256QAM
Non-Standalone & Standalone are supported. 5G NR FR1 Bands, n2,n5,n7,n12,n25,n26,n38,n41,n48,n66,n71,n77,n78 are supported to NSA and SA Connectivity. n30,n70 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 4/5/12/13/14/30/48/66
LTE Anchor Bands for NR Band n5 (Cell)	LTE Band 2/4/30/48/66
LTE Anchor Bands for NR Band n7	N/A
LTE Anchor Bands for NR Band n12	LTE Band 2/48/66
LTE Anchor Bands for NR Band n25	LTE Band 12
LTE Anchor Bands for NR Band n26	N/A
LTE Anchor Bands for NR Band n30	N/A
LTE Anchor Bands for NR Band n38	N/A
LTE Anchor Bands for NR Band n41	LTE Band 2/4/5/12/66/71
LTE Anchor Bands for NR Band n48	N/A
LTE Anchor Bands for NR Band n66 (AWS)	LTE Band 2/5/12/13/14/30/48
LTE Anchor Bands for NR Band n70	N/A
LTE Anchor Bands for NR Band n71	LTE Band 2/48/66
LTE Anchor Bands for NR Band n77	LTE Band 2/5/12/13/14/30/66/71
LTE Anchor Bands for NR Band n78	N/A

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
MAIN1 [Ant A]	GSM/GPRS/EDGE 850	Yes	Yes	Yes	Yes	Yes	No
MAIN1 [Ant A]	GSM/GPRS/EDGE 1900	Yes	Yes	Yes	Yes	Yes	No
MAIN1 [Ant A]	UMTS Band 5	Yes	Yes	Yes	Yes	Yes	No
MAIN1 [Ant A]	UMTS Band 4	Yes	Yes	Yes	Yes	Yes	No
MAIN1 [Ant A]	UMTS Band 2	Yes	Yes	Yes	Yes	Yes	No
MAIN1 [Ant A]	LTE FDD Band 2 (PCS)	Yes	Yes	Yes	Yes	Yes	No
SUB2 [Ant F]	LTE FDD Band 2 (PCS)	Yes	Yes	Yes	No	No	Yes
MAIN1 [Ant A]	LTE FDD Band 4 (AWS)	Yes	Yes	Yes	Yes	Yes	No
SUB2 [Ant F]	LTE FDD Band 4 (AWS)	Yes	Yes	Yes	No	No	Yes
MAIN1 [Ant A]	LTE FDD Band 5	Yes	Yes	Yes	Yes	Yes	No
MAIN2 [Ant B]	LTE FDD Band 7	Yes	Yes	Yes	No	Yes	No
SUB2 [Ant F]	LTE FDD Band 7	Yes	Yes	Yes	No	No	Yes
MAIN1 [Ant A]	LTE FDD Band 12	Yes	Yes	Yes	Yes	Yes	No
MAIN1 [Ant A]	LTE FDD Band 13	Yes	Yes	Yes	Yes	Yes	No
MAIN1 [Ant A]	LTE FDD Band 14	Yes	Yes	Yes	Yes	Yes	No
MAIN1 [Ant A]	LTE FDD Band 25 (PCS)	Yes	Yes	Yes	Yes	Yes	No
SUB2 [Ant F]	LTE FDD Band 25 (PCS)	Yes	Yes	Yes	No	No	Yes
MAIN1 [Ant A]	LTE FDD Band 26 (Cell)	Yes	Yes	Yes	Yes	Yes	No
MAIN1 [Ant A]	LTE FDD Band 30	Yes	Yes	Yes	Yes	Yes	No
SUB2 [Ant F]	LTE FDD Band 30	Yes	Yes	Yes	No	No	Yes
MAIN2 [Ant B]	LTE TDD Band 38	Yes	Yes	Yes	No	Yes	No
SUB2 [Ant F]	LTE TDD Band 38	Yes	Yes	Yes	No	No	Yes
MAIN2 [Ant B]	LTE TDD Band 41 (PC3)	Yes	Yes	Yes	No	Yes	No
MAIN2 [Ant B]	LTE TDD Band 41 (PC2)	Yes	Yes	Yes	No	Yes	No
SUB2 [Ant F]	LTE TDD Band 41 (PC3)	Yes	Yes	Yes	No	No	Yes
SUB2 [Ant F]	LTE TDD Band 41 (PC2)	Yes	Yes	Yes	No	No	Yes
SUB2 [Ant F]	LTE TDD Band 48	Yes	Yes	Yes	No	No	Yes
MAIN1 [Ant A]	LTE FDD Band 66 (AWS)	Yes	Yes	Yes	Yes	Yes	No
SUB2 [Ant F]	LTE FDD Band 66 (AWS)	Yes	Yes	Yes	No	No	Yes
MAIN1 [Ant A]	LTE FDD Band 71	Yes	Yes	Yes	Yes	Yes	No
MAIN1 [Ant A]	NR FDD Band n2 (PCS)	Yes	Yes	Yes	Yes	Yes	No
SUB2 [Ant F]	NR FDD Band n2 (PCS)	Yes	Yes	Yes	No	No	Yes
MAIN1 [Ant A]	NR FDD Band n5	Yes	Yes	Yes	Yes	Yes	No
MAIN2 [Ant B]	NR FDD Band n7	Yes	Yes	Yes	No	Yes	No
SUB2 [Ant F]	NR FDD Band n7	Yes	Yes	Yes	No	No	Yes
MAIN1 [Ant A]	NR FDD Band n12	Yes	Yes	Yes	Yes	Yes	No
MAIN1 [Ant A]	NR FDD Band n25 (PCS)	Yes	Yes	Yes	Yes	Yes	No
SUB2 [Ant F]	NR FDD Band n25 (PCS)	Yes	Yes	Yes	No	No	Yes
MAIN1 [Ant A]	NR FDD Band n26	Yes	Yes	Yes	Yes	Yes	No
MAIN1 [Ant A]	NR FDD Band n30	Yes	Yes	Yes	Yes	Yes	No

Antenna	Mode	Rear	Front	Left	Right	Bottom	Top
SUB2 [Ant F]	NR FDD Band n30	Yes	Yes	Yes	No	No	Yes
MAIN2 [Ant B]	NR TDD Band n38 (PC3 only)	Yes	Yes	Yes	No	Yes	No
SUB2 [Ant F]	NR TDD Band n41 (PC2 only)	Yes	Yes	Yes	No	No	Yes
MAIN2 [Ant B]	NR TDD Band n41 (PC2 only)	Yes	Yes	Yes	No	Yes	No
SUB1 [Ant E]	NR TDD Band n41 (PC2 only)	Yes	Yes	No	Yes	No	Yes
MAIN4 [Ant D]	NR TDD Band n41 (PC2 only)	Yes	Yes	No	Yes	Yes	No
SUB2 [Ant F]	NR TDD Band n48 (PC3 only)	Yes	Yes	Yes	No	No	Yes
MAIN3 [Ant C]	NRTDD Band n48 (PC3 only)	Yes	Yes	Yes	No	Yes	No
SUB5[Ant I]	NR TDD Band n48 (PC3 only)	Yes	Yes	Yes	No	No	No
MAIN4 [Ant D]	NRTDD Band n48 (PC3 only)	Yes	Yes	No	Yes	Yes	No
MAIN1 [Ant A]	NR FDD Band n66	Yes	Yes	Yes	Yes	Yes	No
SUB2 [Ant F]	NR FDD Band n66	Yes	Yes	Yes	No	No	Yes
MAIN1 [Ant A]	NR FDD Band n70	Yes	Yes	Yes	Yes	Yes	No
MAIN1 [Ant A]	NR FDD Band n71	Yes	Yes	Yes	Yes	Yes	No
SUB2 [Ant F]	NR TDD Band n77 (PC2 only)	Yes	Yes	Yes	No	No	Yes
MAIN3 [Ant C]	NR TDD Band n77 (PC2 only)	Yes	Yes	Yes	No	Yes	No
SUB5[Ant I]	NR TDD Band n77 (PC2 only)	Yes	Yes	Yes	No	No	No
MAIN4 [Ant D]	NR TDD Band n77 (PC2 only)	Yes	Yes	No	Yes	Yes	No
SUB2 [Ant F]	NR TDD Band n77 DoD (PC2 only)	Yes	Yes	Yes	No	No	Yes
MAIN3 [Ant C]	NR TDD Band n77 DoD (PC2 only)	Yes	Yes	Yes	No	Yes	No
SUB5[Ant I]	NR TDD Band n77 DoD (PC2 only)	Yes	Yes	Yes	No	No	No
MAIN4 [Ant D]	NR TDD Band n77 DoD (PC2 only)	Yes	Yes	No	Yes	Yes	No
SUB2 [Ant F]	NR TDD Band n78 (PC2 only)	Yes	Yes	Yes	No	No	Yes
MAIN3 [Ant C]	NR TDD Band n78 (PC2 only)	Yes	Yes	Yes	No	Yes	No
SUB5[Ant I]	NR TDD Band n78 (PC2 only)	Yes	Yes	Yes	No	No	No
MAIN4 [Ant D]	NR TDD Band n78 (PC2 only)	Yes	Yes	No	Yes	Yes	No
SUB4 [Ant H] WIFI 1	2.4 GHz WLAN	Yes	Yes	Yes	No	No	Yes
SUB1 [Ant E] WIFI2	2.4 GHz WLAN	Yes	Yes	No	Yes	No	Yes
SUB4 [Ant H] BT 1	Bluetooth	Yes	Yes	Yes	No	No	Yes
SUB4 [Ant H] WIFI 1	5 GHz WLAN	Yes	Yes	Yes	No	No	Yes
SUB1 [Ant E] WIFI2	5 GHz WLAN	Yes	Yes	No	Yes	No	Yes
SUB4 [Ant H] WIFI 1	6 GHz WLAN	Yes	Yes	Yes	No	No	Yes
SUB1 [Ant E] WIFI2	6 GHz WLAN	Yes	Yes	No	Yes	No	Yes
NFC Ant	NFC	Yes	Yes	Yes	No	No	No

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

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

4.7 Near Field Communications (NFC) Antenna

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

4.8 SAR Summation Scenario

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

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

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

Note:

1. 2.4GHz WLAN and 2.4GHz Bluetooth share the same antenna path. So, this DUT can only transmit together 2.4GHz WLAN Ant.2 and Bluetooth Ant.1.
2. 5 GHz WLAN and 6 GHz WLAN share the same antenna path and cannot transmit simultaneously.
3. When the user utilizes multiple services in UMTS 3G mode it uses multi-Radio Access Bearer or multi- RAB. The power control is based on a physical control channel (Dedicated Physical Control Channel [DPCCH]) and power control will be adjusted to meet the needs of both services. Therefore, the UMTS+WLAN scenario also represents the UMTS Voice/DATA + WLAN Hotspot scenario.
4. Per the manufacturer, WIFI Direct is not expected to be used in conjunction with a held-to-ear or bodyworn accessory voice call. Therefore, there are no simultaneous transmission scenarios involving WIFI direct beyond that listed in the above table.

5. 5 GHz Wireless Router is only supported for the U-NII-3 by S/W, therefore U-NII-1, U-NII-2A, U-NII-2C, and U-NII-4 were not evaluated for wireless router conditions.
6. 6 GHz Wireless Router is not supported; therefore, it was not evaluated for wireless router conditions.
7. This device supports 2x2 MIMO Tx for WLAN 802.11a/g/n/ac/ax. 802.11a/g/n/ac/ax supports CDD and STBC and 802.11n/ac/ax additionally supports SDM.
8. This device supports VoWIFI/VoLTE/VoNR
9. This device supports Bluetooth Tethering in SISO/MIMO
10. LTE + 5G NR FR1 Scenarios are limited to EN-DC combinations with anchor bands as shown in the NR FR1 checklist.
11. 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 & U-NII-2C and U-NII-4 WiFi, WiFi Hotspot SAR test and combinations are considered only 2.4 GHz and U-NII-3 for SAR with respected to wireless router configurations according to FCC KDB 941225 D06v02r01.

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

This device supports IEEE 802.11ax with the following features:
a) Up to 160 MHz Bandwidth only for 5/6 GHz
b) Up to 20 MHz Bandwidth only for 2.4 GHz
c) 2Tx antenna output
d) Up to 1024 QAM is supported
e) TDWR and Band gap channels are supported for 5 GHz
f) MU-MIMO UL Operations are not supported

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

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

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

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

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

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

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

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

4.9.2 Licensed Transmitter(s)

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

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

Per FCC KDB 648474 D04v01r03, this device is considered a "Phablet" since the diagonal dimension is greater than 160 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 ≤ 0.5dB higher than the same configuration in QPSK and the reported SAR for QPSK configuration is ≤1.45 W/Kg, per section 5.2.4 for FCC KDB941225 D05v02r05.

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

LTE capabilities with overlapping transmission frequency ranges were applied to LTE Band 5 (824.7 ㎒ ~ 848.3㎒) is covered by LTE Band 26(814.7 ㎒ ~ 848.3 ㎒), LTE Band 4 (1 710.7 ㎒ ~ 1 754.3㎒) is covered by LTE Band 66(1 710.7 ㎒ ~ 1 779.3 ㎒), LTE Band 2(1 850.7 ㎒ ~ 1 909.3㎒) is covered by LTE Band 25(1 850.7 ㎒ ~ 1 914.3㎒), LTE Band 38(2 572.5 ㎒ ~ 2 617.5㎒) is covered by LTE Band 41(2 498.5 ㎒ ~ 2 687.5㎒) of this model each both LTE bands have the same target powers.
NR capabilities with overlapping transmission frequency ranges were applied to n2(1 852.5 ㎒ ~ 1 907.5㎒) is covered by n25(1 852.5 ㎒ ~ 1 912.5㎒), n5(826.5 ㎒ ~ 846.5㎒) is covered by n26(816.5 ㎒ ~ 846.5㎒), n78(3 705 ㎒ ~ 3 795㎒) is covered by n77(3 705 ㎒ ~ 3 795㎒), n78 DoD(3 455.01 ㎒ ~ 3 544.98㎒) is covered by n77 DoD(3 455.01 ㎒ ~ 3 544.98㎒)of this model each both NR bands have the same target powers.

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

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

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

This product supported Intra-band LTE Carrier Aggregation for 41C, 48C, 66B, 66C 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(Stand alone) connectivity for 5G NR FR1 Bands, More detailed specifications of the Bands are contained in the Technical description document.

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

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

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

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

5. Introduction

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

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

SAR Definition

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

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

Figure 1. SAR Mathematical Equation

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

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

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

6. Description of test equipment

6.1 SAR MEASUREMENT SETUP

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

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

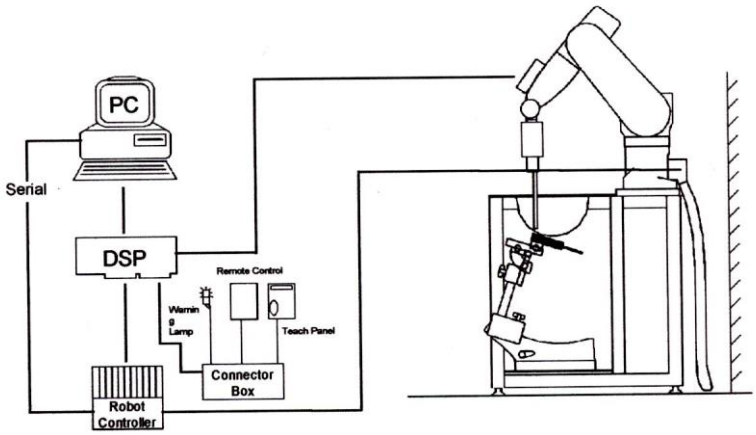


Figure 2. HCT SAR Lab. Test Measurement Set-up

The DAE consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the PC-card is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe mounting device includes two different sensor systems for frontal and sidewise probe contacts. They are also used for mechanical surface detection and probe collision detection. The robot uses its own controller with a built in VME-bus computer. The system is described in detail in.

7. SAR Measurement Procedure

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

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

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

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

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

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

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

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

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

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

8. Description of Test Position

8.1 EAR REFERENCE POINT

Figure 8-2 shows the front, back and side views of the SAM phantom. The center-of-mouth reference point is labeled "M", the left ear reference point (ERP) is marked "LE", and the right ERP is marked "RE." Each ERP is on the B-M (back-mouth) line located 15 mm behind the entrance-to-ear-canal (EEC) point, as shown in Figure 6-1. The Reference Plane is defined as passing through the two ear reference 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.

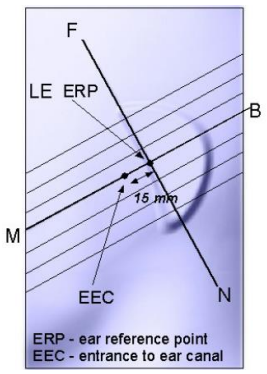


Figure 8-1
Close-up side view of ERP

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 than located at the same level as the center of the ear reference point. The device under test was positioned so that the "vertical centerline" was bisecting the front surface of the handset at its top and bottom edges, positioning the "ear reference point" on the outer surface of the both the left and right head phantoms on the ear reference point.

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

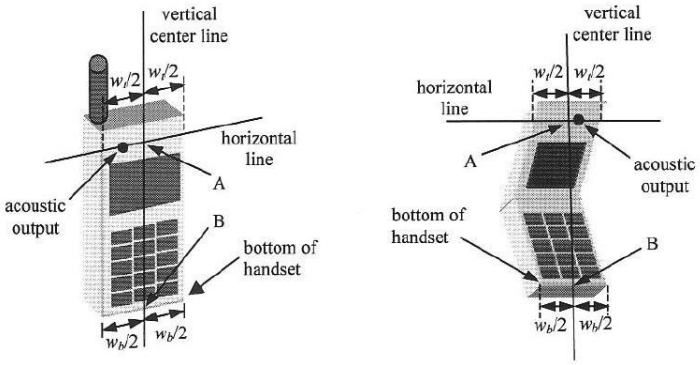


Figure 8-3. Handset vertical and horizontal reference lines

8.3 Device Holder

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

8.4 Position for cheek

Figure 8.4. shows cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

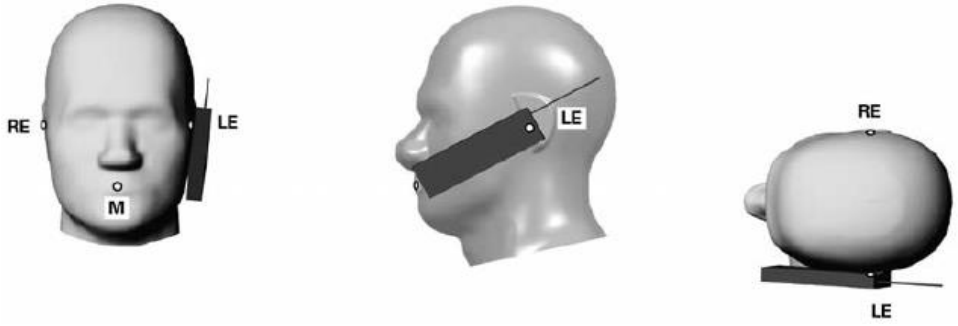


Figure 8.4 Cheek/ Touch position of the wireless device

8.5 Definition of the "tilted" position

Figure 8.5. shows tilted position. Place the device in the cheek position. Then while maintaining the orientation of the device, retract the device parallel to the reference plane far enough away from the phantom to enable a rotation of the device by 15°.

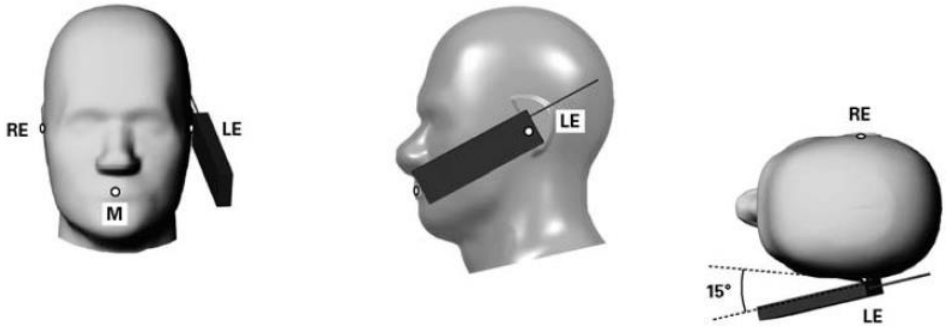


Figure 8.5. Tilt 15°position of the wireless device

8.6 Body-Worn Accessory Configurations

Body-worn operating configurations are tested with the belt-dips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 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 W/kg, the highest reported SAR configuration for that wireless mode and frequency Band should be repeated for that body- worn accessory with a headset attached to the handset.

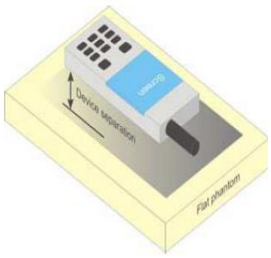


Figure 8.6
Sample Body-Worn Diagram

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

8.7 Wireless Router Configurations

Some battery-operated handsets have the capability to transmit and receive user data through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06v02r01 where SAR test considerations for handsets (L x W≥9cmx5 cm) are based on *a* composite test separation distance of 10 ㎜ from the front back and edges of the device containing transmitting antennas within 2.5 cm of their edges, determined from general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the Body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some Body-worn accessory SAR tests.

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

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

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

RF Exposure Limits for Frequencies Above 6GHz

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

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

NOTES: 1.0 mW/㎠ is 10 W/㎡

10. FCC SAR General Measurement Procedures

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

10.1 Measured and Reported SAR

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

10.2 3G SAR Test Reduction Procedure

10.2.1 GSM, GPRS and EDGE

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

10.2.2 SAR Test Reduction

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

10.2.3 Procedures Used to Establish RF Signal for SAR

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

10.3 SAR Measurement Conditions for UMTS

10.3.1 Output Power Verification

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

10.3.2 Body SAR measurements

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

10.3.3 SAR Measurements with Rel. 5 HSDPA

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

10.3.4 SAR Measurements with Rel. 6 HSUPA

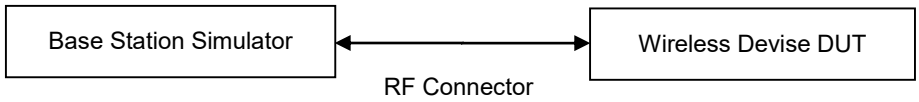
The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 and power control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

10.3.5 DC-HSDPA

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

DC-HSDPA Configurations

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



10.4 SAR Measurement Conditions for LTE

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

10.4.1 Spectrum Plots for RB Configurations

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

10.4.2 MPR

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

10.4.3 A-MPR

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

10.4.4 Required RB Size and RB offsets for SAR testing

According to FCC KDB 941225 D05v02r05

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

10.4.5 Downlink Carrier Aggregation

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

10.4.6 LTE Uplink Carrier Aggregation SAR Measurement Procedure

This device is specified with the same maximum output power and Tune-up tolerances for intra-band contiguous up-link LTE CA_41C/48C/66B/66C. LTE Band 41 Uplink carrier aggregation and single carrier are operating with Power class 3/2.

For intra-band contiguous carrier aggregation scenarios, 3GPP 36.101 Table 6.2.2A-1 specifies that aggregate maximum allowed output power is equivalent to the single carrier scenario.

The measured power results of single carrier LTE B41/48/66 and intra-band contiguous up-link LTE CA_41C/48C/66B/66C satisfy Maximum output power and Tune-up tolerances.

Per Fall 2017 TCB Workshop Notes, the output Power with uplink CA active was measured for the configuration with the Highest Reported SAR with standalone condition.

UL CA SAR is not required for all required test channels, Because the reported SAR for UL CA configuration is > 1.2 W/kg

10.4.7 LTE(TDD) Considerations

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

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

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

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

Table 4.2-2: Uplink-downlink configurations.

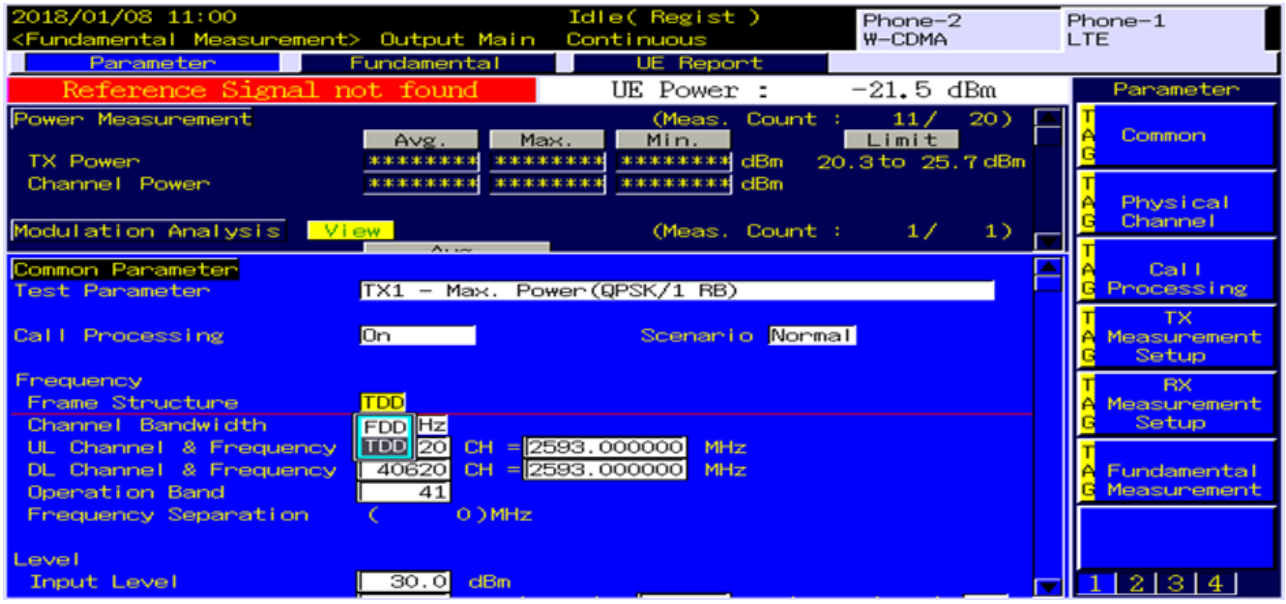
Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number									
		0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	U	U	D	S	U	U	U
1	5 ms	D	S	U	U	D	D	S	U	U	D
2	5 ms	D	S	U	D	D	D	S	U	D	D
3	10 ms	D	S	U	U	U	D	D	D	D	D
4	10 ms	D	S	U	U	D	D	D	D	D	D
5	10 ms	D	S	U	D	D	D	D	D	D	D
6	5 ms	D	S	U	U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

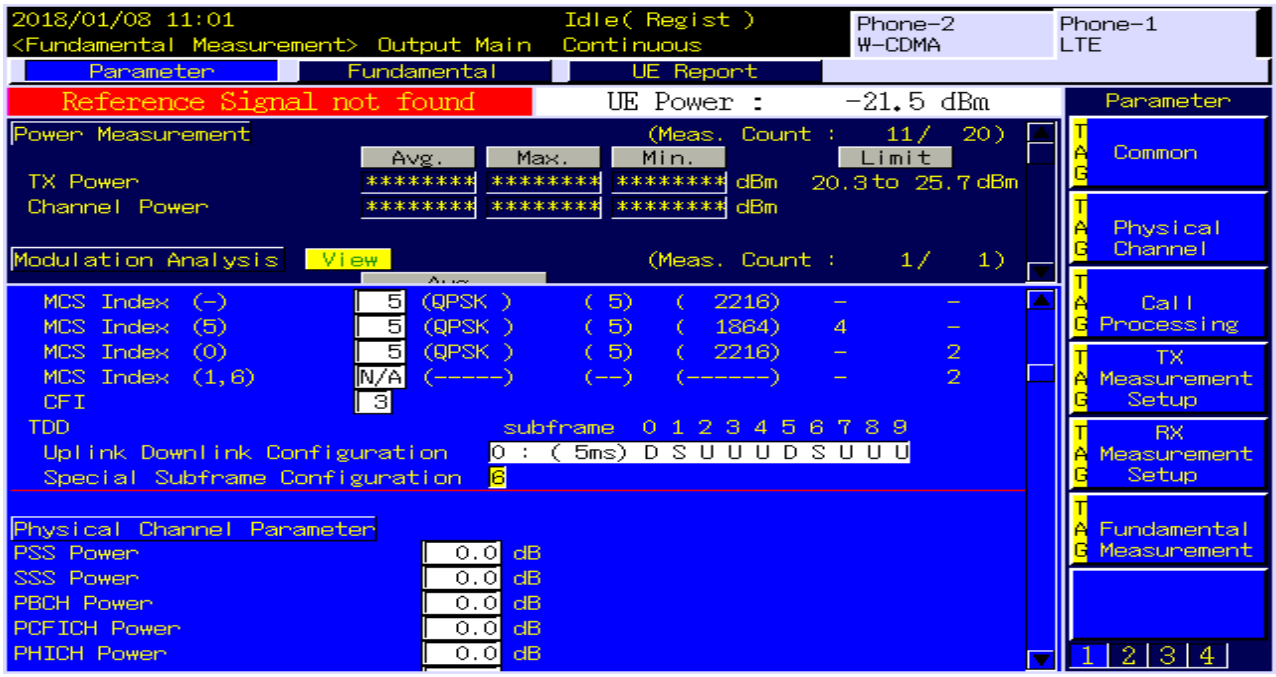
Example for calculated Duty Cycle for Uplink-Downlink Configuration 0:
Calculated Duty Cycle = (5120 x (1/(15000 x 2048)) x 2 + 0.006)/0.01 = 63.33 %
Where
T_s = 1/(15000 x 2048) seconds

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

10.4.8 The Call Box Setup for LTE(TDD)

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





10.5 SAR Testing with 802.11 Transmitters

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

10.5.1 General Device Setup

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

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

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

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

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

10.5.4 Initial Test Position Procedure

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

10.5.5 2.4 ㎓ SAR test Requirements

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

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

10.5.6 OFDM Transmission Mode and SAR Test Channel Selection

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

10.5.7 Initial Test Configuration Procedure

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

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

10.5.8 Subsequent Test Configuration Procedures

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

10.5.9 MIMO SAR Considerations

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

11. Output Power Specifications

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

Licensed Bands

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

Test Overview

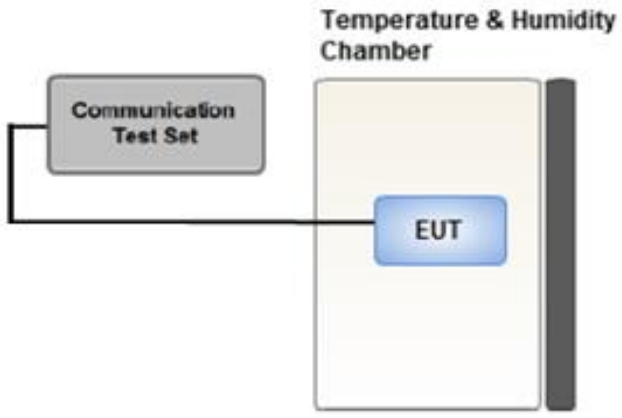
According to ANSI C63.26-2015 Section 5.2.1 when measuring the maximum RF output power from such devices, control over the EUT must be provided either through special test software (provided by manufacturer specifically for compliance testing, but not accessible by an end user) or through use of a base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

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

Test Procedure

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

Test setup



11.1 GSM Maximum Output Power

11.1.1 GSM Maximum Conducted Output Power

GSM850 – MAIN1 [Ant A]

Measured *Pmax*, RSI = 0, 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		33.00	33.00	31.00	29.50	28.00	27.00	25.50	24.00	22.50
Nominal		32.00	32.00	30.00	28.50	27.00	26.00	24.50	23.00	21.50
GSM 850	128	32.43	32.43	30.03	28.77	27.57	26.68	24.62	23.45	21.86
	190	32.53	32.53	30.40	28.98	27.63	26.92	24.86	23.52	21.83
	251	32.88	32.88	30.45	29.01	27.81	26.97	24.95	23.68	21.97

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		23.97	23.97	24.98	25.24	24.99	17.97	19.48	19.74	19.49
Nominal		22.97	22.97	23.98	24.24	23.99	16.97	18.48	18.74	18.49
GSM 850	128	23.40	23.40	24.01	24.51	24.56	17.65	18.60	19.19	18.85
	190	23.50	23.50	24.38	24.72	24.62	17.89	18.84	19.26	18.82
	251	23.85	23.85	24.43	24.75	24.80	17.94	18.93	19.42	18.96

GSM Conducted output powers (Frame-Average)

GSM1900 – MAIN1 [Ant A]

Measured *Pmax*, 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		31.20	31.20	28.50	26.50	25.00	26.00	24.50	23.50	21.50
Nominal		30.20	30.20	27.50	25.50	24.00	25.00	23.50	22.50	20.50
GSM 1900	512	29.01	29.00	26.54	24.66	23.11	24.39	22.61	21.81	19.92
	661	29.33	29.34	26.73	25.31	23.47	24.92	23.01	22.32	20.41
	810	29.34	29.48	26.98	25.28	23.58	25.09	23.08	22.19	20.35

GSM Conducted output powers (Burst-Average)

Mode / Band		Voice	GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)			
		GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Maximum		22.17	22.17	22.48	22.24	21.99	16.97	18.48	19.24	18.49
Nominal		21.17	21.17	21.48	21.24	20.99	15.97	17.48	18.24	17.49
GSM 1900	512	19.98	19.97	20.52	20.40	20.10	15.36	16.59	17.55	16.91
	661	20.30	20.31	20.71	21.05	20.46	15.89	16.99	18.06	17.40
	810	20.31	20.45	20.96	21.02	20.57	16.06	17.06	17.93	17.34

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		29.00	29.00	26.00	24.20	22.00	26.00	24.50	23.00	21.00
Nominal		28.00	28.00	25.00	23.20	21.00	25.00	23.50	22.00	20.00
GSM 1900	512	26.61	27.22	24.05	21.86	20.51			21.40	19.35
	661	27.41	27.66	24.35	22.15	20.56			21.82	19.78
	810	27.37	27.63	24.32	22.12	20.67			21.77	19.68

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		19.97	19.97	19.98	19.94	18.99	16.97	18.48	18.74	17.99
Nominal		18.97	18.97	18.98	18.94	17.99	15.97	17.48	17.74	16.99
GSM 1900	512	17.58	18.19	18.03	17.60	17.50			17.14	16.34
	661	18.38	18.63	18.33	17.89	17.55			17.56	16.77
	810	18.34	18.60	18.30	17.86	17.66			17.51	16.67

GSM Conducted output powers (Frame-Average)

Note:

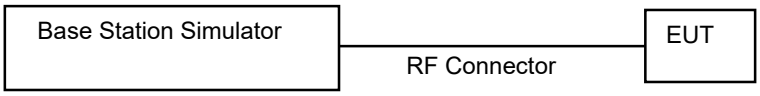
Time slot average factor is as follows:

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

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

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

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



11.2 UMTS Maximum Output Power

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

11.2.1 UMTS Maximum Conducted Output Power

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

Measured *Pmax*, RSI = 0, 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	24.23	24.22	24.19	-
99		12.2 kbps AMR	24.24	24.24	24.20	-
5	HSDPA	Subtest 1	24.25	23.19	24.12	0
5		Subtest 2	22.74	22.58	22.65	0
5		Subtest 3	22.35	22.42	22.24	0.5
5		Subtest 4	22.21	22.15	22.10	0.5
6	HSUPA	Subtest 1	23.42	23.29	23.23	0
6		Subtest 2	21.32	21.19	21.13	2
6		Subtest 3	22.27	22.13	22.13	1
6		Subtest 4	21.22	21.12	21.10	2
6		Subtest 5	23.31	24.15	23.18	0
8	DC-HSDPA	Subtest1	23.18	23.03	22.96	0
8		Subtest2	22.45	22.34	22.14	0
8		Subtest3	22.31	22.30	22.42	0.5
8		Subtest4	21.91	21.90	21.92	0.5

UMTS Average Conducted output powers

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

Measured *Pmax*, RSI = 1

3GPP Release Version	Mode	3GPP 34.121 Subtest	UMTS Band 4 [dBm] UL 1312 DL 1537	UL 1412 DL 1637	UL 1513 DL 1738	3GPP MPR
99	UMTS	12.2 kbps RMC	23.87	24.29	24.20	-
99		12.2 kbps AMR	23.61	24.27	24.26	-
5	HSDPA	Subtest 1	22.43	22.44	22.97	0
5		Subtest 2	22.49	21.97	21.90	0
5		Subtest 3	22.51	21.99	21.94	0.5
5		Subtest 4	21.46	20.95	20.90	0.5
6	HSUPA	Subtest 1	22.49	21.90	21.83	0
6		Subtest 2	20.41	19.95	19.90	2
6		Subtest 3	21.38	20.92	20.89	1
6		Subtest 4	20.35	19.95	19.88	2
6		Subtest 5	22.42	21.90	21.84	0
8	DC-HSDPA	Subtest1	23.21	22.99	22.88	0
8		Subtest2	22.21	21.93	21.77	0
8		Subtest3	21.13	20.91	20.77	0.5
8		Subtest4	21.20	20.93	20.77	0.5

UMTS Average Conducted output powers

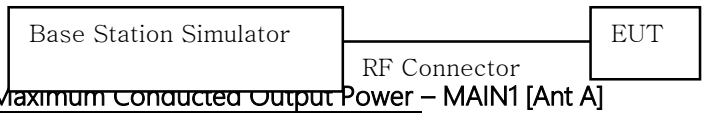
Measured RSI = 0

3GPP Release Version	Mode	3GPP 34.121 Subtest	UMTS Band 4 [dBm] UL 1312 DL 1537	UL 1412 DL 1637	UL 1513 DL 1738	3GPP MPR
99	UMTS	12.2 kbps RMC	20.94	20.55	20.52	-
99		12.2 kbps AMR	20.93	20.54	20.51	-
5	HSDPA	Subtest 1	19.35	18.92	18.83	0
5		Subtest 2	19.33	18.86	18.76	0
5		Subtest 3	19.35	18.93	18.82	0
5		Subtest 4	19.43	18.89	18.87	0
6	HSUPA	Subtest 1	17.70	17.34	17.26	0
6		Subtest 2	17.71	17.33	17.26	0
6		Subtest 3	17.68	17.31	17.25	0
6		Subtest 4	17.67	17.31	17.25	0
6		Subtest 5	18.70	18.34	18.26	0
8	DC-HSDPA	Subtest1	19.13	19.12	18.98	0
8		Subtest2	18.97	19.21	18.91	0
8		Subtest3	19.20	19.15	18.93	0
8		Subtest4	19.14	19.15	18.97	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.



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

Measured *Pmax*, RSI = 1

3GPP	Mode	3GPP 34.121	UMTS Band 2 [dBm]	3GPP

Release Version		Subtest	UL9262 DL9662	UL9400 DL9800	UL9538 DL9938	MPR
99	UMTS	12.2 kbps RMC	23.80	23.81	23.85	-
99		12.2 kbps AMR	23.84	23.79	23.83	-
5	HSDPA	Subtest 1	22.07	22.11	22.11	0
5		Subtest 2	22.11	22.09	22.11	0
5		Subtest 3	21.80	21.56	21.54	0.5
5		Subtest 4	22.37	22.33	22.26	0.5
6	HSUPA	Subtest 1	22.48	22.10	22.12	0
6		Subtest 2	20.52	20.12	20.20	2
6		Subtest 3	21.44	21.10	21.12	1
6		Subtest 4	20.49	20.08	20.10	2
6		Subtest 5	22.55	22.12	22.22	0
8	DC-HSDPA	Subtest 1	23.14	23.09	22.78	0
8		Subtest2	23.34	22.99	22.62	0
8		Subtest3	21.86	21.40	21.02	0.5
8		Subtest4	22.80	22.47	22.62	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	20.67	20.98	20.66	-
99		12.2 kbps AMR	20.64	20.97	20.65	-
5	HSDPA	Subtest 1	19.80	19.55	19.48	0
5		Subtest 2	19.97	19.57	19.42	0
5		Subtest 3	19.91	19.58	19.45	0
5		Subtest 4	19.98	19.60	19.48	0
6	HSUPA	Subtest 1	18.35	17.96	17.76	0
6		Subtest 2	18.31	17.87	17.80	0
6		Subtest 3	17.89	17.79	17.68	0
6		Subtest 4	18.29	17.86	17.75	0
6		Subtest 5	18.84	18.86	18.74	0
8	DC-HSDPA	Subtest 1	19.79	19.60	19.15	0
8		Subtest2	19.79	19.51	19.21	0
8		Subtest3	19.79	19.47	19.07	0
8		Subtest4	19.87	19.60	19.21	0

UMTS Average Conducted output powers

11.3 LTE Maximum Output Power

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

LTE B4/B5/B12/B13/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 Conducted Power (Lower Antenna)

LTE FDD Band 2 Conducted Power _ Measured Pmax, RSI = 1_ MAIN1 [Ant A]

LTE FDD Band 2 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 ㎒	18900 Ch. 1880 ㎒	19100 Ch. 1900 ㎒		
20 ㎒	QPSK	1	0	24.59	24.56	24.48	0	0
		1	49	24.63	24.54	24.50	0	0
		1	99	24.51	24.47	24.34	0	0
		50	0	23.57	23.61	23.45	0-1	1
		50	25	23.58	23.59	23.46	0-1	1
		50	49	23.60	23.55	23.44	0-1	1
		100	0	23.59	23.53	23.41	0-1	1
	16QAM	1	0	23.63	23.63	23.48	0-1	1
		1	49	23.44	23.44	23.48	0-1	1
		1	99	23.67	23.67	23.63	0-1	1
		50	0	22.55	22.54	22.47	0-2	2
		50	25	22.60	22.59	22.49	0-2	2
		50	49	22.58	22.57	22.42	0-2	2
		100	0	22.54	22.52	22.42	0-2	2
	64QAM	1	0	22.67	22.71	22.67	0-2	2
		1	49	22.63	22.46	22.53	0-2	2
		1	99	22.68	22.59	22.65	0-2	2
		50	0	21.64	21.61	21.52	0-3	3
		50	25	21.65	21.58	21.49	0-3	3
		50	49	21.62	21.55	21.51	0-3	3
		100	0	21.62	21.58	21.51	0-3	3
	256QAM	1	0	19.88	19.84	19.79	0-5	5
		1	49	19.78	19.73	19.72	0-5	5
		1	99	19.83	19.65	19.68	0-5	5
		50	0	19.70	19.70	19.65	0-5	5
		50	25	19.69	19.68	19.57	0-5	5
		50	49	19.69	19.64	19.58	0-5	5
		100	0	19.70	19.73	19.65	0-5	5

LTE FDD Band 2 Conducted Power _ Measured RSI = 0_ MAIN1 [Ant A]

LTE FDD Band 2 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 ㎒	18900 Ch. 1880 ㎒	19100 Ch. 1900 ㎒		
20 ㎒	QPSK	1	0	20.29	20.31	20.19	0	0
		1	49	20.35	20.45	20.22	0	0
		1	99	20.23	20.16	20.11	0	0
		50	0	20.26	20.24	20.16	0-1	0
		50	25	20.35	20.22	20.12	0-1	0
		50	49	20.24	20.16	20.13	0-1	0
		100	0	20.28	20.22	20.14	0-1	0
	16QAM	1	0	20.52	20.58	20.33	0-1	0
		1	49	20.34	20.43	20.41	0-1	0
		1	99	20.52	20.42	20.36	0-1	0
		50	0	20.27	20.21	20.16	0-2	0
		50	25	20.24	20.22	20.16	0-2	0
		50	49	20.27	20.19	20.08	0-2	0
		100	0	20.28	20.20	20.18	0-2	0
	64QAM	1	0	20.30	20.35	20.32	0-2	0
		1	49	20.48	20.29	20.38	0-2	0
		1	99	20.40	20.29	20.21	0-2	0
		50	0	20.29	20.21	20.17	0-3	0
		50	25	20.24	20.18	20.15	0-3	0
		50	49	20.29	20.20	20.16	0-3	0
		100	0	20.27	20.20	20.19	0-3	0
	256QAM	1	0	19.85	19.86	19.79	0-5	0
		1	49	19.75	19.65	19.62	0-5	0
		1	99	19.77	19.82	19.73	0-5	0
		50	0	19.75	19.77	19.69	0-5	0
		50	25	19.77	19.69	19.69	0-5	0
		50	49	19.74	19.73	19.65	0-5	0
		100	0	19.77	19.74	19.69	0-5	0

LTE FDD Band 4 Conducted Power _ Measured Pmax, RSI = 1_ MAIN1 [Ant A]

LTE FDD Band 4 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20050 ch. 1720 ㎒	20175 ch. 1732.5 ㎒	20300 ch. 1745 ㎒		
20 ㎒	QPSK	1	0	24.32	23.99	23.97	0	0
		1	49	24.23	23.97	23.94	0	0
		1	99	24.14	23.92	23.72	0	0
		50	0	23.26	23.14	22.96	0-1	1
		50	25	23.22	23.10	22.86	0-1	1
		50	49	23.18	23.07	22.85	0-1	1
		100	0	23.18	23.12	22.88	0-1	1
	16QAM	1	0	23.32	23.33	23.16	0-1	1
		1	49	23.19	22.92	22.96	0-1	1
		1	99	23.26	23.20	22.99	0-1	1
		50	0	22.26	22.19	21.89	0-2	2
		50	25	22.21	22.12	21.89	0-2	2
		50	49	22.21	22.07	21.82	0-2	2
		100	0	22.19	22.11	21.86	0-2	2
	64QAM	1	0	22.43	22.29	22.19	0-2	2
		1	49	22.44	22.05	21.83	0-2	2
		1	99	22.37	22.22	21.97	0-2	2
		50	0	21.31	21.17	20.92	0-3	3
		50	25	21.23	21.11	20.86	0-3	3
		50	49	21.21	21.06	20.84	0-3	3
		100	0	21.25	21.13	20.88	0-3	3
	256QAM	1	0	19.35	19.27	19.38	0-5	5
		1	49	19.23	19.29	19.12	0-5	5
		1	99	19.09	19.30	19.37	0-5	5
		50	0	18.98	19.19	18.86	0-5	5
		50	25	19.22	19.19	19.12	0-5	5
		50	49	18.96	19.29	19.10	0-5	5
		100	0	19.26	19.16	19.31	0-5	5

LTE FDD Band 4 Conducted Power _ Measured RSI = 0_ MAIN1 [Ant A]

LTE FDD Band 4 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20050 ch. 1720 ㎒	20175 ch. 1732.5 ㎒	20300 ch. 1745 ㎒		
20 ㎒	QPSK	1	0	18.71	18.64	18.37	0	0
		1	49	18.76	18.66	18.24	0	0
		1	99	18.69	18.57	18.39	0	0
		50	0	18.61	18.59	18.43	0-1	0
		50	25	18.59	18.64	18.39	0-1	0
		50	49	18.63	18.59	18.41	0-1	0
		100	0	18.64	18.61	18.44	0-1	0
	16QAM	1	0	18.92	18.87	18.64	0-1	0
		1	49	18.81	18.64	18.31	0-1	0
		1	99	18.83	18.72	18.66	0-1	0
		50	0	18.69	18.59	18.47	0-2	0
		50	25	18.65	18.64	18.45	0-2	0
		50	49	18.64	18.61	18.44	0-2	0
		100	0	18.66	18.61	18.46	0-2	0
	64QAM	1	0	18.81	18.82	18.60	0-2	0
		1	49	18.52	18.83	18.68	0-2	0
		1	99	18.79	18.88	18.75	0-2	0
		50	0	18.66	18.65	18.43	0-3	0
		50	25	18.63	18.60	18.42	0-3	0
		50	49	18.67	18.61	18.44	0-3	0
		100	0	18.64	18.60	18.44	0-3	0
	256QAM	1	0	18.57	18.75	18.48	0-5	0
		1	49	19.08	18.64	18.51	0-5	0
		1	99	18.95	18.61	18.60	0-5	0
		50	0	19.03	18.59	18.41	0-5	0
		50	25	19.01	18.58	18.41	0-5	0
		50	49	18.95	18.58	18.40	0-5	0
		100	0	18.65	18.62	18.39	0-5	0

LTE FDD Band 5 Conducted Power _ Measured Pmax, RSI = 0, RSI = 1_ MAIN1 [Ant A]

LTE FDD Band 5 _ 10 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 20525 Ch. 836.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	24.90	0	0
		1	24	24.99	0	0
		1	49	24.83	0	0
		25	0	23.98	0-1	1
		25	12	23.96	0-1	1
		25	24	23.95	0-1	1
		50	0	23.95	0-1	1
	16QAM	1	0	24.00	0-1	1
		1	24	23.85	0-1	1
		1	49	23.99	0-1	1
		25	0	22.93	0-2	2
		25	12	22.94	0-2	2
		25	24	22.94	0-2	2
		50	0	22.92	0-2	2
	64QAM	1	0	23.04	0-2	2
		1	24	23.05	0-2	2
		1	49	22.93	0-2	2
		25	0	21.91	0-3	3
		25	12	21.89	0-3	3
		25	24	21.88	0-3	3
		50	0	21.92	0-3	3
	256QAM	1	0	20.20	0-5	5
		1	24	20.01	0-5	5
		1	49	20.05	0-5	5
		25	0	20.25	0-5	5
		25	12	20.16	0-5	5
		25	24	20.23	0-5	5
		50	0	20.27	0-5	5

LTE FDD Band 7 Conducted Power Measured Pmax, RSI = 1_ MAIN2 [Ant B]

LTE FDD Band 7 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20850 Ch. 2510 ㎒	21100 Ch. 2535 ㎒	21350 Ch. 2560 ㎒		
20 ㎒	QPSK	1	0	24.11	23.80	23.90	0	0
		1	49	24.07	23.74	23.87	0	0
		1	99	23.91	23.64	23.86	0	0
		50	0	23.08	22.79	22.91	0-1	1
		50	25	23.02	22.72	22.89	0-1	1
		50	49	23.00	22.71	22.88	0-1	1
		100	0	23.04	22.70	22.90	0-1	1
	16QAM	1	0	23.31	23.05	23.10	0-1	1
		1	49	23.09	22.78	22.94	0-1	1
		1	99	23.08	22.87	23.12	0-1	1
		50	0	22.06	21.72	21.93	0-2	2
		50	25	22.07	21.72	21.91	0-2	2
		50	49	22.00	21.68	21.83	0-2	2
		100	0	22.07	21.71	21.91	0-2	2
	64QAM	1	0	22.30	21.94	22.14	0-2	2
		1	49	22.04	21.75	22.00	0-2	2
		1	99	22.09	21.86	22.03	0-2	2
		50	0	21.10	20.77	20.92	0-3	3
		50	25	21.09	20.69	20.89	0-3	3
		50	49	21.00	20.66	20.87	0-3	3
		100	0	21.06	20.69	20.86	0-3	3
	256QAM	1	0	19.06	19.08	19.07	0-5	5
		1	49	19.10	18.92	19.07	0-5	5
		1	99	19.08	18.69	19.37	0-5	5
		50	0	19.13	18.76	19.09	0-5	5
		50	25	19.10	18.70	19.28	0-5	5
		50	49	19.41	18.68	19.12	0-5	5
		100	0	19.11	18.75	18.91	0-5	5

LTE FDD Band 7 Conducted Power _ Measured Pmax, RSI = 0_ MAIN2 [Ant B]

LTE FDD Band 7 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20850 Ch. 2510 ㎒	21100 Ch. 2535 ㎒	21350 Ch. 2560 ㎒		
20 ㎒	QPSK	1	0	20.97	20.80	20.82	0	0
		1	49	20.85	20.88	20.84	0	0
		1	99	20.91	20.81	20.78	0	0
		50	0	20.92	20.78	20.75	0-1	0
		50	25	20.88	20.81	20.88	0-1	0
		50	49	20.84	20.79	20.81	0-1	0
		100	0	20.69	20.79	20.87	0-1	0
	16QAM	1	0	20.89	21.09	21.30	0-1	0
		1	49	20.90	20.94	20.95	0-1	0
		1	99	21.07	21.01	20.99	0-1	0
		50	0	20.64	20.77	20.95	0-2	0
		50	25	20.71	20.78	20.86	0-2	0
		50	49	20.66	20.79	20.82	0-2	0
		100	0	20.71	20.73	20.87	0-2	0
	64QAM	1	0	20.82	20.94	21.13	0-2	0
		1	49	20.94	20.99	21.03	0-2	0
		1	99	20.89	21.04	20.93	0-2	0
		50	0	20.69	20.83	20.96	0-3	0
		50	25	20.67	20.75	20.83	0-3	0
		50	49	20.73	20.77	20.83	0-3	0
		100	0	20.73	20.79	20.88	0-3	0
	256QAM	1	0	19.25	19.49	19.59	0-5	2
		1	49	19.35	19.48	19.55	0-5	2
		1	99	19.30	19.49	19.37	0-5	2
		50	0	19.15	19.28	19.39	0-5	2
		50	25	19.17	19.30	19.37	0-5	2
		50	49	19.15	19.25	19.34	0-5	2
		100	0	19.20	19.28	19.37	0-5	2

LTE FDD Band 12 Conducted Power_ Measured Pmax, RSI = 0, RSI = 1 _ MAIN1 [Ant A]

LTE FDD Band 12 _ 10 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 23095 Ch. 707.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	24.84	0	0
		1	24	24.86	0	0
		1	49	24.69	0	0
		25	0	23.89	0-1	1
		25	12	23.86	0-1	1
		25	24	23.85	0-1	1
		50	0	23.87	0-1	1
	16QAM	1	0	23.91	0-1	1
		1	24	23.77	0-1	1
		1	49	23.84	0-1	1
		25	0	22.85	0-2	2
		25	12	22.80	0-2	2
		25	24	22.77	0-2	2
		50	0	22.79	0-2	2
	64QAM	1	0	22.93	0-2	2
		1	24	22.90	0-2	2
		1	49	22.93	0-2	2
		25	0	21.80	0-3	3
		25	12	21.73	0-3	3
		25	24	21.74	0-3	3
		50	0	21.80	0-3	3
	256QAM	1	0	20.02	0-5	5
		1	24	19.75	0-5	5
		1	49	19.85	0-5	5
		25	0	20.30	0-5	5
		25	12	19.80	0-5	5
		25	24	19.81	0-5	5
		50	0	19.84	0-5	5

LTE FDD Band 13 Conducted Power_ Measured Pmax, RSI = 0, RSI = 1 _ MAIN1 [Ant A]

LTE FDD Band 13 _ 10 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 23230 Ch. 782 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	24.99	0	0
		1	24	24.98	0	0
		1	49	24.93	0	0
		25	0	24.10	0-1	1
		25	12	24.07	0-1	1
		25	24	24.03	0-1	1
		50	0	24.06	0-1	1
	16QAM	1	0	23.87	0-1	1
		1	24	23.82	0-1	1
		1	49	24.11	0-1	1
		25	0	23.02	0-2	2
		25	12	22.95	0-2	2
		25	24	22.99	0-2	2
		50	0	22.99	0-2	2
	64QAM	1	0	22.93	0-2	2
		1	24	23.03	0-2	2
		1	49	23.10	0-2	2
		25	0	22.00	0-3	3
		25	12	21.98	0-3	3
		25	24	21.95	0-3	3
		50	0	21.97	0-3	3
	256QAM	1	0	20.29	0-5	5
		1	24	19.98	0-5	5
		1	49	19.98	0-5	5
		25	0	20.19	0-5	5
		25	12	19.98	0-5	5
		25	24	20.16	0-5	5
		50	0	19.98	0-5	5

LTE FDD Band 14 Conducted Power_ Measured Pmax, RSI = 0, RSI = 1 _ MAIN1 [Ant A]

LTE FDD Band 14 _ 10 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 23330 Ch. 793 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	24.93	0	0
		1	24	24.88	0	0
		1	49	24.73	0	0
		25	0	23.98	0-1	1
		25	12	23.89	0-1	1
		25	24	23.83	0-1	1
		50	0	23.90	0-1	1
	16QAM	1	0	24.11	0-1	1
		1	24	23.87	0-1	1
		1	49	23.86	0-1	1
		25	0	22.92	0-2	2
		25	12	22.85	0-2	2
		25	24	22.81	0-2	2
		50	0	22.85	0-2	2
	64QAM	1	0	23.14	0-2	2
		1	24	22.97	0-2	2
		1	49	22.84	0-2	2
		25	0	21.92	0-3	3
		25	12	21.85	0-3	3
		25	24	21.83	0-3	3
		50	0	21.89	0-3	3
	256QAM	1	0	20.18	0-5	5
		1	24	20.03	0-5	5
		1	49	20.01	0-5	5
		25	0	20.04	0-5	5
		25	12	19.93	0-5	5
		25	24	19.89	0-5	5
		50	0	20.18	0-5	5

LTE FDD Band 25 Conducted Power_ Measured Pmax, RSI = 1_ MAIN1 [Ant A]

LTE FDD Band 25 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26140 Ch. 1860 ㎒	26365 Ch. 1882.5 ㎒	26590 Ch. 1905 ㎒		
20 ㎒	QPSK	1	0	24.62	24.60	24.48	0	0
		1	49	24.65	24.56	24.44	0	0
		1	99	24.52	24.47	24.36	0	0
		50	0	23.57	23.62	23.45	0-1	1
		50	25	23.58	23.54	23.46	0-1	1
		50	49	23.60	23.57	23.41	0-1	1
		100	0	23.60	23.54	23.45	0-1	1
	16QAM	1	0	23.64	23.75	23.69	0-1	1
		1	49	23.53	23.31	23.34	0-1	1
		1	99	23.64	23.69	23.49	0-1	1
		50	0	22.59	22.59	22.44	0-2	2
		50	25	22.60	22.56	22.48	0-2	2
		50	49	22.57	22.56	22.44	0-2	2
		100	0	22.57	22.54	22.45	0-2	2
	64QAM	1	0	22.77	22.77	22.63	0-2	2
		1	49	22.78	22.57	22.65	0-2	2
		1	99	22.74	22.63	22.59	0-2	2
		50	0	21.67	21.62	21.57	0-3	3
		50	25	21.66	21.58	21.48	0-3	3
		50	49	21.64	21.59	21.50	0-3	3
		100	0	21.63	21.57	21.50	0-3	3
	256QAM	1	0	19.83	19.83	19.76	0-5	5
		1	49	19.97	19.71	19.72	0-5	5
		1	99	19.73	19.80	19.59	0-5	5
		50	0	19.69	19.68	19.64	0-5	5
		50	25	19.66	19.69	19.57	0-5	5
		50	49	19.72	19.68	19.61	0-5	5
		100	0	19.71	19.68	19.63	0-5	5

LTE FDD Band 25 Conducted Power_ Measured RSI = 0_ MAIN1 [Ant A]

LTE FDD Band 25 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26140 Ch. 1860 ㎒	26365 Ch. 1882.5 ㎒	26590 Ch. 1905 ㎒		
20 ㎒	QPSK	1	0	20.26	20.25	20.14	0	0
		1	49	20.21	20.35	20.13	0	0
		1	99	20.17	20.15	20.15	0	0
		50	0	20.45	20.20	20.09	0-1	0
		50	25	20.20	20.21	20.10	0-1	0
		50	49	20.20	20.15	20.00	0-1	0
		100	0	20.24	20.13	20.25	0-1	0
	16QAM	1	0	20.38	20.45	20.38	0-1	0
		1	49	20.30	20.18	20.09	0-1	0
		1	99	20.38	20.36	20.19	0-1	0
		50	0	20.22	20.19	20.08	0-2	0
		50	25	20.22	20.16	20.05	0-2	0
		50	49	20.19	20.14	20.03	0-2	0
		100	0	20.22	20.18	20.07	0-2	0
	64QAM	1	0	20.33	20.24	20.27	0-2	0
		1	49	20.42	20.34	20.18	0-2	0
		1	99	20.31	20.31	20.24	0-2	0
		50	0	20.24	20.22	20.10	0-3	0
		50	25	20.24	20.16	20.06	0-3	0
		50	49	20.20	20.15	20.02	0-3	0
		100	0	20.21	20.21	20.07	0-3	0
	256QAM	1	0	19.87	19.91	19.79	0-5	0
		1	49	19.74	19.67	19.57	0-5	0
		1	99	19.85	19.77	19.64	0-5	0
		50	0	19.71	19.71	19.60	0-5	0
		50	25	19.73	19.67	19.60	0-5	0
		50	49	19.73	19.62	19.60	0-5	0
		100	0	19.76	19.71	19.63	0-5	0

LTE FDD Band 26 Conducted Power _ Measured Pmax, RSI = 0, RSI = 1_ MAIN1 [Ant A]

LTE FDD Band 26 _ 15 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 26865 Ch. 831.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
15 ㎒	QPSK	1	0	25.05	0	0
		1	36	24.63	0	0
		1	74	24.83	0	0
		36	0	24.00	0-1	1
		36	18	23.94	0-1	1
		36	39	23.91	0-1	1
		75	0	23.95	0-1	1
	16QAM	1	0	24.12	0-1	1
		1	36	23.93	0-1	1
		1	74	23.94	0-1	1
		36	0	22.97	0-2	2
		36	18	22.92	0-2	2
		36	39	22.88	0-2	2
		75	0	22.92	0-2	2
	64QAM	1	0	23.17	0-2	2
		1	36	22.92	0-2	2
		1	74	22.95	0-2	2
		36	0	21.97	0-3	3
		36	18	21.94	0-3	3
		36	39	21.89	0-3	3
		75	0	21.92	0-3	3
	256QAM	1	0	20.29	0-5	5
		1	36	20.06	0-5	5
		1	74	20.04	0-5	5
		36	0	20.24	0-5	5
		36	18	20.24	0-5	5
		36	39	20.08	0-5	5
		75	0	20.10	0-5	5

LTE FDD Band 30 Conducted Power_ Measured Pmax, RSI = 1_MAIN1 [Ant A]

LTE FDD Band 30 _ 10 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 27710 Ch. 2310 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	22.85	0	0
		1	24	22.61	0	0
		1	49	22.74	0	0
		25	0	21.89	0-1	1
		25	12	21.85	0-1	1
		25	24	21.82	0-1	1
		50	0	21.83	0-1	1
	16QAM	1	0	22.07	0-1	1
		1	24	21.85	0-1	1
		1	49	22.04	0-1	1
		25	0	20.85	0-2	2
		25	12	20.79	0-2	2
		25	24	20.81	0-2	2
		50	0	20.82	0-2	2
	64QAM	1	0	20.98	0-2	2
		1	24	20.58	0-2	2
		1	49	20.89	0-2	2
		25	0	19.82	0-3	3
		25	12	19.77	0-3	3
		25	24	19.76	0-3	3
		50	0	19.79	0-3	3
	256QAM	1	0	18.02	0-5	5
		1	24	18.13	0-5	5
		1	49	17.89	0-5	5
		25	0	17.89	0-5	5
		25	12	17.81	0-5	5
		25	24	17.85	0-5	5
		50	0	17.83	0-5	5

LTE FDD Band 30 Conducted Power_ Measured RSI = 0_ MAIN1 [Ant A]

LTE FDD Band 30 _ 10 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 27710 Ch. 2310 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	19.45	0	0
		1	24	19.35	0	0
		1	49	19.26	0	0
		25	0	19.46	0-1	0
		25	12	19.25	0-1	0
		25	24	19.22	0-1	0
		50	0	19.29	0-1	0
	16QAM	1	0	19.54	0-1	0
		1	24	19.38	0-1	0
		1	49	19.44	0-1	0
		25	0	19.24	0-2	0
		25	12	19.25	0-2	0
		25	24	19.27	0-2	0
		50	0	19.27	0-2	0
	64QAM	1	0	19.41	0-2	0
		1	24	19.30	0-2	0
		1	49	19.39	0-2	0
		25	0	19.19	0-3	0
		25	12	19.25	0-3	0
		25	24	19.22	0-3	0
		50	0	19.27	0-3	0
	256QAM	1	0	17.81	0-5	2
		1	24	17.85	0-5	2
		1	49	17.84	0-5	2
		25	0	17.75	0-5	2
		25	12	17.78	0-5	2
		25	24	17.78	0-5	2
		50	0	17.81	0-5	2

LTE TDD Band 38 Conducted Power_ Measured Pmax, RSI = 1 _MAIN2 [Ant B]

LTE TDD Band 38 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				37850 2580 ㎒	38000 Ch. 2595 ㎒	38150 2610 ㎒		
20 ㎒	QPSK	1	0	24.05	24.16	24.19	0	0
		1	49	23.99	24.14	24.08	0	0
		1	99	24.18	24.15	24.15	0	0
		50	0	23.38	23.35	23.36	0-1	1
		50	25	23.39	23.32	23.31	0-1	1
		50	49	23.37	23.31	23.28	0-1	1
		100	0	23.39	23.32	23.31	0-1	1
	16QAM	1	0	23.07	23.18	23.31	0-1	1
		1	49	22.98	23.14	23.19	0-1	1
		1	99	23.09	23.13	23.15	0-1	1
		50	0	22.28	22.28	22.32	0-2	2
		50	25	22.27	22.28	22.28	0-2	2
		50	49	22.27	22.26	22.25	0-2	2
		100	0	22.31	22.29	22.32	0-2	2
	64QAM	1	0	22.10	22.17	22.31	0-2	2
		1	49	21.96	22.14	22.18	0-2	2
		1	99	22.19	22.21	22.19	0-2	2
		50	0	21.28	21.32	21.36	0-3	3
		50	25	21.29	21.31	21.34	0-3	3
		50	49	21.29	21.30	21.30	0-3	3
		100	0	21.26	21.27	21.29	0-3	3
	256QAM	1	0	18.78	19.00	19.19	0-5	5
		1	49	18.89	18.95	19.09	0-5	5
		1	99	19.18	19.04	19.07	0-5	5
		50	0	19.34	19.36	19.41	0-5	5
		50	25	19.36	19.36	19.38	0-5	5
		50	49	19.33	19.35	19.36	0-5	5
		100	0	19.27	19.30	19.32	0-5	5

LTE TDD Band 38 Conducted Power_ Measured RSI = 0 MAIN2 [Ant B]

LTE TDD Band 38 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				37850 2580 ㎒	38000 Ch. 2595 ㎒	38150 2610 ㎒		
20 ㎒	QPSK	1	0	21.98	21.91	21.74	0	0
		1	49	21.70	21.71	21.54	0	0
		1	99	21.73	21.67	21.54	0	0
		50	0	22.11	22.01	21.78	0-1	0
		50	25	22.02	21.92	21.71	0-1	0
		50	49	21.95	21.86	21.67	0-1	0
		100	0	22.03	21.93	21.72	0-1	0
	16QAM	1	0	21.83	21.87	21.74	0-1	0
		1	49	21.60	21.65	21.61	0-1	0
		1	99	21.58	21.61	21.54	0-1	0
		50	0	22.02	21.95	21.75	0-2	0
		50	25	21.94	21.87	21.67	0-2	0
		50	49	21.87	21.81	21.64	0-2	0
		100	0	21.98	21.92	21.73	0-2	0
	64QAM	1	0	21.92	21.88	21.73	0-2	0
		1	49	21.68	21.71	21.49	0-2	0
		1	99	21.69	21.76	21.52	0-2	0
		50	0	21.42	21.35	21.18	0-3	1
		50	25	21.36	21.30	21.12	0-3	1
		50	49	21.30	21.23	21.08	0-3	1
		100	0	21.33	21.28	21.10	0-3	1
	256QAM	1	0	19.21	19.20	19.12	0-5	3
		1	49	18.99	19.01	18.99	0-5	3
		1	99	18.94	19.00	18.99	0-5	3
		50	0	19.48	19.43	19.24	0-5	3
		50	25	19.42	19.35	19.18	0-5	3
		50	49	19.36	19.31	19.14	0-5	3
		100	0	19.36	19.30	19.13	0-5	3

LTE TDD Band 41 Conducted Power (Power Class 3)_ Measured Pmax, RSI = 1 _MAIN2 [Ant B]

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

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	24.06	23.82	24.22	24.17	24.31	0	0
		1	49	23.77	23.72	24.17	23.92	24.24	0	0
		1	99	23.88	23.70	24.17	23.99	24.21	0	0
		50	0	23.14	22.97	23.38	23.23	23.46	0-1	1
		50	25	23.07	22.97	23.36	23.17	23.44	0-1	1
		50	49	23.03	22.98	23.35	23.13	23.41	0-1	1
		100	0	23.07	22.97	23.37	23.17	23.44	0-1	1
	16QAM	1	0	22.99	22.75	23.18	23.17	23.23	0-1	1
		1	49	22.81	22.58	23.19	22.96	23.09	0-1	1
		1	99	22.72	22.60	23.18	22.84	23.10	0-1	1
		50	0	22.09	21.89	22.30	22.16	22.40	0-2	2
		50	25	22.03	21.87	22.30	22.11	22.37	0-2	2
		50	49	21.98	21.86	22.29	22.06	22.34	0-2	2
		100	0	22.08	21.89	22.34	22.16	22.41	0-2	2
	64QAM	1	0	22.03	21.79	22.25	22.24	22.43	0-2	2
		1	49	21.80	21.65	22.21	22.06	22.30	0-2	2
		1	99	21.80	21.64	22.22	21.89	22.33	0-2	2
		50	0	21.12	20.91	21.34	21.22	21.43	0-3	3
		50	25	21.07	20.89	21.32	21.17	21.41	0-3	3
		50	49	21.02	20.88	21.32	21.11	21.39	0-3	3
		100	0	21.05	20.86	21.31	21.14	21.39	0-3	3
	256QAM	1	0	18.59	18.88	19.02	19.24	19.31	0-5	5
		1	49	18.54	18.70	18.98	18.99	19.16	0-5	5
		1	99	18.82	18.70	19.04	18.88	19.22	0-5	5
		50	0	19.16	18.96	19.37	19.27	19.48	0-5	5
		50	25	19.12	18.93	19.37	19.20	19.46	0-5	5
		50	49	19.08	18.91	19.37	19.16	19.44	0-5	5
		100	0	19.06	18.87	19.32	19.14	19.41	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 2)_ Measured Pmax, RSI = 1 _MAIN2 [Ant B]

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

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	26.09	25.88	26.22	25.98	25.98	0	0
		1	49	26.05	25.78	26.20	25.90	25.95	0	0
		1	99	25.84	25.68	26.11	25.62	25.79	0	0
		50	0	25.18	24.98	25.34	25.01	25.10	0-1	1
		50	25	25.11	24.98	25.31	24.94	25.05	0-1	1
		50	49	24.98	24.96	25.30	24.86	25.00	0-1	1
		100	0	25.05	24.94	25.32	24.93	25.05	0-1	1
	16QAM	1	0	25.29	24.92	25.17	25.28	25.11	0-1	1
		1	49	25.27	24.77	25.05	25.01	25.08	0-1	1
		1	99	25.16	24.71	25.09	25.02	25.09	0-1	1
		50	0	24.14	23.91	24.30	24.01	24.17	0-2	2
		50	25	24.02	23.86	24.29	23.99	24.04	0-2	2
		50	49	24.03	23.83	24.26	23.80	23.99	0-2	2
		100	0	24.04	23.84	24.29	23.92	24.04	0-2	2
	64QAM	1	0	24.14	23.89	24.25	24.33	23.98	0-2	2
		1	49	24.16	23.66	24.25	24.15	23.93	0-2	2
		1	99	24.06	23.68	24.23	24.02	23.88	0-2	2
		50	0	23.23	22.93	23.31	23.02	23.05	0-3	3
		50	25	23.11	22.88	23.31	22.97	23.01	0-3	3
		50	49	23.07	22.84	23.27	22.89	22.98	0-3	3
		100	0	23.08	22.83	23.25	22.90	22.99	0-3	3
	256QAM	1	0	20.59	20.73	21.54	20.04	21.38	0-5	5
		1	49	21.00	20.60	21.82	20.33	21.13	0-5	5
		1	99	20.27	20.53	21.50	20.05	21.01	0-5	5
		50	0	20.28	20.95	21.34	20.80	21.54	0-5	5
		50	25	20.31	20.91	21.32	20.62	21.08	0-5	5
		50	49	21.30	20.90	21.30	20.75	21.48	0-5	5
		100	0	21.10	21.17	21.63	20.82	21.01	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 _MAIN2 [Ant B]

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

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	21.66	21.95	21.97	21.53	21.65	0	0
		1	49	21.55	21.81	21.71	21.45	21.42	0	0
		1	99	21.74	21.80	21.67	21.44	21.32	0	0
		50	0	21.99	21.84	21.95	21.66	21.71	0-1	0
		50	25	21.97	21.85	21.93	21.61	21.60	0-1	0
		50	49	21.97	21.81	21.87	21.61	21.54	0-1	0
		100	0	21.98	21.83	21.93	21.62	21.62	0-1	0
	16QAM	1	0	21.63	21.81	21.87	21.47	21.51	0-1	0
		1	49	21.58	21.68	21.68	21.36	21.33	0-1	0
		1	99	21.68	21.69	21.64	21.34	21.31	0-1	0
		50	0	21.72	22.03	21.95	21.63	21.66	0-2	0
		50	25	21.71	22.00	21.88	21.58	21.55	0-2	0
		50	49	21.73	21.98	21.81	21.56	21.49	0-2	0
		100	0	21.79	22.03	21.91	21.63	21.62	0-2	0
	64QAM	1	0	21.70	21.92	22.00	21.80	21.62	0-2	0
		1	49	21.63	21.74	21.85	21.63	21.42	0-2	0
		1	99	21.75	21.74	21.83	21.56	21.33	0-2	0
		50	0	21.17	21.45	21.38	21.04	21.07	0-3	1
		50	25	21.17	21.42	21.32	21.01	21.00	0-3	1
		50	49	21.19	21.40	21.24	21.00	20.93	0-3	1
		100	0	21.15	21.39	21.28	21.00	20.99	0-3	1
	256QAM	1	0	19.00	19.33	19.23	18.88	19.01	0-5	3
		1	49	18.92	19.22	19.03	18.73	18.82	0-5	3
		1	99	19.08	19.22	19.01	18.79	18.72	0-5	3
		50	0	19.22	19.50	19.44	19.12	19.15	0-5	3
		50	25	19.22	19.46	19.37	19.08	19.07	0-5	3
		50	49	19.24	19.46	19.31	19.06	19.00	0-5	3
		100	0	19.17	19.40	19.31	19.02	19.03	0-5	3

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

LTE TDD Band 41 Conducted Power (Power Class 2)_ Measured RSI = 0 _MAIN2 [Ant B]

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

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	24.01	23.66	24.05	23.81	23.77	0	0
		1	49	24.03	23.57	23.38	23.72	23.75	0	0
		1	99	23.96	23.42	23.36	23.52	23.63	0	0
		50	0	24.16	23.79	24.17	23.83	23.92	0-1	0
		50	25	24.12	23.76	23.51	23.76	23.85	0-1	0
		50	49	24.10	23.74	23.50	23.72	23.80	0-1	0
		100	0	24.13	23.74	23.52	23.76	23.84	0-1	0
	16QAM	1	0	24.12	23.98	23.41	23.91	23.87	0-1	0
		1	49	24.13	23.76	23.49	23.79	23.80	0-1	0
		1	99	24.10	23.67	23.49	23.62	23.72	0-1	0
		50	0	24.07	23.70	23.45	23.78	23.82	0-2	0
		50	25	24.06	23.64	23.43	23.72	23.77	0-2	0
		50	49	24.05	23.61	23.43	23.68	23.75	0-2	0
		100	0	24.11	23.65	23.48	23.73	23.81	0-2	0
	64QAM	1	0	23.98	23.92	23.40	23.78	23.69	0-2	0
		1	49	24.12	23.74	23.52	23.53	23.56	0-2	0
		1	99	24.08	23.61	23.47	23.49	23.59	0-2	0
		50	0	23.59	23.20	22.98	23.30	23.31	0-3	0
		50	25	23.59	23.14	22.97	23.23	23.28	0-3	0
		50	49	23.58	23.12	22.96	23.16	23.26	0-3	0
		100	0	23.56	23.09	22.93	23.20	23.29	0-3	0
	256QAM	1	0	21.50	20.93	20.86	20.95	20.91	0-5	3
		1	49	21.54	20.81	20.91	20.74	20.76	0-5	3
		1	99	21.48	20.68	20.90	20.70	20.82	0-5	3
		50	0	21.65	21.24	21.03	21.37	21.40	0-5	3
		50	25	21.63	21.22	21.00	21.31	21.35	0-5	3
		50	49	21.64	21.16	21.02	21.25	21.34	0-5	3
		100	0	21.58	21.11	20.95	21.24	21.32	0-5	3

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

LTE FDD Band 66 Conducted Power_ Measured Pmax, RSI = 1_MAIN1 [Ant A]

LTE FDD Band 66 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 ㎒	132322 Ch. 1745 ㎒	132572 Ch. 1770 ㎒		
20 ㎒	QPSK	1	0	24.34	23.99	23.98	0	0
		1	49	24.22	24.00	23.92	0	0
		1	99	24.15	23.83	23.75	0	0
		50	0	23.30	22.91	22.90	0-1	1
		50	25	23.22	22.86	22.87	0-1	1
		50	49	23.15	22.84	22.81	0-1	1
		100	0	23.25	22.88	22.84	0-1	1
	16QAM	1	0	23.42	23.21	23.18	0-1	1
		1	49	23.31	23.02	22.82	0-1	1
		1	99	23.28	22.96	22.93	0-1	1
		50	0	22.29	21.96	21.91	0-2	2
		50	25	22.27	21.94	21.91	0-2	2
		50	49	22.22	21.89	21.87	0-2	2
		100	0	22.22	21.91	21.88	0-2	2
	64QAM	1	0	22.44	22.07	22.13	0-2	2
		1	49	22.48	22.02	21.99	0-2	2
		1	99	22.31	22.06	21.91	0-2	2
		50	0	21.34	21.01	21.00	0-3	3
		50	25	21.25	20.98	20.94	0-3	3
		50	49	21.20	20.88	20.86	0-3	3
		100	0	21.29	20.93	20.91	0-3	3
	256QAM	1	0	19.12	18.86	18.86	0-5	5
		1	49	19.17	18.82	18.64	0-5	5
		1	99	19.13	18.92	18.72	0-5	5
		50	0	19.16	18.94	18.59	0-5	5
		50	25	19.16	18.90	18.86	0-5	5
		50	49	19.13	18.83	18.79	0-5	5
		100	0	19.42	18.90	18.92	0-5	5

LTE FDD Band 66 Conducted Power_ Measured RSI = 0 _MAIN1 [Ant A]

LTE FDD Band 66 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 ㎒	132322 Ch. 1745 ㎒	132572 Ch. 1770 ㎒		
20 ㎒	QPSK	1	0	18.74	18.46	18.61	0	0
		1	49	18.76	18.52	18.62	0	0
		1	99	18.67	18.49	18.65	0	0
		50	0	18.69	18.44	18.57	0-1	0
		50	25	18.66	18.42	18.58	0-1	0
		50	49	18.63	18.43	18.60	0-1	0
		100	0	18.67	18.40	18.63	0-1	0
	16QAM	1	0	18.92	18.57	18.85	0-1	0
		1	49	18.77	18.56	18.78	0-1	0
		1	99	18.91	18.59	18.86	0-1	0
		50	0	18.70	18.43	18.58	0-2	0
		50	25	18.68	18.46	18.59	0-2	0
		50	49	18.63	18.47	18.59	0-2	0
		100	0	18.73	18.48	18.62	0-2	0
	64QAM	1	0	18.93	18.51	18.84	0-2	0
		1	49	18.70	18.41	18.80	0-2	0
		1	99	18.85	18.61	18.85	0-2	0
		50	0	18.68	18.45	18.63	0-3	0
		50	25	18.66	18.46	18.59	0-3	0
		50	49	18.63	18.47	18.63	0-3	0
		100	0	18.69	18.48	18.62	0-3	0
	256QAM	1	0	18.69	18.46	18.41	0-5	0
		1	49	18.69	18.48	18.63	0-5	0
		1	99	18.70	18.61	18.68	0-5	0
		50	0	18.66	18.42	18.62	0-5	0
		50	25	18.67	18.41	18.53	0-5	0
		50	49	18.65	18.43	18.55	0-5	0
		100	0	18.66	18.43	18.62	0-5	0

LTE FDD Band 71 Conducted Power_ Measured Pmax, RSI = 0, RSI = 1_ MAIN1 [Ant A]

LTE FDD Band 71 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 133297 Ch. 680.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
20 ㎒	QPSK	1	0	24.86	0	0
		1	49	24.85	0	0
		1	99	24.65	0	0
		50	0	23.89	0-1	1
		50	25	23.85	0-1	1
		50	49	23.83	0-1	1
		100	0	23.82	0-1	1
	16QAM	1	0	23.99	0-1	1
		1	49	23.76	0-1	1
		1	99	23.80	0-1	1
		50	0	22.79	0-2	2
		50	25	22.76	0-2	2
		50	49	22.76	0-2	2
		100	0	22.77	0-2	2
	64QAM	1	0	22.94	0-2	2
		1	49	22.85	0-2	2
		1	99	22.75	0-2	2
		50	0	21.85	0-3	3
		50	25	21.78	0-3	3
		50	49	21.76	0-3	3
		100	0	21.76	0-3	3
	256QAM	1	0	19.75	0-5	5
		1	49	19.90	0-5	5
		1	99	19.91	0-5	5
		50	0	19.87	0-5	5
		50	25	19.89	0-5	5
		50	49	19.64	0-5	5
		100	0	19.57	0-5	5

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.

11.3.2 LTE Plimit Conducted Power (Upper Antenna)

LTE FDD Band 2 Conducted Power _ Measured Pmax _ SUB2 [Ant F]

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

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 ㎒	18900 Ch. 1880 ㎒	19100 Ch. 1900 ㎒		
20 ㎒	QPSK	1	0	22.49	22.68	22.53	0	0
		1	49	22.56	22.64	22.62	0	0
		1	99	22.46	22.42	22.64	0	0
		50	0	21.53	21.66	21.54	0-1	1
		50	25	21.53	21.60	21.51	0-1	1
		50	49	21.48	21.55	21.55	0-1	1
		100	0	21.46	21.58	21.52	0-1	1
	16QAM	1	0	21.57	21.77	21.71	0-1	1
		1	49	21.45	21.58	21.51	0-1	1
		1	99	21.68	21.55	21.82	0-1	1
		50	0	20.44	20.63	20.51	0-2	2
		50	25	20.45	20.58	20.48	0-2	2
		50	49	20.45	20.51	20.50	0-2	2
		100	0	20.40	20.53	20.50	0-2	2
	64QAM	1	0	20.51	20.78	20.65	0-2	2
		1	49	20.57	20.66	20.63	0-2	2
		1	99	20.63	20.60	20.84	0-2	2
		50	0	19.40	19.61	19.52	0-3	3
		50	25	19.42	19.55	19.43	0-3	3
		50	49	19.46	19.53	19.47	0-3	3
		100	0	19.39	19.49	19.47	0-3	3
	256QAM	1	0	17.86	17.76	17.50	0-5	5
		1	49	17.41	17.65	17.50	0-5	5
		1	99	17.48	17.57	17.47	0-5	5
		50	0	17.28	17.63	17.49	0-5	5
		50	25	17.22	17.53	17.78	0-5	5
		50	49	17.25	17.53	17.48	0-5	5
		100	0	17.29	17.52	17.47	0-5	5

LTE FDD Band 2 Conducted Power _ Measured RSI = 0_ SUB2 [Ant F]

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

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 ㎒	18900 Ch. 1880 ㎒	19100 Ch. 1900 ㎒		
20 ㎒	QPSK	1	0	19.41	19.64	19.46	0	0
		1	49	19.58	19.64	19.60	0	0
		1	99	19.40	19.50	19.59	0	0
		50	0	19.50	19.60	19.53	0-1	0
		50	25	19.47	19.57	19.48	0-1	0
		50	49	19.47	19.50	19.50	0-1	0
		100	0	19.43	19.56	19.50	0-1	0
	16QAM	1	0	19.53	19.77	19.58	0-1	0
		1	49	19.40	19.44	19.40	0-1	0
		1	99	19.65	19.61	19.78	0-1	0
		50	0	19.45	19.58	19.45	0-2	0
		50	25	19.42	19.52	19.41	0-2	0
		50	49	19.42	19.47	19.45	0-2	0
		100	0	19.35	19.51	19.41	0-2	0
	64QAM	1	0	19.38	19.80	19.58	0-2	0
		1	49	19.34	19.75	19.60	0-2	0
		1	99	19.53	19.54	19.71	0-2	0
		50	0	19.43	19.62	19.46	0-3	0.5
		50	25	19.40	19.52	19.41	0-3	0.5
		50	49	19.42	19.45	19.46	0-3	0.5
		100	0	19.40	19.51	19.44	0-3	0.5
	256QAM	1	0	17.81	17.75	17.55	0-5	2.5
		1	49	17.42	17.51	17.51	0-5	2.5
		1	99	17.27	17.49	17.69	0-5	2.5
		50	0	17.51	17.57	17.40	0-5	2.5
		50	25	17.27	17.53	17.42	0-5	2.5
		50	49	17.26	17.49	17.46	0-5	2.5
		100	0	17.27	17.50	17.43	0-5	2.5

LTE FDD Band 2 Conducted Power _ Measured RSI = 1_ SUB2 [Ant F]

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

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 ㎒	18900 Ch. 1880 ㎒	19100 Ch. 1900 ㎒		
20 ㎒	QPSK	1	0	17.11	17.21	17.14	0	0
		1	49	17.11	17.10	17.12	0	0
		1	99	17.03	16.93	16.85	0	0
		50	0	17.10	17.11	17.07	0-1	0
		50	25	17.07	17.09	16.97	0-1	0
		50	49	17.06	17.04	16.98	0-1	0
		100	0	17.03	17.05	16.93	0-1	0
	16QAM	1	0	17.13	17.31	17.25	0-1	0
		1	49	17.05	17.14	16.89	0-1	0
		1	99	17.24	17.06	16.97	0-1	0
		50	0	17.00	17.06	16.96	0-2	0
		50	25	17.02	17.03	16.89	0-2	0
		50	49	17.01	16.96	16.88	0-2	0
		100	0	16.99	17.01	16.88	0-2	0
	64QAM	1	0	17.03	17.26	17.26	0-2	0
		1	49	17.13	17.25	17.10	0-2	0
		1	99	17.16	17.00	17.06	0-2	0
		50	0	16.96	17.08	16.94	0-3	0
		50	25	17.05	17.26	17.03	0-3	0
		50	49	16.99	16.99	16.87	0-3	0
		100	0	16.94	16.97	16.85	0-3	0
	256QAM	1	0	17.15	17.29	17.22	0-5	0
		1	49	16.98	17.05	17.02	0-5	0
		1	99	17.18	17.05	17.01	0-5	0
		50	0	17.06	17.08	16.99	0-5	0
		50	25	17.04	17.05	16.96	0-5	0
		50	49	17.04	17.05	16.95	0-5	0
		100	0	16.99	17.05	16.94	0-5	0

LTE FDD Band 4 Conducted Power _ Measured Pmax _ SUB2 [Ant F]

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

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20050 ch. 1720 ㎒	20175 ch. 1732.5 ㎒	20300 ch. 1745 ㎒		
20 ㎒	QPSK	1	0	22.39	22.49	22.60	0	0
		1	49	22.38	22.66	22.81	0	0
		1	99	22.40	22.70	22.68	0	0
		50	0	21.43	21.49	21.69	0-1	1
		50	25	21.55	21.53	21.74	0-1	1
		50	49	21.56	21.67	21.76	0-1	1
		100	0	21.57	21.47	21.72	0-1	1
	16QAM	1	0	21.46	21.58	21.65	0-1	1
		1	49	21.41	21.32	21.53	0-1	1
		1	99	21.38	21.75	21.81	0-1	1
		50	0	20.45	20.41	20.62	0-2	2
		50	25	20.56	20.40	20.68	0-2	2
		50	49	20.43	20.47	20.69	0-2	2
		100	0	20.46	20.44	20.66	0-2	2
	64QAM	1	0	20.26	20.52	20.52	0-2	2
		1	49	20.58	20.60	20.53	0-2	2
		1	99	20.57	20.82	20.83	0-2	2
		50	0	19.46	19.38	19.66	0-3	3
		50	25	19.43	19.42	19.67	0-3	3
		50	49	19.48	19.50	19.79	0-3	3
		100	0	19.61	19.40	19.72	0-3	3
	256QAM	1	0	17.56	17.38	17.67	0-5	5
		1	49	17.46	17.49	17.81	0-5	5
		1	99	17.65	17.67	18.07	0-5	5
		50	0	17.39	17.41	17.64	0-5	5
		50	25	17.42	17.46	17.65	0-5	5
		50	49	17.45	17.49	17.71	0-5	5
		100	0	17.45	17.43	17.65	0-5	5

LTE FDD Band 4 Conducted Power _ Measured RSI = 0_ SUB2 [Ant F]

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

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20500 ch. 1720 ㎒	20175 ch. 1732.5 ㎒	20300 ch. 1745 ㎒		
20 ㎒	QPSK	1	0	18.51	18.49	18.54	0	0
		1	49	18.58	18.37	18.70	0	0
		1	99	18.44	18.29	18.55	0	0
		50	0	18.51	18.40	18.51	0-1	0
		50	25	18.48	18.36	18.53	0-1	0
		50	49	18.53	18.38	18.54	0-1	0
		100	0	18.48	18.36	18.49	0-1	0
	16QAM	1	0	18.72	18.51	18.75	0-1	0
		1	49	18.58	18.42	18.69	0-1	0
		1	99	18.62	18.48	18.78	0-1	0
		50	0	18.50	18.34	18.46	0-2	0
		50	25	18.44	18.32	18.44	0-2	0
		50	49	18.46	18.32	18.49	0-2	0
		100	0	18.42	18.28	18.46	0-2	0
	64QAM	1	0	18.63	18.61	18.65	0-2	0
		1	49	18.66	18.45	18.79	0-2	0
		1	99	18.59	18.33	18.71	0-2	0
		50	0	18.45	18.34	18.46	0-3	0
		50	25	18.45	18.29	18.49	0-3	0
		50	49	18.45	18.33	18.50	0-3	0
		100	0	18.42	18.27	18.42	0-3	0
	256QAM	1	0	17.65	17.66	17.77	0-5	2
		1	49	17.77	17.51	17.77	0-5	2
		1	99	17.61	17.60	17.76	0-5	2
		50	0	17.57	17.44	17.55	0-5	2
		50	25	17.56	17.46	17.61	0-5	2
		50	49	17.55	17.42	17.63	0-5	2
		100	0	17.56	17.45	17.56	0-5	2

LTE FDD Band 4 Conducted Power _ Measured RSI = 1_ SUB2 [Ant F]

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

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20500 ch. 1720 ㎒	20175 ch. 1732.5 ㎒	20300 ch. 1745 ㎒		
20 ㎒	QPSK	1	0	16.86	16.92	17.12	0	0
		1	49	16.91	16.83	17.19	0	0
		1	99	16.71	16.72	17.06	0	0
		50	0	16.81	16.87	17.05	0-1	0
		50	25	16.81	16.83	17.09	0-1	0
		50	49	16.79	16.86	17.03	0-1	0
		100	0	16.82	16.82	17.03	0-1	0
	16QAM	1	0	17.05	17.05	17.24	0-1	0
		1	49	16.87	16.86	17.26	0-1	0
		1	99	16.74	16.84	17.13	0-1	0
		50	0	16.76	16.76	16.95	0-2	0
		50	25	16.76	16.75	17.00	0-2	0
		50	49	16.73	16.77	17.01	0-2	0
		100	0	16.74	16.71	16.96	0-2	0
	64QAM	1	0	17.00	16.96	17.10	0-2	0
		1	49	16.95	16.92	17.28	0-2	0
		1	99	16.74	16.85	17.18	0-2	0
		50	0	16.77	16.77	16.99	0-3	0
		50	25	17.00	16.86	16.83	0-3	0
		50	49	16.75	16.75	17.02	0-3	0
		100	0	16.74	16.75	16.95	0-3	0
	256QAM	1	0	17.07	17.12	17.24	0-5	0
		1	49	16.92	16.83	17.21	0-5	0
		1	99	16.87	16.94	17.29	0-5	0
		50	0	16.82	16.86	17.00	0-5	0
		50	25	16.79	16.78	17.02	0-5	0
		50	49	16.81	16.82	17.04	0-5	0
		100	0	16.82	16.81	17.00	0-5	0

LTE FDD Band 7 Conducted Power_ Measured Pmax _ SUB2 [Ant F]

LTE FDD Band 7 _ 20 ㎒ Bandwidth Conducted Power_ Upper Antenna

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20850 Ch. 2510 ㎒	21100 Ch. 2535 ㎒	21350 Ch. 2560 ㎒		
20 ㎒	QPSK	1	0	23.18	23.19	23.33	0	0
		1	49	23.08	23.05	23.24	0	0
		1	99	23.05	22.97	23.20	0	0
		50	0	22.30	22.13	22.39	0-1	1
		50	25	22.25	22.09	22.36	0-1	1
		50	49	22.21	22.06	22.31	0-1	1
		100	0	22.19	22.09	22.29	0-1	1
	16QAM	1	0	22.22	22.20	22.40	0-1	1
		1	49	21.97	22.15	22.12	0-1	1
		1	99	22.15	22.04	22.22	0-1	1
		50	0	21.18	21.09	21.35	0-2	2
		50	25	21.15	21.04	21.28	0-2	2
		50	49	21.15	21.00	21.25	0-2	2
		100	0	21.12	21.02	21.28	0-2	2
	64QAM	1	0	21.30	21.37	21.43	0-2	2
		1	49	21.08	20.92	21.31	0-2	2
		1	99	21.26	21.07	21.36	0-2	2
		50	0	20.14	20.07	20.34	0-3	3
		50	25	20.13	20.03	20.29	0-3	3
		50	49	20.16	20.00	20.26	0-3	3
		100	0	20.08	19.99	20.31	0-3	3
	256QAM	1	0	18.26	18.24	18.45	0-5	5
		1	49	18.23	18.25	18.45	0-5	5
		1	99	18.21	18.13	18.37	0-5	5
		50	0	18.17	18.11	18.31	0-5	5
		50	25	18.15	18.00	18.24	0-5	5
		50	49	18.15	17.99	18.28	0-5	5
		100	0	23.18	23.19	23.33	0	0

LTE FDD Band 7 Conducted Power_ Measured RSI = 0_ SUB2 [Ant F]

LTE FDD Band 7 _ 20 ㎒ Bandwidth Conducted Power_ Upper Antenna

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20850 Ch. 2510 ㎒	21100 Ch. 2535 ㎒	21350 Ch. 2560 ㎒		
20 ㎒	QPSK	1	0	18.22	18.34	18.65	0	0
		1	49	18.31	18.37	18.64	0	0
		1	99	18.16	18.33	18.35	0	0
		50	0	18.23	18.30	18.77	0-1	0
		50	25	18.24	18.27	18.49	0-1	0
		50	49	18.22	18.32	18.40	0-1	0
		100	0	18.18	18.29	18.42	0-1	0
	16QAM	1	0	18.41	18.54	18.61	0-1	0
		1	49	18.05	18.38	18.26	0-1	0
		1	99	18.40	18.44	18.59	0-1	0
		50	0	18.15	18.28	18.43	0-2	0
		50	25	18.16	18.27	18.35	0-2	0
		50	49	18.13	18.25	18.38	0-2	0
		100	0	18.09	18.22	18.36	0-2	0
	64QAM	1	0	18.29	18.38	18.49	0-2	0
		1	49	18.19	18.47	18.49	0-2	0
		1	99	18.31	18.45	18.44	0-2	0
		50	0	18.12	18.26	18.41	0-3	0
		50	25	18.14	18.21	18.35	0-3	0
		50	49	18.14	18.23	18.37	0-3	0
		100	0	18.09	18.21	18.33	0-3	0
	256QAM	1	0	17.40	17.55	17.68	0-5	1
		1	49	17.42	17.53	17.51	0-5	1
		1	99	17.40	17.47	17.64	0-5	1
		50	0	17.27	17.37	17.52	0-5	1
		50	25	17.28	17.37	17.49	0-5	1
		50	49	17.31	17.38	17.48	0-5	1
		100	0	17.25	17.36	17.50	0-5	1

LTE FDD Band 7 Conducted Power_ Measured RSI = 1_ SUB2 [Ant F]

LTE FDD Band 7 _ 20 ㎒ Bandwidth Conducted Power_ Upper Antenna

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20850 Ch. 2510 ㎒	21100 Ch. 2535 ㎒	21350 Ch. 2560 ㎒		
20 ㎒	QPSK	1	0	16.20	16.07	16.31	0	0
		1	49	16.12	16.00	16.22	0	0
		1	99	16.05	15.80	16.05	0	0
		50	0	16.20	16.01	16.24	0-1	0
		50	25	16.18	15.96	16.15	0-1	0
		50	49	16.11	15.89	16.12	0-1	0
		100	0	16.09	15.92	16.12	0-1	0
	16QAM	1	0	16.22	16.19	16.34	0-1	0
		1	49	16.05	16.07	15.96	0-1	0
		1	99	16.16	15.84	16.05	0-1	0
		50	0	16.08	15.98	16.14	0-2	0
		50	25	16.04	15.92	16.10	0-2	0
		50	49	15.97	15.81	16.05	0-2	0
		100	0	15.97	15.89	16.01	0-2	0
	64QAM	1	0	16.16	16.17	16.27	0-2	0
		1	49	16.03	16.10	16.13	0-2	0
		1	99	16.16	15.87	16.08	0-2	0
		50	0	16.04	16.00	16.09	0-3	0
		50	25	16.02	15.92	16.05	0-3	0
		50	49	15.98	15.83	16.00	0-3	0
		100	0	15.95	15.84	16.15	0-3	0
	256QAM	1	0	16.32	16.21	16.35	0-5	0
		1	49	16.14	16.10	16.36	0-5	0
		1	99	16.03	15.98	16.16	0-5	0
		50	0	16.14	15.99	16.27	0-5	0
		50	25	16.10	15.87	16.16	0-5	0
		50	49	16.08	15.87	16.12	0-5	0
		100	0	16.09	15.89	16.17	0-5	0

LTE FDD Band 25 Conducted Power_ Measured Pmax _ SUB2 [Ant F]

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

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26140 Ch. 1860 ㎒	26365 Ch. 1882.5 ㎒	26590 Ch. 1905 ㎒		
20 ㎒	QPSK	1	0	22.55	22.60	22.52	0	0
		1	49	22.57	22.62	22.54	0	0
		1	99	22.52	22.44	22.65	0	0
		50	0	21.54	21.65	21.56	0-1	1
		50	25	21.53	21.57	21.59	0-1	1
		50	49	21.52	21.54	21.61	0-1	1
		100	0	21.47	21.56	21.55	0-1	1
	16QAM	1	0	21.43	21.80	21.57	0-1	1
		1	49	21.30	21.31	21.38	0-1	1
		1	99	21.60	21.49	21.69	0-1	1
		50	0	20.46	20.56	20.52	0-2	2
		50	25	20.48	20.57	20.58	0-2	2
		50	49	20.49	20.51	20.53	0-2	2
		100	0	20.42	20.51	20.52	0-2	2
	64QAM	1	0	20.60	20.75	20.61	0-2	2
		1	49	20.54	20.66	20.52	0-2	2
		1	99	20.63	20.46	20.75	0-2	2
		50	0	19.47	19.55	19.51	0-3	3
		50	25	19.47	19.50	19.54	0-3	3
		50	49	19.46	19.43	19.53	0-3	3
		100	0	19.41	19.46	19.49	0-3	3
	256QAM	1	0	17.60	17.74	17.73	0-5	5
		1	49	17.47	17.54	17.60	0-5	5
		1	99	17.53	17.51	17.69	0-5	5
		50	0	17.46	17.56	17.48	0-5	5
		50	25	17.44	17.49	17.53	0-5	5
		50	49	17.46	17.46	17.53	0-5	5
		100	0	17.44	17.50	17.47	0-5	5

LTE FDD Band 25 Conducted Power_ Measured RSI = 0_ SUB2 [Ant F]

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

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26140 Ch. 1860 ㎒	26365 Ch. 1882.5 ㎒	26590 Ch. 1905 ㎒		
20 ㎒	QPSK	1	0	19.43	19.59	19.44	0	0
		1	49	19.38	19.47	19.40	0	0
		1	99	19.35	19.34	19.53	0	0
		50	0	19.43	19.58	19.46	0-1	0
		50	25	19.43	19.48	19.50	0-1	0
		50	49	19.41	19.46	19.48	0-1	0
		100	0	19.39	19.45	19.48	0-1	0
	16QAM	1	0	19.50	19.78	19.54	0-1	0
		1	49	19.58	19.33	19.51	0-1	0
		1	99	19.53	19.44	19.63	0-1	0
		50	0	19.38	19.51	19.42	0-2	0
		50	25	19.43	19.45	19.46	0-2	0
		50	49	19.38	19.38	19.46	0-2	0
		100	0	19.33	19.40	19.40	0-2	0
	64QAM	1	0	19.47	19.72	19.51	0-2	0
		1	49	19.36	19.54	19.26	0-2	0
		1	99	19.50	19.46	19.67	0-2	0
		50	0	19.38	19.46	19.41	0-3	0.5
		50	25	19.41	19.44	19.43	0-3	0.5
		50	49	19.32	19.36	19.45	0-3	0.5
		100	0	19.33	19.40	19.40	0-3	0.5
	256QAM	1	0	17.15	17.63	17.50	0-5	2.5
		1	49	17.42	17.37	17.40	0-5	2.5
		1	99	17.95	17.34	17.61	0-5	2.5
		50	0	17.13	17.47	17.36	0-5	2.5
		50	25	17.21	17.44	17.46	0-5	2.5
		50	49	17.16	17.37	17.44	0-5	2.5
		100	0	17.33	17.39	17.39	0-5	2.5

LTE FDD Band 25 Conducted Power_ Measured RSI = 1_ SUB2 [Ant F]

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

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26140 Ch. 1860 ㎒	26365 Ch. 1882.5 ㎒	26590 Ch. 1905 ㎒		
20 ㎒	QPSK	1	0	17.07	17.26	16.93	0	0
		1	49	17.09	17.16	17.02	0	0
		1	99	17.07	17.08	17.06	0	0
		50	0	17.09	17.29	16.94	0-1	0
		50	25	17.09	17.15	16.92	0-1	0
		50	49	17.06	17.10	16.95	0-1	0
		100	0	17.05	17.12	16.94	0-1	0
	16QAM	1	0	17.21	17.40	16.98	0-1	0
		1	49	16.98	17.21	16.99	0-1	0
		1	99	17.26	17.22	17.27	0-1	0
		50	0	17.01	17.10	16.87	0-2	0
		50	25	17.05	17.09	16.86	0-2	0
		50	49	17.01	17.02	16.88	0-2	0
		100	0	16.95	17.05	16.87	0-2	0
	64QAM	1	0	17.11	17.35	16.95	0-2	0
		1	49	17.11	17.29	17.10	0-2	0
		1	99	17.17	17.23	17.14	0-2	0
		50	0	17.01	17.13	16.90	0-3	0
		50	25	17.00	17.09	16.86	0-3	0
		50	49	16.98	17.06	16.91	0-3	0
		100	0	16.95	17.01	16.83	0-3	0
	256QAM	1	0	17.13	17.28	16.98	0-5	0
		1	49	16.93	17.04	16.89	0-5	0
		1	99	17.16	17.06	17.17	0-5	0
		50	0	17.05	17.16	16.90	0-5	0
		50	25	17.07	17.12	16.89	0-5	0
		50	49	17.08	17.08	16.95	0-5	0
		100	0	17.01	17.06	16.89	0-5	0

LTE FDD Band 30 Conducted Power_ Measured Pmax _ SUB2 [Ant F]

LTE FDD Band 30 _ 10 ㎒ Bandwidth Conducted Power_ Upper Antenna

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 27710 Ch. 2310 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	20.26	0	0
		1	24	20.29	0	0
		1	49	20.61	0	0
		25	0	19.36	0-1	0
		25	12	19.46	0-1	0
		25	24	19.54	0-1	0
		50	0	19.43	0-1	0
	16QAM	1	0	19.52	0-1	0
		1	24	19.63	0-1	0
		1	49	19.84	0-1	0
		25	0	18.36	0-2	0
		25	12	18.41	0-2	0
		25	24	18.52	0-2	0
		50	0	18.39	0-2	0
	64QAM	1	0	18.37	0-2	0
		1	24	18.48	0-2	0
		1	49	18.75	0-2	0
		25	0	17.26	0-3	1
		25	12	17.31	0-3	1
		25	24	17.42	0-3	1
		50	0	17.36	0-3	1
	256QAM	1	0	15.35	0-5	3
		1	24	15.64	0-5	3
		1	49	15.66	0-5	3
		25	0	15.33	0-5	3
		25	12	15.34	0-5	3
		25	24	15.40	0-5	3
		50	0	15.29	0-5	3

LTE FDD Band 30 Conducted Power_ Measured RSI = 0_ SUB2 [Ant F]

LTE FDD Band 30 _ 10 ㎒ Bandwidth Conducted Power_ Upper Antenna

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 27710 Ch. 2310 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	19.23	0	0
		1	24	19.20	0	0
		1	49	19.53	0	0
		25	0	19.25	0-1	0
		25	12	19.33	0-1	0
		25	24	19.42	0-1	0
		50	0	19.39	0-1	0
	16QAM	1	0	19.36	0-1	0
		1	24	19.51	0-1	0
		1	49	19.74	0-1	0
		25	0	18.23	0-2	1
		25	12	18.32	0-2	1
		25	24	18.39	0-2	1
		50	0	18.34	0-2	1
	64QAM	1	0	18.26	0-2	1
		1	24	18.19	0-2	1
		1	49	18.66	0-2	1
		25	0	17.17	0-3	2
		25	12	17.29	0-3	2
		25	24	17.32	0-3	2
		50	0	17.25	0-3	2
	256QAM	1	0	15.29	0-5	4
		1	24	15.46	0-5	4
		1	49	15.57	0-5	4
		25	0	15.20	0-5	4
		25	12	15.26	0-5	4
		25	24	15.36	0-5	4
		50	0	15.29	0-5	4

LTE FDD Band 30 Conducted Power_ Measured RSI = 1_ SUB2 [Ant F]

LTE FDD Band 30 _ 10 ㎒ Bandwidth Conducted Power_ Upper Antenna

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 27710 Ch. 2310 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	16.49	0	0
		1	24	16.79	0	0
		1	49	16.87	0	0
		25	0	16.55	0-1	0
		25	12	16.71	0-1	0
		25	24	16.98	0-1	0
		50	0	16.66	0-1	0
	16QAM	1	0	16.72	0-1	0
		1	24	16.79	0-1	0
		1	49	17.07	0-1	0
		25	0	16.56	0-2	0
		25	12	16.64	0-2	0
		25	24	16.77	0-2	0
		50	0	16.62	0-2	0
	64QAM	1	0	16.59	0-2	0
		1	24	16.84	0-2	0
		1	49	16.91	0-2	0
		25	0	16.58	0-3	0
		25	12	16.61	0-3	0
		25	24	16.74	0-3	0
		50	0	16.64	0-3	0
	256QAM	1	0	15.93	0-5	1
		1	24	15.99	0-5	1
		1	49	16.44	0-5	1
		25	0	15.99	0-5	1
		25	12	16.13	0-5	1
		25	24	16.20	0-5	1
		50	0	16.09	0-5	1

LTE TDD Band 38 Conducted Power _ Measured Pmax _ SUB2 [Ant F]

LTE TDD Band 38 _ 20 ㎒ Bandwidth Conducted Power_ Upper Antenna

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				37850 Ch. 2580 ㎒	38000 Ch. 2595 ㎒	38150 Ch. 2610 ㎒		
20 ㎒	QPSK	1	0	20.80	20.55	20.44	0	0
		1	49	20.49	20.35	20.27	0	0
		1	99	20.48	20.33	20.24	0	0
		50	0	19.73	19.58	19.48	0-1	1
		50	25	19.65	19.50	19.43	0-1	1
		50	49	19.61	19.46	19.42	0-1	1
		100	0	19.68	19.53	19.45	0-1	1
	16QAM	1	0	19.80	19.60	19.54	0-1	1
		1	49	19.59	19.41	19.38	0-1	1
		1	99	19.49	19.37	19.35	0-1	1
		50	0	18.76	18.59	18.49	0-2	2
		50	25	18.68	18.52	18.44	0-2	2
		50	49	18.61	18.47	18.42	0-2	2
		100	0	18.74	18.58	18.49	0-2	2
	64QAM	1	0	18.73	18.62	18.46	0-2	2
		1	49	18.49	18.37	18.26	0-2	2
		1	99	18.42	18.33	18.22	0-2	2
		50	0	17.80	17.63	17.52	0-3	3
		50	25	17.74	17.58	17.49	0-3	3
		50	49	17.68	17.51	17.45	0-3	3
		100	0	17.72	17.56	17.48	0-3	3
	256QAM	1	0	15.69	15.52	15.36	0-5	5
		1	49	15.56	15.30	15.20	0-5	5
		1	99	15.43	15.30	15.18	0-5	5
		50	0	15.87	15.71	15.58	0-5	5
		50	25	15.80	15.63	15.53	0-5	5
		50	49	15.74	15.57	15.50	0-5	5
		100	0	15.75	15.58	15.48	0-5	5

LTE TDD Band 38 Conducted Power _ RSI = 0_ SUB2 [Ant F]

LTE TDD Band 38 _ 20 ㎒ Bandwidth Conducted Power_ Upper Antenna

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				37850 Ch. 2580 ㎒	38000 Ch. 2595 ㎒	38150 Ch. 2610 ㎒		
20 ㎒	QPSK	1	0	20.20	20.36	20.21	0	0
		1	49	20.01	19.94	19.85	0	0
		1	99	19.93	19.88	19.84	0	0
		50	0	19.60	19.55	19.47	0-1	1
		50	25	19.51	19.47	19.42	0-1	1
		50	49	19.49	19.44	19.37	0-1	1
		100	0	19.55	19.50	19.44	0-1	1
	16QAM	1	0	19.66	19.55	19.49	0-1	1
		1	49	19.51	19.28	19.29	0-1	1
		1	99	19.47	19.22	19.26	0-1	1
		50	0	18.62	18.57	18.48	0-2	2
		50	25	18.55	18.46	18.42	0-2	2
		50	49	18.50	18.43	18.39	0-2	2
		100	0	18.61	18.57	18.49	0-2	2
	64QAM	1	0	18.74	18.53	18.58	0-2	2
		1	49	18.55	18.31	18.36	0-2	2
		1	99	18.53	18.28	18.39	0-2	2
		50	0	17.66	17.62	17.52	0-3	3
		50	25	17.61	17.55	17.48	0-3	3
		50	49	17.56	17.51	17.42	0-3	3
		100	0	17.59	17.54	17.46	0-3	3
	256QAM	1	0	15.74	15.54	15.54	0-5	5
		1	49	15.48	15.29	15.33	0-5	5
		1	99	15.46	15.24	15.36	0-5	5
		50	0	15.73	15.67	15.58	0-5	5
		50	25	15.66	15.60	15.53	0-5	5
		50	49	15.62	15.56	15.48	0-5	5
		100	0	15.62	15.57	15.48	0-5	5

LTE TDD Band 38 Conducted Power _ Measured RSI = 1_ SUB2 [Ant F]

LTE TDD Band 38 _ 20 ㎒ Bandwidth Conducted Power_ Upper Antenna

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				37850 Ch. 2580 ㎒	38000 Ch. 2595 ㎒	38150 Ch. 2610 ㎒		
20 ㎒	QPSK	1	0	16.72	16.71	16.50	0	0
		1	49	16.53	16.40	16.22	0	0
		1	99	16.39	16.27	16.13	0	0
		50	0	16.84	16.72	16.51	0-1	0
		50	25	16.72	16.60	16.42	0-1	0
		50	49	16.66	16.54	16.35	0-1	0
		100	0	16.73	16.63	16.44	0-1	0
	16QAM	1	0	16.71	16.59	16.32	0-1	0
		1	49	16.46	16.29	16.12	0-1	0
		1	99	16.35	16.14	16.04	0-1	0
		50	0	16.77	16.63	16.41	0-2	0
		50	25	16.66	16.51	16.33	0-2	0
		50	49	16.58	16.45	16.26	0-2	0
		100	0	16.72	16.58	16.40	0-2	0
	64QAM	1	0	16.79	16.66	16.40	0-2	0
		1	49	16.51	16.37	16.11	0-2	0
		1	99	16.39	16.19	16.06	0-2	0
		50	0	16.79	16.66	16.45	0-3	0
		50	25	16.69	16.56	16.38	0-3	0
		50	49	16.61	16.48	16.30	0-3	0
		100	0	16.67	16.55	16.36	0-3	0
	256QAM	1	0	15.63	15.48	15.26	0-5	1
		1	49	15.39	15.15	14.97	0-5	1
		1	99	15.26	15.03	14.94	0-5	1
		50	0	15.75	15.60	15.38	0-5	1
		50	25	15.65	15.49	15.30	0-5	1
		50	49	15.57	15.42	15.23	0-5	1
		100	0	15.59	15.45	15.26	0-5	1

LTE TDD Band 41 Conducted Power (Power Class 3)_ Measured Pmax _ SUB2 [Ant F]

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

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	20.14	20.58	20.71	20.56	20.97	0	0
		1	49	20.11	20.33	20.53	20.42	20.68	0	0
		1	99	20.19	20.31	20.26	20.40	20.61	0	0
		50	0	19.32	19.51	19.52	19.67	19.85	0-1	1
		50	25	19.30	19.46	19.45	19.60	19.80	0-1	1
		50	49	19.30	19.42	19.41	19.55	19.77	0-1	1
		100	0	19.32	19.47	19.47	19.61	19.81	0-1	1
	16QAM	1	0	19.08	19.42	19.53	19.52	19.83	0-1	1
		1	49	19.08	19.29	19.35	19.38	19.64	0-1	1
		1	99	19.15	19.28	19.28	19.39	19.64	0-1	1
		50	0	18.29	18.50	18.54	18.66	18.86	0-2	2
		50	25	18.28	18.48	18.47	18.60	18.81	0-2	2
		50	49	18.28	18.43	18.42	18.55	18.78	0-2	2
		100	0	18.33	18.51	18.52	18.66	18.89	0-2	2
	64QAM	1	0	18.20	18.52	18.54	18.68	18.89	0-2	2
		1	49	18.17	18.43	18.36	18.54	18.75	0-2	2
		1	99	18.24	18.42	18.37	18.56	18.78	0-2	2
		50	0	17.32	17.55	17.59	17.72	17.92	0-3	3
		50	25	17.31	17.53	17.54	17.67	17.89	0-3	3
		50	49	17.31	17.48	17.48	17.62	17.86	0-3	3
		100	0	17.30	17.49	17.51	17.64	17.87	0-3	3
	256QAM	1	0	15.13	15.30	15.40	15.59	15.80	0-5	5
		1	49	15.05	15.24	15.24	15.53	15.65	0-5	5
		1	99	15.09	15.25	15.15	15.51	15.74	0-5	5
		50	0	15.38	15.60	15.65	15.76	15.97	0-5	5
		50	25	15.38	15.57	15.58	15.71	15.94	0-5	5
		50	49	15.37	15.54	15.53	15.67	15.92	0-5	5
		100	0	15.32	15.51	15.53	15.66	15.92	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_ SUB2 [Ant F]

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

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	19.87	19.91	20.22	20.15	20.65	0	0
		1	49	19.76	19.75	19.99	20.05	20.67	0	0
		1	99	19.82	19.74	19.96	20.07	20.49	0	0
		50	0	19.37	19.32	19.61	19.64	20.00	0-1	0
		50	25	19.36	19.27	19.53	19.60	19.94	0-1	0
		50	49	19.36	19.25	19.49	19.56	19.88	0-1	0
		100	0	19.37	19.29	19.56	19.60	19.94	0-1	0
	16QAM	1	0	19.30	19.23	19.65	19.59	19.94	0-1	0
		1	49	19.29	19.09	19.34	19.45	19.79	0-1	0
		1	99	19.33	19.06	19.31	19.47	19.72	0-1	0
		50	0	18.35	18.32	18.63	18.64	19.00	0-2	1
		50	25	18.35	18.28	18.53	18.59	18.93	0-2	1
		50	49	18.35	18.25	18.49	18.57	18.89	0-2	1
		100	0	18.40	18.36	18.61	18.67	19.01	0-2	1
	64QAM	1	0	18.20	18.30	18.77	18.68	19.09	0-2	1
		1	49	18.11	18.21	18.54	18.53	18.83	0-2	1
		1	99	18.24	18.22	18.54	18.57	18.80	0-2	1
		50	0	17.39	17.38	17.67	17.72	18.07	0-3	2
		50	25	17.39	17.35	17.60	17.68	18.01	0-3	2
		50	49	17.38	17.32	17.55	17.65	17.96	0-3	2
		100	0	17.36	17.33	17.59	17.65	18.01	0-3	2
	256QAM	1	0	15.19	15.26	15.63	15.64	16.07	0-5	4
		1	49	15.13	15.14	15.36	15.43	15.89	0-5	4
		1	99	15.20	15.16	15.32	15.51	15.84	0-5	4
		50	0	15.45	15.42	15.73	15.75	16.13	0-5	4
		50	25	15.45	15.39	15.64	15.71	16.07	0-5	4
		50	49	15.44	15.37	15.60	15.68	16.03	0-5	4
		100	0	15.37	15.34	15.61	15.66	16.04	0-5	4

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 = 1_ SUB2 [Ant F]

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

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	16.31	16.43	16.81	16.55	17.01	0	0
		1	49	16.21	16.26	16.45	16.40	16.71	0	0
		1	99	16.21	16.27	16.34	16.35	16.62	0	0
		50	0	16.52	16.54	16.79	16.62	17.00	0-1	0
		50	25	16.47	16.50	16.67	16.55	16.91	0-1	0
		50	49	16.45	16.46	16.61	16.53	16.83	0-1	0
		100	0	16.48	16.49	16.70	16.56	16.93	0-1	0
	16QAM	1	0	16.29	16.33	16.66	16.44	17.03	0-1	0
		1	49	16.18	16.18	16.38	16.26	16.78	0-1	0
		1	99	16.19	16.18	16.27	16.30	16.72	0-1	0
		50	0	16.41	16.47	16.71	16.53	16.94	0-2	0
		50	25	16.37	16.43	16.58	16.47	16.86	0-2	0
		50	49	16.35	16.38	16.51	16.44	16.77	0-2	0
		100	0	16.42	16.47	16.66	16.53	16.93	0-2	0
	64QAM	1	0	16.35	16.42	16.68	16.54	17.00	0-2	0
		1	49	16.23	16.22	16.41	16.35	16.77	0-2	0
		1	99	16.26	16.27	16.22	16.40	16.66	0-2	0
		50	0	16.44	16.49	16.74	16.57	16.97	0-3	0
		50	25	16.41	16.47	16.63	16.52	16.89	0-3	0
		50	49	16.39	16.42	16.54	16.49	16.81	0-3	0
		100	0	16.37	16.42	16.62	16.50	16.88	0-3	0
	256QAM	1	0	15.11	15.21	15.53	15.23	15.82	0-5	1
		1	49	14.95	15.03	15.21	15.07	15.53	0-5	1
		1	99	14.96	15.04	15.06	15.11	15.51	0-5	1
		50	0	15.40	15.44	15.68	15.51	15.92	0-5	1
		50	25	15.36	15.41	15.56	15.45	15.84	0-5	1
		50	49	15.34	15.37	15.48	15.44	15.76	0-5	1
		100	0	15.30	15.35	15.53	15.40	15.80	0-5	1

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

LTE TDD Band 41 Conducted Power (Power Class 2)_ Measured Pmax _ SUB2 [Ant F]

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

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	23.01	23.32	23.40	23.55	23.63	0	0
		1	49	23.04	23.22	23.28	23.37	23.48	0	0
		1	99	23.09	23.17	23.22	23.25	23.41	0	0
		50	0	22.27	22.46	22.43	22.69	22.90	0-1	1
		50	25	22.26	22.39	22.37	22.64	22.86	0-1	1
		50	49	22.25	22.34	22.33	22.56	22.82	0-1	1
		100	0	22.24	22.38	22.36	22.61	22.86	0-1	1
	16QAM	1	0	22.15	22.53	22.72	22.77	22.83	0-1	1
		1	49	22.17	22.54	22.57	22.62	22.71	0-1	1
		1	99	22.24	22.50	22.53	22.59	22.63	0-1	1
		50	0	21.24	21.47	21.48	21.67	21.84	0-2	2
		50	25	21.23	21.43	21.42	21.63	21.81	0-2	2
		50	49	21.23	21.37	21.38	21.55	21.78	0-2	2
		100	0	21.25	21.45	21.45	21.62	21.87	0-2	2
	64QAM	1	0	21.09	21.54	21.70	21.90	21.87	0-2	2
		1	49	21.49	21.50	21.55	21.73	21.69	0-2	2
		1	99	21.59	21.44	21.45	21.72	21.67	0-2	2
		50	0	20.27	20.49	20.52	20.70	20.89	0-3	3
		50	25	20.28	20.46	20.44	20.64	20.85	0-3	3
		50	49	20.28	20.42	20.41	20.59	20.81	0-3	3
		100	0	20.23	20.43	20.43	20.63	20.83	0-3	3
	256QAM	1	0	18.39	18.51	18.89	18.99	18.99	0-5	5
		1	49	18.39	18.44	18.80	18.92	18.87	0-5	5
		1	99	18.42	18.36	18.65	18.85	18.86	0-5	5
		50	0	18.35	18.56	18.62	18.79	18.97	0-5	5
		50	25	18.34	18.53	18.55	18.74	18.92	0-5	5
		50	49	18.35	18.50	18.50	18.69	18.90	0-5	5
		100	0	18.29	18.47	18.50	18.67	18.88	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 2)_ Measured RSI = 0_ SUB2 [Ant F]

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

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	19.93	19.83	20.58	20.14	20.54	0	0
		1	49	19.97	20.03	20.11	20.19	20.48	0	0
		1	99	19.78	19.86	19.84	20.03	20.22	0	0
		50	0	20.00	20.02	20.56	20.12	20.49	0-1	0
		50	25	19.94	19.97	20.07	20.07	20.48	0-1	0
		50	49	19.92	19.92	20.00	20.03	20.40	0-1	0
		100	0	19.95	19.97	20.08	20.07	20.46	0-1	0
	16QAM	1	0	20.12	20.24	20.69	20.27	20.80	0-1	0
		1	49	20.13	20.17	20.34	20.24	20.68	0-1	0
		1	99	19.95	20.07	20.10	20.20	20.46	0-1	0
		50	0	19.99	19.98	20.18	20.15	20.51	0-2	0
		50	25	19.94	19.93	20.07	20.12	20.41	0-2	0
		50	49	19.93	19.90	19.97	20.09	20.34	0-2	0
		100	0	19.95	19.96	20.12	20.12	20.48	0-2	0
	64QAM	1	0	20.05	20.32	20.62	20.28	20.83	0-2	0
		1	49	19.98	20.19	20.68	20.16	20.76	0-2	0
		1	99	19.90	20.12	20.40	20.16	20.50	0-2	0
		50	0	19.99	20.03	20.21	20.14	20.56	0-3	0
		50	25	19.94	19.99	20.11	20.12	20.45	0-3	0
		50	49	19.92	19.96	20.01	20.07	20.39	0-3	0
		100	0	19.92	19.97	20.06	20.09	20.41	0-3	0
	256QAM	1	0	18.29	18.54	19.09	18.85	19.13	0-5	2
		1	49	18.18	18.24	18.68	18.69	18.91	0-5	2
		1	99	18.46	18.24	18.55	18.75	18.82	0-5	2
		50	0	18.53	18.60	18.78	18.73	19.15	0-5	2
		50	25	18.50	18.56	18.65	18.68	19.06	0-5	2
		50	49	18.47	18.49	18.58	18.69	19.00	0-5	2
		100	0	18.44	18.50	18.60	18.64	19.00	0-5	2

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

LTE TDD Band 41 Conducted Power (Power Class 2) _ Measured RSI = 1_ SUB2 [Ant F]

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

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	18.27	18.34	18.84	18.41	18.75	0	0
		1	49	18.07	18.15	18.31	18.23	18.59	0	0
		1	99	18.11	18.19	18.23	18.29	18.50	0	0
		50	0	18.33	18.36	18.83	18.42	18.79	0-1	0
		50	25	18.27	18.30	18.46	18.34	18.76	0-1	0
		50	49	18.24	18.27	18.40	18.33	18.66	0-1	0
		100	0	18.28	18.30	18.48	18.38	18.76	0-1	0
	16QAM	1	0	18.43	18.09	18.89	18.67	19.00	0-1	0
		1	49	18.35	17.93	18.55	18.35	18.78	0-1	0
		1	99	18.36	17.94	18.47	18.42	18.68	0-1	0
		50	0	18.25	18.34	18.56	18.40	18.80	0-2	0
		50	25	18.21	18.30	18.43	18.32	18.72	0-2	0
		50	49	18.19	18.26	18.37	18.32	18.62	0-2	0
		100	0	18.25	18.31	18.46	18.41	18.74	0-2	0
	64QAM	1	0	18.41	18.70	19.04	18.61	18.97	0-2	0
		1	49	18.27	18.52	18.74	18.47	18.72	0-2	0
		1	99	18.35	18.57	18.65	18.49	18.65	0-2	0
		50	0	18.29	18.34	18.57	18.43	18.81	0-3	0
		50	25	18.25	18.30	18.45	18.40	18.76	0-3	0
		50	49	18.22	18.27	18.38	18.38	18.68	0-3	0
		100	0	18.21	18.27	18.44	18.37	18.71	0-3	0
	256QAM	1	0	18.47	18.38	18.93	18.46	18.82	0-5	0
		1	49	18.36	18.22	18.60	18.08	18.50	0-5	0
		1	99	18.38	18.23	18.52	18.09	18.39	0-5	0
		50	0	18.31	18.37	18.61	18.48	18.88	0-5	0
		50	25	18.29	18.33	18.50	18.44	18.79	0-5	0
		50	49	18.27	18.29	18.43	18.41	18.70	0-5	0
		100	0	18.23	18.27	18.44	18.36	18.74	0-5	0

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

LTE TDD Band 48 Conducted Power_ Measured Pmax _ SUB2 [Ant F]

LTE TDD Band 48 _ 20 ㎒ Bandwidth Conducted Power _ Upper Antenna

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]				MPR Allowed Per 3GPP [dB]	MPR [dB]
				55340Ch. 3560.0 ㎒	55773 Ch. 3603.3 ㎒	56207 Ch. 3646.7 ㎒	56640 Ch. 3690.0 ㎒		
20 ㎒	QPSK	1	0	22.90	22.69	22.83	22.59	0	0
		1	49	22.77	22.64	22.77	22.55	0	0
		1	99	22.78	22.80	22.73	22.73	0	0
		50	0	21.93	21.80	21.85	21.70	0-1	1
		50	25	21.88	21.79	21.82	21.69	0-1	1
		50	49	21.88	21.82	21.79	21.71	0-1	1
		100	0	21.89	21.81	21.80	21.70	0-1	1
	16QAM	1	0	21.99	21.67	21.81	21.69	0-1	1
		1	49	21.86	21.65	21.67	21.67	0-1	1
		1	99	21.87	21.72	21.68	21.71	0-1	1
		50	0	20.93	20.80	20.82	20.70	0-2	2
		50	25	20.88	20.79	20.78	20.68	0-2	2
		50	49	20.87	20.80	20.76	20.71	0-2	2
		100	0	20.93	20.85	20.84	20.74	0-2	2
	64QAM	1	0	20.92	20.75	20.74	20.85	0-2	2
		1	49	20.75	20.69	20.52	20.94	0-2	2
		1	99	20.74	20.78	20.59	20.91	0-2	2
		50	0	19.97	19.86	19.87	19.75	0-3	3
		50	25	19.94	19.86	19.85	19.75	0-3	3
		50	49	19.91	19.88	19.84	19.78	0-3	3
		100	0	19.93	19.84	19.82	19.72	0-3	3
	256QAM	1	0	17.70	17.55	17.50	17.81	0-5	5
		1	49	17.64	17.52	17.45	17.34	0-5	5
		1	99	17.61	17.58	17.38	17.06	0-5	5
		50	0	17.95	17.93	17.94	17.79	0-5	5
		50	25	17.92	17.93	17.90	17.79	0-5	5
		50	49	17.99	17.94	17.89	17.81	0-5	5
		100	0	17.95	17.87	17.85	17.74	0-5	5

LTE TDD Band 48 Conducted Power_ Measured RSI = 0_ SUB2 [Ant F]

LTE TDD Band 48 _ 20 ㎒ Bandwidth Conducted Power _ Upper Antenna

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]				MPR Allowed Per 3GPP [dB]	MPR [dB]
				55340Ch. 3560.0 ㎒	55773 Ch. 3603.3 ㎒	56207 Ch. 3646.7 ㎒	56640 Ch. 3690.0 ㎒		
20 ㎒	QPSK	1	0	20.39	20.22	20.46	20.19	0	0
		1	49	20.45	20.21	20.35	20.25	0	0
		1	99	20.44	20.44	20.32	20.35	0	0
		50	0	20.57	20.40	20.46	20.32	0-1	0
		50	25	20.54	20.41	20.43	20.31	0-1	0
		50	49	20.51	20.41	20.40	20.34	0-1	0
		100	0	20.55	20.40	20.42	20.32	0-1	0
	16QAM	1	0	20.54	20.36	20.44	20.29	0-1	0
		1	49	20.41	20.37	20.38	20.32	0-1	0
		1	99	20.42	20.37	20.35	20.31	0-1	0
		50	0	20.55	20.41	20.44	20.31	0-2	0
		50	25	20.52	20.41	20.42	20.31	0-2	0
		50	49	20.50	20.42	20.40	20.33	0-2	0
		100	0	20.58	20.47	20.48	20.35	0-2	0
	64QAM	1	0	20.56	20.50	20.40	20.46	0-2	0
		1	49	20.35	20.47	20.02	20.43	0-2	0
		1	99	20.46	20.54	20.35	20.51	0-2	0
		50	0	19.99	19.87	19.91	19.75	0-3	1
		50	25	19.96	19.87	19.90	19.76	0-3	1
		50	49	19.95	19.89	19.86	19.77	0-3	1
		100	0	19.95	19.85	19.86	19.73	0-3	1
	256QAM	1	0	17.64	17.72	17.79	17.47	0-5	3
		1	49	17.46	17.62	17.59	17.29	0-5	3
		1	99	17.57	17.72	17.70	17.52	0-5	3
		50	0	17.95	17.92	17.98	17.82	0-5	3
		50	25	17.92	17.92	17.94	17.82	0-5	3
		50	49	17.90	17.94	17.92	17.84	0-5	3
		100	0	17.96	17.86	17.88	17.76	0-5	3

LTE TDD Band 48 Conducted Power_ Measured RSI = 1_ SUB2 [Ant F]

LTE TDD Band 48 _ 20 ㎒ Bandwidth Conducted Power _ Upper Antenna

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]				MPR Allowed Per 3GPP [dB]	MPR [dB]
				55340Ch. 3560.0 ㎒	55773 Ch. 3603.3 ㎒	56207 Ch. 3646.7 ㎒	56640 Ch. 3690.0 ㎒		
20 ㎒	QPSK	1	0	17.45	17.07	17.13	17.02	0	0
		1	49	17.22	16.97	16.99	16.91	0	0
		1	99	17.24	17.06	17.12	16.98	0	0
		50	0	17.45	17.09	17.12	17.05	0-1	0
		50	25	17.34	17.06	17.09	17.04	0-1	0
		50	49	17.34	17.08	17.11	17.02	0-1	0
		100	0	17.34	17.07	17.09	17.02	0-1	0
	16QAM	1	0	17.20	17.13	16.95	17.03	0-1	0
		1	49	17.13	17.04	16.94	16.95	0-1	0
		1	99	17.26	17.08	17.11	16.92	0-1	0
		50	0	17.30	17.05	17.06	17.02	0-2	0
		50	25	17.30	17.04	17.09	17.01	0-2	0
		50	49	17.30	17.06	17.11	17.00	0-2	0
		100	0	17.36	17.11	17.14	17.05	0-2	0
	64QAM	1	0	17.37	17.18	17.14	17.06	0-2	0
		1	49	17.30	17.10	17.11	16.91	0-2	0
		1	99	17.41	17.21	17.20	17.03	0-2	0
		50	0	17.34	17.10	17.12	17.06	0-3	0
		50	25	17.34	17.10	17.14	17.05	0-3	0
		50	49	17.34	17.10	17.15	17.05	0-3	0
		100	0	17.33	17.08	17.11	17.02	0-3	0
	256QAM	1	0	17.06	16.98	16.86	16.79	0-5	0
		1	49	16.98	16.88	16.82	16.72	0-5	0
		1	99	17.06	16.94	16.92	16.78	0-5	0
		50	0	17.40	17.15	17.15	17.11	0-5	0
		50	25	17.40	17.15	17.18	17.11	0-5	0
		50	49	17.40	17.16	17.20	17.09	0-5	0
		100	0	17.35	17.10	17.11	17.04	0-5	0

LTE FDD Band 66 Conducted Power_ Measured Pmax _ SUB2 [Ant F]

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

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 ㎒	132322 Ch. 1745 ㎒	132572 Ch. 1770 ㎒		
20 ㎒	QPSK	1	0	22.35	22.60	22.63	0	0
		1	49	22.27	22.43	22.81	0	0
		1	99	22.34	22.69	22.69	0	0
		50	0	21.54	21.70	21.70	0-1	1
		50	25	21.54	21.74	21.64	0-1	1
		50	49	21.61	21.79	21.63	0-1	1
		100	0	21.54	21.79	21.63	0-1	1
	16QAM	1	0	21.35	21.65	21.69	0-1	1
		1	49	21.56	21.69	21.64	0-1	1
		1	99	21.36	21.86	21.96	0-1	1
		50	0	20.42	20.64	20.59	0-2	2
		50	25	20.40	20.74	20.60	0-2	2
		50	49	20.28	20.73	20.59	0-2	2
		100	0	20.48	20.66	20.57	0-2	2
	64QAM	1	0	20.42	20.68	20.82	0-2	2
		1	49	20.48	20.49	20.74	0-2	2
		1	99	20.46	20.75	20.87	0-2	2
		50	0	19.43	19.65	19.61	0-3	3
		50	25	19.47	19.70	19.61	0-3	3
		50	49	19.32	19.75	19.62	0-3	3
		100	0	19.47	19.68	19.56	0-3	3
	256QAM	1	0	17.47	17.63	17.73	0-5	5
		1	49	17.45	17.77	17.68	0-5	5
		1	99	17.57	18.00	17.79	0-5	5
		50	0	17.39	17.63	17.60	0-5	5
		50	25	17.46	17.66	17.59	0-5	5
		50	49	17.48	17.74	17.58	0-5	5
		100	0	17.45	17.73	17.61	0-5	5

LTE FDD Band 66 Conducted Power_ Measured RSI = 0_ SUB2 [Ant F]

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

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 ㎒	132322 Ch. 1745 ㎒	132572 Ch. 1770 ㎒		
20 ㎒	QPSK	1	0	19.37	19.72	19.58	0	0
		1	49	19.51	19.67	19.69	0	0
		1	99	19.58	19.57	19.71	0	0
		50	0	19.45	19.67	19.63	0-1	0
		50	25	19.49	19.55	19.63	0-1	0
		50	49	19.56	19.57	19.65	0-1	0
		100	0	19.47	19.52	19.60	0-1	0
	16QAM	1	0	19.57	19.57	19.75	0-1	0
		1	49	19.73	19.57	19.88	0-1	0
		1	99	19.74	19.81	19.67	0-1	0
		50	0	19.40	19.45	19.58	0-2	0
		50	25	19.48	19.49	19.59	0-2	0
		50	49	19.48	19.54	19.61	0-2	0
		100	0	19.43	19.51	19.54	0-2	0
	64QAM	1	0	19.52	19.48	19.73	0-2	0
		1	49	19.72	19.50	19.73	0-2	0
		1	99	19.65	19.70	19.89	0-2	0
		50	0	19.43	19.46	19.56	0-3	0
		50	25	19.42	19.50	19.58	0-3	0
		50	49	19.42	19.57	19.60	0-3	0
		100	0	19.41	19.45	19.56	0-3	0
	256QAM	1	0	17.32	17.37	17.43	0-5	2
		1	49	17.58	17.57	17.63	0-5	2
		1	99	17.42	17.68	17.70	0-5	2
		50	0	17.59	17.48	17.53	0-5	2
		50	25	17.21	17.45	17.54	0-5	2
		50	49	17.47	17.50	17.61	0-5	2
		100	0	17.48	17.45	17.54	0-5	2

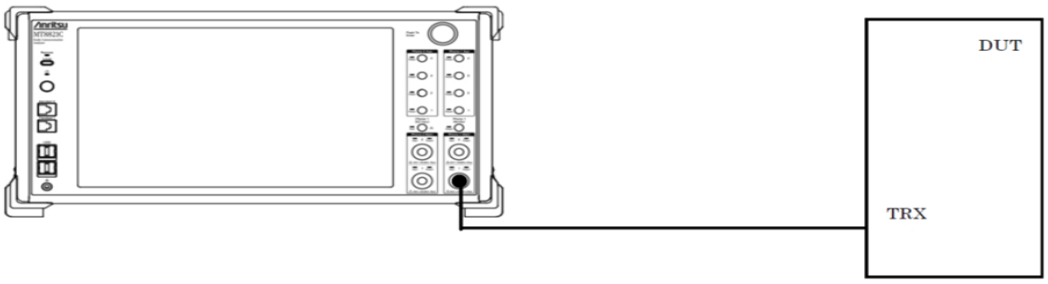
LTE FDD Band 66 Conducted Power_ Measured RSI = 1_ SUB2 [Ant F]

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

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 ㎒	132322 Ch. 1745 ㎒	132572 Ch. 1770 ㎒		
20 ㎒	QPSK	1	0	16.75	17.09	17.21	0	0
		1	49	16.74	17.17	17.02	0	0
		1	99	16.65	17.28	17.03	0	0
		50	0	16.66	17.04	17.13	0-1	0
		50	25	16.67	17.08	17.10	0-1	0
		50	49	16.71	17.15	17.10	0-1	0
		100	0	16.67	17.05	17.07	0-1	0
	16QAM	1	0	16.87	17.24	17.28	0-1	0
		1	49	16.61	17.26	16.99	0-1	0
		1	99	16.71	17.32	17.30	0-1	0
		50	0	16.64	17.06	17.03	0-2	0
		50	25	16.61	17.00	17.00	0-2	0
		50	49	16.62	17.08	17.01	0-2	0
		100	0	16.58	16.97	17.03	0-2	0
	64QAM	1	0	16.96	17.10	17.28	0-2	0
		1	49	16.78	17.35	17.05	0-2	0
		1	99	16.70	17.30	17.11	0-2	0
		50	0	16.63	16.98	17.05	0-3	0
		50	25	16.62	17.04	17.01	0-3	0
		50	49	16.62	17.07	17.03	0-3	0
		100	0	16.56	16.96	17.00	0-3	0
	256QAM	1	0	16.81	17.18	17.22	0-5	0
		1	49	16.78	17.21	17.04	0-5	0
		1	99	16.74	17.14	17.07	0-5	0
		50	0	16.69	17.00	17.05	0-5	0
		50	25	16.65	17.07	17.06	0-5	0
		50	49	16.69	17.13	17.10	0-5	0
		100	0	16.69	17.04	17.07	0-5	0

11.3.3 LTE Up-link Carrier Aggregation Conducted Powers Setup

To measure the LTE UP CA power of this device, Anritsu's MT8821C was used to check the power as follows.



Power Measurement setup

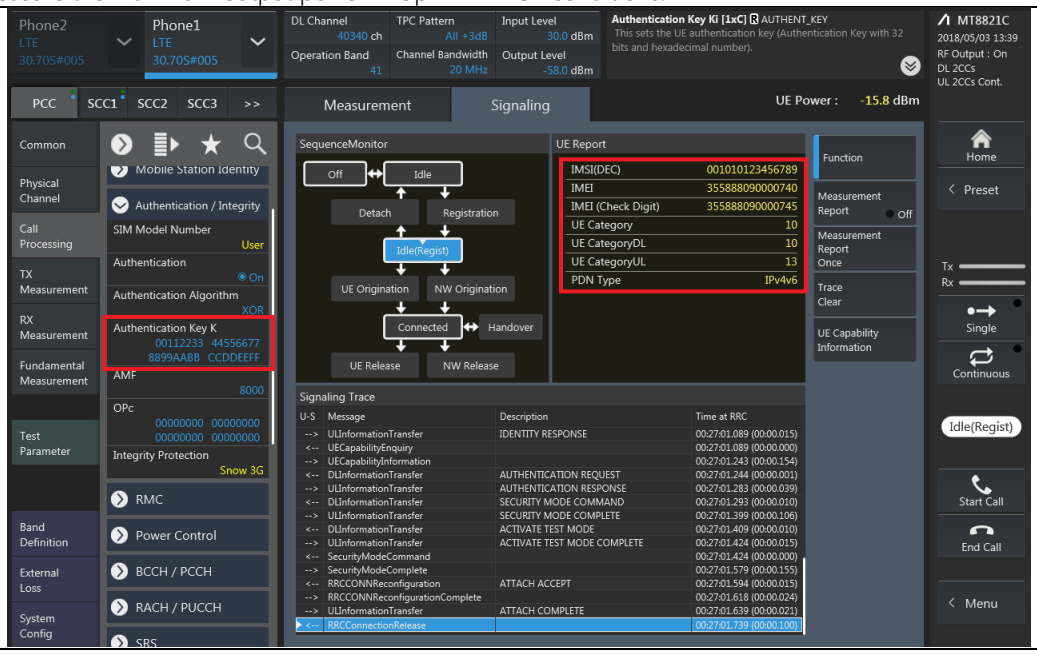
TDD CA_41C Intra-Band Contiguous Call Connection

Set to MT8821C with following parameters:

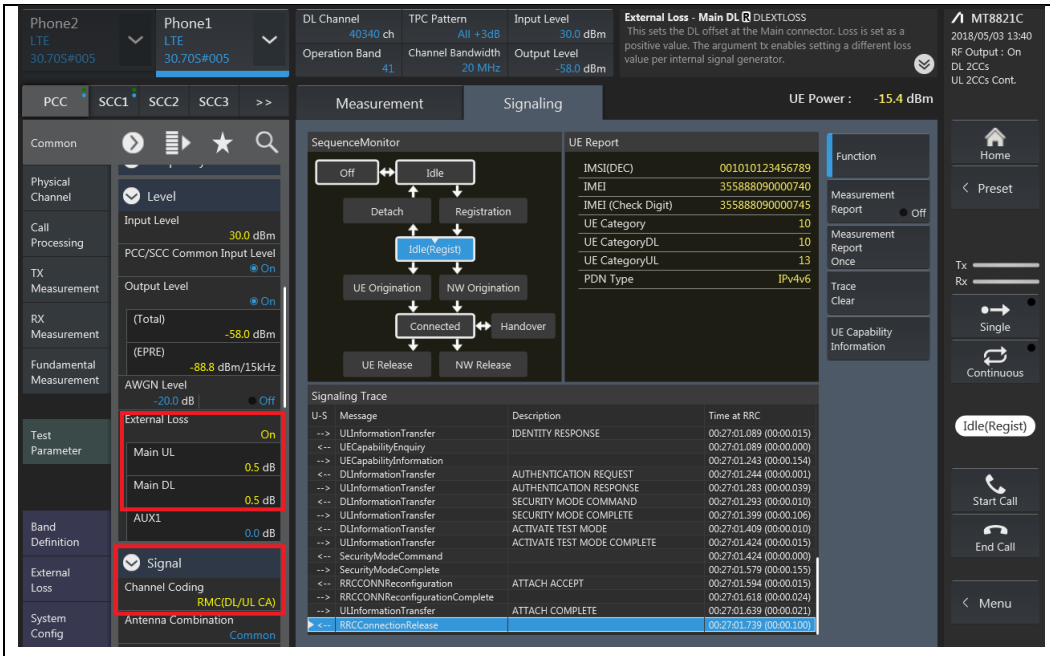
-. Set up the call box for PCC Configuration for LTE Uplink CA

-. Set up the call box for SCC Configuration for LTE Uplink CA

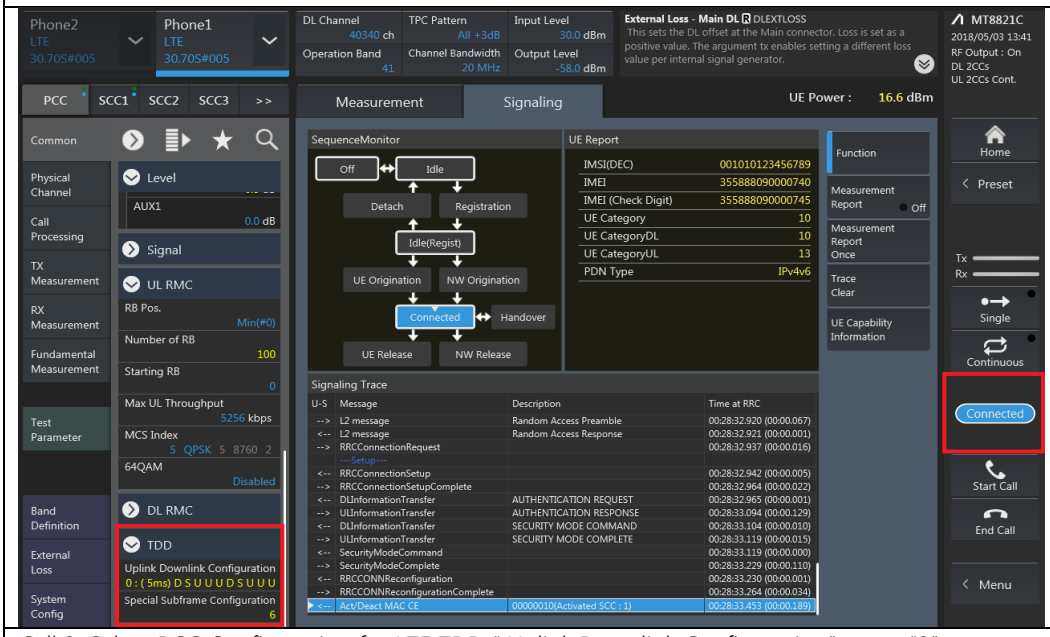
-. Measure the maximum output power in Uplink LTE CA conditions.



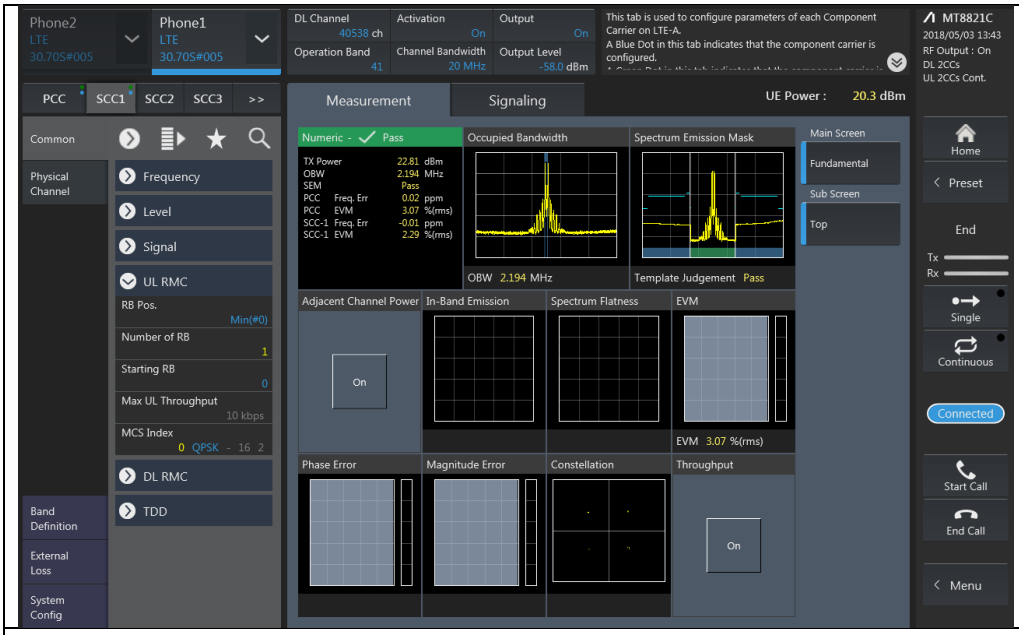
Call 1 :Select PCC Configuration for Authentication key to Register



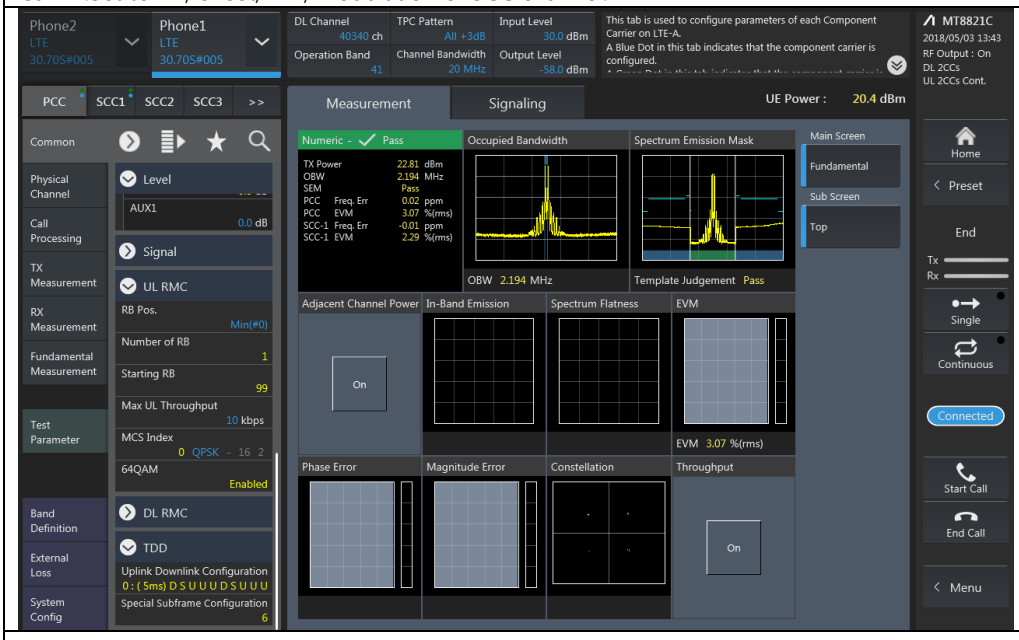
Call 2 :Select PCC Configuration for LTE UL CA and Cable loss



Call 3 :Select PCC Configuration for LTE TDD " Uplink Downlink Configuration" set to "0"
And then Select "connect"button.



Call 4 :Set to RB, offset, BW, modulation of SCC channel.



Call 5: Set to RB, offset, BW, modulation and Max Power conditions of PCC required test channel.

Uplink Carrier aggregation Conducted Powers

LTE TDD Band 41 Conducted Power (Power Class 3)_ Measured Pmax, RSI = 1_MAIN2 [Ant B]

Combination	PCC						SCC						Tx Power	
	Band	BW	PCC UL Channel	PCC UL Frequency	RB	offset	Band	BW	SCC UL Channel	SCC UL Frequency	RB	offset	LTE Single Carrier Tx Power (dBm)	LTE Tx Power witU UL CA Enabled(dBm)
41C PC3	41	20	41490	2680	1	0	41	20	41292	2660.2	1	99	24.31	24.25

LTE TDD Band 41 Conducted Power (Power Class 3)_ Measured RSI = 0_MAIN2 [Ant B]

Combination	PCC						SCC						Tx Power	
	Band	BW	PCC UL Channel	PCC UL Frequency	RB	offset	Band	BW	SCC UL Channel	SCC UL Frequency	RB	offset	LTE Single Carrier Tx Power (dBm)	LTE Tx Power witU UL CA Enabled(dBm)
41C PC3	41	20	40620	2593	1	0	41	20	40422	2573.2	1	99	21.97	21.95

LTE TDD Band 41 Conducted Power (Power Class 2)_ Measured Pmax, RSI = 1_MAIN2 [Ant B]

Combination	PCC						SCC						Tx Power	
	Band	BW	PCC UL Channel	PCC UL Frequency	RB	offset	Band	BW	SCC UL Channel	SCC UL Frequency	RB	offset	LTE Single Carrier Tx Power (dBm)	LTE Tx Power witU UL CA Enabled(dBm)
41C PC2	41	20	40620	2593	1	0	41	20	40422	2573.2	1	99	26.22	26.11

LTE TDD Band 41 Conducted Power (Power Class 2)_ Measured RSI = 0_MAIN2 [Ant B]

Combination	PCC						SCC						Tx Power	
	Band	BW	PCC UL Channel	PCC UL Frequency	RB	offset	Band	BW	SCC UL Channel	SCC UL Frequency	RB	offset	LTE Single Carrier Tx Power (dBm)	LTE Tx Power witU UL CA Enabled(dBm)
41C PC2	41	20	40620	2593	50	0	41	20	40422	2573.2	50	49	24.17	24.15

LTE TDD Band 41 Conducted Power (Power Class 3)_ Measured RSI = 1_ SUB2 [Ant F]

Combination	PCC						SCC						Tx Power	
	Band	BW	PCC UL Channel	PCC UL Frequency	RB	offset	Band	BW	SCC UL Channel	SCC UL Frequency	RB	offset	LTE Single Carrier Tx Power (dBm)	LTE Tx Power witU UL CA Enabled(dBm)
41C PC3	41	20	41055	2636.5	1	0	41	20	40857	2616.7	1	99	16.55	16.48

LTE TDD Band 41 Conducted Power (Power Class 3)_Measured Pmax, RSI = 0 _ SUB2 [Ant F]

Combination	PCC						SCC						Tx Power	
	Band	BW	PCC UL Channel	PCC UL Frequency	RB	offset	Band	BW	SCC UL Channel	SCC UL Frequency	RB	offset	LTE Single Carrier Tx Power (dBm)	LTE Tx Power witU UL CA Enabled(dBm)
41C PC3	41	20	41490	2680	50	0	41	20	41292	2660.2	50	49	20.0	19.87

LTE TDD Band 41 Conducted Power (Power Class 2)_ Measured RSI = 1_ SUB2 [Ant F]

Combination	PCC						SCC						Tx Power	
	Band	BW	PCC UL Channel	PCC UL Frequency	RB	offset	Band	BW	SCC UL Channel	SCC UL Frequency	RB	offset	LTE Single Carrier Tx Power (dBm)	LTE Tx Power witU UL CA Enabled(dBm)
41C PC2	41	20	40620	2593	50	0	41	20	40422	2573.2	50	49	18.83	18.63

LTE TDD Band 41 Conducted Power (Power Class 2)_Measured RSI = 0 _ SUB2 [Ant F]

Combination	PCC						SCC						Tx Power	
	Band	BW	PCC UL Channel	PCC UL Frequency	RB	offset	Band	BW	SCC UL Channel	SCC UL Frequency	RB	offset	LTE Single Carrier Tx Power (dBm)	LTE Tx Power witU UL CA Enabled(dBm)
41C PC2	41	20	40620	2593	1	0	41	20	40422	2573.2	1	99	20.58	20.48

LTE TDD Band 48 Conducted Power_ Measured RSI = 1 _ SUB2 [Ant F]

Combination	PCC						SCC						Tx Power	
	Band	BW	PCC UL Channel	PCC UL Frequency	RB	offset	Band	BW	SCC UL Channel	SCC UL Frequency	RB	offset	LTE Single Carrier Tx Power (dBm)	LTE Tx Power witU UL CA Enabled(dBm)
48C	48	20	55773	3603.3	50	0	41	20	55575	3583.5	50	49	17.09	17.06

LTE TDD Band 48 Conducted Power_ Measured RSI = 0_ SUB2 [Ant F]

Combination	PCC						SCC						Tx Power	
	Band	BW	PCC UL Channel	PCC UL Frequency	RB	offset	Band	BW	SCC UL Channel	SCC UL Frequency	RB	offset	LTE Single Carrier Tx Power (dBm)	LTE Tx Power witU UL CA Enabled(dBm)
48C	41	20	55340	3560	50	49	41	20	55538	3579.8	50	0	20.51	20.48

LTE FDD Band 66 Conducted Power_ Measured RSI = 1_MAIN1 [Ant A]

Combination	PCC						SCC						Tx Power	
	Band	BW	PCC UL Channel	PCC UL Frequency	RB	offset	Band	BW	SCC UL Channel	SCC UL Frequency	RB	offset	LTE Single Carrier Tx Power (dBm)	LTE Tx Power witU UL CA Enabled(dBm)
66B	66	15	132047	1717.5	1	74	66	5	132140	1726.8	1	0	24.25	24.05
66C	66	20	132072	1720	1	99	66	20	132270	1739.8	1	0	24.15	24.12

LTE FDD Band 66 Conducted Power_ Measured RSI = 0 _MAIN1 [Ant A]

Combination	PCC						SCC						Tx Power	
	Band	BW	PCC UL Channel	PCC UL Frequency	RB	offset	Band	BW	SCC UL Channel	SCC UL Frequency	RB	offset	LTE Single Carrier Tx Power (dBm)	LTE Tx Power witU UL CA Enabled(dBm)
66B	66	15	132597	1772.5	1	0	66	5	132504	1763.2	1	24	18.59	18.29
66C	66	20	132572	1770	1	0	66	20	132374	1750.2	1	99	18.61	18.44

LTE FDD Band 66 Conducted Power_ Measured Pmax, RSI = 1 _ SUB2 [Ant F]

Combination	PCC						SCC						Tx Power	
	Band	BW	PCC UL Channel	PCC UL Frequency	RB	offset	Band	BW	SCC UL Channel	SCC UL Frequency	RB	offset	LTE Single Carrier Tx Power (dBm)	LTE Tx Power witU UL CA Enabled(dBm)
66B	66	15	132322	1745	36	0	66	5	132229	1735.7	12	11	17.18	17.16
66C	66	20	132322	1745	50	49	66	20	132520	1764.8	50	0	17.15	17.14

LTE FDD Band 66 Conducted Power_ Measured RSI = 0_ SUB2 [Ant F]

Combination	PCC						SCC						Tx Power	
	Band	BW	PCC UL Channel	PCC UL Frequency	RB	offset	Band	BW	SCC UL Channel	SCC UL Frequency	RB	offset	LTE Single Carrier Tx Power (dBm)	LTE Tx Power witU UL CA Enabled(dBm)
66B	66	15	132322	1745	1	0	66	5	132229	1735.7	1	24	19.43	19.38
66C	66	20	132322	1745	1	0	66	20	132124	1725.2	1	99	19.72	19.56

11.4 NR Maximum Output Power

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

11.4.1 NR Band Maximum Conducted Power (Lower Antenna)

NR FDD Band n2 Conducted Power_ Measured Pmax, RSI = 1_ MAIN1 [Ant A]

NR FDD Band n2 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						376000	
						1880 ㎒	
40 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	24.54	0
				1	108	24.67	0
				1	214	24.37	0
				108	0	24.04	0.5
				108	54	24.52	0
				108	108	24.09	0.5
				216	0	24.04	0.5
			QPSK	1	1	24.52	0
				1	108	24.48	0
				1	214	24.35	0
				108	0	23.55	1
				108	54	24.51	0
				108	108	23.58	1
				216	0	23.52	1
			16QAM	1	1	23.49	1
			64QAM	1	1	22.10	2.5
			256QAM	1	1	20.09	4.5
		CP	QPSK	1	1	23.14	1.5

NR FDD Band n2 Conducted Power_ Measured RSI = 0 _ MAIN1 [Ant A]

NR FDD Band n2 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						376000	
						1880 ㎒	
40 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	20.03	0
				1	108	20.17	0
				1	214	19.88	0
				108	0	19.99	0
				108	54	19.97	0
				108	108	19.98	0
				216	0	19.97	0
			QPSK	1	1	20.00	0
				1	108	20.13	0
				1	214	19.87	0
				108	0	19.97	0
				108	54	19.94	0
				108	108	20.01	0
				216	0	19.96	0
			16QAM	1	1	20.02	0
			64QAM	1	1	20.01	0
			256QAM	1	1	19.90	0
		CP	QPSK	1	1	20.04	0

NR FDD Band n5 Conducted Power_ Measured Pmax, RSI = 0, RSI = 1 _ MAIN1 [Ant A]

NR FDD Band n5_ 20 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						167300	
						836.5 ㎒	
20 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	24.42	0
				1	53	24.41	0
				1	104	24.36	0
				50	0	23.78	0.5
				50	28	24.30	0
				50	56	23.89	0.5
				100	0	23.78	0.5
			QPSK	1	1	24.37	0
				1	53	24.41	0
				1	104	24.38	0
				50	0	23.32	1
				50	28	24.28	0
				50	56	23.35	1
				100	0	23.26	1
			16QAM	1	1	23.49	1
			64QAM	1	1	21.89	2.5
			256QAM	1	1	19.78	4.5
		CP	QPSK	1	1	22.90	1.5

NR FDD Band n7 Conducted Power_ Measured Pmax, RSI = 1_ MAIN2 [Ant B]

NR FDD Band n7 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						507000	
						2535 ㎒	
40 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	22.80	0
				1	108	23.08	0
				1	214	23.15	0
				108	0	22.25	0.5
				108	54	22.92	0
				108	108	22.58	0.5
				216	0	22.44	0.5
			QPSK	1	1	22.97	0
				1	108	23.10	0
				1	214	23.31	0
				108	0	21.91	1
				108	54	23.09	0
				108	108	22.92	1
				216	0	21.96	1
			16QAM	1	1	21.80	1
			64QAM	1	1	20.27	2.5
			256QAM	1	1	18.29	4.5
		CP	QPSK	1	1	21.57	1.5

NR FDD Band n7 Conducted Power_ Measured RSI = 0_ MAIN2 [Ant B]

NR FDD Band n7 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						507000	
						2535 ㎒	
40 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	19.16	0
				1	108	19.23	0
				1	214	19.46	0
				108	0	19.07	0
				108	54	19.18	0
				108	108	19.30	0
				216	0	19.23	0
			QPSK	1	1	19.14	0
				1	108	19.27	0
				1	214	19.42	0
				108	0	19.07	0
				108	54	19.17	0
				108	108	19.27	0
				216	0	19.20	0
			16QAM	1	1	19.25	0
			64QAM	1	1	19.13	0
			256QAM	1	1	17.74	1
		CP	QPSK	1	1	19.07	0

NR FDD Band n12 Conducted Power_ Measured Pmax, RSI = 0, RSI = 1_ MAIN1 [Ant A]

NR FDD Band n12_ 15 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						141500	
						707.5 ㎒	
15 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	24.83	0
				1	40	24.85	0
				1	77	24.92	0
				36	0	24.34	0.5
				36	22	24.81	0
				36	43	24.38	0.5
				75	0	24.34	0.5
			QPSK	1	1	24.84	0
				1	40	24.72	0
				1	77	24.88	0
				36	0	23.83	1
				36	22	24.81	0
				36	43	23.87	1
				75	0	23.84	1
			16QAM	1	1	23.76	1
			64QAM	1	1	22.44	2.5
			256QAM	1	1	20.39	4.5
		CP	QPSK	1	1	23.32	1.5

NR FDD Band n25 Conducted Power_ Measured Pmax, RSI = 1_ MAIN1 [Ant A]

NR FDD Band n25 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						376500	
						1882.5 ㎒	
40 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	24.50	0
				1	108	24.63	0
				1	214	24.37	0
				108	0	23.99	0.5
				108	54	24.48	0
				108	108	24.01	0.5
				216	0	23.94	0.5
			QPSK	1	1	24.44	0
				1	108	24.54	0
				1	214	24.36	0
				108	0	23.49	1
				108	54	24.45	0
				108	108	23.49	1
				216	0	23.46	1
			16QAM	1	1	23.52	1
			64QAM	1	1	22.10	2.5
			256QAM	1	1	19.96	4.5
		CP	QPSK	1	1	22.97	1.5

NR FDD Band n25 Conducted Power_ Measured RSI = 0_ MAIN1 [Ant A]

NR FDD Band n25 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 376500 1882.5 ㎒	MPR [dB]
40 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	19.53	0
				1	108	19.72	0
				1	214	19.46	0
				108	0	19.53	0
				108	54	19.59	0
				108	108	19.72	0
				216	0	19.55	0
			QPSK	1	1	19.53	0
				1	108	19.71	0
				1	214	19.47	0
				108	0	19.50	0
				108	54	19.70	0
				108	108	19.65	0
				216	0	19.57	0
			16QAM	1	1	19.58	0
			64QAM	1	1	19.62	0
			256QAM	1	1	18.05	2.5
		CP	QPSK	1	1	19.48	0

NR FDD Band n26 Conducted Power_ Measured Pmax, RSI = 0, RSI = 1 _ MAIN1 [Ant A]

NR FDD Band n26 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						166300	
						831.5 ㎒	
20 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	24.97	0
				1	53	25.02	0
				1	104	24.97	0
				50	0	24.45	0.5
				50	28	24.96	0
				50	56	24.46	0.5
				100	0	24.44	0.5
			QPSK	1	1	24.95	0
				1	53	25.04	0
				1	104	24.97	0
				50	0	23.98	1
				50	28	24.97	0
				50	56	23.94	1
				100	0	23.95	1
			16QAM	1	1	24.00	1
			64QAM	1	1	22.60	2.5
			256QAM	1	1	20.52	4.5
		CP	QPSK	1	1	23.63	1.5

NR FDD Band n30 Conducted Power_ Measured Pmax, RSI = 1_ MAIN1 [Ant A]

NR FDD Band n30_ 10 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 462000 2310 ㎒	MPR [dB]
10 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	22.81	0
				1	26	22.93	0
				1	50	22.90	0
				25	0	22.36	0.5
				25	14	22.89	0
				25	27	22.40	0.5
				50	0	22.40	0.5
			QPSK	1	1	22.84	0
				1	26	22.92	0
				1	50	22.87	0
				25	0	21.91	1
				25	14	22.91	0
				25	27	21.93	1
				50	0	21.92	1
			16QAM	1	1	21.82	1
			64QAM	1	1	20.41	2.5
			256QAM	1	1	18.39	4.5
		CP	QPSK	1	1	21.34	1.5

NR FDD Band n30 Conducted Power_ Measured RSI = 0_ MAIN1 [Ant A]

NR FDD Band n30_ 10 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 462000 2310 ㎒	MPR [dB]
10 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	17.27	0
				1	26	17.39	0
				1	50	17.31	0
				25	0	17.30	0
				25	14	17.32	0
				25	27	17.30	0
				50	0	17.32	0
			QPSK	1	1	17.24	0
				1	26	17.34	0
				1	50	17.30	0
				25	0	17.26	0
				25	14	17.31	0
				25	27	17.30	0
				50	0	17.31	0
			16QAM	1	1	17.23	0
			64QAM	1	1	17.30	0
			256QAM	1	1	17.19	0
		CP	QPSK	1	1	17.26	0

NR TDD Band n38 Conducted Power_ Measured Pmax, RSI = 1_ MAIN2 [Ant B]

NR TDD Band n38 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
							519000		
							2595 ㎒		
40 ㎒	30	DFT-s OFDM	pi/2 BPSK	1	1		23.46		0
				1	80		23.44		0
				1	158		23.23		0
				80	0		22.92		0.5
				80	40		23.39		0
				80	80		22.78		0.5
				160	0		22.90		0.5
			QPSK	1	1		23.48		0
				1	80		23.35		0
				1	158		23.25		0
				80	0		22.39		1
				80	40		23.37		0
				80	80		22.28		1
				160	0		22.42		1
			16QAM	1	1		22.54		1
			64QAM	1	1		21.21		2.5
			256QAM	1	1		18.94		4.5
		CP	QPSK	1	80		22.04		1.5

NR TDD Band n38 Conducted Power_ Measured RSI = 0 _ MAIN2 [Ant B]

NR TDD Band n38 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
							519000		
							2595 ㎒		
40 ㎒	30	DFT-s OFDM	pi/2 BPSK	1	1		19.12		0
				1	80		19.14		0
				1	158		19.00		0
				80	0		19.16		0
				80	40		19.10		0
				80	80		19.02		0
				160	0		19.16		0
			QPSK	1	1		19.17		0
				1	80		19.14		0
				1	158		18.99		0
				80	0		19.16		0
				80	40		19.13		0
				80	80		19.03		0
				160	0		19.16		0
			16QAM	1	1		19.34		0
			64QAM	1	1		19.22		0
			256QAM	1	1		18.92		0
		CP	QPSK	1	80		19.21		0

NR FDD Band n66 Conducted Power_ Measured Pmax, RSI = 1_ MAIN1 [Ant A]

NR FDD Band n66 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 349000 1745 ㎒	MPR [dB]
40 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	24.28	0
				1	108	24.38	0
				1	214	24.45	0
				108	0	23.87	0.5
				108	54	24.23	0
				108	108	23.84	0.5
				216	0	23.70	0.5
			QPSK	1	1	24.27	0
				1	108	24.28	0
				1	214	24.43	0
				108	0	23.32	1
				108	54	24.22	0
				108	108	23.37	1
				216	0	23.24	1
			16QAM	1	1	23.35	1
			64QAM	1	1	21.87	2.5
			256QAM	1	1	19.75	4.5
		CP	QPSK	1	1	22.85	1.5

NR FDD Band n66 Conducted Power_ Measured RSI = 0_ MAIN1 [Ant A]

NR FDD Band n66 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						349000	
						1745 ㎒	
40 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	18.76	0
				1	108	18.85	0
				1	214	18.80	0
				108	0	18.84	0
				108	54	18.68	0
				108	108	18.77	0
				216	0	18.67	0
			QPSK	1	1	18.75	0
				1	108	18.72	0
				1	214	18.76	0
				108	0	18.78	0
				108	54	18.64	0
				108	108	18.77	0
				216	0	18.75	0
			16QAM	1	1	18.75	0
			64QAM	1	1	18.84	0
			256QAM	1	1	18.79	0
		CP	QPSK	1	1	18.75	0

NR FDD Band n70 Conducted Power_ Measured Pmax, RSI = 1 _ MAIN1 [Ant A]

NR FDD Band n70 _ 15 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						340500	
						1702.5 ㎒	
15 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	24.12	0
				1	40	23.92	0
				1	77	24.12	0
				36	0	23.58	0.5
				36	22	23.99	0
				36	43	23.61	0.5
				75	0	23.49	0.5
			QPSK	1	1	24.11	0
				1	40	23.92	0
				1	77	24.14	0
				36	0	23.08	1
				36	22	24.02	0
				36	43	23.12	1
				75	0	23.02	1
			16QAM	1	1	23.19	1
			64QAM	1	1	21.62	2.5
			256QAM	1	1	19.59	4.5
		CP	QPSK	1	1	22.56	1.5

NR FDD Band n70 Conducted Power_ Measured RSI = 0_ MAIN1 [Ant A]

NR FDD Band n70 _ 15 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						340500	
						1702.5 ㎒	
15 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	19.96	0
				1	40	19.76	0
				1	77	19.97	0
				36	0	19.96	0
				36	22	19.84	0
				36	43	19.94	0
				75	0	19.86	0
			QPSK	1	1	19.89	0
				1	40	19.72	0
				1	77	19.94	0
				36	0	19.97	0
				36	22	19.86	0
				36	43	19.92	0
				75	0	19.84	0
			16QAM	1	1	20.01	0
			64QAM	1	1	19.97	0
			256QAM	1	1	19.56	0
		CP	QPSK	1	1	19.93	0

NR FDD Band n71 Conducted Power_ Measured Pmax, RSI = 0, RSI = 1_ MAIN1 [Ant A]

NR FDD Band n71 _ 20 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)	MPR [dB]
						136100	
						680.5 ㎒	
20 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	25.10	0
				1	53	24.93	0
				1	104	24.83	0
				50	0	24.55	0.5
				50	28	24.87	0
				50	56	24.35	0.5
				100	0	24.41	0.5
			QPSK	1	1	25.11	0
				1	53	24.97	0
				1	104	24.82	0
				50	0	24.03	1
				50	28	25.13	0
				50	56	23.87	1
				100	0	23.93	1
			16QAM	1	1	24.18	1
			64QAM	1	1	22.69	2.5
			256QAM	1	1	20.76	4.5
		CP	QPSK	1	1	23.65	1.5

11.4.2 NR Band Maximum Conducted Power (Upper Antenna)

NR FDD Band n2 Conducted Power_ Measured Pmax _ SUB2 [Ant F]

NR FDD Band n2 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						376000	
						1880 ㎒	
40 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	22.43	0
				1	108	22.63	0
				1	214	22.67	0
				108	0	22.10	0.5
				108	54	22.64	0
				108	108	22.24	0.5
				216	0	22.07	0.5
			QPSK	1	1	22.43	0
				1	108	22.68	0
				1	214	22.67	0
				108	0	21.58	1
				108	54	22.63	0
				108	108	21.75	1
				216	0	21.58	1
			16QAM	1	1	21.33	1
			64QAM	1	1	19.97	2.5
			256QAM	1	1	17.91	4.5
		CP	QPSK	1	1	20.97	1.5

NR FDD Band n2 Conducted Power_ Measured RSI = 0_ SUB2 [Ant F]

NR FDD Band n2 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						376000	
						1880 ㎒	
40 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	19.40	0
				1	108	19.62	0
				1	214	19.56	0
				108	0	19.56	0
				108	54	19.57	0
				108	108	19.71	0
				216	0	19.54	0
			QPSK	1	1	19.44	0
				1	108	19.64	0
				1	214	19.58	0
				108	0	19.53	0
				108	54	19.55	0
				108	108	19.67	0
				216	0	19.54	0
			16QAM	1	1	19.38	0
			64QAM	1	1	19.33	0
			256QAM	1	1	17.95	2.5
		CP	QPSK	1	1	19.38	0

NR FDD Band n2 Conducted Power_ Measured RSI = 1_ SUB2 [Ant F]

NR FDD Band n2 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						376000	
						1880 ㎒	
40 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	16.64	0
				1	108	16.86	0
				1	214	16.72	0
				108	0	16.69	0
				108	54	16.69	0
				108	108	16.80	0
				216	0	16.66	0
			QPSK	1	1	16.64	0
				1	108	16.83	0
				1	214	16.67	0
				108	0	16.69	0
				108	54	16.70	0
				108	108	16.83	0
				216	0	16.66	0
			16QAM	1	1	16.70	0
			64QAM	1	1	16.63	0
			256QAM	1	1	16.61	0
		CP	QPSK	1	1	16.59	0

NR FDD Band n7 Conducted Power_ Measured Pmax _ SUB2 [Ant F]

NR FDD Band n7 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						507000	
						2535 ㎒	
40 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	22.69	0
				1	108	22.76	0
				1	214	22.97	0
				108	0	22.12	0.5
				108	54	22.73	0
				108	108	22.28	0.5
				216	0	22.24	0.5
			QPSK	1	1	22.66	0
				1	108	22.74	0
				1	214	22.95	0
				108	0	21.58	1
				108	54	22.68	0
				108	108	21.79	1
				216	0	21.71	1
			16QAM	1	1	21.67	1
			64QAM	1	1	20.12	2.5
			256QAM	1	1	18.18	4.5
		CP	QPSK	1	1	21.15	1.5

NR FDD Band n7 Conducted Power_ Measured RSI = 0_ SUB2 [Ant F]

NR FDD Band n7 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						507000	
						2535 ㎒	
40 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	19.16	0
				1	108	19.23	0
				1	214	19.46	0
				108	0	19.07	0
				108	54	19.18	0
				108	108	19.30	0
				216	0	19.23	0
			QPSK	1	1	19.14	0
				1	108	19.27	0
				1	214	19.42	0
				108	0	19.07	0
				108	54	19.17	0
				108	108	19.27	0
				216	0	19.20	0
			16QAM	1	1	19.25	0
			64QAM	1	1	19.13	0
			256QAM	1	1	17.74	1
		CP	QPSK	1	1	19.07	0

NR FDD Band n7 Conducted Power_ Measured RSI = 1_ SUB2 [Ant F]

NR FDD Band n7 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						507000	
						2535 ㎒	
40 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	15.79	0
				1	108	15.92	0
				1	214	16.24	0
				108	0	15.77	0
				108	54	15.91	0
				108	108	15.97	0
				216	0	15.95	0
			QPSK	1	1	15.78	0
				1	108	15.99	0
				1	214	16.23	0
				108	0	15.73	0
				108	54	15.92	0
				108	108	16.11	0
				216	0	15.94	0
			16QAM	1	1	15.63	0
			64QAM	1	1	15.84	0
			256QAM	1	1	15.74	0
		CP	QPSK	1	1	15.71	0

NR FDD Band n25 Conducted Power_ Measured Pmax _ SUB2 [Ant F]

NR FDD Band n25 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						376500	
						1882.5 ㎒	
40 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	22.62	0
				1	108	22.84	0
				1	214	22.48	0
				108	0	22.11	0.5
				108	54	22.70	0
				108	108	22.30	0.5
				216	0	22.18	0.5
			QPSK	1	1	22.64	0
				1	108	22.68	0
				1	214	22.51	0
				108	0	21.63	1
				108	54	22.71	0
				108	108	21.81	1
				216	0	21.67	1
			16QAM	1	1	21.55	1
			64QAM	1	1	20.18	2.5
			256QAM	1	1	18.07	4.5
		CP	QPSK	1	1	21.13	1.5

NR FDD Band n25 Conducted Power_ Measured RSI = 0_ SUB2 [Ant F]

NR FDD Band n25 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						376500	
						1882.5 ㎒	
40 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	19.53	0
				1	108	19.72	0
				1	214	19.46	0
				108	0	19.53	0
				108	54	19.59	0
				108	108	19.72	0
				216	0	19.55	0
			QPSK	1	1	19.53	0
				1	108	19.71	0
				1	214	19.47	0
				108	0	19.50	0
				108	54	19.70	0
				108	108	19.65	0
				216	0	19.57	0
			16QAM	1	1	19.58	0
			64QAM	1	1	19.62	0
			256QAM	1	1	18.05	2.5
		CP	QPSK	1	1	19.48	0

NR FDD Band n25 Conducted Power_ Measured RSI = 1_ SUB2 [Ant F]

NR FDD Band n25 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						376500	
						1882.5 ㎒	
40 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	16.55	0
				1	108	16.75	0
				1	214	16.71	0
				108	0	16.58	0
				108	54	16.70	0
				108	108	16.75	0
				216	0	16.69	0
			QPSK	1	1	16.88	0
				1	108	16.78	0
				1	214	16.69	0
				108	0	16.60	0
				108	54	16.72	0
				108	108	16.86	0
				216	0	16.72	0
			16QAM	1	1	16.57	0
			64QAM	1	1	16.53	0
			256QAM	1	1	16.60	0
		CP	QPSK	1	1	16.54	0

NR FDD Band n30 Conducted Power_ Measured Pmax _ SUB2 [Ant F]

NR FDD Band n30_ 10 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 462000 2310 ㎒	MPR [dB]
10 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	20.63	0
				1	26	20.75	0
				1	50	20.83	0
				25	0	20.15	0.5
				25	14	20.63	0
				25	27	20.22	0.5
				50	0	20.15	0.5
			QPSK	1	1	20.65	0
				1	26	20.75	0
				1	50	20.80	0
				25	0	19.65	1
				25	14	20.67	0
				25	27	19.77	1
				50	0	19.68	1
			16QAM	1	1	19.61	1
			64QAM	1	1	18.08	2.5
			256QAM	1	1	16.19	4.5
		CP	QPSK	1	1	19.21	1.5

NR FDD Band n30 Conducted Power_ Measured RSI = 0_ SUB2 [Ant F]

NR FDD Band n30_ 10 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 462000 2310 ㎒	MPR [dB]
10 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	18.83	0
				1	26	18.75	0
				1	50	18.97	0
				25	0	18.76	0
				25	14	18.69	0
				25	27	18.81	0
				50	0	18.69	0
			QPSK	1	1	18.80	0
				1	26	18.74	0
				1	50	18.93	0
				25	0	18.78	0
				25	14	18.72	0
				25	27	18.81	0
				50	0	18.70	0
			16QAM	1	1	18.91	0
			64QAM	1	1	18.86	0
			256QAM	1	1	17.92	0
		CP	QPSK	1	1	18.73	0

NR FDD Band n30 Conducted Power Measured RSI = 1_ SUB2 [Ant F]

NR FDD Band n30_ 10 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 462000 2310 ㎒	MPR [dB]
10 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	16.75	0
				1	26	16.73	0
				1	50	16.90	0
				25	0	16.73	0
				25	14	16.67	0
				25	27	16.74	0
				50	0	16.65	0
			QPSK	1	1	16.79	0
				1	26	16.75	0
				1	50	16.89	0
				25	0	16.71	0
				25	14	16.69	0
				25	27	16.77	0
				50	0	16.65	0
			16QAM	1	1	16.78	0
			64QAM	1	1	16.72	0
			256QAM	1	1	16.83	0
		CP	QPSK	1	1	16.74	0

NR TDD Band n48 (PC3 only) Conducted Power_ Measured Pmax _ SUB2 [Ant F]

NR TDD Band n48 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]				MPR [dB]
						638000	641666		645332	
						3570 ㎒	3624.99 ㎒		3679.98 ㎒	
40 ㎒	30	DFT-s OFDM	pi/2 BPSK	1	1	22.42	22.79		22.58	0
				1	53	22.85	22.81		22.49	0
				1	104	22.71	22.46		22.36	0
				50	0	22.32	22.32		22.04	0.5
				50	28	22.80	22.83		22.49	0
				50	56	22.21	22.00		22.05	0.5
				100	0	22.08	22.33		22.06	0.5
			QPSK	1	1	22.79	22.75		22.60	0
				1	53	22.83	22.85		22.55	0
				1	104	22.71	22.41		22.51	0
				50	0	21.82	21.81		21.62	1
				50	28	22.83	22.82		22.53	0
				50	56	21.72	21.77		21.57	1
				100	0	21.81	21.85		21.57	1
			16QAM	1	1	21.89	21.79		21.37	1
			64QAM	1	1	20.25	20.33		20.04	2.5
			256QAM	1	1	18.34	18.27		18.09	4.5
		CP	QPSK	1	1	21.37	21.34		20.69	1.5

NR TDD Band n48 (PC3 only) Conducted Power _ Measured RSI = 0 _ SUB2 [Ant F]

NR TDD Band n48 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]				MPR [dB]
						638000	641666		645332	
						3570 ㎒	3624.99 ㎒		3679.98 ㎒	
40 ㎒	30	DFT-s OFDM	pi/2 BPSK	1	1	17.09	17.41		17.19	0
				1	53	17.13	17.49		17.15	0
				1	104	17.27	17.36		17.04	0
				50	0	17.13	17.44		17.13	0
				50	28	17.18	17.13		17.13	0
				50	56	17.25	17.27		17.07	0
				100	0	17.18	17.13		17.14	0
			QPSK	1	1	17.10	17.41		17.17	0
				1	53	17.22	17.50		17.08	0
				1	104	17.24	17.34		17.00	0
				50	0	17.14	17.42		17.13	0
				50	28	17.17	17.48		17.27	0
				50	56	17.27	17.45		17.13	0
				100	0	17.16	17.45		17.13	0
			16QAM	1	1	17.36	17.42		17.14	0
			64QAM	1	1	17.07	17.28		17.23	0
			256QAM	1	1	17.07	17.37		17.20	0
		CP	QPSK	1	1	17.02	17.08		17.36	0

NR TDD Band n48 (PC3 only) Conducted Power _ Measured RSI = 1 _ SUB2 [Ant F]

NR TDD Band n48 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]				MPR [dB]
						638000	641666		645332	
						3570 ㎒	3624.99 ㎒		3679.98 ㎒	
40 ㎒	30	DFT-s OFDM	pi/2 BPSK	1	1	15.41	15.26		15.22	0
				1	53	15.32	15.36		15.34	0
				1	104	15.21	15.30		15.38	0
				50	0	15.34	15.29		15.22	0
				50	28	15.27	15.33		15.30	0
				50	56	15.27	15.32		15.33	0
				100	0	15.27	15.34		15.28	0
			QPSK	1	1	15.42	15.25		15.24	0
				1	53	15.25	15.54		15.36	0
				1	104	15.20	15.28		15.37	0
				50	0	15.35	15.32		15.25	0
				50	28	15.28	15.52		15.29	0
				50	56	15.27	15.33		15.32	0
				100	0	15.30	15.31		15.31	0
			16QAM	1	1	15.65	15.43		15.41	0
			64QAM	1	1	15.46	15.23		15.23	0
			256QAM	1	1	15.45	15.25		15.32	0
		CP	QPSK	1	1	15.46	15.34		15.18	0

NR FDD Band n66 Conducted Power_ Measured Pmax _ SUB2 [Ant F]

NR FDD Band n66 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 349000 1745 ㎒	MPR [dB]
40 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	22.70	0
				1	108	23.34	0
				1	214	22.87	0
				108	0	22.55	0.5
				108	54	23.14	0
				108	108	22.58	0.5
				216	0	22.60	0.5
			QPSK	1	1	22.75	0
				1	108	23.25	0
				1	214	22.95	0
				108	0	22.07	1
				108	54	23.15	0
				108	108	22.08	1
				216	0	22.12	1
			16QAM	1	1	22.03	1
			64QAM	1	1	20.51	2.5
			256QAM	1	1	18.45	4.5
		CP	QPSK	1	1	21.48	1.5

NR FDD Band n66 Conducted Power_ Measured RSI = 0_ SUB2 [Ant F]

NR FDD Band n66 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						349000	
						1745 ㎒	
40 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	19.23	0
				1	108	19.52	0
				1	214	19.24	0
				108	0	19.26	0
				108	54	19.35	0
				108	108	19.23	0
				216	0	19.33	0
			QPSK	1	1	19.21	0
				1	108	19.56	0
				1	214	19.28	0
				108	0	19.29	0
				108	54	19.54	0
				108	108	19.23	0
				216	0	19.33	0
			16QAM	1	1	19.18	0
			64QAM	1	1	19.33	0
			256QAM	1	1	18.88	0
		CP	QPSK	1	1	19.20	0

NR FDD Band n66 Conducted Power_ Measured RSI = 1_ SUB2 [Ant F]

NR FDD Band n66 _ 40 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR [dB]
						349000	
						1745 ㎒	
40 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	16.95	0
				1	108	17.23	0
				1	214	16.99	0
				108	0	17.01	0
				108	54	17.07	0
				108	108	16.97	0
				216	0	17.08	0
			QPSK	1	1	17.02	0
				1	108	17.28	0
				1	214	16.94	0
				108	0	17.01	0
				108	54	17.09	0
				108	108	16.99	0
				216	0	17.07	0
			16QAM	1	1	16.95	0
			64QAM	1	1	17.06	0
			256QAM	1	1	16.85	0
		CP	QPSK	1	1	16.88	0

NR TDD Band n77 (PC2 only) Conducted Power_ Measured Pmax _ SUB2 [Ant F]

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)						MPR [dB]
						650000				662000		
						3750 ㎒				3930 ㎒		
100 ㎒	30	DFT-s OFDM	pi/2 BPSK	1	1	25.58				25.60		0
				1	137	26.06				26.01		0
				1	271	25.76				26.37		0
				135	0	25.65				25.47		0.5
				135	69	26.16				26.08		0
				135	138	25.69				25.91		0.5
				270	0	25.65				25.59		0.5
			QPSK	1	1	25.62				25.45		0
				1	137	26.07				25.86		0
				1	271	25.79				26.07		0
				135	0	25.16				24.99		1
				135	69	26.12				26.06		0
				135	138	25.20				25.41		1
				270	0	25.17				25.07		1
			16QAM	1	1	24.64				24.63		1
			64QAM	1	1	23.21				23.10		2.5
			256QAM	1	1	21.09				21.09		4.5
		CP	QPSK	1	1	24.22				24.14		1.5

NR TDD Band n77 (PC2 only) Conducted Power_ Measured RSI = 0_ SUB2 [Ant F]

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)						MPR [dB]
						650000				662000		
						3750 ㎒				3930 ㎒		
100 ㎒	30	DFT-s OFDM	pi/2 BPSK	1	1	16.70				16.41		0
				1	137	16.93				16.51		0
				1	271	16.44				16.67		0
				135	0	17.09				16.41		0
				135	69	16.98				16.41		0
				135	138	16.92				16.89		0
				270	0	16.44				17.09		0
			QPSK	1	1	16.73				16.70		0
				1	137	16.99				16.83		0
				1	271	16.42				17.09		0
				135	0	17.09				16.92		0
				135	69	16.98				16.86		0
				135	138	16.93				16.89		0
				270	0	17.05				16.91		0
			16QAM	1	1	16.70				16.32		0
			64QAM	1	1	16.75				16.62		0
			256QAM	1	1	16.75				16.31		0
		CP	QPSK	1	1	16.75				16.62		0

NR TDD Band n77 (PC2 only) Conducted Power_ Measured RSI = 1_ SUB2 [Ant F]

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)						MPR [dB]
						650000				662000		
						3750 ㎒				3930 ㎒		
100 ㎒	30	DFT-s OFDM	pi/2 BPSK	1	1	14.86				15.06		0
				1	137	15.32				15.15		0
				1	271	14.82				15.34		0
				135	0	15.34				15.25		0
				135	69	15.31				15.19		0
				135	138	15.30				15.16		0
				270	0	15.34				15.24		0
			QPSK	1	1	14.85				15.07		0
				1	137	15.31				15.35		0
				1	271	14.82				15.34		0
				135	0	15.34				15.26		0
				135	69	15.36				15.20		0
				135	138	15.30				15.17		0
				270	0	15.35				15.23		0
			16QAM	1	1	14.94				15.13		0
			64QAM	1	1	14.93				15.05		0
			256QAM	1	1	14.82				15.03		0
		CP	QPSK	1	1	14.87				15.06		0

NR TDD Band n77 DoD (PC2 only) Conducted Power_ Measured Pmax _ SUB2 [Ant F]

NR TDD Band n77 DoD_100 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
							633334		
							3500.01 ㎒		
100㎒	30	DFT-s	pi/2 BPSK	1	1		26.12		0
				1	137		26.07		0
				1	271		25.94		0
				135	0		25.82		0
				135	69		26.13		0
				135	138		25.62		0
				270	0		25.69		0
			QPSK	1	1		26.33		0
				1	137		26.11		0
				1	271		25.99		0
				135	0		25.32		0
				135	69		26.11		0
				135	138		24.90		0
				270	0		25.19		0
			16QAM	1	1		25.35		0
			64QAM	1	1		23.75		0
			256QAM	1	1		21.93		0
		CP	QPSK	1	1		24.85		0

NR TDD Band n77 DoD (PC2 only) Conducted Power_ Measured RSI = 0_ SUB2 [Ant F]

NR TDD Band n77 DoD_100 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
							633334		
							3500.01 ㎒		
100㎒	30	DFT-s	pi/2 BPSK	1	1		16.39		0
				1	137		16.56		0
				1	271		17.01		0
				135	0		16.51		0
				135	69		16.56		0
				135	138		16.76		0
				270	0		16.66		0
			QPSK	1	1		16.55		0
				1	137		16.74		0
				1	271		17.17		0
				135	0		16.70		0
				135	69		16.78		0
				135	138		16.97		0
				270	0		16.82		0
			16QAM	1	1		16.57		0
			64QAM	1	1		16.52		0
			256QAM	1	1		16.84		0
		CP	QPSK	1	1		16.88		0

NR TDD Band n77 DoD (PC2 only) Conducted Power_ Measured RSI = 1_ SUB2 [Ant F]

NR TDD Band n77 DoD_100 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
							633334		
							3500.01 ㎒		
100㎒	30	DFT-s	pi/2 BPSK	1	1		15.89		0
				1	137		15.60		0
				1	271		15.32		0
				135	0		15.86		0
				135	69		15.64		0
				135	138		15.49		0
				270	0		15.70		0
			QPSK	1	1		15.90		0
				1	137		15.61		0
				1	271		15.91		0
				135	0		15.85		0
				135	69		15.64		0
				135	138		15.86		0
				270	0		15.68		0
			16QAM	1	1		15.87		0
			64QAM	1	1		15.73		0
			256QAM	1	1		15.84		0
		CP	QPSK	1	1		15.94		0

NR TDD Band n78 (PC2 only) Conducted Power_ Measured Pmax _ SUB2 [Ant F]

NR TDD Band n78 _100 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
							650000		
							3750 ㎒		
100 ㎒	30	DFT-s	pi/2 BPSK	1	1		25.97		0
				1	137		26.02		0
				1	271		25.65		0
				135	0		25.61		0
				135	69		26.08		0
				135	138		25.69		0
				270	0		25.62		0
			QPSK	1	1		25.55		0
				1	137		26.02		0
				1	271		25.66		0
				135	0		25.07		0
				135	69		26.07		0
				135	138		25.14		0
				270	0		25.12		0
			16QAM	1	1		24.50		0
			64QAM	1	1		23.17		0
			256QAM	1	1		20.99		0
		CP	QPSK	1	1		24.10		0

NR TDD Band n78 (PC2 only) Conducted Power_ Measured RSI = 0_ SUB2 [Ant F]

NR TDD Band n78 _100 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
							650000		
							3750 ㎒		
100 ㎒	30	DFT-s	pi/2 BPSK	1	1		16.98		0
				1	137		16.88		0
				1	271		16.27		0
				135	0		17.02		0
				135	69		16.92		0
				135	138		16.87		0
				270	0		16.98		0
			QPSK	1	1		16.65		0
				1	137		16.89		0
				1	271		16.28		0
				135	0		17.02		0
				135	69		16.91		0
				135	138		16.86		0
				270	0		16.98		0
			16QAM	1	1		16.56		0
			64QAM	1	1		16.63		0
			256QAM	1	1		16.63		0
		CP	QPSK	1	1		16.71		0

NR TDD Band n78 (PC2 only) Conducted Power_ Measured RSI = 1_ SUB2 [Ant F]

NR TDD Band n78 _100 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
							650000		
							3750 ㎒		
100 ㎒	30	DFT-s	pi/2 BPSK	1	1		14.70		0
				1	137		15.22		0
				1	271		14.64		0
				135	0		15.17		0
				135	69		15.28		0
				135	138		15.22		0
				270	0		15.22		0
			QPSK	1	1		14.71		0
				1	137		15.19		0
				1	271		14.67		0
				135	0		15.17		0
				135	69		15.23		0
				135	138		15.24		0
				270	0		15.18		0
			16QAM	1	1		14.81		0
			64QAM	1	1		14.74		0
			256QAM	1	1		14.76		0
		CP	QPSK	1	1		14.69		0

NR TDD Band n78 DoD (PC2 only) Conducted Power_ Measured Pmax _ SUB2 [Ant F]

NR TDD Band n78 DoD _100 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
							633334		
							3500.01 ㎒		
100 ㎒	30	DFT-s	pi/2 BPSK	1	1		25.93		0
				1	137		26.07		0
				1	271		26.48		0
				135	0		25.82		0
				135	69		26.13		0
				135	138		25.61		0
				270	0		25.68		0
			QPSK	1	1		25.93		0
				1	137		26.10		0
				1	271		26.49		0
				135	0		25.31		0
				135	69		26.14		0
				135	138		25.11		0
				270	0		25.18		0
			16QAM	1	1		24.94		0
			64QAM	1	1		23.38		0
			256QAM	1	1		21.51		0
		CP	QPSK	1	1		24.47		0

NR TDD Band n78 DoD (PC2 only) Conducted Power_ Measured RSI = 0_ SUB2 [Ant F]

NR TDD Band n78 DoD _100 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
							633334		
							3500.01 ㎒		
100 ㎒	30	DFT-s	pi/2 BPSK	1	1		16.76		0
				1	137		16.66		0
				1	271		17.71		0
				135	0		16.62		0
				135	69		16.68		0
				135	138		16.90		0
				270	0		16.76		0
			QPSK	1	1		16.07		0
				1	137		16.66		0
				1	271		17.73		0
				135	0		16.62		0
				135	69		16.70		0
				135	138		16.90		0
				270	0		16.75		0
			16QAM	1	1		16.07		0
			64QAM	1	1		16.09		0
			256QAM	1	1		16.03		0
		CP	QPSK	1	1		16.62		0

NR TDD Band n78 DoD (PC2 only) Conducted Power_ Measured RSI = 1_ SUB2 [Ant F]

NR TDD Band n78 DoD _100 ㎒ Bandwidth Conducted Power

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR [dB]
							633334		
							3500.01 ㎒		
100 ㎒	30	DFT-s	pi/2 BPSK	1	1		15.31		0
				1	137		15.84		0
				1	271		15.85		0
				135	0		15.87		0
				135	69		15.87		0
				135	138		15.79		0
				270	0		15.37		0
			QPSK	1	1		15.37		0
				1	137		15.81		0
				1	271		15.94		0
				135	0		15.74		0
				135	69		15.84		0
				135	138		15.85		0
				270	0		15.88		0
			16QAM	1	1		15.34		0
			64QAM	1	1		15.37		0
			256QAM	1	1		15.42		0
		CP	QPSK	1	1		15.20		0

11.4.3 NR Band SRS Conducted Power

[NR TDD Band n41(PC2 only) SRS Conducted Power]

NR TDD Band n41_ 100 ㎒ Bandwidth Conducted Power_ Antenna: SUB2 (Ant F), SRS1_ Measured Pmax

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				518598		
				2592.99 ㎒		
100 ㎒	30	CW		20.00		0

NR TDD Band n41_ 100 ㎒ Bandwidth Conducted Power_ Antenna: SUB2 (Ant F), SRS1 _ Measured RSI=0

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				518598		
				2592.99 ㎒		
100 ㎒	30	CW		14.50		0

NR TDD Band n41_ 100 ㎒ Bandwidth Conducted Power_ Antenna: SUB2 (Ant F), SRS1 _ Measured RSI=1

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				518598		
				2592.99 ㎒		
100 ㎒	30	CW		13.47		0

NR TDD Band n41_ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN4 [Ant D], SRS2 _ Measured Pmax

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				518598		
				2592.99 ㎒		
100 ㎒	30	CW		20.71		0

NR TDD Band n41_ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN4 [Ant D], SRS2 _ Measured RSI=0

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				518598		
				2592.99 ㎒		
100 ㎒	30	CW		14.97		0

NR TDD Band n41_ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN4 [Ant D], SRS2 _ Measured RSI=1

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				518598		
				2592.99 ㎒		
100 ㎒	30	CW		13.97		0

NR TDD Band n41_100 ㎒ Bandwidth Conducted Power_ Antenna: SUB1 [Ant E], SRS3 _Measured Pmax

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				518598		
				2592.99 ㎒		
100 ㎒	30	CW		20.21		0

NR TDD Band n41_100 ㎒ Bandwidth Conducted Power_ Antenna: SUB1 [Ant E], SRS3 _Measured RSI=0

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				518598		
				2592.99 ㎒		
100 ㎒	30	CW		14.56		0

NR TDD Band n41_100 ㎒ Bandwidth Conducted Power_ Antenna: SUB1 [Ant E], SRS3 _Measured RSI=1

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				518598		
				2592.99 ㎒		
100 ㎒	30	CW		13.56		0

[NR TDD Band n48 (PC3 only) SRS Conducted Power]

NR TDD Band n48_ 40 ㎒ Bandwidth Conducted Power_ Antenna: MAIN3 [Ant C], SRS1_Measured Pmax

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
			638000	641666	645334	
			3570 ㎒	3624.99 ㎒	3680.01 ㎒	
40 ㎒	30	CW	19.44	20.22	19.68	0

NR TDD Band n48_ 40 ㎒ Bandwidth Conducted Power_ Antenna: MAIN3 [Ant C], SRS1 Measured RSI=0

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
			638000	641666	645334	
			3570 ㎒	3624.99 ㎒	3680.01 ㎒	
40 ㎒	30	CW	14.79	14.88	14.77	0

NR TDD Band n48_ 40 ㎒ Bandwidth Conducted Power_ Antenna: MAIN3 [Ant C], SRS1_ Measured RSI=1

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
			638000	641666	645334	
			3570 ㎒	3624.99 ㎒	3680.01 ㎒	
40 ㎒	30	CW	12.71	12.84	12.75	0

NR TDD Band n48_ 40 ㎒ Bandwidth Conducted Power_ Antenna: MAIN4 [Ant D], SRS2_Measured Pmax

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
			638000	641666	645334	
			3570 ㎒	3624.99 ㎒	3680.01 ㎒	
40 ㎒	30	CW	21.15	21.22	21.23	0

NR TDD Band n48_ 40 ㎒ Bandwidth Conducted Power_ Antenna: MAIN4 [Ant D], SRS2_Measured RSI=0

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
			638000	641666	645334	
			3570 ㎒	3624.99 ㎒	3680.01 ㎒	
40 ㎒	30	CW	16.21	16.40	16.42	0

NR TDD Band n48_ 40 ㎒ Bandwidth Conducted Power_ Antenna: MAIN4 [Ant D], SRS2_ Measured RSI=1

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
			638000	641666	645334	
			3570 ㎒	3624.99 ㎒	3680.01 ㎒	
40 ㎒	30	CW	14.22	14.41	14.44	0

NR TDD Band n48_ 40 ㎒ Bandwidth Conducted Power_ Antenna: SUB5[Ant I], SRS3_Measured Pmax

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
			638000	641666	645334	
			3570 ㎒	3624.99 ㎒	3680.01 ㎒	
40 ㎒	30	CW	21.95	22.20	22.54	0

NR TDD Band n48_ 40 ㎒ Bandwidth Conducted Power_ Antenna: SUB5[Ant I], SRS3 Measured RSI=0

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
			638000	641666	645334	
			3570 ㎒	3624.99 ㎒	3680.01 ㎒	
40 ㎒	30	CW	17.35	17.27	17.52	0

NR TDD Band n48_ 40 ㎒ Bandwidth Conducted Power_ Antenna: SUB5[Ant I], SRS3_ Measured RSI=1

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
			638000	641666	645334	
			3570 ㎒	3624.99 ㎒	3680.01 ㎒	
40 ㎒	30	CW	15.28	15.22	15.45	0

[NR TDD Band n77 (PC2 Only) SRS Conducted Power]

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN3 [Ant C], SRS1_ Measured Pmax

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]					MPR [dB]
			650000				662000	
			3750 ㎒				3930 ㎒	
100 ㎒	30	CW	23.43				22.46	0

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN3 [Ant C], SRS1_Measured RSI=0

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]					MPR [dB]
			650000				662000	
			3750 ㎒				3930 ㎒	
100 ㎒	30	CW	16.14				15.05	0

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN3 [Ant C], SRS1_Measured RSI=1

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]					MPR [dB]
			650000				662000	
			3750 ㎒				3930 ㎒	
100 ㎒	30	CW	14.20				13.12	0

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN4 [Ant D], SRS2_ Measured Pmax

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]					MPR [dB]
			650000				662000	
			3750 ㎒				3930 ㎒	
100 ㎒	30	CW	24.03				23.25	0

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN4 [Ant D], SRS2_Measured RSI=0

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]					MPR [dB]
			650000				662000	
			3750 ㎒				3930 ㎒	
100 ㎒	30	CW	16.77				15.84	0

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN4 [Ant D], SRS2_Measured RSI=1

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]					MPR [dB]
			650000				662000	
			3750 ㎒				3930 ㎒	
100 ㎒	30	CW	14.76				13.89	0

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power_ Antenna: SUB5[Ant I], SRS3_ Measured Pmax

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]					MPR [dB]
			650000				662000	
			3750 ㎒				3930 ㎒	
100 ㎒	30	CW	25.57				25.11	0

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power_ Antenna: SUB5[Ant I], SRS3_Measured RSI=0

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]					MPR [dB]
			650000				662000	
			3750 ㎒				3930 ㎒	
100 ㎒	30	CW	17.95				17.69	0

NR TDD Band n77_ 100 ㎒ Bandwidth Conducted Power_ Antenna: SUB5[Ant I], SRS3_Measured RSI=1

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]					MPR [dB]
			650000				662000	
			3750 ㎒				3930 ㎒	
100 ㎒	30	CW	15.94				15.71	0

[NR TDD Band n77 (PC2 Only) DoD SRS Conducted Power]

NR TDD Band n77 DoD_ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN3 [Ant C], SRS1_ Measured Pmax

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				633334		
				3500.01 ㎒		
100 ㎒	30	CW		23.50		0

NR TDD Band n77 DoD_ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN3 [Ant C], SRS1_Measured RSI=0

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				633334		
				3500.01 ㎒		
100 ㎒	30	CW		16.11		0

NR TDD Band n77 DoD_ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN3 [Ant C], SRS1_Measured RSI=1

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				633334		
				3500.01 ㎒		
100 ㎒	30	CW		14.12		0

NR TDD Band n77 DoD _ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN4 [Ant D], SRS2_ Measured Pmax

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				633334		
				3500.01 ㎒		
100 ㎒	30	CW		23.22		0

NR TDD Band n77 DoD _ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN4 [Ant D], SRS2_Measured RSI=0

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				633334		
				3500.01 ㎒		
100 ㎒	30	CW		15.79		0

NR TDD Band n77 DoD _ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN4 [Ant D], SRS2_Measured RSI=1

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				633334		
				3500.01 ㎒		
100 ㎒	30	CW		13.90		0

NR TDD Band n77 DoD _ 100 ㎒ Bandwidth Conducted Power_ Antenna: SUB5[Ant I], SRS3_ Measured Pmax

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				633334		
				3500.01 ㎒		
100 ㎒	30	CW		24.52		0

NR TDD Band n77 DoD _ 100 ㎒ Bandwidth Conducted Power_ Antenna: SUB5[Ant I], SRS3_Measured RSI=0

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				633334		
				3500.01 ㎒		
100 ㎒	30	CW		17.10		0

NR TDD Band n77 DoD _ 100 ㎒ Bandwidth Conducted Power_ Antenna: SUB5[Ant I], SRS3_Measured RSI=1

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				633334		
				3500.01 ㎒		
100 ㎒	30	CW		15.15		0

[NR TDD Band n78 (PC2 Only) SRS Conducted Power]

NR TDD Band n78_ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN3 [Ant C], SRS1_ Measured Pmax

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				650000		
				3750 ㎒		
100 ㎒	30	CW		23.56		0

NR TDD Band n78_ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN3 [Ant C], SRS1_Measured RSI=0

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				650000		
				3750 ㎒		
100 ㎒	30	CW		16.18		0

NR TDD Band n78_ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN3 [Ant C], SRS1_Measured RSI=1

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				650000		
				3750 ㎒		
100 ㎒	30	CW		14.27		0

NR TDD Band n78_ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN4 [Ant D], SRS2_ Measured Pmax

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				650000		
				3750 ㎒		
100 ㎒	30	CW		24.22		0

NR TDD Band n78_ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN4 [Ant D], SRS2_Measured RSI=0

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				650000		
				3750 ㎒		
100 ㎒	30	CW		16.88		0

NR TDD Band n78_ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN4 [Ant D], SRS2_Measured RSI=1

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				650000		
				3750 ㎒		
100 ㎒	30	CW		14.96		0

NR TDD Band n78_ 100 ㎒ Bandwidth Conducted Power_ Antenna: SUB5[Ant I], SRS3_ Measured Pmax

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				650000		
				3750 ㎒		
100 ㎒	30	CW		25.62		0

NR TDD Band n78_ 100 ㎒ Bandwidth Conducted Power_ Antenna: SUB5[Ant I], SRS3_Measured RSI=0

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				650000		
				3750 ㎒		
100 ㎒	30	CW		17.94		0

NR TDD Band n78_ 100 ㎒ Bandwidth Conducted Power_ Antenna: SUB5[Ant I], SRS3_Measured RSI=1

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				650000		
				3750 ㎒		
100 ㎒	30	CW		15.94		0

[NR TDD Band n78 DoD (PC2 Only) SRS Conducted Power]

NR TDD Band n78_ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN3 [Ant C], SRS1_ Measured Pmax

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				633334		
				3500.01 ㎒		
100 ㎒	30	CW		23.52		0

NR TDD Band n78_ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN3 [Ant C], SRS1_Measured RSI=0

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				633334		
				3500.01 ㎒		
100 ㎒	30	CW		16.11		0

NR TDD Band n78_ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN3 [Ant C], SRS1_Measured RSI=1

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				633334		
				3500.01 ㎒		
100 ㎒	30	CW		14.17		0

NR TDD Band n78_ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN4 [Ant D], SRS2_ Measured Pmax

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				633334		
				3500.01 ㎒		
100 ㎒	30	CW		23.33		0

NR TDD Band n78_ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN4 [Ant D], SRS2_Measured RSI=0

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				633334		
				3500.01 ㎒		
100 ㎒	30	CW		15.99		0

NR TDD Band n78_ 100 ㎒ Bandwidth Conducted Power_ Antenna: MAIN4 [Ant D], SRS2_Measured RSI=1

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				633334		
				3500.01 ㎒		
100 ㎒	30	CW		14.05		0

NR TDD Band n78_ 100 ㎒ Bandwidth Conducted Power_ Antenna: SUB5[Ant I], SRS3_ Measured Pmax

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				633334		
				3500.01 ㎒		
100 ㎒	30	CW		24.51		0

NR TDD Band n78_ 100 ㎒ Bandwidth Conducted Power_ Antenna: SUB5[Ant I], SRS3_Measured RSI=0

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				633334		
				3500.01 ㎒		
100 ㎒	30	CW		17.23		0

NR TDD Band n78_ 100 ㎒ Bandwidth Conducted Power_ Antenna: SUB5[Ant I], SRS3_Measured RSI=1

Bandwidth	SCS(㎑)	Modulation	Max. Average Power [dBm]			MPR [dB]
				633334		
				3500.01 ㎒		
100 ㎒	30	CW		15.29		0

11.5 WIFI Conducted Power measurement method

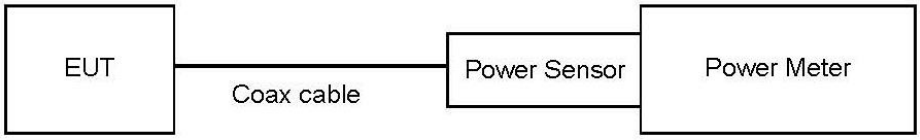
Un-Licensed Bands (DTS Band)

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

Test Procedure

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

Test setup



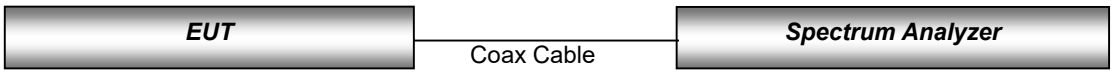
Un-Licensed Bands (NII Band)

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

Test Procedure

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

Test setup



11.5.1 IEEE 802.11 (2.4 ㎓) Maximum and Reduced Conducted Power

Mode	Frequency [㎒]	Channel	Plimit=1 (Head)		
			IEEE 802.11 (2.4 ㎓) Average RF Conducted Power [dBm]		
			WIFI 1	WIFI 2	MIMO
802.11b	2 412	1	13.97	13.89	
	2 437	6	13.89	13.77	
	2 462	11	14.01	13.44	
802.11g	2 412	1	13.94	13.88	16.92
	2 437	6	14.01	13.83	16.93
	2 462	11	13.95	13.42	16.70
802.11n (HT20)	2 412	1	13.96	13.83	16.91
	2 437	6	13.98	13.81	16.91
	2 462	11	14.00	13.35	16.70
802.11ax (HT20)	2 412	1	13.67	13.88	16.78
	2 437	6	13.70	13.84	16.78
	2 462	11	13.85	13.51	16.69

Mode	Frequency [㎒]	Channel	Plimit=0 (Body)		
			IEEE 802.11 (2.4 ㎓) Average RF Conducted Power [dBm]		
			WIFI 1	WIFI 2	MIMO
802.11b	2 412	1	15.17	16.80	
	2 437	6	15.37	16.39	
	2 462	11	15.36	16.56	
802.11g	2 412	1	15.20	16.25	18.76
	2 437	6	15.67	16.49	19.11
	2 462	11	15.23	16.04	18.66
802.11n (HT20)	2 412	1	15.23	16.21	18.76
	2 437	6	15.36	16.00	18.70
	2 462	11	15.34	16.12	18.26
802.11ax (HT20)	2 412	1	15.31	15.94	18.64
	2 437	6	15.40	15.82	18.62
	2 462	11	15.46	16.15	18.82

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

Frequency [㎒]	Channel	Plimit=1 (Head)		
		IEEE 802.11 ac (80 ㎒ BW) Conducted Power [dBm]		
		Ant.1	Ant.2	MIMO
5 210	42	12.06	12.85	15.48
5 290	58	12.97	12.73	15.86
5 530	106	12.37	12.49	15.44
5 610	122	12.73	12.76	15.75
5 690	138	12.92	12.91	15.92
5 775	155	12.99	12.96	15.98
5 855	171	12.98	12.87	15.93

Frequency [㎒]	Channel	Plimit=0 (Body)		
		IEEE 802.11 ac (80 ㎒ BW) Conducted Power [dBm]		
		Ant.1	Ant.2	MIMO
5 210	42	15.20	15.01	18.11
5 290	58	15.15	15.15	18.16
5 530	106	14.85	15.11	17.99
5 610	122	15.42	15.23	18.33
5 690	138	15.48	15.51	18.50
5 775	155	15.49	15.42	18.46
5 855	171	15.38	15.61	18.50

Frequency [㎒]	Channel	Plimit=2 (mmWave Active Body)		
		IEEE 802.11 ac (80 ㎒ BW) Conducted Power [dBm]		
		Ant.1	Ant.2	MIMO
5 210	42	13.05	13.09	16.08
5 290	58	13.37	13.11	16.25
5 530	106	13.11	12.94	16.03
5 610	122	13.30	12.55	15.95
5 690	138	13.61	13.57	16.60
5 775	155	13.77	13.04	16.43
5 855	171	13.79	13.55	16.68

11.5.3 IEEE 802.11 (6-7 ㎓) Maximum and Reduced Conducted Power

Frequency [㎒]	Channel	Plimit=0, 1, 2		
		IEEE 802.11ax (160 ㎒ BW) Conducted Power [dBm]		
		Ant.1	Ant.2	MIMO
6025	15	8.47	8.75	11.63
6185	47	8.88	8.59	11.75
6345	79	8.41	8.71	11.58
6505	111	8.70	8.62	11.67
6665	143	8.98	8.12	11.59
6825	175	7.91	8.38	11.17
6985	207	8.91	8.15	11.56

Note:

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

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

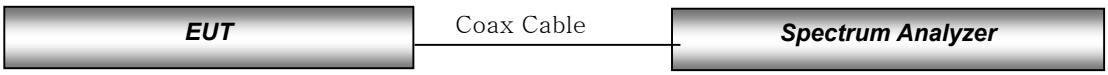
▪ Power measurements were performed for the transmission mode configuration with the highest maximum output power specified for production units.

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

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

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

Test Configuration



11.6 Bluetooth Maximum Conducted Power

11.6.1 Maximum Conducted Power

The Burst Averaged-conducted power

Mode	Channel	Max. Average Conducted Power [dBm]	
		Ant.1	Ant.2
DH5	0	17.36	14.38
	39	17.40	14.39
	78	16.06	13.71
2-DH5	0	14.03	11.62
	39	14.37	11.19
	78	12.89	10.67
3-DH5	0	13.91	11.51
	39	14.10	11.32
	78	12.91	10.69

The Burst Averaged-conducted power - Dual

Mode	Channel	Max. Average Conducted Power [dBm]		
		Ant.1	Ant.2	Dual
DH5	0	13.26	10.98	15.28
	39	13.10	9.21	14.59
	78	12.39	9.94	14.35
2-DH5	0	10.30	8.01	12.31
	39	9.80	5.85	11.27
	78	9.39	6.70	11.26
3-DH5	0	10.35	8.03	12.35
	39	9.83	6.07	11.36
	78	9.38	6.94	11.34

The Burst Averaged-conducted power – Dual Bluetooth LE

Mode	Channel	Max. Average Conducted Power [dBm]
		Dual BLE
1M 255 Packet	37	15.01
	17	14.53
	39	14.43

11.6.2 Reduced Conducted Power – Receiver Active

The Burst Averaged-conducted power

Mode	Channel	Max. Average Conducted Power [dBm]	
		Ant.1	Ant.2
DH5	0	10.56	8.83
	39	10.95	6.78
	78	10.60	8.63
2-DH5	0	9.78	8.35
	39	10.57	7.20
	78	9.70	7.28
3-DH5	0	9.89	8.36
	39	10.40	7.18
	78	9.60	7.25

The Burst Averaged-conducted power – Dual Bluetooth

Mode	Channel	Max. Average Conducted Power [dBm]		
		Ant.1	Ant.2	Dual Bluetooth
DH5	0	7.98	5.72	10.01
	39	7.66	2.97	8.93
	78	8.58	5.29	10.25
2-DH5	0	7.70	5.74	9.84
	39	7.57	3.43	8.99
	78	7.91	5.28	9.80
3-DH5	0	7.69	5.75	9.84
	39	7.58	3.42	8.99
	78	7.90	5.25	9.78

The Burst Averaged-conducted power – Bluetooth LE

Mode	Channel	Max. Average Conducted Power [dBm]	
		Ant.1	Ant.2
1M 255 Packet	37	11.78	9.26
	17	11.59	7.02
	39	11.40	8.43

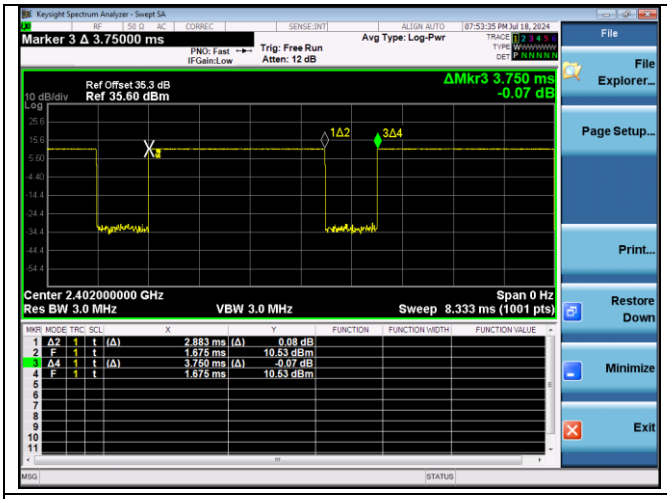
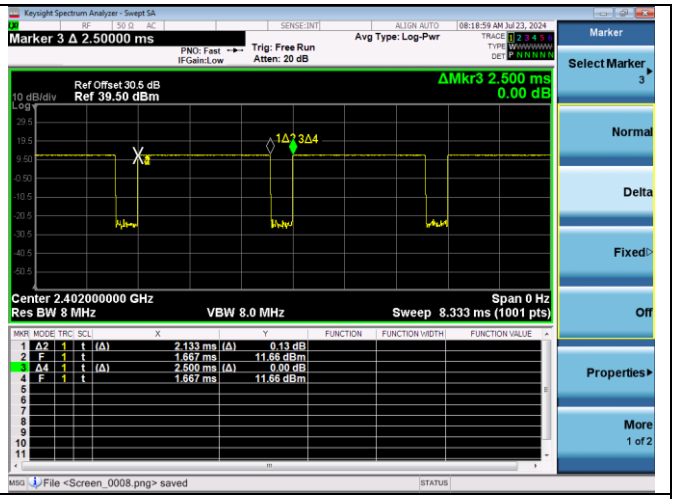
The Burst Averaged-conducted power – Dual Bluetooth LE

Mode	Channel	Max. Average Conducted Power [dBm]
		Dual BLE
1M 255 Packet	37	10.98
	17	10.06
	39	10.41

Per October 2016 TCB Workshop Notes:

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

Bluetooth Duty cycle Measurement results

	
Duty Cycle== (BT-On time /BT-Full time) =(2.883/3.750) = 0.769 (DH5)	Duty Cycle=(BT-On time /BT-Full time) (2.133/2.500) = 0.853 (BT LE 1M)

BT DH5 Maximum Duty Factor:

The maximum duty cycle defined by chipset manufacturer is 78.13 % In the worst case 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.

BT LE (1M) Maximum Duty Factor:
The maximum duty cycle defined by chipset manufacturer is 84.8 % for BT LE 1MHz.The duty cycle of BT LE 1M measured by DUT was 85.3%, and the duty cycle was compensated by applying test error tolerance 1%. For more information on BT , please refer to the technical description document.

12. System Verification

12.1 Tissue Verification

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

Table for Head Tissue Verification									
Date of Tests	Tissue Temp. (°C)	Tissue Type	Freq. (㎒)	Measured Conductivity σ (S/m)	Measured Dielectric Constant, ε	Target Conductivity σ (S/m)	Target Dielectric Constant, ε	% dev σ	% dev ε
06/18/2024	23.6	13H	12	0.744	54.344	0.750	55.000	-0.77	-1.19
			13	0.724	54.346	0.750	55.000	-3.47	-1.19
			14	0.756	54.328	0.750	55.000	0.75	-1.22
06/11/2024	18.9	750H	705	0.856	43.480	0.889	42.174	-3.71	3.10
			710	0.853	43.410	0.890	42.148	-4.14	2.99
			750	0.895	42.827	0.893	41.940	0.22	2.11
06/20/2024	19.0	750H	705	0.882	43.400	0.889	42.174	-0.80	2.91
			710	0.883	43.362	0.890	42.148	-0.76	2.88
			750	0.900	43.234	0.893	41.940	0.78	3.09
06/12/2024	18.4	750H	750	0.895	42.830	0.893	41.940	0.22	2.12
			785	0.932	42.315	0.896	41.758	4.00	1.33
06/13/2024	19.4	750H	750	0.895	42.812	0.893	41.940	0.22	2.08
			785	0.933	42.300	0.896	41.758	4.10	1.30
06/04/2024	21.7	835H	820	0.906	41.471	0.899	41.577	0.82	-0.26
			835	0.923	41.241	0.900	41.500	2.56	-0.62
			850	0.940	41.012	0.916	41.500	2.62	-1.18
06/10/2024	21.0	835H	820	0.908	40.465	0.899	41.577	0.95	-2.68
			835	0.924	40.230	0.900	41.500	2.67	-3.06
			850	0.941	40.007	0.916	41.500	2.68	-3.60
06/14/2024	20.0	835H	820	0.922	43.029	0.899	41.577	2.53	3.49
			835	0.937	42.825	0.900	41.500	4.11	3.19
			850	0.952	42.621	0.916	41.500	3.96	2.70
07/04/2024	22.7	1800H	1 710	1.328	41.563	1.348	40.144	-1.52	3.53
			1 750	1.371	41.373	1.371	40.080	-0.03	3.23
			1 800	1.416	41.183	1.400	40.000	1.14	2.96
06/05/2024	23.7	1800H	1 710	1.328	41.547	1.348	40.144	-1.52	3.50
			1 750	1.364	41.353	1.371	40.080	-0.53	3.18
			1 800	1.419	41.099	1.400	40.000	1.36	2.75
06/27/2024	21.7	1800H	1 710	1.317	41.332	1.348	40.144	-2.31	2.96
			1 750	1.357	41.138	1.371	40.080	-0.99	2.64
			1 800	1.406	40.884	1.400	40.000	0.43	2.21
06/05/2024	21.9	1900H	1 850	1.343	39.353	1.400	40.000	-4.07	-1.62
			1 900	1.391	39.146	1.400	40.000	-0.64	-2.13
			1 910	1.401	39.100	1.400	40.000	0.05	-2.25
07/03/2024	22.0	1900H	1 850	1.341	39.348	1.400	40.000	-4.21	-1.63
			1 900	1.391	39.146	1.400	40.000	-0.64	-2.14
			1 910	1.399	39.101	1.400	40.000	-0.07	-2.25
06/03/2024	24.0	1900H	1 850	1.342	39.345	1.400	40.000	-4.12	-1.64
			1 900	1.390	39.144	1.400	40.000	-0.71	-2.14
			1 910	1.400	39.100	1.400	40.000	-0.01	-2.25
06/26/2024	21.2	1900H	1 850	1.355	38.914	1.400	40.000	-3.20	-2.71
			1 900	1.404	38.713	1.400	40.000	0.29	-3.22
			1 910	1.413	38.669	1.400	40.000	0.94	-3.33
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
06/27/2024	20.3	2300H	2 300	1.709	39.979	1.667	39.470	2.52	1.29
			2 310	1.717	39.955	1.676	39.452	2.45	1.27
06/28/2024	20.7	2300H	2 300	1.718	39.301	1.667	39.470	3.06	-0.43
			2 310	1.726	39.264	1.676	39.452	3.01	-0.48
07/03/2024	21.6	2450H	2 400	1.787	39.518	1.756	39.290	1.75	0.58
			2 450	1.826	39.587	1.800	39.200	1.44	0.99
			2 500	1.874	39.666	1.855	39.140	1.01	1.34
06/24/2024	21.3	2450H	2 400	1.707	38.253	1.756	39.290	-2.76	-2.64
			2 450	1.773	38.957	1.800	39.200	-1.50	-0.62
			2 500	1.884	39.533	1.855	39.140	1.58	1.00
06/25/2024	21.0	2450H	2 400	1.689	38.393	1.756	39.290	-3.79	-2.28
			2 450	1.752	39.107	1.800	39.200	-2.67	-0.24
			2 500	1.866	39.673	1.855	39.140	0.60	1.36
06/26/2024	20.6	2450H	2 400	1.793	39.140	1.756	39.290	2.13	-0.38
			2 450	1.833	39.205	1.800	39.200	1.83	0.01
			2 500	1.880	39.303	1.855	39.140	1.36	0.42
06/27/2024	20.2	2450H	2 400	1.793	39.141	1.756	39.290	2.12	-0.38
			2 450	1.833	39.207	1.800	39.200	1.83	0.02
			2 500	1.880	39.303	1.855	39.140	1.37	0.42
06/04/2024	21.1	2600H	2 500	1.922	38.424	1.855	39.140	3.62	-1.83
			2 600	2.032	38.030	1.964	39.010	3.48	-2.51
			2 690	2.134	37.634	2.062	38.894	3.48	-3.24
06/26/2024	20.9	2600H	2 500	1.832	38.887	1.855	39.140	-1.22	-0.65
			2 600	1.939	38.492	1.964	39.010	-1.28	-1.33
			2 690	2.037	38.096	2.062	38.894	-1.21	-2.05
06/05/2024	21.4	2600H	2 500	1.842	39.222	1.855	39.140	-0.69	0.21
			2 600	1.930	38.835	1.964	39.010	-1.72	-0.45
			2 690	2.021	38.362	2.062	38.894	-2.01	-1.37
07/01/2024	21.2	2600H	2 500	1.847	39.125	1.855	39.140	-0.43	-0.04
			2 600	1.908	38.941	1.964	39.010	-2.85	-0.18
			2 690	2.026	38.265	2.062	38.894	-1.75	-1.62
06/17/2024	20.6	2600H	2 500	1.880	39.298	1.855	39.140	1.35	0.40
			2 600	2.007	39.182	1.964	39.010	2.19	0.44
			2 690	2.113	38.381	2.062	38.894	2.47	-1.32
07/05/2024	22.0	2600H	2 500	1.880	39.305	1.855	39.140	1.35	0.42
			2 600	2.007	39.185	1.964	39.010	2.19	0.45
			2 690	2.114	38.394	2.062	38.894	2.52	-1.29
07/08/2024	23.0	3500H-3700H	3 500	2.921	36.254	2.913	37.93	0.27	-4.42
			3 550	2.955	36.181	2.964	37.87	-0.30	-4.46
			3 650	3.032	36.052	3.066	37.76	-1.11	-4.52
			3 700	3.072	35.955	3.118	37.77	-1.48	-4.81

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
06/19/2024	24.0	5180H-5320H	5 180	4.456	36.938	4.635	36.010	-3.86	2.58
			5 250	4.580	37.000	4.706	35.930	-2.68	2.98
			5 280	4.520	36.820	4.737	35.894	-4.58	2.58
			5 320	4.574	36.905	4.778	35.846	-4.27	2.95
06/20/2024	23.0	5500H-5600H	5 500	4.832	37.139	4.963	35.640	-2.64	4.21
			5 600	4.870	36.900	5.065	35.530	-3.85	3.86
			5 750	5.089	36.812	5.219	35.360	-2.49	4.11
06/21/2024	24.1	5750H-5825H	5 750	5.040	36.800	5.219	35.360	-3.43	4.07
			5 800	5.086	36.752	5.270	35.300	-3.49	4.11
			5 825	5.127	36.812	5.296	35.270	-3.19	4.37
06/24/2024	19.0	5800H-5885H	5 800	5.080	36.800	5.270	35.300	-3.61	4.25
			5 835	5.078	36.730	5.306	35.258	-4.30	4.17
			5 845	5.082	36.692	5.316	35.246	-4.40	4.10
			5 855	5.089	36.648	5.326	35.235	-4.45	4.01
			5 865	5.098	36.603	5.337	35.225	-4.48	3.91
			5 875	5.108	36.556	5.347	35.215	-4.47	3.81
			5 885	5.118	36.507	5.357	35.205	-4.46	3.70
06/25/2024	19.1	5180H-5320H	5 180	4.442	37.162	4.635	36.010	-4.16	3.20
			5 250	4.580	37.000	4.706	35.930	-2.68	2.98
			5 280	4.625	36.928	4.737	35.894	-2.36	2.88
			5 320	4.675	36.940	4.778	35.846	-2.16	3.05
06/26/2024	19.5	5500H-5600H	5 500	4.808	36.882	4.963	35.640	-3.12	3.48
			5 600	4.870	36.700	5.065	35.530	-3.85	3.29
			5 750	5.073	36.471	5.219	35.360	-2.80	3.14
06/27/2024	19.9	5750H-5825H	5 750	5.240	36.500	5.219	35.360	0.40	3.22
			5 800	5.191	36.443	5.270	35.300	-1.50	3.24
			5 825	5.182	36.393	5.296	35.270	-2.15	3.18
06/28/2024	20.3	5800H-5885H	5 800	5.200	36.500	5.270	35.300	-1.33	3.40
			5 835	5.194	36.362	5.306	35.258	-2.11	3.13
			5 845	5.199	36.324	5.316	35.246	-2.20	3.06
			5 855	5.206	36.280	5.326	35.235	-2.25	2.97
			5 865	5.214	36.235	5.337	35.225	-2.30	2.87
			5 875	5.224	36.196	5.347	35.215	-2.30	2.79
			5 885	5.234	36.164	5.357	35.205	-2.30	2.72
07/02/2024	19.5	6.5 GHz	5935	5.420	34.600	5.409	35.148	0.20	-1.56
			6000	5.560	34.500	5.475	35.070	1.55	-1.63
			6425	6.200	34.000	5.982	34.550	3.64	-1.59
			6500	6.220	34.000	6.072	34.460	2.44	-1.33
			6525	6.240	33.900	6.101	34.430	2.28	-1.54
			6875	6.680	33.300	6.497	34.029	2.82	-2.14
			7000	6.820	32.900	6.650	33.880	2.56	-2.89
			7115	6.970	33.000	6.786	33.742	2.71	-2.20
07/03/2024	19.0	6.5 GHz	5935	5.450	34.700	5.409	35.148	0.76	-1.27
			6000	5.580	34.600	5.475	35.070	1.92	-1.34
			6425	6.230	34.100	5.982	34.550	4.15	-1.30
			6500	6.240	34.000	6.072	34.460	2.77	-1.33
			6525	6.270	34.000	6.101	34.430	2.77	-1.25
			6875	6.710	33.300	6.497	34.029	3.28	-2.14
			7000	6.860	33.000	6.650	33.880	3.16	-2.60
			7115	7.000	33.100	6.786	33.742	3.15	-1.90

5G NR SUB 6

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
06/17/2024	19.3	750H	705	0.861	41.284	0.889	42.174	-3.13	-2.11
			710	0.867	41.204	0.890	42.148	-2.57	-2.24
			750	0.914	40.566	0.893	41.940	2.35	-3.28
06/18/2024	19.6	750H	705	0.861	41.669	0.889	42.174	-3.14	-1.20
			710	0.867	41.590	0.890	42.148	-2.58	-1.32
			750	0.914	40.967	0.893	41.940	2.35	-2.32
06/19/2024	21.0	835H	820	0.911	42.825	0.899	41.577	1.30	3.00
			835	0.926	42.619	0.900	41.500	2.89	2.70
			850	0.941	42.418	0.916	41.500	2.75	2.21
06/17/2024	21.8	1640H	1 640	1.269	41.168	1.307	40.255	-2.91	2.27
			1 690	1.300	41.124	1.336	40.176	-2.71	2.36
			1 700	1.307	41.111	1.342	40.160	-2.64	2.37
06/19/2024	21.3	1800H	1 710	1.303	41.477	1.348	40.000	-3.33	3.69
			1 750	1.341	41.313	1.371	40.000	-2.17	3.28
			1 800	1.390	41.009	1.400	40.000	-0.71	2.52
07/02/2024	23.0	1800H	1 710	1.298	41.537	1.348	40.000	-3.72	3.84
			1 750	1.336	41.358	1.371	40.000	-2.56	3.40
			1 800	1.385	41.049	1.400	40.000	-1.07	2.62
06/28/2024	22.3	1900H	1 850	1.351	38.964	1.400	40.000	-3.53	-2.59
			1 900	1.398	38.768	1.400	40.000	-0.14	-3.08
			1 910	1.409	38.719	1.400	40.000	0.64	-3.20
07/01/2024	23.0	1900H	1 850	1.345	39.039	1.400	40.000	-3.94	-2.40
			1 900	1.392	38.818	1.400	40.000	-0.57	-2.96
			1 910	1.403	38.774	1.400	40.000	0.19	-3.07
06/24/2024	20.7	2300H	2 300	1.699	39.671	1.667	39.470	1.92	0.51
			2 310	1.707	39.634	1.676	39.452	1.87	0.46
06/25/2024	19.8	2300H	2 300	1.667	39.321	1.667	39.470	0.00	-0.38
			2 310	1.675	39.284	1.676	39.452	-0.05	-0.43
06/12/2024	20.6	2 600H	2 500	1.905	38.944	1.855	39.140	2.69	-0.50
			2 600	2.001	38.511	1.964	39.010	1.88	-1.28
			2 690	2.083	38.072	2.062	38.894	1.02	-2.11
07/02/2024	21.3	2 600H	2 500	1.901	38.974	1.855	39.140	2.46	-0.43
			2 600	1.997	38.556	1.964	39.010	1.68	-1.16
			2 690	2.079	38.102	2.062	38.894	0.84	-2.04
06/20/2024	19.6	2 600H	2 500	1.922	38.427	1.855	39.140	3.61	-1.82
			2 600	2.032	38.030	1.964	39.010	3.46	-2.51
			2 690	2.135	37.635	2.062	38.894	3.53	-3.24
06/13/2024	20.3	2 600H	2 500	1.870	39.178	1.855	39.140	0.81	0.10
			2 600	1.964	38.746	1.964	39.010	0.00	-0.68
			2 690	2.046	38.306	2.062	38.894	-0.80	-1.51
07/01/2024	20.9	2 600H	2 500	1.904	39.418	1.855	39.140	2.65	0.71
			2 600	1.900	38.900	1.964	39.010	-3.26	-0.28
			2 690	2.080	38.555	2.062	38.894	0.87	-0.87
06/18/2024	24.6	2 600H	2 500	1.930	39.600	1.855	39.140	4.04	1.18
			2 600	2.020	39.200	1.964	39.010	2.85	0.49
			2 690	2.110	38.700	2.062	38.894	2.33	-0.50
08/08/2024 SRS Head	22.2	2 600H	2 500	1.922	38.428	1.855	39.140	3.62	-1.82
			2 600	2.031	38.031	1.964	39.010	3.41	-2.51
			2 690	2.135	37.639	2.062	38.894	3.52	-3.23

08/08/2024 SRS Body	22.2	2 600H	2 500	1.853	38.928	1.855	39.140	-0.13	-0.54
			2 600	1.959	38.531	1.964	39.010	-0.25	-1.23
			2 690	2.060	38.139	2.062	38.894	-0.11	-1.94
06/17/2024	24.1	2 600H	2 500	1.904	39.418	1.855	39.140	2.64	0.71
			2 600	2.000	39.000	1.964	39.010	1.83	-0.03
			2 690	2.080	38.555	2.062	38.894	0.87	-0.87

Table for Head Tissue Verification									
Date of Tests	Tissue Temp. (°C)	Tissue Type	Freq. (㎒)	Measured Conductivity σ (S/m)	Measured Dielectric Constant, ε	Target Conductivity σ (S/m)	Target Dielectric Constant, ε	% dev σ	% dev ε
07/08/2024	23.0	3500H-3700H	3 500	2.933	36.595	2.913	37.930	0.69	-3.52
			3 550	2.972	36.544	2.964	37.870	0.27	-3.50
			3 650	3.049	36.459	3.066	37.760	-0.54	-3.45
			3 700	3.083	36.362	3.118	37.770	-1.12	-3.73
07/09/2024	22.9	3500H-3700H	3 500	2.934	36.621	2.913	37.930	0.72	-3.45
			3 550	2.973	36.572	2.964	37.870	0.30	-3.43
			3 650	3.050	36.486	3.066	37.760	-0.52	-3.37
			3 700	3.084	36.390	3.118	37.770	-1.09	-3.65
07/11/2024	22.8	3500H-3700H	3 500	2.934	36.626	2.913	37.930	0.72	-3.44
			3 550	2.973	36.576	2.964	37.870	0.31	-3.42
			3 650	3.050	36.491	3.066	37.760	-0.51	-3.36
			3 700	3.085	36.395	3.118	37.770	-1.06	-3.64
07/10/2024	22.8	3500H-3700H	3 500	2.934	36.633	2.913	37.930	0.72	-3.42
			3 550	2.973	36.582	2.964	37.870	0.31	-3.40
			3 650	3.050	36.495	3.066	37.760	-0.51	-3.35
			3 700	3.085	36.400	3.118	37.770	-1.06	-3.63
06/17/2024	20.6	3500H	3 400	2.920	37.067	2.810	38.040	3.92	-2.56
			3 500	2.990	36.877	2.913	37.930	2.64	-2.78
			3 550	3.031	36.808	2.964	37.870	2.25	-2.81
06/18/2024	19.6	3500H	3 400	2.860	36.764	2.810	38.040	1.79	-3.36
			3 500	2.933	36.603	2.913	37.930	0.69	-3.50
			3 550	2.972	36.553	2.964	37.870	0.28	-3.48
06/20/2024	19.6	3500H	3 400	2.861	36.771	2.810	38.040	1.81	-3.34
			3 500	2.933	36.609	2.913	37.930	0.69	-3.48
			3 550	2.973	36.559	2.964	37.870	0.30	-3.46
06/19/2024	21.0	3500H	3 400	2.861	36.778	2.810	38.040	1.81	-3.32
			3 500	2.933	36.616	2.913	37.930	0.69	-3.46
			3 550	2.973	36.566	2.964	37.870	0.30	-3.44
06/17/2024	20.6	3700H-3970	3 700	3.152	36.634	3.118	37.700	1.09	-2.83
			3 750	3.200	36.467	3.169	37.640	0.96	-3.12
			3 800	3.309	36.571	3.220	37.590	2.77	-2.71
			3 900	3.392	36.506	3.233	37.470	4.92	-2.57
			3 970	3.372	36.183	3.394	37.390	-0.64	-3.23
06/18/2024	19.6	3700H-3970	3 700	3.084	36.371	3.118	37.700	-1.09	-3.53
			3 750	3.131	36.185	3.169	37.640	-1.20	-3.87
			3 800	3.244	36.283	3.220	37.590	0.75	-3.48
			3 900	3.355	36.208	3.233	37.470	3.77	-3.37
			3 970	3.313	35.906	3.394	37.390	-2.39	-3.97
06/20/2024	19.6	3700H-3970	3 700	3.084	36.377	3.118	37.700	-1.09	-3.51
			3 750	3.131	36.192	3.169	37.640	-1.19	-3.85
			3 800	3.244	36.290	3.220	37.590	0.75	-3.46
			3 900	3.355	36.215	3.233	37.470	3.77	-3.35
			3 970	3.313	35.913	3.394	37.390	-2.39	-3.95

06/19/2024	21.0	3700H-3970	3 700	3.084	36.385	3.118	37.700	-1.09	-3.49
			3 750	3.132	36.199	3.169	37.640	-1.18	-3.83
			3 800	3.244	36.298	3.220	37.590	0.76	-3.44
			3 900	3.355	36.222	3.233	37.470	3.77	-3.33
			3 970	3.313	35.920	3.394	37.390	-2.38	-3.93

12.2 System Verification

Input Power: 50 mW

Freq.	Date	Probe	Dipole	Liquid	Amb. Temp.	Liquid Temp.	1 W Target SAR_{1g} (SPEAG)	50mW Measured SAR_{1g}	1 W Normalized SAR_{1g}	Deviation	Limit
[MHz]		(S/N)	(S/N)		[°C]	[°C]	[W/kg]	[W/kg]	[W/kg]	[%]	[%]
750	06/11/2024	7681	1014	Head	19.0	18.9	8.50	0.406	8.12	- 4.47	± 10
750	06/20/2024	7681		Head	19.1	19.0	8.50	0.409	8.18	- 3.76	± 10
750	06/12/2024	7681		Head	18.5	18.4	8.50	0.405	8.10	- 4.71	± 10
750	06/13/2024	7681		Head	19.5	19.4	8.50	0.406	8.12	- 4.47	± 10
835	06/04/2024	7702	441	Head	21.8	21.7	9.73	0.513	10.26	+ 5.45	± 10
835	06/10/2024	7702		Head	21.2	21.0	9.73	0.512	10.24	+ 5.24	± 10
835	06/14/2024	7681		Head	20.2	20.0	9.73	0.509	10.18	+ 4.62	± 10
1 800	07/04/2024	7702	2d007	Head	22.7	22.7	39.0	1.90	38.0	- 2.56	± 10
1 800	06/05/2024	3968		Head	23.8	23.7	39.0	2.05	41.0	+ 5.13	± 10
1 800	06/27/2024	3968		Head	21.8	21.7	39.0	2.04	40.8	+ 4.62	± 10
1 900	06/05/2024	7702	5d032	Head	22.0	21.9	40.2	1.89	37.8	- 5.97	± 10
1 900	07/03/2024	7702		Head	22.1	22.0	40.2	1.89	37.8	- 5.97	± 10
1 900	06/03/2024	3968		Head	24.1	24.0	40.2	2.08	41.6	+ 3.48	± 10
1 900	06/26/2024	3968		Head	21.3	21.2	40.2	2.17	43.4	+ 7.96	± 10
2 300	06/27/2024	3797	1010	Head	20.4	20.3	48.3	2.56	51.2	+ 6.00	± 10
2 300	06/28/2024	3797		Head	20.8	20.7	48.3	2.42	48.4	+ 0.21	± 10
2 450	07/03/2024	3797	743	Head	21.7	21.6	51.8	2.66	53.2	+ 2.70	± 10
2 450	06/24/2024	7702		Head	21.5	21.3	51.8	2.52	50.4	- 2.70	± 10
2 450	06/24/2024	7702		Head	21.1	21.0	51.8	2.47	49.4	- 4.63	± 10
2 450	06/26/2024	7702		Head	20.8	20.6	51.8	2.39	47.8	- 7.72	± 10
2 450	06/27/2024	7702		Head	20.4	20.2	51.8	2.41	48.2	- 6.95	± 10
2 600	06/04/2024	3797	1015	Head	21.2	21.1	56.4	2.91	58.2	+ 3.19	± 10
2 600	06/26/2024	3797		Head	20.9	20.9	56.4	2.83	56.6	+ 0.35	± 10
2 600	06/05/2024	3797		Head	21.5	21.4	56.4	2.83	56.6	+ 0.35	± 10
2 600	07/01/2024	3797		Head	21.3	21.2	56.4	2.78	55.6	- 1.42	± 10
2 600	06/17/2024	7702		Head	20.8	20.6	56.4	2.98	59.6	+ 5.67	± 10
2 600	07/05/2024	7702		Head	22.0	22.0	56.4	2.96	59.2	+ 4.96	± 10
3 500	07/08/2024	7702	1132	Head	23.1	23.0	65.1	3.19	63.8	- 2.00	± 10
3 700	07/08/2024	7702	1105	Head	23.1	23.0	67.1	3.14	62.8	- 6.41	± 10
5 250	06/19/2024	7370	1107	Head	24.2	24.0	80.2	3.93	78.6	- 2.00	± 10
5 600	06/20/2024	7370		Head	23.2	23.0	82.1	4.33	86.6	+ 5.48	± 10
5 750	06/21/2024	7370		Head	24.3	24.1	79.9	3.76	75.2	- 5.88	± 10
5 800	06/24/2024	7370		Head	19.0	19.0	79.3	3.90	78.0	- 1.64	± 10
5 250	06/25/2024	7370		Head	19.3	19.1	80.2	4.27	85.4	+ 6.48	± 10
5 600	06/26/2024	7370		Head	19.7	19.5	82.1	4.08	81.6	- 0.61	± 10
5 750	06/27/2024	7370		Head	19.9	19.9	79.9	3.75	75.0	- 6.13	± 10
5 800	06/28/2024	7370		Head	20.3	20.3	79.3	3.80	76.0	- 4.16	± 10

Input Power: 10 mW

Freq.	Date	Probe	Dipole	Liquid	Amb. Temp.	Liquid Temp.	1 W Target SAR_{1g} (SPEAG)	10mW Measured SAR_{1g}	1 W Normalized SAR_{1g}	Deviation	Limit
[MHz]		(S/N)	(S/N)		[°C]	[°C]	[W/kg]	[W/kg]	[W/kg]	[%]	[%]
6 500	07/02/2024	7370	1012	Head	19.6	19.5	292	3.14	314	+ 7.53	± 10
6 500	07/03/2024	7370		Head	19.2	19.0	292	3.03	303	+ 3.77	± 10

◆ 5G NR SUB 6

Input Power: 50 mW

Freq.	Date	Probe (S/N)	Dipole (S/N)	Liquid	Amb. Temp.	Liquid Temp.	1 W Target SAR_{1g} (SPEAG)	50mW Measured SAR_{1g}	1 W Normalized SAR_{1g}	Deviation	Limit
[MHz]					[°C]	[°C]	[W/kg]	[W/kg]	[W/kg]	[%]	[%]
750	06/17/2024	7681	1014	Head	19.4	19.3	8.50	0.410	8.20	- 3.53	± 10
750	06/18/2024	7702		Head	19.6	19.6	8.50	0.437	8.74	+ 2.82	± 10
835	06/19/2024	7681	441	Head	21.0	21.0	9.73	0.503	10.06	+ 3.39	± 10
1 640	06/17/2024	7702	345	Head	21.9	21.8	33.8	1.61	32.2	- 4.73	± 10
1 800	06/19/2024	3968	2d007	Head	21.5	21.3	39.0	2.01	40.2	+ 3.08	± 10
1 800	07/02/2024	3968		Head	23.1	23.0	39.0	2.00	40.0	+ 2.56	± 10
1 900	06/28/2024	3968	5d032	Head	22.3	22.3	40.2	2.16	43.2	+ 7.46	± 10
1 900	07/01/2024	3968		Head	23.2	23.0	40.2	2.14	42.8	+ 6.47	± 10
2 300	06/24/2024	3797	1010	Head	20.8	20.7	48.3	2.54	50.8	+ 5.18	± 10
2 300	06/25/2024	3797		Head	19.8	19.8	48.3	2.35	47.0	- 2.69	± 10
2 600	06/12/2024	3797	1015	Head	20.7	20.6	56.4	2.81	56.2	- 0.35	± 10
2 600	07/02/2024	3797		Head	21.5	21.3	56.4	2.80	56.0	- 0.71	± 10
2 600	06/20/2024	7702		Head	19.8	19.6	56.4	2.85	57.0	+ 1.06	± 10
2 600	06/13/2024	3797		Head	20.3	20.3	56.4	2.76	55.2	- 2.13	± 10
2 600	06/17/2024	7370		Head	24.3	24.1	56.4	2.80	56.0	- 0.71	± 10
2 600	06/18/2024	7370		Head	24.8	24.6	56.4	2.84	56.8	+ 0.71	± 10
2 600	07/01/2024	7370		Head	20.9	20.9	56.4	2.78	55.6	- 1.42	± 10
2 600	08/08/2024	3076		Head	22.2	22.2	56.4	2.72	54.4	- 3.55	± 10
2 600	08/08/2024	7751		Head	22.2	22.2	56.4	2.79	55.8	- 1.06	± 10
3 500	07/08/2024	7702	1132	Head	23.1	23.0	65.1	3.26	65.2	+ 0.15	± 10
3 500	07/09/2024	7702		Head	22.9	22.9	65.1	3.36	67.2	+ 3.23	± 10
3 500	07/10/2024	7702		Head	22.8	22.8	65.1	3.36	67.2	+ 3.23	± 10
3 500	07/11/2024	7702		Head	23.0	22.8	65.1	3.35	67.0	+ 2.92	± 10
3 500	06/17/2024	7702		Head	20.8	20.6	65.1	3.20	64.0	- 1.69	± 10
3 500	06/18/2024	7702		Head	19.6	19.6	65.1	3.11	62.2	- 4.45	± 10
3 500	06/19/2024	7702		Head	21.0	21.0	65.1	3.13	62.6	- 3.84	± 10
3 500	06/20/2024	7702		Head	19.8	19.6	65.1	3.17	63.4	- 2.61	± 10
3 700	07/08/2024	7702	1105	Head	23.1	23.0	67.1	3.09	61.8	- 7.90	± 10
3 700	07/09/2024	7702		Head	22.9	22.9	67.1	3.31	66.2	- 1.34	± 10
3 700	07/10/2024	7702		Head	22.8	22.8	67.1	3.32	66.4	- 1.04	± 10
3 700	07/11/2024	7702		Head	23.0	22.8	67.1	3.31	66.2	- 1.34	± 10
3 700	06/17/2024	7702		Head	20.8	20.6	67.1	3.15	630	- 6.11	± 10
3 700	06/18/2024	7702		Head	19.6	19.6	67.1	3.22	64.4	- 4.02	± 10
3 700	06/19/2024	7702		Head	21.0	21.0	67.1	3.17	63.4	- 5.51	± 10
3 700	06/20/2024	7702		Head	19.8	19.6	67.1	3.19	63.8	- 4.92	± 10
3 900	06/17/2024	7702	1086	Head	20.8	20.6	67.6	3.14	62.8	- 7.10	± 10
3 900	06/18/2024	7702		Head	19.6	19.6	67.6	3.26	65.2	- 3.55	± 10
3 900	06/19/2024	7702		Head	21.0	21.0	67.6	3.24	64.8	- 4.14	± 10
3 900	06/20/2024	7702		Head	19.8	19.6	67.6	3.24	64.8	- 4.14	± 10

◆ System Verification Results – Extremity SAR

Input Power: 50 ㎽

Freq.	Date	Probe (S/N)	Dipole (S/N)	Liquid	Amb. Temp.	Liquid Temp.	1 W Target SAR_{10g} (SPEAG)	50mW Measured SAR_{10g}	1 W Normalized SAR_{10g}	Deviation	Limit
[㎒]					[°C]	[°C]	[W/kg]	[W/kg]	[W/kg]	[%]	[%]
13	06/18/2024	3076	1016	Head	23.6	23.6	0.343	0.017	0.34	- 0.87	± 10
5 250	06/19/2024	7370	1107	Head	24.2	24.0	23.1	1.22	24.4	+ 5.63	± 10
5 600	06/20/2024	7370		Head	23.2	23.0	23.5	1.18	23.6	+ 0.43	± 10
5 800	06/24/2024	7370		Head	19.0	19.0	22.5	1.20	24	+ 6.67	± 10
5 250	06/25/2024	7370		Head	19.3	19.1	23.1	1.22	24.4	+ 5.63	± 10
5 600	06/26/2024	7370		Head	19.7	19.5	23.5	1.21	24.2	+ 2.98	± 10
5 800	06/28/2024	7370		Head	20.3	20.3	22.5	1.12	22.4	- 0.44	± 10

Input Power: 10 ㎽

Freq.	Date	Probe (S/N)	Dipole (S/N)	Liquid	Amb. Temp.	Liquid Temp.	1 W Target SAR_{10g} (SPEAG)	10mW Measured SAR_{10g}	1 W Normalized SAR_{10g}	Deviation	Limit
[㎒]					[°C]	[°C]	[W/kg]	[W/kg]	[W/kg]	[%]	[%]
6 500	07/02/2024	7370	1012	Head	19.6	19.5	53.8	0.565	56.5	+ 5.02	± 10
6 500	07/03/2024	7370		Head	19.2	19.0	53.8	0.544	54.4	+ 1.12	± 10

12.3 SAR Test System Verification Procedure

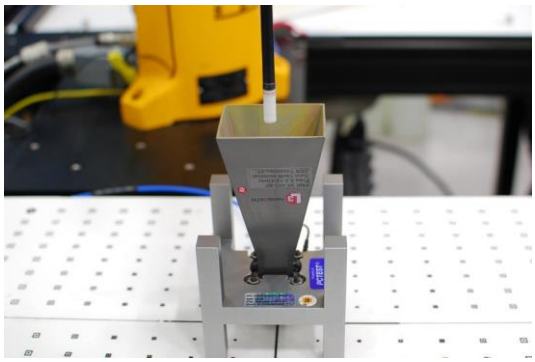
SAR measurement was prior to assessment; the system is verified to the ± 10 % of the specifications at each frequency Band by using the system verification kit. (Graphic Plots Attached)
- Cabling the system, using the verification kit equipment.
- For all frequency band except 6GHz, Generate about 50 ㎽ Input level from the signal generator to the Dipole Antenna. And Generate about 10 ㎽ Input level from the signal generator to the Dipole Antenna for 6.5GHz.
- 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.

12.4 Power density System Verification

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

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



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◆ 10GHz Power Density System Verification Results

Input Power: 10 ㎽

Freq. [㎓]	Date	Probe (S/N)	Dipole (S/N)	Amb. Temp. [°C]	Normal psPD (W/m² over 4 cm²)			Deviation [dB]	Total psPD (W/m² over 4 cm²)			Deviation [dB]
					Measured	Normalized	Target		Measured	Normalized	Target	
10	06/21/2024	9464	1018	19.5	5.23	52.3	56.5	-0.34	5.35	53.5	57.1	-0.28
10	06/24/2024	9464	1018	20.0	5.19	51.9	56.5	-0.37	5.32	53.2	57.1	-0.31

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	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dB)	(dB)	(dB)				(W/kg)		(W/kg)	
836.6	190	GSM Voice	A	33.0	32.53	0.01	Left Touch	1:8.3		0.074	1.114	0.082	-
836.6	190	GSM Voice	A	33.0	32.53	-0.06	Left Tilt	1:8.3		0.027	1.114	0.030	-
836.6	190	GSM Voice	A	33.0	32.53	0.18	Right Cheek	1:8.3		0.108	1.114	0.120	-
836.6	190	GSM Voice	A	33.0	32.53	-0.01	Right Tilt	1:8.3		0.051	1.114	0.057	-
836.6	190	GPRS 3Tx	A	29.5	28.98	-0.19	Left Touch	1:2.77		0.088	1.127	0.099	-
836.6	190	GPRS 3Tx	A	29.5	28.98	-0.03	Left Tilt	1:2.77		0.064	1.127	0.072	-
836.6	190	GPRS 3Tx	A	29.5	28.98	-0.12	Right Cheek	1:2.77		0.134	1.127	**0.151**	**A1**
836.6	190	GPRS 3Tx	A	29.5	28.98	-0.16	Right Tilt	1:2.77		0.069	1.127	0.078	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Head 1.6 W/kg Averaged over 1 gram						

GSM 1900 Head SAR													
Frequency		Mode	Ant.	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dB)	(dB)	(dB)				(W/kg)		(W/kg)	
1 880	661	GSM Voice	A	31.0	29.33	-0.05	Left Touch	1:8.3		0.04	1.469	0.059	-
1 880	661	GSM Voice	A	31.0	29.33	-0.01	Left Tilt	1:8.3		0.016	1.469	0.024	-
1 880	661	GSM Voice	A	31.0	29.33	0.08	Right Touch	1:8.3		0.032	1.469	0.047	-
1 880	661	GSM Voice	A	31.0	29.33	0.11	Right Tilt	1:8.3		0.030	1.469	0.044	-
1 880	661	GPRS 2Tx	A	28.5	26.73	-0.19	Left Touch	1:4.15		0.084	1.503	**0.126**	**A2**
1 880	661	GPRS 2Tx	A	28.5	26.73	-0.02	Left Tilt	1:4.15		0.031	1.503	0.047	-
1 880	661	GPRS 2Tx	A	28.5	26.73	0.09	Right Touch	1:4.15		0.035	1.503	0.053	-
1 880	661	GPRS 2Tx	A	28.5	26.73	-0.11	Right Tilt	1:4.15		0.030	1.503	0.045	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Head 1.6 W/kg Averaged over 1 gram						

UMTS Band 5 Head SAR													
Frequency		Mode	Ant.	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dB)	(dB)	(dB)				(W/kg)		(W/kg)	
836.6	4183	RMC	A	25.5	24.22	-0.16	Left Touch	1:1		0.081	1.343	0.109	-
836.6	4183	RMC	A	25.5	24.22	0.04	Left Tilt	1:1		0.055	1.343	0.074	-
836.6	4183	RMC	A	25.5	24.22	-0.03	Right Touch	1:1		0.146	1.343	**0.196**	**A3**
836.6	4183	RMC	A	25.5	24.22	0.13	Right Tilt	1:1		0.064	1.343	0.086	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Head 1.6 W/kg Averaged over 1 gram						

UMTS Band 4 Head SAR

Frequency		Mode	Ant.	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dB)	(dB)	(dB)				(W/kg)		(W/kg)	
1 732.4	1412	RMC	A	24.5	24.29	0.10	Left Touch	1:1		0.035	1.050	**0.037**	**A4**
1 732.4	1412	RMC	A	24.5	24.29	0.16	Left Tilt	1:1		0.011	1.050	0.012	-
1 732.4	1412	RMC	A	24.5	24.29	0.10	Right Touch	1:1		0.021	1.050	0.022	-
1 732.4	1412	RMC	A	24.5	24.29	0.13	Right Tilt	1:1		0.019	1.050	0.020	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Head 1.6 W/kg Averaged over 1 gram						

UMTS Band 2 Head SAR

Frequency		Mode	Ant.	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dB)	(dB)	(dB)				(W/kg)		(W/kg)	
1 880	9400	RMC	A	24.5	23.81	-0.14	Left Touch	1:1		0.045	1.172	**0.053**	**A5**
1 880	9400	RMC	A	24.5	23.81	-0.01	Left Tilt	1:1		0.024	1.172	0.028	-
1 880	9400	RMC	A	24.5	23.81	0.19	Right Touch	1:1		0.024	1.172	0.028	-
1 880	9400	RMC	A	24.5	23.81	0.12	Right Tilt	1:1		0.024	1.172	0.028	-
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	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
2 510	20850	QPSK	B	20	25.0	24.11	0.09	Left Touch	0	1	0	1:1		0.136	1.227	0.167	-
2 510	20850	QPSK	B	20	24.0	23.08	-0.13	Left Touch	1	50	0	1:1		0.153	1.236	0.189	-
2 510	20850	QPSK	B	20	25.0	24.11	0.07	Left Tilt	0	1	0	1:1		0.106	1.227	0.130	-
2 510	20850	QPSK	B	20	24.0	23.08	0.16	Left Tilt	1	50	0	1:1		0.082	1.236	0.101	-
2 510	20850	QPSK	B	20	25.0	24.11	0.14	Right Touch	0	1	0	1:1		0.067	1.227	0.082	-
2 510	20850	QPSK	B	20	24.0	23.08	-0.07	Right Touch	1	50	0	1:1		0.051	1.236	0.063	-
2 510	20850	QPSK	B	20	25.0	24.11	-0.02	Right Tilt	0	1	0	1:1		0.053	1.227	0.065	-
2 510	20850	QPSK	B	20	24.0	23.08	0.16	Right Tilt	1	50	0	1:1		0.040	1.236	0.049	-
2 560	21350	QPSK	F	20	17.0	16.31	-0.12	Left Touch	0	1	0	1:1		0.344	1.172	0.403	-
2 560	21350	QPSK	F	20	17.0	16.24	-0.04	Left Touch	0	50	0	1:1		0.343	1.191	0.409	-
2 560	21350	QPSK	F	20	17.0	16.31	-0.01	Left tilt	0	1	0	1:1		0.325	1.172	0.381	-
2 560	21350	QPSK	F	20	17.0	16.24	-0.03	Left tilt	0	50	0	1:1		0.327	1.191	0.389	-
2 560	21350	QPSK	F	20	17.0	16.31	0.01	Right touch	0	1	0	1:1		0.562	1.172	0.659	-
2 560	21350	QPSK	F	20	17.0	16.24	0.05	Right touch	0	50	0	1:1		0.577	1.191	0.687	-
2 560	21350	QPSK	F	20	17.0	16.31	0.05	Right Tilt	0	1	0	1:1		0.678	1.172	0.795	-
2 560	21350	QPSK	F	20	17.0	16.24	0.07	Right Tilt	0	50	0	1:1		0.682	1.191	0.812	-
2 510	20850	QPSK	F	20	17.0	16.31	0.06	Right Tilt	0	50	0	1:1		0.643	1.172	0.754	-
2 535	21100	QPSK	F	20	17.0	16.24	0.06	Right Tilt	0	50	0	1:1		0.620	1.191	0.738	-
2 560	21350	QPSK	F	20	17.0	16.12	0.02	Right Tilt	0	100	0	1:1		0.671	1.225	**0.822**	**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 12 Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
707.5	23095	QPSK	A	10	25.8	24.86	-0.16	Left Touch	0	1	24	1:1		0.103	1.242	0.128	-
707.5	23095	QPSK	A	10	24.8	23.89	-0.12	Left Touch	1	25	0	1:1		0.072	1.233	0.089	-
707.5	23095	QPSK	A	10	25.8	24.86	-0.13	Left Tilt	0	1	24	1:1		0.029	1.242	0.036	-
707.5	23095	QPSK	A	10	24.8	23.89	-0.06	Left Tilt	1	25	0	1:1		0.041	1.233	0.051	-
707.5	23095	QPSK	A	10	25.8	24.86	0.14	Right Touch	0	1	24	1:1		0.123	1.242	**0.153**	**A7**
707.5	23095	QPSK	A	10	24.8	23.89	0.00	Right Touch	1	25	0	1:1		0.097	1.233	0.120	-
707.5	23095	QPSK	A	10	25.8	24.86	0.12	Right Tilt	0	1	24	1:1		0.059	1.242	0.073	-
707.5	23095	QPSK	A	10	24.8	23.89	0.12	Right Tilt	1	25	0	1:1		0.033	1.233	0.041	-

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

LTE FDD Band 13 Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
782	23230	QPSK	A	10	25.8	24.99	-0.16	Left Touch	0	1	0	1:1		0.131	1.205	0.158	-
782	23230	QPSK	A	10	24.8	24.10	-0.12	Left Touch	1	25	0	1:1		0.102	1.175	0.120	-
782	23230	QPSK	A	10	25.8	24.99	-0.13	Left Tilt	0	1	0	1:1		0.089	1.205	0.107	-
782	23230	QPSK	A	10	24.8	24.10	-0.06	Left Tilt	1	25	0	1:1		0.070	1.175	0.082	-
782	23230	QPSK	A	10	25.8	24.99	0.14	Right Touch	0	1	0	1:1		0.167	1.205	**0.201**	**A8**
782	23230	QPSK	A	10	24.8	24.10	0.00	Right Touch	1	25	0	1:1		0.130	1.175	0.153	-
782	23230	QPSK	A	10	25.8	24.99	0.12	Right Tilt	0	1	0	1:1		0.075	1.205	0.090	-
782	23230	QPSK	A	10	24.8	24.10	0.12	Right Tilt	1	25	0	1:1		0.060	1.175	0.071	-

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	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
793	23330	QPSK	A	10	25.8	24.93	0.00	Left Touch	0	1	0	1:1		0.113	1.222	0.138	-
793	23330	QPSK	A	10	24.8	23.98	-0.11	Left Touch	1	25	0	1:1		0.081	1.208	0.098	-
793	23330	QPSK	A	10	25.8	24.93	-0.12	Left Tilt	0	1	0	1:1		0.081	1.222	0.099	-
793	23330	QPSK	A	10	24.8	23.98	-0.15	Left Tilt	1	25	0	1:1		0.060	1.208	0.072	-
793	23330	QPSK	A	10	25.8	24.93	-0.01	Right Touch	0	1	0	1:1		0.165	1.222	**0.202**	**A9**
793	23330	QPSK	A	10	24.8	23.98	-0.11	Right Touch	1	25	0	1:1		0.132	1.208	0.159	-
793	23330	QPSK	A	10	25.8	24.93	0.17	Right Tilt	0	1	0	1:1		0.076	1.222	0.093	-
793	23330	QPSK	A	10	24.8	23.98	0.00	Right Tilt	1	25	0	1:1		0.057	1.208	0.069	-

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

LTE FDD Band 25 (PCS) Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB	RB	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)	Size	offset			(W/kg)		(W/kg)	
1 860	26140	QPSK	A	20	25.3	24.65	0.13	Left Touch	0	1	49	1:1		0.128	1.161	0.149	-
1 883	26365	QPSK	A	20	24.3	23.62	0.05	Left Touch	0	50	0	1:1		0.114	1.169	0.133	-
1 860	26140	QPSK	A	20	25.3	24.65	-0.08	Left Tilt	0	1	49	1:1		0.055	1.161	0.064	-
1 883	26365	QPSK	A	20	24.3	23.62	0.12	Left Tilt	0	50	0	1:1		0.069	1.169	0.081	-
1 860	26140	QPSK	A	20	25.3	24.65	0.15	Right Touch	0	1	49	1:1		0.066	1.161	0.077	-
1 883	26365	QPSK	A	20	24.3	23.62	0.13	Right Touch	0	50	0	1:1		0.058	1.169	0.068	-
1 860	26140	QPSK	A	20	25.3	24.65	-0.13	Right Tilt	0	1	49	1:1		0.058	1.161	0.067	-
1 883	26365	QPSK	A	20	24.3	23.62	0.12	Right Tilt	0	50	0	1:1		0.061	1.169	0.071	-
1 882.5	26365	QPSK	F	20	18.5	17.26	-0.05	Left Touch	0	1	0	1:1		0.358	1.330	0.476	-
1 882.5	26365	QPSK	F	20	18.5	17.29	-0.02	Left Touch	0	50	0	1:1		0.36	1.321	0.476	-
1 882.5	26365	QPSK	F	20	18.5	17.26	0.01	Left Tilt	0	1	0	1:1		0.414	1.330	0.551	-
1 882.5	26365	QPSK	F	20	18.5	17.29	-0.02	Left Tilt	0	50	0	1:1		0.417	1.321	0.551	-
1 882.5	26365	QPSK	F	20	18.5	17.26	-0.04	Right Touch	0	1	0	1:1		0.570	1.330	0.758	-
1 882.5	26365	QPSK	F	20	18.5	17.29	0.02	Right Touch	0	50	0	1:1		0.574	1.321	**0.758**	**A10**
1 882.5	26365	QPSK	F	20	18.5	17.26	-0.01	Right Tilt	0	1	0	1:1		0.556	1.330	0.739	-
1 882.5	26365	QPSK	F	20	18.5	17.29	-0.01	Right Tilt	0	50	0	1:1		0.561	1.321	0.741	-

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

LTE FDD Band 26 (Cell) Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB	RB	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)	Size	offset			(W/kg)		(W/kg)	
831.5	26865	QPSK	A	15	25.8	25.05	0.14	Left Touch	0	1	0	1:1		0.101	1.189	0.120	-
831.5	26865	QPSK	A	15	24.8	24.00	0.11	Left Touch	1	36	0	1:1		0.077	1.202	0.093	-
831.5	26865	QPSK	A	15	25.8	25.05	-0.07	Left Tilt	0	1	0	1:1		0.065	1.189	0.077	-
831.5	26865	QPSK	A	15	24.8	24.00	-0.15	Left Tilt	1	36	0	1:1		0.054	1.202	0.065	-
831.5	26865	QPSK	A	15	25.8	25.05	0.00	Right Touch	0	1	0	1:1		0.155	1.189	**0.184**	**A11**
831.5	26865	QPSK	A	15	24.8	24.00	-0.14	Right Touch	1	36	0	1:1		0.122	1.202	0.147	-
831.5	26865	QPSK	A	15	25.8	25.05	0.02	Right Tilt	0	1	0	1:1		0.068	1.189	0.081	-
831.5	26865	QPSK	A	15	24.8	24.00	0.04	Right Tilt	1	36	0	1:1		0.059	1.202	0.071	-

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	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
2 310	27710	QPSK	A	10	24.0	22.85	0.00	Left Touch	0	1	0	1:1		0.018	1.303	0.023	-
2 310	27710	QPSK	A	10	23.0	21.89	0.00	Left Touch	1	25	0	1:1		0.011	1.291	0.014	-
2 310	27710	QPSK	A	10	24.0	22.85	0.15	Left tilt	0	1	0	1:1		0.014	1.303	0.018	-
2 310	27710	QPSK	A	10	23.0	21.89	0.13	Left tilt	1	25	0	1:1		0.00913	1.291	0.012	-
2 310	27710	QPSK	A	10	24.0	22.85	-0.19	Right touch	0	1	0	1:1		0.024	1.303	0.031	-
2 310	27710	QPSK	A	10	23.0	21.89	0.00	Right touch	1	25	0	1:1		0.018	1.291	0.023	-
2 310	27710	QPSK	A	10	24.0	22.85	0.15	Right Tilt	0	1	0	1:1		0.00719	1.303	0.009	-
2 310	27710	QPSK	A	10	23.0	21.89	0.19	Right Tilt	1	25	0	1:1		0.00668	1.291	0.009	-
2 310	27710	QPSK	F	10	17.5	16.87	0.02	Left Touch	0	1	49	1:1		0.451	1.156	0.521	-
2 310	27710	QPSK	F	10	17.5	16.98	0.01	Left Touch	0	25	24	1:1		0.452	1.127	0.509	-
2 310	27710	QPSK	F	10	17.5	16.87	0.03	Left tilt	0	1	49	1:1		0.405	1.156	0.468	-
2 310	27710	QPSK	F	10	17.5	16.98	0.05	Left tilt	0	25	24	1:1		0.404	1.127	0.455	-
2 310	27710	QPSK	F	10	17.5	16.87	0.07	Right touch	0	1	49	1:1		0.638	1.156	0.738	-
2 310	27710	QPSK	F	10	17.5	16.98	-0.08	Right touch	0	25	24	1:1		0.678	1.127	**0.764**	A12
2 310	27710	QPSK	F	10	17.5	16.66	-0.13	Right touch	0	50	0	1:1		0.490	1.213	0.594	-
2 310	27710	QPSK	F	10	17.5	16.87	0.00	Right Tilt	0	1	49	1:1		0.659	1.156	0.762	-
2 310	27710	QPSK	F	10	17.5	16.98	0.06	Right Tilt	0	25	24	1:1		0.669	1.127	0.754	-
2 310	27710	QPSK	F	10	17.5	16.66	-0.03	Right Tilt	0	50	0	1:1		0.582	1.213	0.706	-
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

CC UL PC	Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
	MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
1CC UL PC3	2 680	41490	QPSK	B	20	25.0	24.31	-0.06	Left Touch	0	1	0	1:1.58		0.054	1.172	0.063	-
1CC UL PC3	2 680	41490	QPSK	B	20	24.0	23.46	0.11	Left Touch	1	50	0	1:1.58		0.043	1.132	0.049	-
1CC UL PC3	2 680	41490	QPSK	B	20	25.0	24.31	0.08	Left tilt	0	1	0	1:1.58		0.019	1.172	0.022	-
1CC UL PC3	2 680	41490	QPSK	B	20	24.0	23.46	0.08	Left tilt	1	50	0	1:1.58		0.015	1.132	0.017	-
1CC UL PC3	2 680	41490	QPSK	B	20	25.0	24.31	0.17	Right touch	0	1	0	1:1.58		0.029	1.172	0.034	-
1CC UL PC3	2 680	41490	QPSK	B	20	24.0	23.46	0.09	Right touch	1	50	0	1:1.58		0.029	1.132	0.033	-
1CC UL PC3	2 680	41490	QPSK	B	20	25.0	24.31	0.18	Right Tilt	0	1	0	1:1.58		0.00863	1.172	0.010	-
1CC UL PC3	2 680	41490	QPSK	B	20	24.0	23.46	0.12	Right Tilt	1	50	0	1:1.58		0.0075	1.132	0.008	-
2CC UL PC3 (41C)	PCC 2 680	41490	QPSK	B	20	25.0	24.25	-0.15	Left Touch	0	1	0	1:1.58		0.117	1.189	0.139	-
	SCC 2 660.2	41292	QPSK	B	20					0	1	99						
1CC UL PC3	2 680	41490	QPSK	F	20	17.5	17.01	-0.09	Left Touch	0	1	0	1:1.58		0.218	1.119	0.244	-
1CC UL PC3	2 680	41490	QPSK	F	20	17.5	17.00	0.06	Left Touch	0	50	0	1:1.58		0.215	1.122	0.241	-
1CC UL PC3	2 680	41490	QPSK	F	20	17.5	17.01	0.04	Left tilt	0	1	0	1:1.58		0.218	1.119	0.244	-
1CC UL PC3	2 680	41490	QPSK	F	20	17.5	17.00	0.01	Left tilt	0	50	0	1:1.58		0.217	1.122	0.243	-
1CC UL PC3	2 680	41490	QPSK	F	20	17.5	17.01	-0.08	Right touch	0	1	0	1:1.58		0.531	1.119	0.594	-
1CC UL PC3	2 680	41490	QPSK	F	20	17.5	17.00	-0.09	Right touch	0	50	0	1:1.58		0.524	1.122	0.588	-
1CC UL PC3	2 680	41490	QPSK	F	20	17.5	17.01	0.06	Right Tilt	0	1	0	1:1.58		0.648	1.119	0.725	-
1CC UL PC3	2 680	41490	QPSK	F	20	17.5	17.00	-0.04	Right Tilt	0	50	0	1:1.58		0.631	1.122	0.708	-
1CC UL PC3	2 506	39750	QPSK	F	20	17.5	16.31	-0.02	Right Tilt	0	1	0	1:1.58		0.489	1.315	0.643	-
1CC UL PC3	2 506	39750	QPSK	F	20	17.5	16.52	0.03	Right Tilt	0	50	0	1:1.58		0.541	1.253	0.678	-
1CC UL PC3	2 549.5	40185	QPSK	F	20	17.5	16.43	0.02	Right Tilt	0	1	0	1:1.58		0.644	1.279	0.824	-
1CC UL PC3	2 549.5	40185	QPSK	F	20	17.5	16.54	-0.08	Right Tilt	0	50	0	1:1.58		0.655	1.247	0.817	-
1CC UL PC3	2 593	40620	QPSK	F	20	17.5	16.81	0.00	Right Tilt	0	1	0	1:1.58		0.683	1.172	0.800	-
1CC UL PC3	2 593	40620	QPSK	F	20	17.5	16.79	0.01	Right Tilt	0	50	0	1:1.58		0.688	1.178	0.810	-
1CC UL PC3	2 636.5	41055	QPSK	F	20	17.5	16.55	-0.10	Right Tilt	0	1	0	1:1.58		0.713	1.245	**0.888**	A13
1CC UL PC3	2 636.5	41055	QPSK	F	20	17.5	16.62	-0.02	Right Tilt	0	50	0	1:1.58		0.723	1.225	0.886	-
1CC UL PC3	2 680	41490	QPSK	F	20	17.5	16.93	-0.07	Right Tilt	0	100	0	1:1.58		0.741	1.140	0.845	-
2CC UL PC3 (41C)	PCC 2 593	40620	QPSK	F	20	17.5	16.48	-0.03	Right Tilt	0	1	0	1:1.58		0.508	1.265	0.643	-
	SCC 2 573.2	40422	QPSK	F	20					0	1	99						

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 2 HPUE) Head SAR

CC UL PC	Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
	MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
1CC UL PC2	2 593	40620	QPSK	B	20	27.0	26.22	-0.18	Left Touch	0	1	0	1:2.31		0.079	1.197	0.095	-
1CC UL PC2	2 593	40620	QPSK	B	20	26.0	25.34	0.10	Left Touch	1	50	0	1:2.31		0.059	1.164	0.069	-
1CC UL PC2	2 593	40620	QPSK	B	20	27.0	26.22	-0.12	Left tilt	0	1	0	1:2.31		0.024	1.197	0.029	-
1CC UL PC2	2 593	40620	QPSK	B	20	26.0	25.34	0.10	Left tilt	1	50	0	1:2.31		0.018	1.164	0.021	-
1CC UL PC2	2 593	40620	QPSK	B	20	27.0	26.22	0.13	Right touch	0	1	0	1:2.31		0.041	1.197	0.049	-
1CC UL PC2	2 593	40620	QPSK	B	20	26.0	25.34	-0.10	Right touch	1	50	0	1:2.31		0.031	1.164	0.036	-
1CC UL PC2	2 593	40620	QPSK	B	20	27.0	26.22	0.13	Right Tilt	0	1	0	1:2.31		0.020	1.197	0.024	-
1CC UL PC2	2 593	40620	QPSK	B	20	26.0	25.34	-0.10	Right Tilt	1	50	0	1:2.31		0.016	1.164	0.019	-
2CC UL PC2 (41C)	PCC 2 593	40620	QPSK	B	20	27.0	26.11	-0.14	Left Touch	0	1	0	1:2.31		0.074	1.227	0.091	-
	SCC 2 573.2	40422	QPSK	B	20					0	1	99						
1CC UL PC2	2 593	40620	QPSK	F	20	19.5	18.84	-0.12	Left Touch	0	1	0	1:2.31		0.167	1.164	0.194	-
1CC UL PC2	2 593	40620	QPSK	F	20	19.5	18.83	0.00	Left Touch	0	50	0	1:2.31		0.172	1.167	0.201	-
1CC UL PC2	2 593	40620	QPSK	F	20	19.5	18.84	-0.04	Left Tilt	0	1	0	1:2.31		0.246	1.164	0.286	-
1CC UL PC2	2 593	40620	QPSK	F	20	19.5	18.83	0.09	Left Tilt	0	50	0	1:2.31		0.207	1.167	0.242	-
1CC UL PC2	2 593	40620	QPSK	F	20	19.5	18.84	-0.12	Right Touch	0	1	0	1:2.31		0.405	1.164	0.471	-
1CC UL PC2	2 593	40620	QPSK	F	20	19.5	18.83	0.13	Right Touch	0	50	0	1:2.31		0.412	1.167	0.481	-
1CC UL PC2	2 593	40620	QPSK	F	20	19.5	18.84	0.10	Right Tilt	0	1	0	1:2.31		0.509	1.164	0.592	-
1CC UL PC2	2 593	40620	QPSK	F	20	19.5	18.83	0.05	Right Tilt	0	50	0	1:2.31		0.510	1.167	0.595	-
2CC UL PC2 (41C)	PCC 2 593	40620	QPSK	F	20	19.5	18.63	0.11	Right Tilt	0	50	0	1:2.31		0.561	1.222	**0.686**	**A14**
	SCC 2 573.2	40422	QPSK	F	20					0	1	99						

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 48 Head SAR

CC UL PC	Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
	MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
1CC UL	3 560	55340	QPSK	F	20	18.0	17.45	0.19	Left Touch	0	1	0	1:1.58		0.321	1.135	0.364	-
1CC UL	3 560	55340	QPSK	F	20	18.0	17.45	-0.12	Left Touch	0	50	0	1:1.58		0.325	1.135	0.369	-
1CC UL	3 560	55340	QPSK	F	20	18.0	17.45	-0.02	Left Tilt	0	1	0	1:1.58		0.337	1.135	0.382	-
1CC UL	3 560	55340	QPSK	F	20	18.0	17.45	-0.08	Left Tilt	0	50	0	1:1.58		0.343	1.135	0.389	-
1CC UL	3 560	55340	QPSK	F	20	18.0	17.45	0.11	Right Touch	0	1	0	1:1.58		0.523	1.135	0.594	-
1CC UL	3 560	55340	QPSK	F	20	18.0	17.45	0.10	Right Touch	0	50	0	1:1.58		0.525	1.135	0.596	-
1CC UL	3 560	55340	QPSK	F	20	18.0	17.45	0.04	Right Tilt	0	1	0	1:1.58		0.730	1.135	0.829	-
1CC UL	3 603.3	55773	QPSK	F	20	18.0	17.07	-0.07	Right Tilt	0	1	0	1:1.58		0.748	1.239	0.927	-
1CC UL	3 646.7	56207	QPSK	F	20	18.0	17.13	-0.10	Right Tilt	0	1	0	1:1.58		0.710	1.222	0.868	-
1CC UL	3 690	56640	QPSK	F	20	18.0	17.02	-0.16	Right Tilt	0	1	0	1:1.58		0.749	1.253	**0.938**	**A15**
1CC UL	3 560	55340	QPSK	F	20	18.0	17.45	-0.09	Right Tilt	0	50	0	1:1.58		0.727	1.135	0.825	-
1CC UL	3 603.3	55773	QPSK	F	20	18.0	17.09	-0.13	Right Tilt	0	50	0	1:1.58		0.753	1.233	0.928	-
1CC UL	3 646.7	56207	QPSK	F	20	18.0	17.12	-0.09	Right Tilt	0	50	0	1:1.58		0.733	1.225	0.898	-
1CC UL	3 690	56640	QPSK	F	20	18.0	17.05	-0.14	Right Tilt	0	50	0	1:1.58		0.751	1.245	0.935	-
1CC UL	3 690	56640	QPSK	F	20	18.0	17.42	-0.18	Right Tilt	0	100	0	1:1.58		0.748	1.143	0.855	-
2CC UL (48C)	PCC 3 603.3	55773	QPSK	F	20	18.0	17.06	-0.14	Right Tilt	0	50	0	1:1.58		0.401	1.242	0.498	-
	SCC 3 583.5	55575	QPSK	F	20						50	49						

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 66 (AWS) Head SAR

CC UL PC	Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
	MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
1CC UL	1 720	132072	QPSK	A	20	25.3	24.34	0.08	Left Touch	0	1	0	1:1		0.128	1.247	0.160	-
1CC UL	1 720	132072	QPSK	A	20	24.3	23.30	0.14	Left Touch	1	50	0	1:1		0.101	1.259	0.127	-
1CC UL	1 720	132072	QPSK	A	20	25.3	24.34	0.04	Left Tilt	0	1	0	1:1		0.064	1.247	0.080	-
1CC UL	1 720	132072	QPSK	A	20	24.3	23.30	0.04	Left Tilt	1	50	0	1:1		0.060	1.259	0.076	-
1CC UL	1 720	132072	QPSK	A	20	25.3	24.34	-0.06	Right Touch	0	1	0	1:1		0.094	1.247	0.117	-
1CC UL	1 720	132072	QPSK	A	20	24.3	23.30	-0.16	Right Touch	1	50	0	1:1		0.050	1.259	0.063	-
1CC UL	1 720	132072	QPSK	A	20	25.3	24.34	0.07	Right Tilt	0	1	0	1:1		0.050	1.247	0.062	-
1CC UL	1 720	132072	QPSK	A	20	24.3	23.30	0.15	Right Tilt	1	50	0	1:1		0.043	1.259	0.054	-
1CC UL	1 720	132072	QPSK	A	20	25.3	24.15	-0.10	Left Touch	0	1	99	1:1		0.135	1.303	0.176	-
1CC UL	1717.5	132047	QPSK	A	20	25.3	24.25	0.01	Left Touch	0	1	99	1:1		0.173	1.274	0.220	-
2CC UL (66B)	PCC 1 720	132072	QPSK	A	15	25.3	24.05	-0.10	Left Touch	0	1	74	1:1		0.145	1.334	0.193	-
2CC UL (66B)	SCC 1726.8	132140	QPSK	A	5						1	0						
2CC UL (66C)	PCC 1 720	132072	QPSK	A	20	25.3	24.12	-0.11	Left Touch	0	1	0	1:1		0.133	1.312	0.174	-
2CC UL (66C)	SCC 1739.8	132270	QPSK	A	20						1	99						
1CC UL	1 745	132322	QPSK	F	20	18.5	17.28	-0.08	Left Touch	0	1	99	1:1		0.411	1.324	0.544	-
1CC UL	1 745	132322	QPSK	F	20	18.5	17.14	0.00	Left Touch	0	50	49	1:1		0.410	1.368	0.561	-
1CC UL	1 745	132322	QPSK	F	20	18.5	17.28	-0.03	Left Tilt	0	1	99	1:1		0.480	1.324	0.636	-
1CC UL	1 745	132322	QPSK	F	20	18.5	17.14	0.01	Left Tilt	0	50	49	1:1		0.476	1.368	0.651	-
1CC UL	1 745	132322	QPSK	F	20	18.5	17.28	-0.00	Right Touch	0	1	99	1:1		0.471	1.324	0.624	-
1CC UL	1 745	132322	QPSK	F	20	18.5	17.14	0.01	Right Touch	0	50	49	1:1		0.479	1.368	0.655	-
1CC UL	1 745	132322	QPSK	F	20	18.5	17.28	-0.01	Right Tilt	0	1	99	1:1		0.442	1.324	0.585	-
1CC UL	1 745	132322	QPSK	F	20	18.5	17.14	-0.02	Right Tilt	0	50	49	1:1		0.454	1.368	0.621	-
1CC UL	1 745	132322	QPSK	F	15	18.5	17.18	0.10	Right Touch	0	36	0	1:1		0.424	1.355	0.575	-
2CC UL (66B)	PCC 1 745	132322	QPSK	F	15	18.5	17.16	0.02	Right Touch	0	36	0	1:1		0.561	1.361	**0.764**	**A16**
2CC UL (66B)	SCC 1735.7	132229	QPSK	F	5						12	11						
2CC UL (66C)	PCC 1 745	132322	QPSK	F	20	18.5	17.14	0.03	Right Touch	0	50	49	1:1		0.557	1.368	0.762	
2CC UL (66C)	SCC 1764.8	132520	QPSK	F	20						50	0						

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	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
683	133322	QPSK	A	20	25.8	24.86	-0.12	Left Touch	0	1	0	1:1		0.123	1.242	**0.153**	**A17**
683	133322	QPSK	A	20	24.8	23.89	-0.12	Left Touch	1	50	0	1:1		0.089	1.233	0.110	-
683	133322	QPSK	A	20	25.8	24.86	-0.12	Left Tilt	0	1	0	1:1		0.048	1.242	0.060	-
683	133322	QPSK	A	20	24.8	23.89	0.03	Left Tilt	1	50	0	1:1		0.037	1.233	0.046	-
683	133322	QPSK	A	20	25.8	24.86	0.17	Right Touch	0	1	0	1:1		0.106	1.242	0.132	-
683	133322	QPSK	A	20	24.8	23.89	0.15	Right Touch	1	50	0	1:1		0.086	1.233	0.106	-
683	133322	QPSK	A	20	25.8	24.86	-0.07	Right Tilt	0	1	0	1:1		0.036	1.242	0.045	-
683	133322	QPSK	A	20	24.8	23.89	-0.13	Right Tilt	1	50	0	1:1		0.034	1.233	0.042	-

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 n7 Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
2 535	507000	DFT-s OFDM QPSK	B	40	25.0	23.31	-0.11	Left Touch	0	1	214	1:1		0.057	1.476	0.084	-
2 535	507000	DFT-s OFDM QPSK	B	40	25.0	23.09	-0.12	Left Touch	0	108	54	1:1		0.063	1.552	0.098	-
2 535	507000	DFT-s OFDM QPSK	B	40	25.0	23.31	-0.16	Left tilt	0	1	214	1:1		0.024	1.476	0.035	-
2 535	507000	DFT-s OFDM QPSK	B	40	25.0	23.09	0.18	Left tilt	0	108	54	1:1		0.029	1.552	0.045	-
2 535	507000	DFT-s OFDM QPSK	B	40	25.0	23.31	0.13	Right touch	0	1	214	1:1		0.021	1.476	0.031	-
2 535	507000	DFT-s OFDM QPSK	B	40	25.0	23.09	-0.17	Right touch	0	108	54	1:1		0.031	1.552	0.048	-
2 535	507000	DFT-s OFDM QPSK	B	40	25.0	23.31	0.19	Right Tilt	0	1	214	1:1		0.015	1.476	0.022	-
2 535	507000	DFT-s OFDM QPSK	B	40	25.0	23.09	0.10	Right Tilt	0	108	54	1:1		0.012	1.552	0.019	-
2 535	507000	CP QPSK	B	40	23.5	21.57	-0.18	Left Touch	1.5	1	1	1:1		0.064	1.560	0.100	-
2 535	507000	DFT-s OFDM QPSK	F	40	17.0	16.23	-0.03	Left Touch	0	1	214	1:1		0.347	1.194	0.414	-
2 535	507000	DFT-s OFDM QPSK	F	40	17.0	16.11	0.03	Left Touch	0	108	108	1:1		0.315	1.227	0.387	-
2 535	507000	DFT-s OFDM QPSK	F	40	17.0	16.23	-0.14	Left Tilt	0	1	214	1:1		0.335	1.194	0.400	-
2 535	507000	DFT-s OFDM QPSK	F	40	17.0	16.11	0.01	Left Tilt	0	108	108	1:1		0.33	1.227	0.405	-
2 535	507000	DFT-s OFDM QPSK	F	40	17.0	16.23	-0.04	Right Touch	0	1	214	1:1		0.467	1.194	0.558	-
2 535	507000	DFT-s OFDM QPSK	F	40	17.0	16.11	-0.10	Right Touch	0	108	108	1:1		0.616	1.227	0.756	-
2 535	507000	DFT-s OFDM QPSK	F	40	17.0	16.23	-0.05	Right Tilt	0	1	214	1:1		0.503	1.194	0.601	-
2 535	507000	DFT-s OFDM QPSK	F	40	17.0	16.11	-0.03	Right Tilt	0	108	108	1:1		0.623	1.227	0.764	-
2 535	507000	CP QPSK	F	40	17.0	15.71	-0.19	Right Tilt	0	1	1	1:1		0.671	1.346	**0.903**	**A18**

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 n12 Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
707.5	141500	DFT-s OFDM QPSK	A	15	25.8	24.88	-0.11	Left Touch	0	1	77	1:1		0.047	1.236	0.058	-
707.5	141500	DFT-s OFDM QPSK	A	15	25.8	24.81	-0.15	Left Touch	0	36	22	1:1		0.080	1.256	0.100	-
707.5	141500	DFT-s OFDM QPSK	A	15	25.8	24.88	0.03	Left Tilt	0	1	77	1:1		0.018	1.236	0.022	-
707.5	141500	DFT-s OFDM QPSK	A	15	25.8	24.81	0.05	Left Tilt	0	36	22	1:1		0.035	1.256	0.044	-
707.5	141500	DFT-s OFDM QPSK	A	15	25.8	24.88	-0.13	Right Touch	0	1	77	1:1		0.124	1.236	**0.153**	**A19**
707.5	141500	DFT-s OFDM QPSK	A	15	25.8	24.81	-0.18	Right Touch	0	36	22	1:1		0.115	1.256	0.144	-
707.5	141500	DFT-s OFDM QPSK	A	15	25.8	24.88	0.11	Right Tilt	0	1	77	1:1		0.054	1.236	0.067	-
707.5	141500	DFT-s OFDM QPSK	A	15	25.8	24.81	0.18	Right Tilt	0	36	22	1:1		0.058	1.256	0.073	-
707.5	141500	CP QPSK	A	15	24.3	23.32	0.00	Right Touch	1.5	1	1	1:1		0.00523	1.253	0.007	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Head 1.6 W/kg Averaged over 1 gram									

NR FDD Band n25 Head (PCS) SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
1 882.5	376500	DFT-s OFDM QPSK	A	40	25.3	24.54	-0.12	Left Touch	0	1	108	1:1		0.174	1.191	0.207	-
1 882.5	376500	DFT-s OFDM QPSK	A	40	25.3	24.45	0.09	Left Touch	0	108	54	1:1		0.135	1.216	0.164	-
1 882.5	376500	DFT-s OFDM QPSK	A	40	25.3	24.54	0.08	Left Tilt	0	1	108	1:1		0.068	1.191	0.081	-
1 882.5	376500	DFT-s OFDM QPSK	A	40	25.3	24.45	0.04	Left Tilt	0	108	54	1:1		0.054	1.216	0.066	-
1 882.5	376500	DFT-s OFDM QPSK	A	40	25.3	24.54	-0.17	Right Touch	0	1	108	1:1		0.088	1.191	0.105	-
1 882.5	376500	DFT-s OFDM QPSK	A	40	25.3	24.45	0.11	Right Touch	0	108	54	1:1		0.065	1.216	0.079	-
1 882.5	376500	DFT-s OFDM QPSK	A	40	25.3	24.54	-0.06	Right Tilt	0	1	108	1:1		0.091	1.191	0.108	-
1 882.5	376500	DFT-s OFDM QPSK	A	40	25.3	24.45	0.18	Right Tilt	0	108	54	1:1		0.066	1.216	0.080	-
1 882.5	376500	CP QPSK	A	40	23.8	22.97	-0.15	Left Touch	1.5	1	1	1:1		0.102	1.211	0.124	-
1 882.5	376500	DFT-s OFDM QPSK	F	40	18.0	16.88	-0.04	Left Touch	0	1	1	1:1		0.356	1.294	0.461	-
1 882.5	376500	DFT-s OFDM QPSK	F	40	18.0	16.86	-0.04	Left Touch	0	108	108	1:1		0.391	1.300	0.508	-
1 882.5	376500	DFT-s OFDM QPSK	F	40	18.0	16.88	-0.01	Left Tilt	0	1	1	1:1		0.453	1.294	0.586	-
1 882.5	376500	DFT-s OFDM QPSK	F	40	18.0	16.86	0.00	Left Tilt	0	108	108	1:1		0.499	1.300	0.649	-
1 882.5	376500	DFT-s OFDM QPSK	F	40	18.0	16.88	-0.02	Right Touch	0	1	1	1:1		0.541	1.294	0.700	-
1 882.5	376500	DFT-s OFDM QPSK	F	40	18.0	16.86	0.01	Right Touch	0	108	108	1:1		0.582	1.300	0.757	-
1 882.5	376500	DFT-s OFDM QPSK	F	40	18.0	16.88	0.07	Right Tilt	0	1	1	1:1		0.554	1.294	0.717	-
1 882.5	376500	DFT-s OFDM QPSK	F	40	18.0	16.86	-0.00	Right Tilt	0	108	108	1:1		0.604	1.300	**0.785**	**A20**
1 882.5	376500	CP QPSK	F	40	18.0	16.54	0.00	Right Tilt	0	1	1	1:1		0.556	1.400	0.778	**-**
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 n26 (Cell) Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
831.5	166300	DFT-s OFDM QPSK	A	20	25.8	25.04	0.14	Left Touch	0	1	53	1:1		0.076	1.191	0.091	-
831.5	166300	DFT-s OFDM QPSK	A	20	25.8	24.97	-0.18	Left Touch	0	50	28	1:1		0.080	1.211	0.097	-
831.5	166300	DFT-s OFDM QPSK	A	20	25.8	25.04	-0.10	Left Tilt	0	1	53	1:1		0.036	1.191	0.043	-
831.5	166300	DFT-s OFDM QPSK	A	20	25.8	24.97	-0.15	Left Tilt	0	50	28	1:1		0.042	1.211	0.051	-
831.5	166300	DFT-s OFDM QPSK	A	20	25.8	25.04	0.14	Right Touch	0	1	53	1:1		0.139	1.191	**0.166**	A21
831.5	166300	DFT-s OFDM QPSK	A	20	25.8	24.97	-0.12	Right Touch	0	50	28	1:1		0.126	1.211	0.153	-
831.5	166300	DFT-s OFDM QPSK	A	20	25.8	25.04	-0.19	Right Tilt	0	1	53	1:1		0.065	1.191	0.077	-
831.5	166300	DFT-s OFDM QPSK	A	20	25.8	24.97	-0.16	Right Tilt	0	50	28	1:1		0.058	1.211	0.070	-
831.5	166300	CP QPSK	A	20	24.3	23.63	-0.15	Right Touch	1.5	1	1	1:1		0.100	1.167	0.117	-
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		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
2 310	462000	DFT-s OFDM QPSK	A	10	24.0	22.92	0.19	Left Touch	0	1	26	1:1		0.015	1.282	0.019	-
2 310	462000	DFT-s OFDM QPSK	A	10	24.0	22.91	0.05	Left Touch	0	25	14	1:1		0.018	1.285	0.023	-
2 310	462000	DFT-s OFDM QPSK	A	10	24.0	22.92	0.04	Left Tilt	0	1	26	1:1		0.015	1.282	0.019	-
2 310	462000	DFT-s OFDM QPSK	A	10	24.0	22.91	0.17	Left Tilt	0	25	14	1:1		0.017	1.285	0.022	-
2 310	462000	DFT-s OFDM QPSK	A	10	24.0	22.92	0.19	Right Touch	0	1	26	1:1		0.024	1.282	0.031	-
2 310	462000	DFT-s OFDM QPSK	A	10	24.0	22.91	0.17	Right Touch	0	25	14	1:1		0.024	1.285	0.031	-
2 310	462000	DFT-s OFDM QPSK	A	10	24.0	22.92	0.12	Right Tilt	0	1	26	1:1		0.011	1.282	0.014	-
2 310	462000	DFT-s OFDM QPSK	A	10	24.0	22.91	0.11	Right Tilt	0	25	14	1:1		0.011	1.285	0.014	-
2 310	462000	CP QPSK	A	10	22.5	21.34	-0.11	Right Touch	1.5	1	1	1:1		0.021	1.306	0.027	-
2 310	462000	DFT-s OFDM QPSK	F	10	17.0	16.89	-0.09	Left Touch	0	1	50	1:1		0.409	1.026	0.420	-
2 310	462000	DFT-s OFDM QPSK	F	10	17.0	16.77	0.03	Left Touch	0	25	27	1:1		0.395	1.054	0.416	-
2 310	462000	DFT-s OFDM QPSK	F	10	17.0	16.89	-0.01	Left tilt	0	1	50	1:1		0.425	1.026	0.436	-
2 310	462000	DFT-s OFDM QPSK	F	10	17.0	16.77	0.08	Left tilt	0	25	27	1:1		0.414	1.054	0.436	-
2 310	462000	DFT-s OFDM QPSK	F	10	17.0	16.89	-0.03	Right touch	0	1	50	1:1		0.645	1.026	0.662	-
2 310	462000	DFT-s OFDM QPSK	F	10	17.0	16.77	0.01	Right touch	0	25	27	1:1		0.651	1.054	0.686	-
2 310	462000	DFT-s OFDM QPSK	F	10	17.0	16.89	-0.04	Right Tilt	0	1	50	1:1		0.683	1.026	0.701	-
2 310	462000	DFT-s OFDM QPSK	F	10	17.0	16.77	-0.02	Right Tilt	0	25	27	1:1		0.680	1.054	0.717	-
2 310	462000	CP QPSK	F	10	17.0	16.74	-0.10	Right Tilt	0	1	1	1:1		0.703	1.062	**0.747**	A22
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 n38 (PC3 Only) Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
2 595	519000	DFT-s OFDM QPSK	B	40	25.0	23.48	-0.01	Left Touch	0	1	1	1:1		0.162	1.419	**0.230**	A23
2 595	519000	DFT-s OFDM QPSK	B	40	25.0	23.37	-0.12	Left Touch	0	50	28	1:1		0.144	1.455	0.210	-
2 595	519000	DFT-s OFDM QPSK	B	40	25.0	23.48	-0.10	Left Tilt	0	1	1	1:1		0.048	1.419	0.068	-
2 595	519000	DFT-s OFDM QPSK	B	40	25.0	23.37	0.17	Left Tilt	0	50	28	1:1		0.049	1.455	0.071	-
2 595	519000	DFT-s OFDM QPSK	B	40	25.0	23.48	-0.11	Right Touch	0	1	1	1:1		0.042	1.419	0.060	-
2 595	519000	DFT-s OFDM QPSK	B	40	25.0	23.37	-0.08	Right Touch	0	50	28	1:1		0.039	1.455	0.057	-
2 595	519000	DFT-s OFDM QPSK	B	40	25.0	23.48	0.10	Right Tilt	0	1	1	1:1		0.037	1.419	0.053	-
2 595	519000	DFT-s OFDM QPSK	B	40	25.0	23.37	0.19	Right Tilt	0	50	28	1:1		0.037	1.455	0.054	-
2 595	519000	CP QPSK	B	40	23.5	22.04	-0.19	Left Touch	1.5	1	1	1:1		0.138	1.112	0.153	-
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 (PC2 Only) Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
2 592.99	518598	DFT-s OFDM QPSK	B	100	20.5	19.24	0.13	Left Touch	0	1	271	1:1		0.023	1.337	0.031	-
2 592.99	518598	DFT-s OFDM QPSK	B	100	20.5	18.73	0.11	Left Touch	0	135	69	1:1		0.021	1.503	0.032	-
2 592.99	518598	DFT-s OFDM QPSK	B	100	20.5	19.24	-0.10	Left tilt	0	1	271	1:1		0.014	1.337	0.019	-
2 592.99	518598	DFT-s OFDM QPSK	B	100	20.5	18.73	0.05	Left tilt	0	135	69	1:1		0.017	1.503	0.026	-
2 592.99	518598	DFT-s OFDM QPSK	B	100	20.5	19.24	0.17	Right touch	0	1	271	1:1		0.014	1.337	0.019	-
2 592.99	518598	DFT-s OFDM QPSK	B	100	20.5	18.73	-0.09	Right touch	0	135	69	1:1		0.015	1.503	0.023	-
2 592.99	518598	DFT-s OFDM QPSK	B	100	20.5	19.24	-0.17	Right Tilt	0	1	271	1:1		0.012	1.337	0.016	-
2 592.99	518598	DFT-s OFDM QPSK	B	100	20.5	18.73	0.09	Right Tilt	0	135	69	1:1		0.012	1.503	0.018	-
2 592.99	518598	CP OFDM QPSK	B	100	20.5	19.09	0.06	Left Touch	1.5	1	1	1:1		0.019	1.384	0.026	-
2 592.99	518598	CW SRS #1	F	100	14.5	13.47	0.15	Left Touch	0	-	-	1:1		0.336	1.268	0.426	-
2 592.99	518598	CW SRS #1	F	100	14.5	13.47	-0.07	Left Tilt	0	-	-	1:1		0.324	1.268	0.411	-
2 592.99	518598	CW SRS #1	F	100	14.5	13.47	0.15	Right Touch	0	-	-	1:1		0.598	1.268	0.758	-
2 592.99	518598	CW SRS #1	F	100	14.5	13.47	0.10	Right Tilt	0	-	-	1:1		0.655	1.268	**0.831**	A24
2 592.99	518598	CW SRS #2	D	100	15.0	13.97	0.16	Left Touch	0	-	-	1:1		0.000161	1.268	0.000	-
2 592.99	518598	CW SRS #2	D	100	15.0	13.97	0.07	Left Tilt	0	-	-	1:1		0.00114	1.268	0.001	-
2 592.99	518598	CW SRS #2	D	100	15.0	13.97	0.18	Right Touch	0	-	-	1:1		0.00167	1.268	0.002	-
2 592.99	518598	CW SRS #2	D	100	15.0	13.97	0.00	Right Tilt	0	-	-	1:1		0.00287	1.268	0.004	-
2 592.99	518598	CW SRS #3	E	100	14.5	13.56	0.14	Left Touch	0	-	-	1:1		0.285	1.242	0.354	-
2 592.99	518598	CW SRS #3	E	100	14.5	13.56	0.19	Left Tilt	0	-	-	1:1		0.206	1.242	0.256	-
2 592.99	518598	CW SRS #3	E	100	14.5	13.56	-0.10	Right Touch	0	-	-	1:1		0.144	1.242	0.179	-
2 592.99	518598	CW SRS #3	E	100	14.5	13.56	0.10	Right Tilt	0	-	-	1:1		0.088	1.242	0.109	-
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 (PC3 Only) Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
3 624.99	641666	DFT-s QPSK	F	40	16.0	15.61	-0.18	Left Touch	0	1	53	1:1		0.204	1.094	0.223	-
3 624.99	641666	DFT-s QPSK	F	40	16.0	15.70	0.07	Left Touch	0	50	28	1:1		0.205	1.072	0.220	-
3 624.99	641666	DFT-s QPSK	F	40	16.0	15.61	0.19	Left Tilt	0	1	53	1:1		0.230	1.094	0.252	-
3 624.99	641666	DFT-s QPSK	F	40	16.0	15.70	0.11	Left Tilt	0	50	28	1:1		0.260	1.072	0.279	-
3 624.99	641666	DFT-s QPSK	F	40	16.0	15.61	0.12	Right Touch	0	1	53	1:1		0.504	1.094	0.551	-
3 624.99	641666	DFT-s QPSK	F	40	16.0	15.70	0.14	Right Touch	0	50	28	1:1		0.516	1.072	0.553	-
3 624.99	641666	DFT-s QPSK	F	40	16.0	15.61	-0.10	Right Tilt	0	1	53	1:1		0.547	1.094	0.598	-
3 624.99	641666	DFT-s QPSK	F	40	16.0	15.70	0.09	Right Tilt	0	50	28	1:1		0.559	1.072	**0.599**	A25
3 570	638000	CP QPSK	F	40	16.0	15.46	-0.11	Right Tilt	0	1	1	1:1		0.468	1.132	0.530	-
3 624.99	641666	CW SRS #1	C	40	14.0	12.84	-0.10	Left Touch	0	-	-	1:1		0.016	1.306	0.021	-
3 624.99	641666	CW SRS #1	C	40	14.0	12.84	0	Left Tilt	0	-	-	1:1		0	1.306	0.000	-
3 624.99	641666	CW SRS #1	C	40	14.0	12.84	0	Right Touch	0	-	-	1:1		0	1.306	0.000	-
3 624.99	641666	CW SRS #1	C	40	14.0	12.84	0	Right Tilt	0	-	-	1:1		0	1.306	0.000	-
3 680.01	645334	CW SRS #2	D	40	16.0	14.44	0.19	Left Touch	0	-	-	1:1		0	1.432	0	-
3 680.01	645334	CW SRS #2	D	40	16.0	14.44	0.14	Left Tilt	0	-	-	1:1		0	1.432	0	-
3 680.01	645334	CW SRS #2	D	40	16.0	14.44	0.11	Right Touch	0	-	-	1:1		0	1.432	0	-
3 680.01	645334	CW SRS #2	D	40	16.0	14.44	0.10	Right Tilt	0	-	-	1:1		0	1.432	0	-
3 680.01	645334	CW SRS #3	I	40	16.0	15.45	0	Left Touch	0	-	-	1:1		0.167	1.135	0.190	-
3 680.01	645334	CW SRS #3	I	40	16.0	15.45	0	Left Tilt	0	-	-	1:1		0.021	1.135	0.024	-
3 680.01	645334	CW SRS #3	I	40	16.0	15.45	0	Right Touch	0	-	-	1:1		0.324	1.135	0.368	-
3 680.01	645334	CW SRS #3	I	40	16.0	15.45	0	Right Tilt	0	-	-	1:1		0.027	1.135	0.031	-

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

NR FDD Band n66 Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
1 745	349000	DFT-s OFDM QPSK	A	40	25.3	24.43	-0.12	Left Touch	0	1	214	1:1		0.115	1.222	0.141	-
1 745	349000	DFT-s OFDM QPSK	A	40	25.3	24.22	-0.08	Left Touch	0	108	54	1:1		0.092	1.282	0.118	-
1 745	349000	DFT-s OFDM QPSK	A	40	25.3	24.43	0.17	Left Tilt	0	1	214	1:1		0.06	1.222	0.073	-
1 745	349000	DFT-s OFDM QPSK	A	40	25.3	24.22	0.07	Left Tilt	0	108	54	1:1		0.047	1.282	0.060	-
1 745	349000	DFT-s OFDM QPSK	A	40	25.3	24.43	0.13	Right Touch	0	1	214	1:1		0.069	1.222	0.084	-
1 745	349000	DFT-s OFDM QPSK	A	40	25.3	24.22	-0.18	Right Touch	0	108	54	1:1		0.056	1.282	0.072	-
1 745	349000	DFT-s OFDM QPSK	A	40	25.3	24.43	-0.06	Right Tilt	0	1	214	1:1		0.069	1.222	0.084	-
1 745	349000	DFT-s OFDM QPSK	A	40	25.3	24.22	0.16	Right Tilt	0	108	54	1:1		0.061	1.282	0.078	-
1 745	349000	CP QPSK	A	40	23.8	22.85	-0.16	Left Touch	1.5	1	1	1:1		0.100	1.245	0.125	-
1 745	349000	DFT-s QPSK	F	40	17.5	17.28	-0.15	Left Touch	0	1	108	1:1		0.404	1.052	0.425	-
1 745	349000	DFT-s QPSK	F	40	17.5	17.09	-0.01	Left Touch	0	108	54	1:1		0.404	1.099	0.444	-
1 745	349000	DFT-s QPSK	F	40	17.5	17.28	0.03	Left Tilt	0	1	108	1:1		0.487	1.052	0.512	-
1 745	349000	DFT-s QPSK	F	40	17.5	17.09	0.03	Left Tilt	0	108	54	1:1		0.473	1.099	0.520	-
1 745	349000	DFT-s QPSK	F	40	17.5	17.28	-0.03	Right Touch	0	1	108	1:1		0.588	1.052	0.619	-
1 745	349000	DFT-s QPSK	F	40	17.5	17.09	0.03	Right Touch	0	108	54	1:1		0.553	1.099	0.608	-
1 745	349000	DFT-s QPSK	F	40	17.5	17.09	-0.07	Right Tilt	0	1	108	1:1		0.479	1.099	0.526	-
1 745	349000	DFT-s QPSK	F	40	17.5	17.28	0.00	Right Tilt	0	108	54	1:1		0.471	1.052	0.495	-
1 745	349000	CP QPSK	F	40	17.5	16.88	0.15	Right Touch	0	1	1	1:1		0.647	1.153	**0.746**	A26

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

NR FDD Band n70 Head SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
1 702.5	340500	DFT-s OFDM QPSK	A	15	24.5	24.14	-0.13	Left Touch	0	1	77	1:1		0.091	1.086	**0.099**	**A27**
1 702.5	340500	DFT-s OFDM QPSK	A	15	24.5	24.02	-0.03	Left Touch	0	36	22	1:1		0.089	1.117	0.099	-
1 702.5	340500	DFT-s OFDM QPSK	A	15	24.5	24.14	0.10	Left Tilt	0	1	77	1:1		0.039	1.086	0.042	-
1 702.5	340500	DFT-s OFDM QPSK	A	15	24.5	24.02	0.12	Left Tilt	0	36	22	1:1		0.047	1.117	0.052	-
1 702.5	340500	DFT-s OFDM QPSK	A	15	24.5	24.14	-0.08	Right Touch	0	1	77	1:1		0.064	1.086	0.070	-
1 702.5	340500	DFT-s OFDM QPSK	A	15	24.5	24.02	0.01	Right Touch	0	36	22	1:1		0.063	1.117	0.070	-
1 702.5	340500	DFT-s OFDM QPSK	A	15	24.5	24.14	0.10	Right Tilt	0	1	77	1:1		0.052	1.086	0.056	-
1 702.5	340500	DFT-s OFDM QPSK	A	15	24.5	24.02	-0.12	Right Tilt	0	36	22	1:1		0.057	1.117	0.064	-
1 702.5	340500	CP QPSK	A	15	23.0	22.56	-0.06	Left Touch	1.5	1	1	1:1		0.071	1.107	0.079	-
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		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
680.5	136100	DFT-s OFDM QPSK	A	20	25.8	25.11	-0.18	Left Touch	0	1	1	1:1		0.077	1.172	0.090	-
680.5	136100	DFT-s OFDM QPSK	A	20	25.8	25.13	0.04	Left Touch	0	50	28	1:1		0.095	1.167	**0.111**	**A28**
680.5	136100	DFT-s OFDM QPSK	A	20	25.8	25.11	-0.16	Left Tilt	0	1	1	1:1		0.031	1.172	0.036	-
680.5	136100	DFT-s OFDM QPSK	A	20	25.8	25.13	-0.02	Left Tilt	0	50	28	1:1		0.036	1.167	0.042	-
680.5	136100	DFT-s OFDM QPSK	A	20	25.8	25.11	0.11	Right Touch	0	1	1	1:1		0.075	1.172	0.088	-
680.5	136100	DFT-s OFDM QPSK	A	20	25.8	25.13	-0.13	Right Touch	0	50	28	1:1		0.084	1.167	0.098	-
680.5	136100	DFT-s OFDM QPSK	A	20	25.8	25.11	-0.12	Right Tilt	0	1	1	1:1		0.032	1.172	0.038	-
680.5	136100	DFT-s OFDM QPSK	A	20	25.8	25.13	0.13	Right Tilt	0	50	28	1:1		0.020	1.167	0.023	-
680.5	136100	CP QPSK	A	20	24.3	23.65	-0.13	Left Touch	1.5	1	1	1:1		0.072	1.161	0.084	-
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 (PC2 only) Head SAR																	
Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
3 930	662000	DFT-s QPSK	F	100	16.0	15.35	-0.09	Left Touch	0	1	271	1:1		0.402	1.161	0.467	-
3 750	650000	DFT-s QPSK	F	100	16.0	15.36	0.13	Left Touch	0	135	69	1:1		0.301	1.159	0.349	-
3 930	662000	DFT-s QPSK	F	100	16.0	15.35	0.16	Left Tilt	0	1	271	1:1		0.412	1.161	0.478	-
3 750	650000	DFT-s QPSK	F	100	16.0	15.36	0.15	Left Tilt	0	135	69	1:1		0.391	1.159	0.453	-
3 930	662000	DFT-s QPSK	F	100	16.0	15.35	-0.17	Right Touch	0	1	271	1:1		0.629	1.161	0.730	-
3 750	650000	DFT-s QPSK	F	100	16.0	15.31	0.04	Right Touch	0	1	137	1:1		0.630	1.172	0.738	-
3 750	650000	DFT-s QPSK	F	100	16.0	15.36	-0.10	Right Touch	0	135	69	1:1		0.518	1.159	0.600	-
3 930	662000	DFT-s QPSK	F	100	16.0	15.26	0.09	Right Touch	0	135	0	1:1		0.585	1.186	0.694	-
3 930	662000	DFT-s QPSK	F	100	16.0	15.35	0.07	Right Tilt	0	1	271	1:1		0.717	1.161	0.835	-
3 750	650000	DFT-s QPSK	F	100	16.0	15.31	-0.14	Right Tilt	0	1	137	1:1		0.672	1.172	0.788	-
3 750	650000	DFT-s QPSK	F	100	16.0	15.36	-0.13	Right Tilt	0	135	69	1:1		0.769	1.159	0.891	-
3 930	662000	DFT-s QPSK	F	100	16.0	15.26	0.16	Right Tilt	0	135	0	1:1		0.777	1.186	**0.922**	**A29**
3 750	650000	DFT-s QPSK	F	100	16.0	15.35	0.09	Right Tilt	0	270	0	1:1		0.776	1.161	0.901	-
3 930	662000	CP QPSK	F	100	16.0	15.06	0.08	Right Tilt	0	1	1	1:1		0.602	1.242	0.748	-
3 500.01	633334	DFT-s QPSK	F	100	16.0	15.86	-0.14	Right Tilt	0	135	138	1:1		0.613	1.033	0.633	-
3 750	650000	CW SRS #1	C	100	15.0	14.20	0	Left Touch	0	-	-	1:1		0	1.202	0.000	-
3 750	650000	CW SRS #1	C	100	15.0	14.20	0	Left Tilt	0	-	-	1:1		0	1.202	0.000	-
3 750	650000	CW SRS #1	C	100	15.0	14.20	0	Right Touch	0	-	-	1:1		0	1.202	0.000	-
3 750	650000	CW SRS #1	C	100	15.0	14.20	0	Right Tilt	0	-	-	1:1		0	1.202	0.000	-
3 500.01	633334	CW SRS #1	C	100	15.0	14.12	-0.10	Right Tilt	0	-	-	1:1		1.3e-007	1.225	0.000	-
3 750	650000	CW SRS #2	D	100	15.0	14.76	-0.14	Left Touch	0	-	-	1:1		0	1.057	0	-
3 750	650000	CW SRS #2	D	100	15.0	14.76	-0.19	Left Tilt	0	-	-	1:1		0	1.057	0	-
3 750	650000	CW SRS #2	D	100	15.0	14.76	-0.09	Right Touch	0	-	-	1:1		0	1.057	0	-
3 750	650000	CW SRS #2	D	100	15.0	14.76	-0.15	Right Tilt	0	-	-	1:1		0	1.057	0	-
3 500.01	633334	CW SRS #2	D	100	15.0	13.90	0.18	Right Touch	0	-	-	1:1		0	1.288	0	-
3 750	650000	CW SRS #3	I	100	16.0	15.94	0.10	Left Touch	0	-	-	1:1		0.286	1.014	0.290	-
3 750	650000	CW SRS #3	I	100	16.0	15.94	-0.03	Left Tilt	0	-	-	1:1		0.032	1.014	0.032	-
3 750	650000	CW SRS #3	I	100	16.0	15.94	0.06	Right Touch	0	-	-	1:1		0.46	1.014	0.466	-
3 750	650000	CW SRS #3	I	100	16.0	15.94	0.11	Right Tilt	0	-	-	1:1		0.044	1.014	0.045	-
3 500.01	633334	CW SRS #3	I	100	16.0	15.15	-0.13	Right Touch	0	-	-	1:1		0.463	1.216	0.563	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Head 1.6 W/kg Averaged over 1 gram									

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 (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
MHz	Ch.			(MHz)	(Mbps)	(dBm)	(dBm)	(dB)								
2 450	11	802.11b	Ant.1	20	1	15.0	14.01	-0.07	Left Touch	98.9	0.112	0.067	1.256	1.011	0.085	-
2 450	11	802.11b	Ant.1	20	1	15.0	14.01	0.01	Left Tilt	98.9	0.100	0.060	1.256	1.011	0.076	-
2 450	11	802.11b	Ant.1	20	1	15.0	14.01	0.11	Right Touch	98.9	0.695	0.323	1.256	1.011	**0.410**	**A30**
2 450	11	802.11b	Ant.1	20	1	15.0	14.01	0.19	Right Tilt	98.9	0.622	0.309	1.256	1.011	0.393	-
2 412	1	802.11b	Ant.2	20	1	15.0	13.89	-0.11	Left Touch	98.9	0.169	0.107	1.291	1.011	0.140	-
2 412	1	802.11b	Ant.2	20	1	15.0	13.89	0.08	Left Tilt	98.9	0.0315	0.014	1.291	1.011	0.018	-
2 412	1	802.11b	Ant.2	20	1	15.0	13.89	-0.13	Right Touch	98.9	0.400	0.119	1.291	1.011	0.155	-
2 412	1	802.11b	Ant.2	20	1	15.0	13.89	0.01	Right Tilt	98.9	0.026	0.016	1.291	1.011	0.021	-
2 472	6	802.11g	MIMO	20	6	18.0	16.94	0.00	Left Touch	93.0	0.148	0.067	1.309	1.075	0.094	-
2 472	6	802.11g	MIMO	20	6	18.0	16.94	0.00	Left Tilt	93.0	0.0808	0.041	1.309	1.075	0.058	-
2 472	6	802.11g	MIMO	20	6	18.0	16.94	0.05	Right Touch	93.0	0.413	0.233	1.309	1.075	0.328	-
2 472	6	802.11g	MIMO	20	6	18.0	16.94	0.11	Right Tilt	93.0	0.249	0.172	1.309	1.075	0.242	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population											Head 1.6 W/kg Averaged over 1 gram					

NII Head SAR – RCV-ON																
Frequency		Mode	Ant.	Band width	Data Rate	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Area Scan Peak SAR	Meas. SAR	Scaling Factor	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(Mbps)	(dBm)	(dBm)	(dB)			(W/kg)	(W/kg)		(Duty)	(W/kg)	
5 290	58	802.11ac	Ant.1	80	MCS0	13.0	12.97	0.11	Left Touch	85.8	0.072	0.046	1.007	1.166	0.054	-
5 290	58	802.11ac	Ant.1	80	MCS0	13.0	12.97	0.17	Left Tilt	85.8	0.071	0.047	1.007	1.166	0.055	-
5 290	58	802.11ac	Ant.1	80	MCS0	13.0	12.97	-0.14	Right Touch	85.8	0.405	0.248	1.007	1.166	0.291	-
5 290	58	802.11ac	Ant.1	80	MCS0	13.0	12.97	-0.17	Right Tilt	85.8	0.249	0.158	1.007	1.166	0.185	-
5 690	138	802.11ac	Ant.1	80	MCS0	13.0	12.92	0.17	Left Touch	85.8	0.094	0.061	1.019	1.166	0.072	-
5 690	138	802.11ac	Ant.1	80	MCS0	13.0	12.92	0.14	Left Tilt	85.8	0.043	0.030	1.019	1.166	0.036	-
5 690	138	802.11ac	Ant.1	80	MCS0	13.0	12.92	0.17	Right Touch	85.8	0.274	0.212	1.019	1.166	0.252	-
5 690	138	802.11ac	Ant.1	80	MCS0	13.0	12.92	0.10	Right Tilt	85.8	0.168	0.107	1.019	1.166	0.127	-
5 775	155	802.11ac	Ant.1	80	MCS0	13.0	12.99	-0.18	Left Touch	85.8	0.031	0.016	1.002	1.166	0.019	-
5 775	155	802.11ac	Ant.1	80	MCS0	13.0	12.99	0.19	Left Tilt	85.8	0.037	0.021	1.002	1.166	0.025	-
5 775	155	802.11ac	Ant.1	80	MCS0	13.0	12.99	0.14	Right Touch	85.8	0.264	0.164	1.002	1.166	0.192	-
5 775	155	802.11ac	Ant.1	80	MCS0	13.0	12.99	-0.10	Right Tilt	85.8	0.145	0.094	1.002	1.166	0.110	-
5 855	171	802.11ac	Ant.1	80	MCS0	13.0	12.98	-0.16	Left Touch	85.8	0.134	0.091	1.005	1.166	0.107	-
5 855	171	802.11ac	Ant.1	80	MCS0	13.0	12.98	-0.14	Left Tilt	85.8	0.126	0.079	1.005	1.166	0.093	-
5 855	171	802.11ac	Ant.1	80	MCS0	13.0	12.98	-0.14	Right Touch	85.8	0.297	0.175	1.005	1.166	0.205	-
5 855	171	802.11ac	Ant.1	80	MCS0	13.0	12.98	-0.15	Right Tilt	85.8	0.175	0.134	1.005	1.166	0.157	-
5 290	58	802.11ac	Ant.2	80	MCS0	13.0	12.73	0.16	Left Touch	85.8	0.133	0.105	1.064	1.166	0.130	-
5 290	58	802.11ac	Ant.2	80	MCS0	13.0	12.73	0.10	Left Tilt	85.8	0.099	0.065	1.064	1.166	0.081	-
5 290	58	802.11ac	Ant.2	80	MCS0	13.0	12.73	-0.10	Right Touch	85.8	0.123	0.117	1.064	1.166	0.145	-
5 290	58	802.11ac	Ant.2	80	MCS0	13.0	12.73	-0.11	Right Tilt	85.8	0.099	0.082	1.064	1.166	0.102	-
5 690	138	802.11ac	Ant.2	80	MCS0	13.0	12.91	0.13	Left Touch	85.8	1.05	0.264	1.021	1.166	0.314	-
5 690	138	802.11ac	Ant.2	80	MCS0	13.0	12.91	-0.04	Left Tilt	85.8	1.00	0.195	1.021	1.166	0.232	-
5 690	138	802.11ac	Ant.2	80	MCS0	13.0	12.91	-0.17	Right Touch	85.8	0.245	0.195	1.021	1.166	0.232	-
5 690	138	802.11ac	Ant.2	80	MCS0	13.0	12.91	-0.12	Right Tilt	85.8	0.170	0.132	1.021	1.166	0.157	-
5 775	155	802.11ac	Ant.2	80	MCS0	13.0	12.96	-0.12	Left Touch	85.8	0.338	0.285	1.009	1.166	0.335	
5 775	155	802.11ac	Ant.2	80	MCS0	13.0	12.96	-0.11	Left Tilt	85.8	0.304	0.248	1.009	1.166	0.292	-
5 775	155	802.11ac	Ant.2	80	MCS0	13.0	12.96	0.15	Right Touch	85.8	0.210	0.197	1.009	1.166	0.232	-
5 775	155	802.11ac	Ant.2	80	MCS0	13.0	12.96	-0.17	Right Tilt	85.8	0.171	0.120	1.009	1.166	0.141	-
5 855	171	802.11ac	Ant.2	80	MCS0	13.0	12.87	-0.02	Left Touch	85.8	0.371	0.253	1.030	1.166	0.304	-
5 855	171	802.11ac	Ant.2	80	MCS0	13.0	12.87	-0.15	Left Tilt	85.8	0.332	0.236	1.030	1.166	0.283	-
5 855	171	802.11ac	Ant.2	80	MCS0	13.0	12.87	-0.08	Right Touch	85.8	0.214	0.185	1.030	1.166	0.222	-
5 855	171	802.11ac	Ant.2	80	MCS0	13.0	12.87	-0.02	Right Tilt	85.8	0.170	0.143	1.030	1.166	0.172	-
5 290	58	802.11ac	MIMO	80	MCS0	16.0	15.86	0.08	Left Touch	85.8	0.187	0.167	1.064	1.166	0.207	-
5 290	58	802.11ac	MIMO	80	MCS0	16.0	15.86	-0.10	Left Tilt	85.8	0.117	0.122	1.064	1.166	0.151	-
5 290	58	802.11ac	MIMO	80	MCS0	16.0	15.86	-0.06	Right Touch	85.8	0.390	0.231	1.064	1.166	0.286	-
5 290	58	802.11ac	MIMO	80	MCS0	16.0	15.86	-0.15	Right Tilt	85.8	0.265	0.192	1.064	1.166	0.238	-
5 690	138	802.11ac	MIMO	80	MCS0	16.0	15.92	0.07	Left Touch	85.8	0.286	0.241	1.021	1.166	0.287	-
5 690	138	802.11ac	MIMO	80	MCS0	16.0	15.92	0.13	Left Tilt	85.8	0.229	0.188	1.021	1.166	0.224	-
5 690	138	802.11ac	MIMO	80	MCS0	16.0	15.92	-0.14	Right Touch	85.8	0.288	0.204	1.021	1.166	0.243	-
5 690	138	802.11ac	MIMO	80	MCS0	16.0	15.92	0.00	Right Tilt	85.8	0.267	0.212	1.021	1.166	0.252	-
5 775	155	802.11ac	MIMO	80	MCS0	16.0	15.98	-0.16	Left Touch	85.8	0.281	0.224	1.009	1.166	0.263	-
5 775	155	802.11ac	MIMO	80	MCS0	16.0	15.98	0.02	Left Tilt	85.8	0.257	0.213	1.009	1.166	0.250	-
5 775	155	802.11ac	MIMO	80	MCS0	16.0	15.98	-0.17	Right Touch	85.8	0.319	0.245	1.009	1.166	0.288	-
5 775	155	802.11ac	MIMO	80	MCS0	16.0	15.98	0.15	Right Tilt	85.8	0.228	0.148	1.009	1.166	0.174	-
5 855	171	802.11ac	MIMO	80	MCS0	16.0	15.93	-0.05	Left Touch	85.8	0.363	0.304	1.030	1.166	**0.365**	A31
5 855	171	802.11ac	MIMO	80	MCS0	16.0	15.93	-0.08	Left Tilt	85.8	0.286	0.246	1.030	1.166	0.295	-
5 855	171	802.11ac	MIMO	80	MCS0	16.0	15.93	0.12	Right Touch	85.8	0.337	0.227	1.030	1.166	0.273	-
5 855	171	802.11ac	MIMO	80	MCS0	16.0	15.93	-0.13	Right Tilt	85.8	0.297	0.228	1.030	1.166	0.274	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Head 1.6 W/kg Averaged over 1 gram							

6 GHz WLAN Head SAR															
Frequency		Mode	Ant.	Band width	Data Rate	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Meas. SAR	Scaling Factor	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(Mbps)	(dBm)	(dBm)	(dB)			(W/kg)		(Duty)	(W/kg)	
6 505	111	802.11ax	Ant.1	160	MCS0	9.0	8.70	0.10	Left Touch	99.5	0.023	1.072	1.005	0.025	-
6 505	111	802.11ax	Ant.1	160	MCS0	9.0	8.70	0.13	Left Tilt	99.5	0.013	1.072	1.005	0.014	-
6 505	111	802.11ax	Ant.1	160	MCS0	9.0	8.70	0.04	Right Touch	99.5	0.131	1.072	1.005	0.141	-
6 505	111	802.11ax	Ant.1	160	MCS0	9.0	8.70	0.18	Right Tilt	99.5	0.065	1.072	1.005	0.070	
6 025	15	802.11ax	Ant.1	160	MCS0	9.0	8.47	0.14	Right Touch	99.5	0.078	1.130	1.005	0.089	
6 185	47	802.11ax	Ant.1	160	MCS0	9.0	8.88	0.13	Right Touch	99.5	0.116	1.028	1.005	0.120	-
6 825	175	802.11ax	Ant.1	160	MCS0	9.0	7.91	0.17	Right Touch	99.5	0.140	1.285	1.005	**0.181**	**A32**
6 985	207	802.11ax	Ant.1	160	MCS0	9.0	8.91	0.14	Right Touch	99.5	0.166	1.021	1.005	0.170	
6 505	111	802.11ax	Ant.2	160	MCS0	9.0	8.62	0.17	Left Touch	99.5	0.122	1.091	1.005	0.134	-
6 505	111	802.11ax	Ant.2	160	MCS0	9.0	8.62	0.19	Left Tilt	99.5	0.083	1.091	1.005	0.091	-
6 505	111	802.11ax	Ant.2	160	MCS0	9.0	8.62	0.11	Right Touch	99.5	0.084	1.091	1.005	0.092	-
6 505	111	802.11ax	Ant.2	160	MCS0	9.0	8.62	-0.12	Right Tilt	99.5	0.015	1.091	1.005	0.016	
6 025	15	802.11ax	Ant.2	160	MCS0	9.0	8.75	-0.19	Left Touch	99.5	0.105	1.059	1.005	0.112	
6 185	47	802.11ax	Ant.2	160	MCS0	9.0	8.59	-0.15	Left Touch	99.5	0.139	1.099	1.005	0.154	
6 825	175	802.11ax	Ant.2	160	MCS0	9.0	8.38	-0.12	Left Touch	99.5	0.088	1.153	1.005	0.102	
6 985	207	802.11ax	Ant.2	160	MCS0	9.0	8.15	-0.14	Left Touch	99.5	0.07	1.216	1.005	0.086	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Head 1.6 W/kg Averaged over 1 gram						

DSS Head SAR – RCV ON												
Frequency		Mode	Ant.	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Meas. SAR	Scaling Factor	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dBm)	(dBm)	(dB)		(W/kg)		(Duty)	(W/kg)	
2 441	39	Bluetooth DH5	Ant.1	11.0	10.95	0.13	Left Touch	0.063	1.012	1.010	0.064	-
2 441	39	Bluetooth DH5	Ant.1	11.0	10.95	-0.10	Left Tilt	0.064	1.012	1.010	0.065	-
2 441	39	Bluetooth DH5	Ant.1	11.0	10.95	0.10	Right Touch	0.310	1.012	1.010	**0.317**	**A33**
2 441	39	Bluetooth DH5	Ant.1	11.0	10.95	0.11	Right Tilt	0.244	1.012	1.010	0.249	-
2 402	0	Bluetooth DH5	Ant.2	9.0	8.83	0.00	Left Touch	0.055	1.040	1.010	0.058	-
2 402	0	Bluetooth DH5	Ant.2	9.0	8.83	0.00	Left Tilt	0.00318	1.040	1.010	0.003	-
2 402	0	Bluetooth DH5	Ant.2	9.0	8.83	-0.16	Right Touch	0.101	1.040	1.010	0.106	-
2 402	0	Bluetooth DH5	Ant.2	9.0	8.83	0.00	Right Tilt	0.00238	1.040	1.010	0.002	-
2 402	37	Bluetooth LE 1M 255	Ant.1	12.0	11.78	-0.11	Left Touch	0.060	1.052	1.010	0.064	-
2 402	37	Bluetooth LE 1M 255	Ant.1	12.0	11.78	0.18	Left Tilt	0.058	1.052	1.010	0.062	-
2 402	37	Bluetooth LE 1M 255	Ant.1	12.0	11.78	-0.15	Right Touch	0.198	1.052	1.010	0.210	-
2 402	37	Bluetooth LE 1M 255	Ant.1	12.0	11.78	0.16	Right Tilt	0.181	1.052	1.010	0.192	-
2 402	37	Bluetooth LE 1M 255	Ant.2	10.5	9.26	0.11	Left Touch	0.060	1.330	1.010	0.081	-
2 402	37	Bluetooth LE 1M 255	Ant.2	10.5	9.26	0.00	Left Tilt	0.00339	1.330	1.010	0.005	-
2 402	37	Bluetooth LE 1M 255	Ant.2	10.5	9.26	0.12	Right Touch	0.075	1.330	1.010	0.101	-
2 402	37	Bluetooth LE 1M 255	Ant.2	10.5	9.26	0.00	Right Tilt	0.00305	1.330	1.010	0.004	-
2 480	78	Bluetooth DH5	Dual	11.0	10.25	0.13	Left Touch	0.045	1.189	1.010	0.054	-
2 480	78	Bluetooth DH5	Dual	11.0	10.25	-0.01	Left Tilt	0.043	1.189	1.010	0.052	-
2 480	78	Bluetooth DH5	Dual	11.0	10.25	0.15	Right Touch	0.177	1.189	1.010	0.213	-
2 480	78	Bluetooth DH5	Dual	11.0	10.25	0.10	Right Tilt	0.169	1.189	1.010	0.203	-
2 402	37	Bluetooth LE 1M 255	Dual LE	11.0	10.98	-0.16	Right Touch	0.135	1.005	1.010	0.137	-
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	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dB)	(dB)	(dB)			(mm)		(W/kg)		(W/kg)	
836.6	190	GPRS 3Tx	A	29.5	28.98	-0.01	Rear	1:2.77	10		0.582	1.127	**0.656**	**B1**
836.6	190	GPRS 3Tx	A	29.5	28.98	-0.06	Front	1:2.77	10		0.340	1.127	0.383	-
836.6	190	GPRS 3Tx	A	29.5	28.98	-0.06	Left	1:2.77	10		0.064	1.127	0.072	-
836.6	190	GPRS 3Tx	A	29.5	28.98	0.09	Right	1:2.77	10		0.232	1.127	0.261	-
836.6	190	GPRS 3Tx	A	29.5	28.98	0.10	Bottom	1:2.77	10		0.283	1.127	0.319	-
836.6	190	Voice	A	33.0	32.53	-0.14	Rear	1:8.3	10		0.447	1.114	0.498	-
836.6	190	Voice	A	33.0	32.53	-0.04	Front	1:8.3	10		0.270	1.114	0.301	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg Averaged over 1 gram							

GSM 1900 Body/Hotspot SAR														
Frequency		Mode	Ant.	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dB)	(dB)	(dB)			(mm)		(W/kg)		(W/kg)	
1 880	661	GPRS 2Tx	A	26.0	24.35	-0.01	Rear	1:4.15	10		0.202	1.462	0.295	-
1 880	661	GPRS 2Tx	A	26.0	24.35	0.02	Front	1:4.15	10		0.182	1.462	0.266	-
1 880	661	GPRS 2Tx	A	26.0	24.35	0.10	Left	1:4.15	10		0.057	1.462	0.083	-
1 880	661	GPRS 2Tx	A	26.0	24.35	-0.11	Right	1:4.15	10		0.042	1.462	0.061	-
1 880	661	GPRS 2Tx	A	26.0	24.35	0.00	Bottom	1:4.15	10		0.389	1.462	**0.569**	**B2**
1 880	661	Voice	A	29.0	27.41	-0.17	Rear	1:8.3	10		0.204	1.442	0.294	-
1 880	661	Voice	A	29.0	27.41	-0.18	Front	1:8.3	10		0.167	1.442	0.241	-
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	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dB)	(dB)	(dB)			(mm)		(W/kg)		(W/kg)	
836.6	4183	RMC	A	25.5	24.22	0.03	Rear	1:1	10		0.256	1.343	**0.344**	**B3**
836.6	4183	RMC	A	25.5	24.22	-0.05	Front	1:1	10		0.190	1.343	0.255	-
836.6	4183	RMC	A	25.5	24.22	0.19	Left	1:1	10		0.037	1.343	0.050	-
836.6	4183	RMC	A	25.5	24.22	0.06	Right	1:1	10		0.117	1.343	0.157	-
836.6	4183	RMC	A	25.5	24.22	0.17	Bottom	1:1	10		0.142	1.343	0.191	-
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	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dB)	(dB)	(dB)			(mm)		(W/kg)		(W/kg)	
1 732.4	1412	RMC	A	21.0	20.55	-0.09	Rear	1:1	10		0.529	1.109	0.587	-
1 732.4	1412	RMC	A	21.0	20.55	0.02	Front	1:1	10		0.390	1.109	0.433	-
1 732.4	1412	RMC	A	21.0	20.55	0.05	Left	1:1	10		0.192	1.109	0.213	-
1 732.4	1412	RMC	A	21.0	20.55	0.08	Right	1:1	10		0.068	1.109	0.075	-
1 732.4	1412	RMC	A	21.0	20.55	0.10	Bottom	1:1	10		0.705	1.109	**0.782**	**B4**

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

UMTS Band 2 Body/Hotspot SAR

Frequency		Mode	Ant.	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dB)	(dB)	(dB)			(mm)		(W/kg)		(W/kg)	
1 880	9400	RMC	A	21.0	20.98	-0.19	Rear	1:1	10		0.444	1.005	0.446	-
1 880	9400	RMC	A	21.0	20.98	0.18	Front	1:1	10		0.313	1.005	0.315	-
1 880	9400	RMC	A	21.0	20.98	0.03	Left	1:1	10		0.105	1.005	0.106	-
1 880	9400	RMC	A	21.0	20.98	0.02	Right	1:1	10		0.086	1.005	0.086	-
1 880	9400	RMC	A	21.0	20.98	0.02	Bottom	1:1	10		0.704	1.005	**0.708**	**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 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	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
2 510	20850	QPSK	B	20	22.0	20.97	0.03	Rear	0	1	0	1:1		10	0.241	1.268	0.306	-
2 510	20850	QPSK	B	20	22.0	20.92	-0.17	Rear	0	50	0	1:1		10	0.246	1.282	0.315	-
2 510	20850	QPSK	B	20	22.0	20.97	0.09	Front	0	1	0	1:1		10	0.234	1.268	0.297	-
2 510	20850	QPSK	B	20	22.0	20.92	0.16	Front	0	50	0	1:1		10	0.236	1.282	0.303	-
2 510	20850	QPSK	B	20	22.0	20.97	-0.12	Left	0	1	0	1:1		10	0.250	1.268	0.317	-
2 510	20850	QPSK	B	20	22.0	20.92	-0.01	Left	0	50	0	1:1		10	0.249	1.282	0.319	-
2 510	20850	QPSK	B	20	22.0	20.97	0.06	Bottom	0	1	0	1:1		10	0.306	1.268	0.388	-
2 510	20850	QPSK	B	20	22.0	20.92	0.09	Bottom	0	50	0	1:1		10	0.313	1.282	0.401	-
2 560	21350	QPSK	F	20	20.0	18.65	0.08	Rear	0	1	0	1:1		10	0.304	1.365	0.415	-
2 560	21350	QPSK	F	20	20.0	18.77	0.04	Rear	0	50	0	1:1		10	0.305	1.327	0.405	-
2 560	21350	QPSK	F	20	20.0	18.65	0.06	Front	0	1	0	1:1		10	0.265	1.365	0.362	-
2 560	21350	QPSK	F	20	20.0	18.77	0.04	Front	0	50	0	1:1		10	0.267	1.327	0.354	-
2 560	21350	QPSK	F	20	20.0	18.65	0.11	Left	0	1	0	1:1		10	0.040	1.365	0.055	-
2 560	21350	QPSK	F	20	20.0	18.77	0.16	Left	0	50	0	1:1		10	0.040	1.327	0.053	-
2 560	21350	QPSK	F	20	20.0	18.65	0.07	Top	0	1	0	1:1		10	0.488	1.365	**0.666**	**B6**
2 560	21350	QPSK	F	20	20.0	18.77	0.11	Top	0	50	0	1:1		10	0.493	1.327	0.654	

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

LTE FDD Band 12 Body/Hotspot SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
707.5	23095	QPSK	A	10	25.8	24.86	0.09	Rear	0	1	24	1:1		10	0.367	1.242	**0.456**	**B7**
707.5	23095	QPSK	A	10	24.8	23.89	0.06	Rear	1	25	0	1:1		10	0.300	1.233	0.370	-
707.5	23095	QPSK	A	10	25.8	24.86	0.08	Front	0	1	24	1:1		10	0.307	1.242	0.381	-
707.5	23095	QPSK	A	10	24.8	23.89	-0.06	Front	1	25	0	1:1		10	0.236	1.233	0.291	-
707.5	23095	QPSK	A	10	25.8	24.86	0.03	Left	0	1	24	1:1		10	0.069	1.242	0.086	-
707.5	23095	QPSK	A	10	24.8	23.89	0.05	Left	1	25	0	1:1		10	0.058	1.233	0.072	-
707.5	23095	QPSK	A	10	25.8	24.86	0.14	Right	0	1	24	1:1		10	0.118	1.242	0.147	-
707.5	23095	QPSK	A	10	24.8	23.89	-0.05	Right	1	25	0	1:1		10	0.102	1.233	0.126	-
707.5	23095	QPSK	A	10	25.8	24.86	0.06	Bottom	0	1	24	1:1		10	0.293	1.242	0.364	-
707.5	23095	QPSK	A	10	24.8	23.89	0.17	Bottom	1	25	0	1:1		10	0.238	1.233	0.293	-

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	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
782	23230	QPSK	A	10	25.8	24.99	-0.03	Rear	0	1	0	1:1		10	0.457	1.205	**0.551**	**B8**
782	23230	QPSK	A	10	24.8	24.10	0.04	Rear	1	25	0	1:1		10	0.386	1.175	0.454	-
782	23230	QPSK	A	10	25.8	24.99	-0.08	Front	0	1	0	1:1		10	0.369	1.205	0.445	-
782	23230	QPSK	A	10	24.8	24.10	-0.05	Front	1	25	0	1:1		10	0.301	1.175	0.354	-
782	23230	QPSK	A	10	25.8	24.99	0.01	Left	0	1	0	1:1		10	0.133	1.205	0.160	-
782	23230	QPSK	A	10	24.8	24.10	0.07	Left	1	25	0	1:1		10	0.103	1.175	0.121	-
782	23230	QPSK	A	10	25.8	24.99	0.03	Right	0	1	0	1:1		10	0.354	1.205	0.427	-
782	23230	QPSK	A	10	24.8	24.10	0.02	Right	1	25	0	1:1		10	0.303	1.175	0.356	-
782	23230	QPSK	A	10	25.8	24.99	0.13	Bottom	0	1	0	1:1		10	0.259	1.205	0.312	-
782	23230	QPSK	A	10	24.8	24.10	0.09	Bottom	1	25	0	1:1		10	0.217	1.175	0.255	-

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	Ant. State	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	25.8	24.93	0.01	Rear	0	1	0	1:1		10	0.520	1.222	**0.635**	**B9**
793	23330	QPSK	A	10	24.8	23.98	0.03	Rear	1	25	0	1:1		10	0.419	1.208	0.506	-
793	23330	QPSK	A	10	25.8	24.93	0.00	Front	0	1	0	1:1		10	0.399	1.222	0.488	-
793	23330	QPSK	A	10	24.8	23.98	-0.03	Front	1	25	0	1:1		10	0.319	1.208	0.385	-
793	23330	QPSK	A	10	25.8	24.93	-0.11	Left	0	1	0	1:1		10	0.077	1.222	0.094	-
793	23330	QPSK	A	10	24.8	23.98	0.04	Left	1	25	0	1:1		10	0.067	1.208	0.081	-
793	23330	QPSK	A	10	25.8	24.93	0.10	Right	0	1	0	1:1		10	0.219	1.222	0.268	-
793	23330	QPSK	A	10	24.8	23.98	0.10	Right	1	25	0	1:1		10	0.190	1.208	0.230	-
793	23330	QPSK	A	10	25.8	24.93	0.18	Bottom	0	1	0	1:1		10	0.328	1.222	0.401	-
793	23330	QPSK	A	10	24.8	23.98	0.14	Bottom	1	25	0	1:1		10	0.258	1.208	0.312	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Body 1.6 W/kg Averaged over 1 gram									

LTE FDD Band 25 (PCS) Body/Hotspot SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
1 883	26365	QPSK	A	20	21.0	20.35	-0.01	Rear	0	1	49	1:1		10	0.257	1.161	0.298	-
1 860	26140	QPSK	A	20	21.0	20.45	0.02	Rear	0	50	0	1:1		10	0.231	1.135	0.262	-
1 883	26365	QPSK	A	20	21.0	20.35	0.05	Front	0	1	49	1:1		10	0.194	1.161	0.225	-
1 860	26140	QPSK	A	20	21.0	20.45	0.08	Front	0	50	0	1:1		10	0.08	1.135	0.192	-
1 883	26365	QPSK	A	20	21.0	20.35	0.15	Left	0	1	49	1:1		10	0.066	1.161	0.077	-
1 860	26140	QPSK	A	20	21.0	20.45	-0.19	Left	0	50	0	1:1		10	0.063	1.135	0.072	-
1 883	26365	QPSK	A	20	21.0	20.35	0.16	Right	0	1	49	1:1		10	0.050	1.161	0.058	-
1 860	26140	QPSK	A	20	21.0	20.45	0.16	Right	0	50	0	1:1		10	0.044	1.135	0.050	-
1 883	26365	QPSK	A	20	21.0	20.35	0.04	Bottom	0	1	49	1:1		10	0.398	1.161	0.462	-
1 860	26140	QPSK	A	20	21.0	20.45	-0.05	Bottom	0	50	0	1:1		10	0.436	1.135	0.495	-
1 883	26365	QPSK	F	20	21.0	19.59	0.08	Rear	0	1	0	1:1		10	0.256	1.384	0.354	-
1 883	26365	QPSK	F	20	21.0	19.58	-0.12	Rear	0	50	0	1:1		10	0.253	1.387	0.351	-
1 883	26365	QPSK	F	20	21.0	19.59	-0.05	Front	0	1	0	1:1		10	0.235	1.384	0.325	-
1 883	26365	QPSK	F	20	21.0	19.58	0.09	Front	0	50	0	1:1		10	0.235	1.387	0.326	-
1 883	26365	QPSK	F	20	21.0	19.59	-0.05	Left	0	1	0	1:1		10	0.065	1.384	0.090	-
1 883	26365	QPSK	F	20	21.0	19.58	-0.05	Left	0	50	0	1:1		10	0.063	1.387	0.087	-
1 883	26365	QPSK	F	20	21.0	19.59	0.03	Top	0	1	0	1:1		10	0.629	1.384	0.871	-
1 883	26365	QPSK	F	20	21.0	19.58	-0.04	Top	0	50	0	1:1		10	0.629	1.387	0.872	-
1 860	26140	QPSK	F	20	21.0	19.43	0.02	Top	0	1	0	1:1		10	0.576	1.435	0.827	-
1 860	26140	QPSK	F	20	21.0	19.43	0.06	Top	0	50	0	1:1		10	0.573	1.435	0.822	-
1 905	26590	QPSK	F	20	21.0	19.53	-0.02	Top	0	1	99	1:1		10	0.644	1.403	**0.904**	**B10**
1 905	26590	QPSK	F	20	21.0	19.50	0.00	Top	0	50	25	1:1		10	0.634	1.413	0.896	-
1 905	26590	QPSK	F	20	21.0	19.48	-0.05	Top	0	100	0	1:1		10	0.625	1.419	0.887	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Body 1.6 W/kg Averaged over 1 gram									

LTE FDD Band 26 (Cell) Body/Hotspot SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
831.5	26865	QPSK	A	15	25.8	25.05	0.09	Rear	0	1	0	1:1		10	0.496	1.189	**0.590**	**B11**
831.5	26865	QPSK	A	15	24.8	24.00	0.13	Rear	1	36	0	1:1		10	0.409	1.202	0.492	-
831.5	26865	QPSK	A	15	25.8	25.05	-0.11	Front	0	1	0	1:1		10	0.343	1.189	0.408	-
831.5	26865	QPSK	A	15	24.8	24.00	-0.02	Front	1	36	0	1:1		10	0.284	1.202	0.341	-
831.5	26865	QPSK	A	15	25.8	25.05	-0.05	Left	0	1	0	1:1		10	0.068	1.189	0.081	-
831.5	26865	QPSK	A	15	24.8	24.00	0.06	Left	1	36	0	1:1		10	0.058	1.202	0.070	-
831.5	26865	QPSK	A	15	25.8	25.05	0.06	Right	0	1	0	1:1		10	0.170	1.189	0.202	-
831.5	26865	QPSK	A	15	24.8	24.00	0.03	Right	1	36	0	1:1		10	0.141	1.202	0.169	-
831.5	26865	QPSK	A	15	25.8	25.05	0.16	Bottom	0	1	0	1:1		10	0.295	1.189	0.351	-
831.5	26865	QPSK	A	15	24.8	24.00	0.17	Bottom	1	36	0	1:1		10	0.239	1.202	0.287	-

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	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
2 310	27710	QPSK	A	10	21.0	19.45	-0.10	Rear	0	1	0	1:1		10	0.209	1.429	0.299	-
2 310	27710	QPSK	A	10	21.0	19.46	0.12	Rear	0	25	0	1:1		10	0.207	1.426	0.295	-
2 310	27710	QPSK	A	10	21.0	19.45	0.11	Front	0	1	0	1:1		10	0.196	1.429	0.280	-
2 310	27710	QPSK	A	10	21.0	19.46	0.14	Front	0	25	0	1:1		10	0.191	1.426	0.272	-
2 310	27710	QPSK	A	10	21.0	19.45	0.14	Left	0	1	0	1:1		10	0.012	1.429	0.017	-
2 310	27710	QPSK	A	10	21.0	19.46	0.18	Left	0	25	0	1:1		10	0.011	1.426	0.016	-
2 310	27710	QPSK	A	10	21.0	19.45	0.19	Right	0	1	0	1:1		10	0.019	1.429	0.027	-
2 310	27710	QPSK	A	10	21.0	19.46	0.02	Right	0	25	0	1:1		10	0.015	1.426	0.021	-
2 310	27710	QPSK	A	10	21.0	19.45	0.11	Bottom	0	1	0	1:1		10	0.533	1.429	**0.762**	**B12**
2 310	27710	QPSK	A	10	21.0	19.46	0.01	Bottom	0	25	0	1:1		10	0.527	1.426	0.752	-
2 310	27710	QPSK	F	10	20.0	19.53	-0.06	Rear	0	1	49	1:1		10	0.340	1.114	0.379	-
2 310	27710	QPSK	F	10	20.0	19.42	-0.16	Rear	0	25	24	1:1		10	0.326	1.143	0.373	-
2 310	27710	QPSK	F	10	20.0	19.53	0.10	Front	0	1	49	1:1		10	0.207	1.114	0.231	-
2 310	27710	QPSK	F	10	20.0	19.42	0.07	Front	0	25	24	1:1		10	0.197	1.143	0.225	-
2 310	27710	QPSK	F	10	20.0	19.53	0.14	Left	0	1	49	1:1		10	0.070	1.114	0.078	-
2 310	27710	QPSK	F	10	20.0	19.42	0.11	Left	0	25	24	1:1		10	0.074	1.143	0.085	-
2 310	27710	QPSK	F	10	20.0	19.53	0.17	Top	0	1	49	1:1		10	0.632	1.114	0.704	-
2 310	27710	QPSK	F	10	20.0	19.42	0.08	Top	0	25	24	1:1		10	0.610	1.143	0.697	-

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 (Power Class 3) Body/Hotspot SAR

CC UL PC	Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
	MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
1CC UL PC3	2 593	40620	QPSK	B	20	23.0	21.97	-0.12	Rear	0	1	0	1:1.58		10	0.216	1.268	0.274	-
1CC UL PC3	2 506	39750	QPSK	B	20	23.0	21.99	-0.04	Rear	0	50	0	1:1.58		10	0.197	1.262	0.249	-
1CC UL PC3	2 593	40620	QPSK	B	20	23.0	21.97	0.15	Front	0	1	0	1:1.58		10	0.146	1.268	0.185	-
1CC UL PC3	2 506	39750	QPSK	B	20	23.0	21.99	0.16	Front	0	50	0	1:1.58		10	0.152	1.262	0.192	-
1CC UL PC3	2 593	40620	QPSK	B	20	23.0	21.97	0.17	Left	0	1	0	1:1.58		10	0.149	1.268	0.189	-
1CC UL PC3	2 506	39750	QPSK	B	20	23.0	21.99	0.13	Left	0	50	0	1:1.58		10	0.148	1.262	0.187	-
1CC UL PC3	2 593	40620	QPSK	B	20	23.0	21.97	0.12	Bottom	0	1	0	1:1.58		10	0.241	1.268	0.306	-
1CC UL PC3	2 506	39750	QPSK	B	20	23.0	21.99	0.17	Bottom	0	50	0	1:1.58		10	0.199	1.262	0.251	-
2CC UL CA PC3	PCC 2 593	40620	QPSK	B	20	23.0	21.95	-0.12	Bottom	0	1	0	1:1.58		10	0.194	1.274	0.247	-
	SCC 2 573.2	40422	QPSK		20					0	1	99							
1CC UL PC3	2 680	41490	QPSK	F	20	21.0	20.67	0.19	Rear	0	1	49	1:1.58		10	0.167	1.079	0.180	-
1CC UL PC3	2 680	41490	QPSK	F	20	21.0	20.00	0.13	Rear	0	50	0	1:1.58		10	0.161	1.259	0.203	-
1CC UL PC3	2 680	41490	QPSK	F	20	21.0	20.67	0.17	Front	0	1	49	1:1.58		10	0.184	1.079	0.199	-
1CC UL PC3	2 680	41490	QPSK	F	20	21.0	20.00	0.16	Front	0	50	0	1:1.58		10	0.188	1.259	0.237	-
1CC UL PC3	2 680	41490	QPSK	F	20	21.0	20.67	0.15	Left	0	1	49	1:1.58		10	0.027	1.079	0.029	-
1CC UL PC3	2 680	41490	QPSK	F	20	21.0	20.00	0.10	Left	0	50	0	1:1.58		10	0.020	1.259	0.025	-
1CC UL PC3	2 680	41490	QPSK	F	20	21.0	20.67	-0.01	Top	0	1	49	1:1.58		10	0.379	1.079	0.409	-
1CC UL PC3	2 680	41490	QPSK	F	20	21.0	20.00	0.16	Top	0	50	0	1:1.58		10	0.383	1.259	**0.482**	**B13**
2CC UL CA PC3(41C)	PCC 2 680	41490	QPSK	F	20	21.0	19.87	0.07	Top	0	50	0	1:1.58		10	0.284	1.297	0.368	-
	SCC 2 660.2	41292	QPSK		20					0	50	49							
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 (Power Class 2 HPUE) Body/Hotspot SAR

CC UL PC	Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
	MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
1CC UL PC2	2 593	40620	QPSK	B	20	25.0	24.05	0.05	Rear	0	1	0	1:2.31		10	0.248	1.245	0.309	-
1CC UL PC2	2 593	40620	QPSK	B	20	25.0	24.17	0.06	Rear	0	50	0	1:2.31		10	0.260	1.211	0.315	-
1CC UL PC2	2 593	40620	QPSK	B	20	25.0	24.05	-0.15	Front	0	1	0	1:2.31		10	0.189	1.245	0.235	-
1CC UL PC2	2 593	40620	QPSK	B	20	25.0	24.17	-0.10	Front	0	50	0	1:2.31		10	0.197	1.211	0.239	-
1CC UL PC2	2 593	40620	QPSK	B	20	25.0	24.05	0.18	Left	0	1	0	1:2.31		10	0.198	1.245	0.247	-
1CC UL PC2	2 593	40620	QPSK	B	20	25.0	24.17	0.12	Left	0	50	0	1:2.31		10	0.201	1.211	0.243	-
1CC UL PC2	2 593	40620	QPSK	B	20	25.0	24.05	-0.18	Bottom	0	1	0	1:2.31		10	0.296	1.245	0.369	-
1CC UL PC2	2 593	40620	QPSK	B	20	25.0	24.17	0.10	Bottom	0	50	0	1:2.31		10	0.297	1.211	0.360	-
2CC UL CA PC2	PCC 2 593	40620	QPSK	B	20	25.0	24.15	0.16	Bottom	0	50	0	1:2.31		10	0.197	1.216	0.240	-
	SCC 2 573.2	40422	QPSK		20					0	50	49							
1CC UL PC2	2 593	40620	QPSK	F	20	22.0	20.58	-0.12	Rear	0	1	0	1:2.31		10	0.226	1.387	0.313	-
1CC UL PC2	2 593	40620	QPSK	F	20	22.0	20.56	0.00	Rear	0	50	0	1:2.31		10	0.218	1.393	0.304	-
1CC UL PC2	2 593	40620	QPSK	F	20	22.0	20.58	-0.18	Front	0	1	0	1:2.31		10	0.199	1.387	0.276	-
1CC UL PC2	2 593	40620	QPSK	F	20	22.0	20.56	0.18	Front	0	50	0	1:2.31		10	0.204	1.393	0.284	-
1CC UL PC2	2 593	40620	QPSK	F	20	22.0	20.58	0.07	Left	0	1	0	1:2.31		10	0.026	1.387	0.036	-
1CC UL PC2	2 593	40620	QPSK	F	20	22.0	20.56	0.14	Left	0	50	0	1:2.31		10	0.026	1.393	0.036	-
1CC UL PC2	2 593	40620	QPSK	F	20	22.0	20.58	0.18	Top	0	1	0	1:2.31		10	0.333	1.387	**0.462**	**B14**
1CC UL PC2	2 593	40620	QPSK	F	20	22.0	20.56	0.16	Top	0	50	0	1:2.31		10	0.206	1.393	0.287	-
2CC UL CA PC2(41C)	PCC 2 593	40620	QPSK	F	20	22.0	20.48	0.17	Top	0	1	0	1:2.31		10	0.295	1.419	0.419	-
	SCC 2 573.2	40422	QPSK		20					0	1	99							

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 Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
	MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
1CC UL	3 647	56207	QPSK	F	20	21.0	20.46	-0.15	Rear	0	1	0	1:1.58		10	0.330	1.132	0.374	-
1CC UL	3 560	55340	QPSK	F	20	21.0	20.57	-0.07	Rear	0	50	0	1:1.58		10	0.347	1.104	**0.383**	**B15**
1CC UL	3 647	56207	QPSK	F	20	21.0	20.46	0.00	Front	0	1	0	1:1.58		10	0.134	1.132	0.152	-
1CC UL	3 560	55340	QPSK	F	20	21.0	20.57	0.16	Front	0	50	0	1:1.58		10	0.155	1.104	0.171	-
1CC UL	3 647	56207	QPSK	F	20	21.0	20.46	0.09	Left	0	1	0	1:1.58		10	0.032	1.132	0.036	-
1CC UL	3 560	55340	QPSK	F	20	21.0	20.57	0.02	Left	0	50	0	1:1.58		10	0.028	1.104	0.031	-
1CC UL	3 647	56207	QPSK	F	20	21.0	20.46	0.17	Top	0	1	0	1:1.58		10	0.298	1.132	0.337	-
1CC UL	3 560	55340	QPSK	F	20	21.0	20.57	-0.03	Top	0	50	0	1:1.58		10	0.296	1.104	0.327	-
1CC UL	3 560	55340	QPSK	F	20	21.0	20.51	-0.07	Rear	0	50	49	1:1.58		10	0.217	1.119	0.243	-
2CC UL (48C)	PCC 3 560	55340	QPSK	F	20	21.0	20.48		Rear	0	50	49	1:1.58		10	0.236	1.127	0.266	-
	SCC 3 579.8	55538	QPSK	F	20					0	50	0							

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 66 (AWS) Body/Hotspot SAR

CC UL PC	Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
	MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
1CC UL	1 720	132072	QPSK	A	20	20.0	18.76	-0.09	Rear	0	1	49	1:1		10	0.416	1.330	0.553	-
1CC UL	1 720	132072	QPSK	A	20	20.0	18.69	0.14	Rear	0	50	0	1:1		10	0.437	1.352	0.591	-
1CC UL	1 720	132072	QPSK	A	20	20.0	18.76	0.14	Front	0	1	49	1:1		10	0.286	1.330	0.380	-
1CC UL	1 720	132072	QPSK	A	20	20.0	18.69	0.07	Front	0	50	0	1:1		10	0.282	1.352	0.381	-
1CC UL	1 720	132072	QPSK	A	20	20.0	18.76	0.12	Left	0	1	49	1:1		10	0.082	1.330	0.109	-
1CC UL	1 720	132072	QPSK	A	20	20.0	18.69	-0.17	Left	0	50	0	1:1		10	0.085	1.352	0.115	-
1CC UL	1 720	132072	QPSK	A	20	20.0	18.76	-0.11	Right	0	1	49	1:1		10	0.066	1.330	0.088	-
1CC UL	1 720	132072	QPSK	A	20	20.0	18.69	-0.09	Right	0	50	0	1:1		10	0.065	1.352	0.088	-
1CC UL	1 720	132072	QPSK	A	20	20.0	18.76	-0.11	Bottom	0	1	49	1:1		10	0.647	1.330	0.861	-
1CC UL	1 720	132072	QPSK	A	20	20.0	18.69	0.00	Bottom	0	50	0	1:1		10	0.616	1.352	0.833	-
1CC UL	1 745	132322	QPSK	A	20	20.0	18.52	0.02	Bottom	0	1	49	1:1		10	0.395	1.406	0.555	-
1CC UL	1 770	132572	QPSK	A	20	20.0	18.65	0.01	Bottom	0	1	99	1:1		10	0.676	1.365	0.923	-
1CC UL	1 745	132322	QPSK	A	20	20.0	18.44	0.05	Bottom	0	50	0	1:1		10	0.460	1.432	0.659	-
1CC UL	1 770	132572	QPSK	A	20	20.0	18.60	0.05	Bottom	0	50	49	1:1		10	0.672	1.380	0.927	-
1CC UL	1 720	132072	QPSK	A	20	20.0	18.67	0.02	Bottom	0	100	0	1:1		10	0.628	1.358	0.853	-
1CC UL	1 770	132572	QPSK	A	20	20.0	18.61	0.01	Bottom	0	1	0	1:1		10	0.717	1.377	0.987	-
1CC UL	1 772.5	132597	QPSK	A	15	20.0	18.59	0.0	Bottom	0	1	0	1:1		10	0.727	1.384	1.006	-
2CC UL (66B)	PCC 1 772.5	132597	QPSK	A	15	20.0	18.29	0.03	Bottom	0	1	0	1:1		10	0.726	1.483	**1.077**	**B16**
2CC UL (66B)	SCC 1 763.2	132504	QPSK		5					0	1	24							
2CC UL (66C)	PCC 1 770	132572	QPSK	A	20	20.0	18.44	0.05	Bottom	0	1	0	1:1		10	0.707	1.432	1.012	-
2CC UL (66C)	SCC 1 750.2	132374	QPSK		20					0	1	99							
1CC UL	1 745	132322	QPSK	F	20	20.0	19.72	-0.11	Rear	0	1	0	1:1		10	0.349	1.067	0.372	-
1CC UL	1 745	132322	QPSK	F	20	20.0	19.67	-0.04	Rear	0	50	0	1:1		10	0.342	1.079	0.369	-
1CC UL	1 745	132322	QPSK	F	20	20.0	19.72	0.01	Front	0	1	0	1:1		10	0.353	1.067	0.377	-
1CC UL	1 745	132322	QPSK	F	20	20.0	19.67	-0.07	Front	0	50	0	1:1		10	0.326	1.079	0.352	-
1CC UL	1 745	132322	QPSK	F	20	20.0	19.72	-0.05	Left	0	1	0	1:1		10	0.042	1.067	0.045	-
1CC UL	1 745	132322	QPSK	F	20	20.0	19.67	-0.18	Left	0	50	0	1:1		10	0.040	1.079	0.043	-
1CC UL	1 745	132322	QPSK	F	20	20.0	19.72	-0.03	Top	0	1	0	1:1		10	0.744	1.067	0.794	-
1CC UL	1 745	132322	QPSK	F	20	20.0	19.67	0.03	Top	0	50	0	1:1		10	0.730	1.079	0.788	-
1CC UL	1 745	132322	QPSK	F	15	20.0	19.43	-0.09	Top	0	1	0	1:1		10	0.778	1.140	0.887	-
2CC UL (66B)	PCC 1 745	132322	QPSK	F	15	20.0	19.38	-010	Top	0	1	0	1:1		10	0.778	1.153	0.897	-
2CC UL (66B)	SCC 1735.7	132229	QPSK		5					0	1	24							
2CC UL (66C)	PCC 1 745	132322	QPSK	F	20	20.0	19.56	-0.07	Top	0	1	0	1:1		10	0.775	1.107	0.858	-
2CC UL (66C)	SCC 1725.2	132124	QPSK		20					0	1	99							

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 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	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
683	133322	QPSK	A	20	25.8	24.86	-0.02	Rear	0	1	0	1:1		10	0.303	1.242	**0.376**	**B17**
683	133322	QPSK	A	20	24.8	23.89	-0.01	Rear	1	50	0	1:1		10	0.241	1.233	0.297	-
683	133322	QPSK	A	20	25.8	24.86	0.02	Front	0	1	0	1:1		10	0.195	1.242	0.242	-
683	133322	QPSK	A	20	24.8	23.89	0.00	Front	1	50	0	1:1		10	0.157	1.233	0.194	-
683	133322	QPSK	A	20	25.8	24.86	0.03	Left	0	1	0	1:1		10	0.217	1.242	0.270	-
683	133322	QPSK	A	20	24.8	23.89	0.03	Left	1	50	0	1:1		10	0.173	1.233	0.213	-
683	133322	QPSK	A	20	25.8	24.86	0.02	Right	0	1	0	1:1		10	0.146	1.242	0.181	-
683	133322	QPSK	A	20	24.8	23.89	0.03	Right	1	50	0	1:1		10	0.121	1.233	0.149	-
683	133322	QPSK	A	20	25.8	24.86	0.18	Bottom	0	1	0	1:1		10	0.084	1.242	0.104	-
683	133322	QPSK	A	20	24.8	23.89	0.17	Bottom	1	50	0	1:1		10	0.066	1.233	0.081	-
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 n7 Body/Hotspot SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
2 535	507000	DFT-s OFDM QPSK	B	40	21.0	19.40	0.17	Rear	0	1	1	1:1		10	0.241	1.445	0.348	-
2 535	507000	DFT-s OFDM QPSK	B	40	21.0	19.35	0.17	Rear	0	108	54	1:1		10	0.254	1.462	0.371	-
2 535	507000	DFT-s OFDM QPSK	B	40	21.0	19.40	0.01	Front	0	1	1	1:1		10	0.181	1.445	0.262	-
2 535	507000	DFT-s OFDM QPSK	B	40	21.0	19.35	0.14	Front	0	108	54	1:1		10	0.18	1.462	0.263	-
2 535	507000	DFT-s OFDM QPSK	B	40	21.0	19.40	0.16	Left	0	1	1	1:1		10	0.247	1.445	0.357	-
2 535	507000	DFT-s OFDM QPSK	B	40	21.0	19.35	0.10	Left	0	108	54	1:1		10	0.209	1.462	0.306	-
2 535	507000	DFT-s OFDM QPSK	B	40	21.0	19.40	0.14	Bottom	0	1	1	1:1		10	0.281	1.445	0.406	-
2 535	507000	DFT-s OFDM QPSK	B	40	21.0	19.35	0.06	Bottom	0	108	54	1:1		10	0.301	1.462	0.440	-
2 535	507000	CP QPSK	B	40	21.0	19.33	-0.03	Bottom	0	1	1	1:1		10	0.232	1.469	0.341	-
2 535	507000	DFT-s OFDM QPSK	F	40	20.0	19.42	0.14	Rear	0	1	214	1:1		10	0.365	1.143	0.417	-
2 535	507000	DFT-s OFDM QPSK	F	40	20.0	19.27	0.12	Rear	0	108	108	1:1		10	0.346	1.183	0.409	-
2 535	507000	DFT-s OFDM QPSK	F	40	20.0	19.42	0.19	Front	0	1	214	1:1		10	0.184	1.143	0.210	-
2 535	507000	DFT-s OFDM QPSK	F	40	20.0	19.27	0.12	Front	0	108	108	1:1		10	0.178	1.183	0.211	-
2 535	507000	DFT-s OFDM QPSK	F	40	20.0	19.42	0.17	Left	0	1	214	1:1		10	0.041	1.143	0.047	-
2 535	507000	DFT-s OFDM QPSK	F	40	20.0	19.27	0.12	Left	0	108	108	1:1		10	0.045	1.183	0.053	-
2 535	507000	DFT-s OFDM QPSK	F	40	20.0	19.42	0.10	Top	0	1	214	1:1		10	0.506	1.143	0.578	-
2 535	507000	DFT-s OFDM QPSK	F	40	20.0	19.27	0.12	Top	0	108	108	1:1		10	0.529	1.183	0.626	-
2 535	507000	CP QPSK	F	40	20.0	19.07	0.14	Top	0	1	1	1:1		10	0.555	1.239	**0.688**	**B18**
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 n12 Body/Hotspot SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
707.5	141500	DFT-s OFDM QPSK	A	15	25.8	24.88	-0.15	Rear	0	1	77	1:1		10	0.347	1.236	**0.429**	B19
707.5	141500	DFT-s OFDM QPSK	A	15	25.8	24.81	0.00	Rear	0	36	22	1:1		10	0.310	1.256	0.389	-
707.5	141500	DFT-s OFDM QPSK	A	15	25.8	24.88	-0.02	Front	0	1	77	1:1		10	0.284	1.236	0.351	-
707.5	141500	DFT-s OFDM QPSK	A	15	25.8	24.81	0.08	Front	0	36	22	1:1		10	0.224	1.256	0.281	-
707.5	141500	DFT-s OFDM QPSK	A	15	25.8	24.88	0.15	Left	0	1	77	1:1		10	0.078	1.236	0.096	-
707.5	141500	DFT-s OFDM QPSK	A	15	25.8	24.81	0.04	Left	0	36	22	1:1		10	0.076	1.256	0.095	-
707.5	141500	DFT-s OFDM QPSK	A	15	25.8	24.88	0.02	Right	0	1	77	1:1		10	0.120	1.236	0.148	-
707.5	141500	DFT-s OFDM QPSK	A	15	25.8	24.81	0.05	Right	0	36	22	1:1		10	0.122	1.256	0.153	-
707.5	141500	DFT-s OFDM QPSK	A	15	25.8	24.88	0.14	Bottom	0	1	77	1:1		10	0.230	1.236	0.284	-
707.5	141500	DFT-s OFDM QPSK	A	15	25.8	24.81	0.19	Bottom	0	36	22	1:1		10	0.223	1.256	0.280	-
707.5	141500	CP QPSK	A	15	24.3	23.32	0.02	Rear	1.5	1	1	1:1		10	0.227	1.253	0.284	-
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		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
1 882.5	376500	DFT-s OFDM QPSK	A	40	21.0	20.08	-0.13	Rear	0	1	108	1:1		10	0.194	1.236	0.240	-
1 882.5	376500	DFT-s OFDM QPSK	A	40	21.0	20.05	0.14	Rear	0	108	108	1:1		10	0.200	1.245	0.249	-
1 882.5	376500	DFT-s OFDM QPSK	A	40	21.0	20.08	-0.19	Front	0	1	108	1:1		10	0.180	1.236	0.222	-
1 882.5	376500	DFT-s OFDM QPSK	A	40	21.0	20.05	-0.11	Front	0	108	108	1:1		10	0.180	1.245	0.224	-
1 882.5	376500	DFT-s OFDM QPSK	A	40	21.0	20.08	-0.05	Left	0	1	108	1:1		10	0.065	1.236	0.080	-
1 882.5	376500	DFT-s OFDM QPSK	A	40	21.0	20.05	-0.13	Left	0	108	108	1:1		10	0.066	1.245	0.082	-
1 882.5	376500	DFT-s OFDM QPSK	A	40	21.0	20.08	-0.13	Right	0	1	108	1:1		10	0.038	1.236	0.047	-
1 882.5	376500	DFT-s OFDM QPSK	A	40	21.0	20.05	-0.18	Right	0	108	108	1:1		10	0.038	1.245	0.047	-
1 882.5	376500	DFT-s OFDM QPSK	A	40	21.0	20.08	-0.13	Bottom	0	1	108	1:1		10	0.440	1.236	0.544	-
1 882.5	376500	DFT-s OFDM QPSK	A	40	21.0	20.05	-0.10	Bottom	0	108	108	1:1		10	0.447	1.245	0.557	-
1 882.5	376500	CP QPSK	A	40	21.0	19.94	-0.13	Bottom	0	1	1	1:1		10	0.426	1.276	0.544	-
1 882.5	376500	DFT-s OFDM QPSK	F	40	21.0	19.71	0.00	Rear	0	1	108	1:1		10	0.318	1.346	0.428	-
1 882.5	376500	DFT-s OFDM QPSK	F	40	21.0	19.70	-0.14	Rear	0	108	54	1:1		10	0.240	1.349	0.324	-
1 882.5	376500	DFT-s OFDM QPSK	F	40	21.0	19.71	-0.13	Front	0	1	108	1:1		10	0.296	1.346	0.398	-
1 882.5	376500	DFT-s OFDM QPSK	F	40	21.0	19.70	-0.09	Front	0	108	54	1:1		10	0.284	1.349	0.383	-
1 882.5	376500	DFT-s OFDM QPSK	F	40	21.0	19.71	0.17	Left	0	1	108	1:1		10	0.044	1.346	0.059	-
1 882.5	376500	DFT-s OFDM QPSK	F	40	21.0	19.70	-0.13	Left	0	108	54	1:1		10	0.040	1.349	0.054	-
1 882.5	376500	DFT-s OFDM QPSK	F	40	21.0	19.71	0.04	Top	0	1	108	1:1		10	0.691	1.346	**0.930**	B20
1 882.5	376500	DFT-s OFDM QPSK	F	40	21.0	19.70	0.04	Top	0	108	54	1:1		10	0.680	1.349	0.917	-
1 882.5	376500	DFT-s OFDM QPSK	F	40	21.0	19.57	0.04	Top	0	216	0	1:1		10	0.634	1.349	0.917	-
1 882.5	376500	CP QPSK	F	40	21.0	19.48	0.00	Top	0	1	1	1:1		10	0.568	1.419	0.806	-
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 n26 (Cell) Body/Hotspot SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
831.5	166300	DFT-s OFDM QPSK	A	20	25.8	25.04	0.13	Rear	0	1	53	1:1		10	0.445	1.191	0.530	-
831.5	166300	DFT-s OFDM QPSK	A	20	25.8	24.97	0.02	Rear	0	50	28	1:1		10	0.458	1.211	**0.555**	**B21**
831.5	166300	DFT-s OFDM QPSK	A	20	25.8	25.04	-0.17	Front	0	1	53	1:1		10	0.336	1.191	0.400	-
831.5	166300	DFT-s OFDM QPSK	A	20	25.8	24.97	-0.06	Front	0	50	28	1:1		10	0.375	1.211	0.454	-
831.5	166300	DFT-s OFDM QPSK	A	20	25.8	25.04	-0.13	Left	0	1	53	1:1		10	0.072	1.191	0.086	-
831.5	166300	DFT-s OFDM QPSK	A	20	25.8	24.97	-0.00	Left	0	50	28	1:1		10	0.072	1.211	0.087	-
831.5	166300	DFT-s OFDM QPSK	A	20	25.8	25.04	-0.03	Right	0	1	53	1:1		10	0.141	1.191	0.168	-
831.5	166300	DFT-s OFDM QPSK	A	20	25.8	24.97	0.01	Right	0	50	28	1:1		10	0.150	1.211	0.182	-
831.5	166300	DFT-s OFDM QPSK	A	20	25.8	25.04	0.15	Bottom	0	1	53	1:1		10	0.307	1.191	0.366	-
831.5	166300	DFT-s OFDM QPSK	A	20	25.8	24.97	-0.12	Bottom	0	50	28	1:1		10	0.310	1.211	0.375	-
831.5	166300	CP QPSK	A	20	24.3	23.63	-0.09	Rear	1.5	1	1	1:1		10	0.385	1.167	0.449	-

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		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
2 310	462000	DFT-s OFDM QPSK	A	10	19.0	17.34	-0.04	Rear	0	1	26	1:1		10	0.313	1.466	0.459	-
2 310	462000	DFT-s OFDM QPSK	A	10	19.0	17.31	0.19	Rear	0	25	14	1:1		10	0.118	1.476	0.174	-
2 310	462000	DFT-s OFDM QPSK	A	10	19.0	17.34	-0.08	Front	0	1	26	1:1		10	0.104	1.466	0.152	-
2 310	462000	DFT-s OFDM QPSK	A	10	19.0	17.31	-0.05	Front	0	25	14	1:1		10	0.199	1.476	0.294	-
2 310	462000	DFT-s OFDM QPSK	A	10	19.0	17.34	0.13	Left	0	1	26	1:1		10	0.019	1.466	0.028	-
2 310	462000	DFT-s OFDM QPSK	A	10	19.0	17.31	0.14	Left	0	25	14	1:1		10	0.018	1.476	0.027	-
2 310	462000	DFT-s OFDM QPSK	A	10	19.0	17.34	-0.14	Right	0	1	26	1:1		10	0.019	1.466	0.028	-
2 310	462000	DFT-s OFDM QPSK	A	10	19.0	17.31	0.18	Right	0	25	14	1:1		10	0.019	1.476	0.028	-
2 310	462000	DFT-s OFDM QPSK	A	10	19.0	17.34	0.09	Bottom	0	1	26	1:1		10	0.478	1.466	0.701	-
2 310	462000	DFT-s OFDM QPSK	A	10	19.0	17.31	0.06	Bottom	0	25	14	1:1		10	0.470	1.476	0.694	-
2 310	462000	CP QPSK	A	10	19.0	17.26	0.04	Bottom	0	1	1	1:1		10	0.471	1.493	0.703	-
2 310	462000	DFT-s OFDM QPSK	F	10	19.0	18.93	-0.04	Rear	0	1	50	1:1		10	0.372	1.016	0.378	-
2 310	462000	DFT-s OFDM QPSK	F	10	19.0	18.81	0.16	Rear	0	25	27	1:1		10	0.341	1.045	0.356	-
2 310	462000	DFT-s OFDM QPSK	F	10	19.0	18.93	0.04	Front	0	1	50	1:1		10	0.189	1.016	0.192	-
2 310	462000	DFT-s OFDM QPSK	F	10	19.0	18.81	0.06	Front	0	25	27	1:1		10	0.240	1.045	0.251	-
2 310	462000	DFT-s OFDM QPSK	F	10	19.0	18.93	0.10	Left	0	1	50	1:1		10	0.044	1.016	0.045	-
2 310	462000	DFT-s OFDM QPSK	F	10	19.0	18.81	0.17	Left	0	25	27	1:1		10	0.051	1.045	0.053	-
2 310	462000	DFT-s OFDM QPSK	F	10	19.0	18.93	0.03	Top	0	1	50	1:1		10	0.709	1.016	**0.720**	**B22**
2 310	462000	DFT-s OFDM QPSK	F	10	19.0	18.81	0.05	Top	0	25	27	1:1		10	0.634	1.045	0.663	-
2 310	462000	CP QPSK	F	10	19.0	18.73	-0.15	Top	0	1	1	1:1		10	0.522	1.064	0.555	-

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 n38 (PC3 Only) Body/Hotspot SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
2 595	519000	DFT-s OFDM QPSK	B	40	21.0	19.17	0.01	Rear	0	1	1	1:1		10	0.365	1.524	0.556	-
2 595	519000	DFT-s OFDM QPSK	B	40	21.0	19.16	-0.09	Rear	0	50	0	1:1		10	0.369	1.528	**0.564**	**B23**
2 595	519000	DFT-s OFDM QPSK	B	40	21.0	19.17	-0.11	Front	0	1	1	1:1		10	0.240	1.524	0.366	-
2 595	519000	DFT-s OFDM QPSK	B	40	21.0	19.16	0.00	Front	0	50	0	1:1		10	0.185	1.528	0.283	-
2 595	519000	DFT-s OFDM QPSK	B	40	21.0	19.17	-0.01	Left	0	1	1	1:1		10	0.197	1.524	0.300	-
2 595	519000	DFT-s OFDM QPSK	B	40	21.0	19.16	0.17	Left	0	50	0	1:1		10	0.188	1.528	0.287	-
2 595	519000	DFT-s OFDM QPSK	B	40	21.0	19.17	0.11	Bottom	0	1	1	1:1		10	0.342	1.524	0.521	-
2 595	519000	DFT-s OFDM QPSK	B	40	21.0	19.16	0.18	Bottom	0	50	0	1:1		10	0.255	1.528	0.390	-
2 595	519000	CP QPSK	B	40	21.0	19.21	-0.19	Rear	0	1	1	1:1		10	0.206	1.510	0.311	-

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

NR TDD Band n41 (PC2 Only) Body/Hotspot SAR

Frequency		Mode	Ant	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
2 592.99	518598	DFT-s OFDM QPSK	B	100	21.0	20.26	0.18	Rear	0	1	1	1:1		10	0.174	1.186	0.206	-
2 592.99	518598	DFT-s OFDM QPSK	B	100	21.0	20.20	0.11	Rear	0	135	0	1:1		10	0.172	1.202	0.207	-
2 592.99	518598	DFT-s OFDM QPSK	B	100	21.0	20.26	0.07	Front	0	1	1	1:1		10	0.130	1.186	0.154	-
2 592.99	518598	DFT-s OFDM QPSK	B	100	21.0	20.20	0.18	Front	0	135	0	1:1		10	0.129	1.202	0.155	-
2 592.99	518598	DFT-s OFDM QPSK	B	100	21.0	20.26	0.14	Left	0	1	1	1:1		10	0.170	1.186	0.202	-
2 592.99	518598	DFT-s OFDM QPSK	B	100	21.0	20.20	0.10	Left	0	135	0	1:1		10	0.156	1.202	0.188	-
2 592.99	518598	DFT-s OFDM QPSK	B	100	21.0	20.26	0.01	Bottom	0	1	1	1:1		10	0.202	1.186	**0.240**	**B24**
2 592.99	518598	DFT-s OFDM QPSK	B	100	21.0	20.20	0.04	Bottom	0	135	0	1:1		10	0.194	1.202	0.233	-
2 592.99	518598	CP QPSK	B	100	21.0	20.04	-0.04	Bottom	0	1	1	1:1		10	0.173	1.247	0.216	-
2 592.99	518598	CW SRS #1	F	100	15.0	14.50	0.00	Rear	0	-	-	1:1		10	0.177	1.122	0.199	-
2 592.99	518598	CW SRS #1	F	100	15.0	14.50	0.00	Front	0	-	-	1:1		10	0.123	1.122	0.138	-
2 592.99	518598	CW SRS #1	F	100	15.0	14.50	0.17	Left	0	-	-	1:1		10	0.021	1.122	0.024	-
2 592.99	518598	CW SRS #1	F	100	15.0	14.50	0.12	Top	0	-	-	1:1		10	0.209	1.122	0.234	-
2 592.99	518598	CW SRS #2	D	100	15.0	14.97	0.00	Rear	0	-	-	1:1		10	0.090	1.007	0.091	-
2 592.99	518598	CW SRS #2	D	100	15.0	14.97	0.00	Front	0	-	-	1:1		10	0.015	1.007	0.015	-
2 592.99	518598	CW SRS #2	D	100	15.0	14.97	0.00	Right	0	-	-	1:1		10	0	1.007	0.000	-
2 592.99	518598	CW SRS #2	D	100	15.0	14.97	0.09	Bottom	0	-	-	1:1		10	0.047	1.007	0.047	-
2 592.99	518598	CW SRS #3	E	100	15.5	14.56	0.00	Rear	0	-	-	1:1		10	0.084	1.242	0.104	-
2 592.99	518598	CW SRS #3	E	100	15.5	14.56	0.00	Front	0	-	-	1:1		10	0.065	1.242	0.081	-
2 592.99	518598	CW SRS #3	E	100	15.5	14.56	0.15	Right	0	-	-	1:1		10	0.040	1.242	0.050	-
2 592.99	518598	CW SRS #3	E	100	15.5	14.56	0.19	Top	0	-	-	1:1		10	0.049	1.242	0.061	-

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 (PC3 Only) Body/Hotspot SAR																		
Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
3 624.99	641666	DFT-s OFDM QPSK	F	40	18.0	17.50	-0.10	Rear	0	1	53	1:1		10	0.332	1.122	0.373	-
3 624.99	641666	DFT-s OFDM QPSK	F	40	18.0	17.48	-0.19	Rear	0	50	28	1:1		10	0.327	1.127	0.369	-
3 624.99	641666	DFT-s OFDM QPSK	F	40	18.0	17.50	0.00	Front	0	1	53	1:1		10	0.102	1.122	0.114	-
3 624.99	641666	DFT-s OFDM QPSK	F	40	18.0	17.48	0.00	Front	0	50	28	1:1		10	0.105	1.127	0.118	-
3 624.99	641666	DFT-s OFDM QPSK	F	40	18.0	17.50	0.15	Left	0	1	53	1:1		10	0.025	1.122	0.028	-
3 624.99	641666	DFT-s OFDM QPSK	F	40	18.0	17.48	0.12	Left	0	50	28	1:1		10	0.029	1.127	0.033	-
3 624.99	641666	DFT-s OFDM QPSK	F	40	18.0	17.50	0.17	Top	0	1	53	1:1		10	0.281	1.122	0.315	-
3 624.99	641666	DFT-s OFDM QPSK	F	40	18.0	17.48	0.04	Top	0	50	28	1:1		10	0.285	1.127	0.321	-
3 680.01	645334	CP QPSK	F	40	18.0	17.36	0.00	Rear	0	1	1	1:1		10	0.352	1.159	0.408	-
3 624.99	641666	CW SRS #1	C	40	16.0	14.88	-0.16	Rear	0	-	-	1:1		10	0.079	1.294	0.102	-
3 624.99	641666	CW SRS #1	C	40	16.0	14.88	0.06	Front	0	-	-	1:1		10	0.091	1.294	0.118	-
3 624.99	641666	CW SRS #1	C	40	16.0	14.88	0.11	Left	0	-	-	1:1		10	0.128	1.294	0.166	-
3 624.99	641666	CW SRS #1	C	40	16.0	14.88	0.19	Bottom	0	-	-	1:1		10	0.027	1.294	0.035	-
3 680.01	645334	CW SRS #2	D	40	17.5	16.42	-0.12	Rear	0	-	-	1:1		10	0.555	1.432	**0.712**	**B25**
3 680.01	645334	CW SRS #2	D	40	17.5	16.42	0.00	Front	0	-	-	1:1		10	0.00788	1.432	0.010	-
3 680.01	645334	CW SRS #2	D	40	17.5	16.42	0.00	Right	0	-	-	1:1		10	0.017	1.432	0.022	-
3 680.01	645334	CW SRS #2	D	40	17.5	16.42	0.15	Bottom	0			1:1		10	0.056	1.432	0.072	-
3 680.01	645334	CW SRS #3	I	40	18.0	17.52	0.05	Rear	0	-	-	1:1		10	0.140	1.117	0.156	-
3 680.01	645334	CW SRS #3	I	40	18.0	17.52	-0.12	Front	0	-	-	1:1		10	0.058	1.117	0.065	-
3 680.01	645334	CW SRS #3	I	40	18.0	17.52	0.14	Left	0	-	-	1:1		10	0.027	1.117	0.030	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Body 1.6 W/kg Averaged over 1 gram									

NR FDD Band n66 Body Body/ Hotspot SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
1 745	349000	DFT-s OFDM QPSK	A	40	20.0	18.76	-0.06	Rear	0	1	214	1:1		10	0.340	1.330	0.452	-
1 745	349000	DFT-s OFDM QPSK	A	40	20.0	18.78	-0.07	Rear	0	108	0	1:1		10	0.366	1.324	0.485	-
1 745	349000	DFT-s OFDM QPSK	A	40	20.0	18.76	0.16	Front	0	1	214	1:1		10	0.224	1.330	0.298	-
1 745	349000	DFT-s OFDM QPSK	A	40	20.0	18.78	-0.11	Front	0	108	0	1:1		10	0.286	1.324	0.379	-
1 745	349000	DFT-s OFDM QPSK	A	40	20.0	18.76	-0.11	Left	0	1	214	1:1		10	0.068	1.330	0.090	-
1 745	349000	DFT-s OFDM QPSK	A	40	20.0	18.78	-0.19	Left	0	108	0	1:1		10	0.075	1.324	0.099	-
1 745	349000	DFT-s OFDM QPSK	A	40	20.0	18.76	-0.15	Right	0	1	214	1:1		10	0.040	1.330	0.053	-
1 745	349000	DFT-s OFDM QPSK	A	40	20.0	18.78	0.17	Right	0	108	0	1:1		10	0.045	1.324	0.060	-
1 745	349000	DFT-s OFDM QPSK	A	40	20.0	18.76	-0.04	Bottom	0	1	214	1:1		10	0.655	1.330	0.871	-
1 745	349000	DFT-s OFDM QPSK	A	40	20.0	18.78	-0.04	Bottom	0	108	0	1:1		10	0.721	1.324	**0.955**	**B26**
1 745	349000	DFT-s OFDM QPSK	A	40	20.0	18.66	-0.18	Bottom	0	216	0	1:1		10	0.630	1.361	0.857	-
1 745	349000	CP OFDM QPSK	A	40	20.0	18.75	0.01	Bottom	0	1	1	1:1		10	0.622	1.334	0.830	-
1 745	349000	DFT-s OFDM QPSK	F	40	20.0	19.56	-0.13	Rear	0	1	108	1:1		10	0.277	1.107	0.307	-
1 745	349000	DFT-s OFDM QPSK	F	40	20.0	19.54	-0.16	Rear	0	108	54	1:1		10	0.315	1.112	0.350	-
1 745	349000	DFT-s OFDM QPSK	F	40	20.0	19.56	-0.13	Front	0	1	108	1:1		10	0.446	1.107	0.494	-
1 745	349000	DFT-s OFDM QPSK	F	40	20.0	19.54	0.04	Front	0	108	54	1:1		10	0.449	1.112	0.499	-
1 745	349000	DFT-s OFDM QPSK	F	40	20.0	19.56	0.07	Left	0	1	108	1:1		10	0.142	1.107	0.157	-
1 745	349000	DFT-s OFDM QPSK	F	40	20.0	19.54	0.00	Left	0	108	54	1:1		10	0.148	1.112	0.165	-
1 745	349000	DFT-s OFDM QPSK	F	40	20.0	19.56	0.00	Top	0	1	108	1:1		10	0.716	1.107	0.793	-
1 745	349000	DFT-s OFDM QPSK	F	40	20.0	19.54	0.02	Top	0	108	54	1:1		10	0.707	1.112	0.786	-
1 745	349000	DFT-s OFDM QPSK	F	40	20.0	19.33	0.00	Top	0	216	0	1:1		10	0.716	1.167	0.836	-
1 745	349000	CP OFDM QPSK	F	40	20.0	19.20	-0.04	Top	0	1	1	1:1		10	0.709	1.202	0.852	-

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 n70 Body/Hotspot SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
1 702.5	340500	DFT-s OFDM QPSK	A	15	21.0	19.94	-0.19	Rear	0	1	77	1:1		10	0.379	1.276	0.484	-
1 702.5	340500	DFT-s OFDM QPSK	A	15	21.0	19.97	-0.04	Rear	0	36	0	1:1		10	0.339	1.268	0.430	-
1 702.5	340500	DFT-s OFDM QPSK	A	15	21.0	19.94	-0.10	Front	0	1	77	1:1		10	0.323	1.276	0.412	-
1 702.5	340500	DFT-s OFDM QPSK	A	15	21.0	19.97	-0.07	Front	0	36	0	1:1		10	0.275	1.268	0.349	-
1 702.5	340500	DFT-s OFDM QPSK	A	15	21.0	19.94	0.10	Left	0	1	77	1:1		10	0.079	1.276	0.101	-
1 702.5	340500	DFT-s OFDM QPSK	A	15	21.0	19.97	-0.04	Left	0	36	0	1:1		10	0.076	1.268	0.096	-
1 702.5	340500	DFT-s OFDM QPSK	A	15	21.0	19.94	-0.12	Right	0	1	77	1:1		10	0.047	1.276	0.060	-
1 702.5	340500	DFT-s OFDM QPSK	A	15	21.0	19.97	-0.01	Right	0	36	0	1:1		10	0.049	1.268	0.062	-
1 702.5	340500	DFT-s OFDM QPSK	A	15	21.0	19.94	0.14	Bottom	0	1	77	1:1		10	0.677	1.276	0.864	-
1 702.5	340500	DFT-s OFDM QPSK	A	15	21.0	19.97	0.08	Bottom	0	36	0	1:1		10	0.683	1.268	**0.866**	**B27**
1 702.5	340500	DFT-s OFDM QPSK	A	15	21.0	19.84	0.11	Bottom	0	75	0	1:1		10	0.611	1.306	0.798	-
1 702.5	340500	CP OFDM QPSK	A	15	21.0	19.93	0.13	Bottom	0	1	1	1:1		10	0.607	1.279	0.776	-

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 n71 Body/Hotspot SAR																		
Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
680.5	136100	DFT-s OFDM QPSK	A	20	25.8	25.11	-0.12	Rear	0	1	1	1:1		10	0.192	1.172	0.225	-
680.5	136100	DFT-s OFDM QPSK	A	20	25.8	25.13	-0.04	Rear	0	50	28	1:1		10	0.203	1.167	**0.237**	**B28**
680.5	136100	DFT-s OFDM QPSK	A	20	25.8	25.11	0.03	Front	0	1	1	1:1		10	0.156	1.172	0.183	-
680.5	136100	DFT-s OFDM QPSK	A	20	25.8	25.13	-0.02	Front	0	50	28	1:1		10	0.164	1.167	0.191	-
680.5	136100	DFT-s OFDM QPSK	A	20	25.8	25.11	0.02	Left	0	1	1	1:1		10	0.190	1.172	0.223	-
680.5	136100	DFT-s OFDM QPSK	A	20	25.8	25.13	0.01	Left	0	50	28	1:1		10	0.191	1.167	0.223	-
680.5	136100	DFT-s OFDM QPSK	A	20	25.8	25.11	0.03	Right	0	1	1	1:1		10	0.132	1.172	0.155	-
680.5	136100	DFT-s OFDM QPSK	A	20	25.8	25.13	0.01	Right	0	50	28	1:1		10	0.151	1.167	0.176	-
680.5	136100	DFT-s OFDM QPSK	A	20	25.8	25.11	0.11	Bottom	0	1	1	1:1		10	0.072	1.172	0.084	-
680.5	136100	DFT-s OFDM QPSK	A	20	25.8	25.13	0.15	Bottom	0	50	28	1:1		10	0.064	1.167	0.075	-
680.5	136100	CP QPSK	A	20	24.3	23.65	-0.04	Rear	1.5	1	1	1:1		10	0.177	1.161	0.205	-
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 (PC2 Only) Body/Hotspot SAR

Frequency		Mode	Ant.	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB Offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
3 930	662000	DFT-s QPSK	F	100	18.0	17.09	-0.01	Rear	0	1	271	1:1		10	0.464	1.233	**0.572**	**B29**
3 750	650000	DFT-s QPSK	F	100	18.0	17.09	-0.17	Rear	0	135	0	1:1		10	0.446	1.233	0.550	-
3 930	662000	DFT-s QPSK	F	100	18.0	17.09	0.00	Front	0	1	271	1:1		10	0.118	1.233	0.145	-
3 750	650000	DFT-s QPSK	F	100	18.0	17.09	0.00	Front	0	135	0	1:1		10	0.131	1.233	0.162	-
3 930	662000	DFT-s QPSK	F	100	18.0	17.09	0.00	Left	0	1	271	1:1		10	0.030	1.233	0.037	-
3 750	650000	DFT-s QPSK	F	100	18.0	17.09	0.17	Left	0	135	0	1:1		10	0.023	1.233	0.028	-
3 930	662000	DFT-s QPSK	F	100	18.0	17.09	0.14	Top	0	1	271	1:1		10	0.319	1.233	0.393	-
3 750	650000	DFT-s QPSK	F	100	18.0	17.09	0.03	Top	0	135	0	1:1		10	0.285	1.233	0.351	-
3 500	633334	DFT-s QPSK	F	100	18.0	17.17	-0.19	Rear	0	1	271	1:1		10	0.332	1.211	0.402	-
3 750	650000	CP QPSK	F	100	18.0	16.75	-0.14	Rear	0	1	1	1:1		10	0.421	1.334	0.562	-
3 750	650000	CW SRS #1	C	100	15.0	14.20	-0.11	Rear	0	-	-	1:1		10	0	1.202	0.000	-
3 750	650000	CW SRS #1	C	100	15.0	14.20	0.12	Front	0	-	-	1:1		10	0	1.202	0.000	-
3 750	650000	CW SRS #1	C	100	15.0	14.20	0.16	Left	0	-	-	1:1		10	0	1.202	0.000	-
3 750	650000	CW SRS #1	C	100	15.0	14.20	-0.15	Bottom	0	-	-	1:1		10	0	1.202	0.000	-
3 500.01	633334	CW SRS #1	C	100	15.0	14.20	0.08	Left	0	-	-	1:1		10	1.3e-007	1.225	0.000	-
3 750	650000	CW SRS #2	D	100	17.0	16.77	-0.19	Rear	0	-	-	1:1		10	0.47	1.054	0.495	-
3 750	650000	CW SRS #2	D	100	17.0	16.77	0.00	Front	0	-	-	1:1		10	0.010	1.054	0.011	-
3 750	650000	CW SRS #2	D	100	17.0	16.77	-0.19	Right	0	-	-	1:1		10	0.022	1.054	0.023	-
3 750	650000	CW SRS #2	D	100	17.0	16.77	0.13	Bottom	0	-	-	1:1		10	0.056	1.054	0.059	-
3 500.01	633334	CW SRS #2	D	100	17.0	15.79	-0.09	Rear	0	-	-	1:1		10	0.401	1.321	0.530	-
3 750	650000	CW SRS #3	I	100	18.0	17.95	-0.17	Rear	0	-	-	1:1		10	0.182	1.012	0.184	-
3 750	650000	CW SRS #3	I	100	18.0	17.95	-0.14	Front	0	-	-	1:1		10	0.102	1.012	0.103	-
3 750	650000	CW SRS #3	I	100	18.0	17.95	0.17	Left	0	-	-	1:1		10	0.038	1.012	0.038	-
3 500.01	633334	CW SRS #3	I	100	18.0	17.10	-0.10	Rear	0	-	-	1:1		10	0.125	1.230	0.154	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Body 1.6 W/kg Averaged over 1 gram									

DTS Body/Hotspot SAR

Frequency		Mode	Ant.	Band width	Data Rate	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Area Scan Peak SAR	Meas. SAR	Scaling Factor	Scaling Factor	Reported SAR	Plot No.
MHz	Ch.			(MHz)	(Mbps)	(dBm)	(dBm)	(dB)			(mm)	(W/kg)	(W/kg)		(Duty)	(W/kg)	
2 437	6	802.11b	Ant.1	20	1	17.0	15.37	-0.16	Rear	98.9	10	0.229	0.153	1.455	1.011	0.225	-
2 437	6	802.11b	Ant.1	20	1	17.0	15.37	0.00	Front	98.9	10	0.248	0.128	1.455	1.011	0.188	-
2 437	6	802.11b	Ant.1	20	1	17.0	15.37	0.12	Left	98.9	10	0.288	0.183	1.455	1.011	**0.269**	**B30**
2 437	6	802.11b	Ant.1	20	1	17.0	15.37	0.10	Top	98.9	10	0.146	0.101	1.455	1.011	0.149	-
2 412	1	802.11b	Ant.2	20	1	17.0	16.80	-0.14	Rear	98.9	10	0.0777	0.056	1.047	1.011	0.059	-
2 412	1	802.11b	Ant.2	20	1	17.0	16.80	-0.16	Front	98.9	10	0.0415	0.023	1.047	1.011	0.024	-
2 412	1	802.11b	Ant.2	20	1	17.0	16.80	0.12	Right	98.9	10	0.0208	0.00426	1.047	1.011	0.005	-
2 437	6	802.11g	MIMO	20	6	20.0	19.11	-0.10	Rear	93.0	10	0.149	0.104	1.358	1.075	0.152	-
2 437	6	802.11g	MIMO	20	6	20.0	19.11	0.10	Front	93.0	10	0.138	0.091	1.358	1.075	0.133	-
2 437	6	802.11g	MIMO	20	6	20.0	19.11	0.14	Left	93.0	10	0.260	0.162	1.358	1.075	0.237	-
2 437	6	802.11g	MIMO	20	6	20.0	19.11	0.07	Right	93.0	10	0.0188	0.00905	1.358	1.075	0.013	-
2 437	6	802.11g	MIMO	20	6	20.0	19.11	-0.12	Top	93.0	10	0.0947	0.056	1.358	1.075	0.082	-
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.																
5 290	58	802.11ac	Ant.1	80	MCS0	16.0	15.15	-0.11	Rear	85.8	10	0.118	0.077	1.216	1.166	0.109	-
5 290	58	802.11ac	Ant.1	80	MCS0	16.0	15.15	-0.11	Front	85.8	10	0.079	0.059	1.216	1.166	0.084	-
5 690	138	802.11ac	Ant.1	80	MCS0	16.0	15.48	-0.17	Rear	85.8	10	0.118	0.093	1.127	1.166	0.122	-
5 690	138	802.11ac	Ant.1	80	MCS0	16.0	15.48	-0.12	Front	85.8	10	0.061	0.049	1.127	1.166	0.064	-
5 855	171	802.11ac	Ant.1	80	MCS0	16.0	15.38	-0.10	Rear	85.8	10	0.106	0.080	1.153	1.166	0.108	-
5 855	171	802.11ac	Ant.1	80	MCS0	16.0	15.38	0.00	Front	85.8	10	0.059	0.046	1.153	1.166	0.062	-
5 775	155	802.11ac	Ant.1	80	MCS0	16.0	15.49	-0.14	Rear	85.8	10	0.110	0.082	1.125	1.166	0.108	-
5 775	155	802.11ac	Ant.1	80	MCS0	16.0	15.49	-0.11	Front	85.8	10	0.059	0.046	1.125	1.166	0.060	-
5 775	155	802.11ac	Ant.1	80	MCS0	16.0	15.49	-0.11	Left	85.8	10	0.225	0.176	1.125	1.166	0.231	-
5 775	155	802.11ac	Ant.1	80	MCS0	16.0	15.49	0.15	Top	85.8	10	0.053	0.041	1.125	1.166	0.054	-
5 290	58	802.11ac	Ant.2	80	MCS0	16.0	15.15	0.16	Rear	85.8	10	0.513	0.366	1.216	1.166	0.519	-
5 290	58	802.11ac	Ant.2	80	MCS0	16.0	15.15	0.14	Front	85.8	10	0.033	0.022	1.216	1.166	0.031	-
5 690	138	802.11ac	Ant.2	80	MCS0	16.0	15.51	0.17	Rear	85.8	10	0.34	0.276	1.119	1.166	0.360	-
5 690	138	802.11ac	Ant.2	80	MCS0	16.0	15.51	0.10	Front	85.8	10	0.078	0.059	1.119	1.166	0.077	-
5 855	171	802.11ac	Ant.2	80	MCS0	16.0	15.61	0.17	Rear	85.8	10	0.317	0.269	1.094	1.166	0.343	-
5 855	171	802.11ac	Ant.2	80	MCS0	16.0	15.61	0.17	Front	85.8	10	0.094	0.057	1.094	1.166	0.073	-
5 775	155	802.11ac	Ant.2	80	MCS0	16.0	15.42	-0.17	Rear	85.8	10	0.329	0.277	1.143	1.166	0.369	-
5 775	155	802.11ac	Ant.2	80	MCS0	16.0	15.42	-0.17	Front	85.8	10	0.071	0.055	1.143	1.166	0.073	-
5 775	155	802.11ac	Ant.2	80	MCS0	16.0	15.42	-0.11	Right	85.8	10	0.030	0.012	1.143	1.166	0.016	-
5 775	155	802.11ac	Ant.2	80	MCS0	16.0	15.42	0.15	Top	85.8	10	0.091	0.067	1.143	1.166	0.089	-
5 290	58	802.11ac	MIMO	80	MCS0	19.0	18.16	-0.15	Rear	85.8	10	0.504	0.386	1.216	1.166	**0.547**	**B31**
5 290	58	802.11ac	MIMO	80	MCS0	19.0	18.16	0.15	Front	85.8	10	0.101	0.071	1.216	1.166	0.101	-
5 690	138	802.11ac	MIMO	80	MCS0	19.0	18.50	-0.15	Rear	85.8	10	0.236	0.185	1.127	1.166	0.243	-
5 690	138	802.11ac	MIMO	80	MCS0	19.0	18.50	0.14	Front	85.8	10	0.098	0.074	1.127	1.166	0.097	-
5 855	171	802.11ac	MIMO	80	MCS0	19.0	18.50	-0.14	Rear	85.8	10	0.163	0.144	1.153	1.166	0.194	-
5 855	171	802.11ac	MIMO	80	MCS0	19.0	18.50	0.14	Front	85.8	10	0.115	0.086	1.153	1.166	0.116	-
5 775	155	802.11ac	MIMO	80	MCS0	19.0	18.46	-0.15	Rear	85.8	10	0.172	0.134	1.143	1.166	0.179	-
5 775	155	802.11ac	MIMO	80	MCS0	19.0	18.46	0.16	Front	85.8	10	0.092	0.063	1.143	1.166	0.084	-
5 775	155	802.11ac	MIMO	80	MCS0	19.0	18.46	-0.11	Left	85.8	10	0.184	0.139	1.143	1.166	0.185	-
5 775	155	802.11ac	MIMO	80	MCS0	19.0	18.46	0.15	Right	85.8	10	0.028	0.014	1.143	1.166	0.019	-
5 775	155	802.11ac	MIMO	80	MCS0	19.0	18.46	-0.13	Top	85.8	10	0.090	0.064	1.143	1.166	0.085	-

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

6 GHz WLAN Body-worn SAR																
Frequency		Mode	Ant.	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Reported SAR (W/kg)	Plot No.
MHz	Ch.															
6 505	111	802.11ax	1	160	MCS0	9.0	8.70	0.04	Rear	99.5	10	0.052	1.072	1.005	**0.056**	**B32**
6 505	111	802.11ax	1	160	MCS0	9.0	8.70	-0.17	Front	99.5	10	0.028	1.072	1.005	0.030	-
6 505	111	802.11ax	2	160	MCS0	9.0	8.62	0.05	Rear	99.5	10	0.026	1.091	1.005	0.029	-
6 505	111	802.11ax	2	160	MCS0	9.0	8.62	0.11	Front	99.5	10	0.011	1.091	1.005	0.012	-
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)	
2 441	39	Bluetooth DH5	Ant.1	17.5	17.40	-0.08	Rear	10	0.161	1.023	1.010	0.166	-
2 441	39	Bluetooth DH5	Ant.1	17.5	17.40	0.15	Front	10	0.171	1.023	1.010	0.177	-
2 441	39	Bluetooth DH5	Ant.1	17.5	17.40	0.15	Left	10	0.304	1.023	1.010	0.314	-
2 441	39	Bluetooth DH5	Ant.1	17.5	17.40	0.12	Top	10	0.151	1.023	1.010	0.156	-
2 440	17	Bluetooth LE 1M 255	Dual LE	17.5	17.33	0.07	Left	10	0.329	1.040	1.010	**0.346**	**B33**
2 441	39	Bluetooth DH5	Ant.2	14.5	14.39	0.18	Rear	10	0.049	1.026	1.010	0.051	-
2 441	39	Bluetooth DH5	Ant.2	14.5	14.39	-0.04	Front	10	0.048	1.026	1.010	0.050	-
2 441	39	Bluetooth DH5	Ant.2	14.5	14.39	0.18	Right	10	0.017	1.026	1.010	0.018	
2 402	37	Bluetooth LE 1M 255	Dual LE	14.5	14.37	-0.02	Rear	10	0.015	1.030	1.010	0.016	-
2 404	0	Bluetooth DH5	Dual	15.5	15.28	-0.19	Rear	10	0.06	1.052	1.010	0.064	-
2 404	0	Bluetooth DH5	Dual	15.5	15.28	0.16	Front	10	0.040	1.052	1.010	0.043	-
2 404	0	Bluetooth DH5	Dual	15.5	15.28	0.15	Left	10	0.097	1.052	1.010	0.103	-
2 404	0	Bluetooth DH5	Dual	15.5	15.28	-0.16	Right	10	0.00522	1.052	1.010	0.006	-
2 404	0	Bluetooth DH5	Dual	15.5	15.28	0.10	Top	10	0.041	1.052	1.010	0.044	-
2 402	37	Bluetooth LE 1M 255	Dual LE	15.5	15.01	0.07	Left	10	0.110	1.119	1.010	0.124	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram					

13.1.3 Phablet SAR Measurement Considerations

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

13.1.4 Phablet SAR Measurement Results

5 GHz WLAN Phablet SAR _10g																	
Frequency		Mode	Ant.	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
MHz	Ch.																
5 290	58	802.11ac	Ant.1	80	MCS0	16.0	15.15	-0.19	Rear	85.8	0	0.787	0.126	1.216	1.166	0.179	-
5 290	58	802.11ac	Ant.1	80	MCS0	16.0	15.15	-0.19	Front	85.8	0	1.23	0.271	1.216	1.166	0.384	-
5 290	58	802.11ac	Ant.1	80	MCS0	16.0	15.15	-0.13	Left	85.8	0	3.77	0.666	1.216	1.166	0.944	-
5 290	58	802.11ac	Ant.1	80	MCS0	16.0	15.15	0.14	Top	85.8	0	0.829	0.102	1.216	1.166	0.145	-
5 690	138	802.11ac	Ant.1	80	MCS0	16.0	15.48	0.17	Rear	85.8	0	1.24	0.280	1.127	1.166	0.368	-
5 690	138	802.11ac	Ant.1	80	MCS0	16.0	15.48	0.14	Front	85.8	0	1.03	0.225	1.127	1.166	0.296	-
5 690	138	802.11ac	Ant.1	80	MCS0	16.0	15.48	0.17	Left	85.8	0	5.73	0.698	1.127	1.166	0.917	-
5 690	138	802.11ac	Ant.1	80	MCS0	16.0	15.48	0.10	Top	85.8	0	0.596	0.093	1.127	1.166	0.122	-
5 855	171	802.11ac	Ant.1	80	MCS0	16.0	15.38	-0.15	Rear	85.8	0	1.30	0.316	1.153	1.166	0.425	-
5 855	171	802.11ac	Ant.1	80	MCS0	16.0	15.38	-0.08	Front	85.8	0	0.840	0.214	1.153	1.166	0.288	-
5 855	171	802.11ac	Ant.1	80	MCS0	16.0	15.38	-0.14	Left	85.8	0	3.19	0.511	1.153	1.166	0.687	-
5 855	171	802.11ac	Ant.1	80	MCS0	16.0	15.38	0.18	Top	85.8	0	0.779	0.102	1.153	1.166	0.137	-
5 290	58	802.11ac	Ant.2	80	MCS0	16.0	15.15	0.14	Rear	85.8	0	2.06	0.426	1.216	1.166	0.604	-
5 290	58	802.11ac	Ant.2	80	MCS0	16.0	15.15	0.10	Front	85.8	0	0.811	0.122	1.216	1.166	0.173	-
5 290	58	802.11ac	Ant.2	80	MCS0	16.0	15.15	0.03	Right	85.8	0	0.281	0.043	1.216	1.166	0.061	-
5 290	58	802.11ac	Ant.2	80	MCS0	16.0	15.15	0.10	Top	85.8	0	0.841	0.190	1.216	1.166	0.269	-
5 690	138	802.11ac	Ant.2	80	MCS0	16.0	15.51	0.17	Rear	85.8	0	1.72	0.406	1.119	1.166	0.530	-
5 690	138	802.11ac	Ant.2	80	MCS0	16.0	15.51	0.14	Front	85.8	0	1.05	0.189	1.119	1.166	0.246	-
5 690	138	802.11ac	Ant.2	80	MCS0	16.0	15.51	0.17	Right	85.8	0	0.426	0.094	1.119	1.166	0.123	-
5 690	138	802.11ac	Ant.2	80	MCS0	16.0	15.51	0.10	Top	85.8	0	0.485	0.359	1.119	1.166	0.468	-
5 855	171	802.11ac	Ant.2	80	MCS0	16.0	15.61	-0.11	Rear	85.8	0	1.44	0.361	1.094	1.166	0.460	-
5 855	171	802.11ac	Ant.2	80	MCS0	16.0	15.61	-0.18	Front	85.8	0	1.24	0.309	1.094	1.166	0.394	-
5 855	171	802.11ac	Ant.2	80	MCS0	16.0	15.61	0.13	Right	85.8	0	0.537	0.065	1.094	1.166	0.083	-
5 855	171	802.11ac	Ant.2	80	MCS0	16.0	15.61	-0.15	Top	85.8	0	0.414	0.089	1.094	1.166	0.113	-
5 290	58	802.11ac	MIMO	80	MCS0	19.0	18.16	0.19	Rear	85.8	0	2.1	0.445	1.216	1.166	0.631	-
5 290	58	802.11ac	MIMO	80	MCS0	19.0	18.16	-0.12	Front	85.8	0	2.31	0.472	1.216	1.166	0.669	-
5 290	58	802.11ac	MIMO	80	MCS0	19.0	18.16	0.05	Left	85.8	0	4.33	0.553	1.216	1.166	0.784	
5 290	58	802.11ac	MIMO	80	MCS0	19.0	18.16	-0.12	Right	85.8	0	0.404	0.065	1.216	1.166	0.092	-
5 290	58	802.11ac	MIMO	80	MCS0	19.0	18.16	-0.04	Top	85.8	0	0.846	0.177	1.216	1.166	0.251	-
5 690	138	802.11ac	MIMO	80	MCS0	19.0	18.50	0.01	Rear	85.8	0	1.21	0.312	1.127	1.166	0.410	-
5 690	138	802.11ac	MIMO	80	MCS0	19.0	18.50	-0.10	Front	85.8	0	1.71	0.217	1.127	1.166	0.285	-
5 690	138	802.11ac	MIMO	80	MCS0	19.0	18.50	-0.12	Left	85.8	0	3.66	0.634	1.127	1.166	0.833	-
5 690	138	802.11ac	MIMO	80	MCS0	19.0	18.50	-0.11	Right	85.8	0	0.376	0.061	1.127	1.166	0.080	-
5 690	138	802.11ac	MIMO	80	MCS0	19.0	18.50	0.15	Top	85.8	0	0.081	0.025	1.127	1.166	0.033	-
5 855	171	802.11ac	MIMO	80	MCS0	19.0	18.50	-0.15	Rear	85.8	0	1.30	0.350	1.153	1.166	0.470	-
5 855	171	802.11ac	MIMO	80	MCS0	19.0	18.50	0.07	Front	85.8	0	1.64	0.285	1.153	1.166	0.383	-
5 855	171	802.11ac	MIMO	80	MCS0	19.0	18.50	0.00	Left	85.8	0	4.22	0.741	1.153	1.166	**0.996**	C1
5 855	171	802.11ac	MIMO	80	MCS0	19.0	18.50	-0.19	Right	85.8	0	0.295	0.061	1.153	1.166	0.082	-
5 855	171	802.11ac	MIMO	80	MCS0	19.0	18.50	0.05	Top	85.8	0	0.865	0.127	1.153	1.166	0.171	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population												Hand 4.0 W/kg Averaged over 10 gram					

5 GHz WLAN mmWave Active Phablet SAR _10g																	
Frequency		Mode	Ant.	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
MHz	Ch.																
5 290	58	802.11ac	Ant.1	80	MCS0	14.0	13.37	0.15	Left	85.8	0	2.93	0.380	1.156	1.166	0.512	-
5 290	58	802.11ac	Ant.1	80	MCS0	14.0	13.37	-0.04	Top	85.8	0	0.362	0.062	1.156	1.166	0.084	-
5 690	138	802.11ac	Ant.1	80	MCS0	14.0	13.61	0.17	Left	85.8	0	2.15	0.373	1.094	1.166	0.476	-
5 855	171	802.11ac	Ant.1	80	MCS0	14.0	13.79	-0.02	Left	85.8	0	1.69	0.332	1.050	1.166	0.406	-
5 290	58	802.11ac	Ant.2	80	MCS0	14.0	13.11	0.14	Rear	85.8	0	1.17	0.244	1.227	1.166	0.349	-
5 690	138	802.11ac	Ant.2	80	MCS0	14.0	13.57	0.17	Rear	85.8	0	0.817	0.215	1.104	1.166	0.277	-
5 290	58	802.11ac	MIMO	80	MCS0	17.0	16.25	0.19	Rear	85.8	0	1.21	0.238	1.227	1.166	0.340	-
5 290	58	802.11ac	MIMO	80	MCS0	17.0	16.25	-0.12	Front	85.8	0	0.976	0.195	1.227	1.166	0.279	-
5 290	58	802.11ac	MIMO	80	MCS0	17.0	16.25	0.05	Left	85.8	0	2.05	0.280	1.227	1.166	0.400	-
5 690	138	802.11ac	MIMO	80	MCS0	17.0	16.60	0.07	Left	85.8	0	2.45	0.398	1.104	1.166	0.512	-
5 855	171	802.11ac	MIMO	80	MCS0	17.0	16.68	-0.02	Left	85.8	0	1.71	0.322	1.109	1.166	0.416	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population										Hand 4.0 W/kg Averaged over 10 gram							

6 GHz WLAN Phablet SAR _10g																
Frequency		Mode	Ant.	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
MHz	Ch.															
6 505	111	802.11ax	Ant.1	160	MCS0	9.0	8.70	0.18	Rear	99.5	0	0.070	1.072	1.005	0.075	-
6 505	111	802.11ax	Ant.1	160	MCS0	9.0	8.70	0.06	Front	99.5	0	0.201	1.072	1.005	0.217	-
6 505	111	802.11ax	Ant.1	160	MCS0	9.0	8.70	-0.14	Left	99.5	0	0.260	1.072	1.005	0.280	-
6 505	111	802.11ax	Ant.1	160	MCS0	9.0	8.70	-0.12	Top	99.5	0	0.016	1.072	1.005	0.017	-
6 025	15	802.11ax	Ant.1	160	MCS0	9.0	8.47	-0.19	Left	99.5	0	0.179	1.130	1.005	0.203	-
6 185	47	802.11ax	Ant.1	160	MCS0	9.0	8.88	0.14	Left	99.5	0	0.206	1.028	1.005	0.213	-
6 825	175	802.11ax	Ant.1	160	MCS0	9.0	7.91	-0.18	Left	99.5	0	0.248	1.285	1.005	**0.320**	C2
6 985	207	802.11ax	Ant.1	160	MCS0	9.0	8.91	0.07	Left	99.5	0	0.203	1.021	1.005	0.208	-
6 505	111	802.11ax	Ant.2	160	MCS0	9.0	8.62	0.19	Rear	99.5	0	0.084	1.091	1.005	0.092	-
6 505	111	802.11ax	Ant.2	160	MCS0	9.0	8.62	0.13	Front	99.5	0	0.102	1.091	1.005	0.112	-
6 505	111	802.11ax	Ant.2	160	MCS0	9.0	8.62	-0.17	Right	99.5	0	0.005	1.091	1.005	0.005	-
6 505	111	802.11ax	Ant.2	160	MCS0	9.0	8.62	0.12	Top	99.5	0	0.028	1.091	1.005	0.031	-
6 025	15	802.11ax	Ant.2	160	MCS0	9.0	8.75	-0.09	Front	99.5	0	0.066	1.059	1.005	0.070	-
6 185	47	802.11ax	Ant.2	160	MCS0	9.0	8.59	0.13	Front	99.5	0	0.096	1.099	1.005	0.106	-
6 825	175	802.11ax	Ant.2	160	MCS0	9.0	8.38	0.17	Front	99.5	0	0.073	1.153	1.005	0.085	-
6 985	207	802.11ax	Ant.2	160	MCS0	9.0	8.15	0.02	Front	99.5	0	0.059	1.216	1.005	0.072	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population										Hand 4.0 W/kg Averaged over 10 gram						

NFC Phablet SAR _10g							
Frequency	Mode	Data Rate	Power Drift	Test Position	Distance	Meas. SAR	Plot No.
㎒		(Kbps)	(dB)		(㎜)	(W/kg)	
13.56	NFC (Type A)	106	0.10	Rear	0	0.019	-
13.56	NFC (Type B)	106	0.11	Rear	0	**0.022**	C3
13.56	NFC (Type F)	212	0.11	Rear	0	0.021	-
13.56	NFC (Type B)	106	0	Front	0	0	-
13.56	NFC (Type B)	106	0	Left	0	0	-
13.56	NFC (Type B)	106	0	Right	0	0	-
13.56	NFC (Type B)	106	0	Top	0	0	-
13.56	NFC (Type B)	106	0	Bottom	0	0	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population			Hand 4.0 W/kg Averaged over 10 gram				

13.2 Absorbed Power Density Results

13.2.1 Head Absorbed Power Density Results

6 GHz WLAN Absorbed Power Density											
Frequency		Mode	Ant. No.	Band width (㎒)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Meas. APD 4 ㎠ (mW/cm²)	Plot No.
㎒	Ch.										
6 505	111	802.11ax	Ant.1	160	MCS0	9.0	8.70	0.10	Left Cheek	0.0143	
6 505	111	802.11ax	Ant.1	160	MCS0	9.0	8.70	0.13	Left Tilt	0.0110	
6 505	111	802.11ax	Ant.1	160	MCS0	9.0	8.70	0.04	Right Cheek	0.0757	
6 505	111	802.11ax	Ant.1	160	MCS0	9.0	8.70	0.18	Right Tilt	0.0449	
6 025	15	802.11ax	Ant.1	160	MCS0	9.0	8.47	0.14	Right Cheek	0.0438	
6 185	47	802.11ax	Ant.1	160	MCS0	9.0	8.88	0.13	Right Cheek	0.0831	
6 825	175	802.11ax	Ant.1	160	MCS0	9.0	7.91	0.17	Right Cheek	0.0907	
6 985	207	802.11ax	Ant.1	160	MCS0	9.0	8.91	0.14	Right Cheek	**0.1070**	D1
6 505	111	802.11ax	Ant.2	160	MCS0	9.0	8.62	0.17	Left Cheek	0.0856	
6 505	111	802.11ax	Ant.2	160	MCS0	9.0	8.62	0.19	Left Tilt	0.0556	
6 505	111	802.11ax	Ant.2	160	MCS0	9.0	8.62	0.11	Right Cheek	0.0502	
6 505	111	802.11ax	Ant.2	160	MCS0	9.0	8.62	-0.12	Right Tilt	0.0339	
6 025	15	802.11ax	Ant.2	160	MCS0	9.0	8.75	-0.19	Left Cheek	0.0686	
6 185	47	802.11ax	Ant.2	160	MCS0	9.0	8.59	-0.15	Left Cheek	0.1000	
6 825	175	802.11ax	Ant.2	160	MCS0	9.0	8.38	-0.12	Left Cheek	0.0503	
6 985	207	802.11ax	Ant.2	160	MCS0	9.0	8.15	-0.14	Left Cheek	0.0374	

13.2.2 Body-worn Absorbed Power Density Results

6 GHz WLAN Absorbed Power Density Body-worn												
Frequency		Mode	Ant. No.	Band width (㎒)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Distance (mm)	Meas. APD 4 ㎠ (mW/cm²)	Plot No.
㎒	Ch.											
6 505	111	802.11ax	1	160	MCS0	9.0	8.70	0.04	Rear	10	**0.0406**	B32
6 505	111	802.11ax	1	160	MCS0	9.0	8.70	-0.17	Front	10	0.0212	
6 505	111	802.11ax	2	160	MCS0	9.0	8.62	0.05	Rear	10	0.0180	
6 505	111	802.11ax	2	160	MCS0	9.0	8.62	0.11	Front	10	0.0077	

13.2.3 Phablet Absorbed Power Density Results

6 GHz WLAN Absorbed Power Density Phablet												
Frequency		Mode	Ant. No.	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Distance (mm)	Meas. APD 4 ㎠ (mW/cm²)	Plot No.
MHz	Ch.											
6 505	111	802.11ax	1	160	MCS0	9.0	8.70	0.18	Rear	0	0.164	
6 505	111	802.11ax	1	160	MCS0	9.0	8.70	0.06	Front	0	0.468	
6 505	111	802.11ax	1	160	MCS0	9.0	8.70	-0.14	Left	0	**0.622**	D2
6 505	111	802.11ax	1	160	MCS0	9.0	8.70	-0.12	Top	0	0.0369	
6 025	15	802.11ax	1	160	MCS0	9.0	8.47	-0.19	Left	0	0.430	
6 185	47	802.11ax	1	160	MCS0	9.0	8.88	0.14	Left	0	0.499	
6 825	175	802.11ax	1	160	MCS0	9.0	7.91	-0.18	Left	0	0.594	
6 985	207	802.11ax	1	160	MCS0	9.0	8.91	0.07	Left	0	0.487	
6 505	111	802.11ax	2	160	MCS0	9.0	8.62	0.19	Rear	0	0.197	
6 505	111	802.11ax	2	160	MCS0	9.0	8.62	0.13	Front	0	0.243	
6 505	111	802.11ax	2	160	MCS0	9.0	8.62	-0.17	Right	0	0.0131	
6 505	111	802.11ax	2	160	MCS0	9.0	8.62	0.12	Top	0	0.0649	
6 025	15	802.11ax	2	160	MCS0	9.0	8.75	-0.09	Front	0	0.160	
6 185	47	802.11ax	2	160	MCS0	9.0	8.59	0.13	Front	0	0.232	
6 825	175	802.11ax	2	160	MCS0	9.0	8.38	0.17	Front	0	0.177	
6 985	207	802.11ax	2	160	MCS0	9.0	8.15	0.02	Front	0	0.144	

13.3 SAR Test Notes

General Notes:

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

GSM/GPRS Test Notes:

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

UMTS Notes:

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

LTE Notes:

1. LTE Considerations: LTE test configurations are determined according to SAR Evaluation Consideration for LTE Devices in FCC KDB 941225 D05v02r05.
2. According to FCC KDB 941225 D05v02r05:
   When the reported SAR is 0.8 W/kg, testing of the 100% RB allocation and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the 1RB, 50%RB and 100%RB allocation with highest output power for that channel.
   Only one channel, and as reported SAR values for 1RB allocation and 50%RB allocation were less than 1.45W/Kg only the highest power RB offset for each allocation was required.
3. MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to target MPR is indicated alongside the SAR results.
4. When Power reduction is applied, MPR is 0 for some modes.
5. A-MPR was disabled for all SAR tests by setting NS=01 on the base station simulator.
6. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) LTE TDD Band 41 SAR measured at the highest output power channel for each test configuration is 0.6 W/kg then testing at the other channels is not required for such test configurations.
7. TDD LTE (Power Class 3) was tested using UL-DL configuration 0 with 6 UL sub frames and 2S sub frames using extended cyclic prefix only and special sub frame configuration 6. SAR tests were performed at maximum output power and worst-case transmission duty factor in extended cyclic prefix. Per 3GPP 36.211 Sec. 4, the duty factor using extended cyclic prefix is 0.633(cf=1.58).
8. Per KDB 941225 D05Av01r02, SAR for LTE Carrier Aggregation operations was not needed because the maximum average output power in LTE CA mode was not > 0.25 dB higher than the maximum output power when downlink CA was not activated.
9. This device supports Power Class 2 and Power Class 3 operations for LTE Band 41. The Highest available duty cycle for Power Class 2 operations is 43.3% using UL-DL configuration 1. Per May TCB Workshop notes, all SAR tests were performed using Power Class 3. SAR with power class 2 at the available duty factor was additionally performed for the power class 3 configuration with the highest SAR configuration for each exposure conditions.
10. This device supports LTE Carrier Aggregation (CA) in Uplink for LTE Band 41C, 48C, 66B, 66C 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, 66B, 66C is ≤ standalone LTE mode (without CA), SAR for LTE Band 41C, 48C, 66B, 66C 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.

11. SAR test reduction is applied using the following criteria:
    Start with the largest channel Bandwidth and measure SAR for QPSK with 1 RB, and 50 % RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is >0.8 W/kg, testing for other Channels is performed at the highest output power level for 1RB, and 50 % RB configuration for that channel. Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are >0.8 W/kg, testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation <1.45 W/kg. Testing for 16-QAM modulation is not required because the reported SAR for QPSK is <1.45 W/kg and its output power is not more than 0.5 dB higher than that a QPSK. Testing for the other channel Bandwidths is not required because the reported SAR for the highest channel Bandwidth is <1.45 W/kg and its output power is not more than 0.5 dB higher than that of the highest channel Bandwidth.

NR Notes:

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

WLAN Notes:

1. For held-to-ear and hotspot operations, the initial test position procedures were applied. For initial test position, the highest extrapolated peak SAR will be used. When reported SAR for the initial test position is ≤ 0.4 W/kg for 1g SAR and ≤ 1.0 W/kg for 10g SAR, no additional testing for the remaining test positions was required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR results is ≤ 0.8 W/kg for 1g SAR and ≤ 2.0 W/kg for 10 g SAR or all test position are measured.
2. Per KDB 2482227 D01v02r02 justification for test configurations of 2.4 GHz WiFi Single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement.

3. Per KDB 2482227 D01v02r02 justification for test configurations of 5 GHz WiFi Single transmission chain operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed powers. Other transmission mode was not investigated since the highest reported SAR for initial test configuration adjusted by the ration of maximum output powers is less than 1.2 W/kg for 1 g SAR and less than 3.0 W/kg for 10 g SAR.

4. When the maximum reported 1g averaged SAR is ≤ 0.8 W/kg, SAR testing on additional channels was not required. Otherwise, SAR for the next highest output power channel was required until the reported SAR result was ≤ 1.20 W/kg or all test channels were measured.

5. The device was configured to transmit continuously at the required data rated, channel Bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance. Procedures used to measure the duty factor are identical to that in the associated WLAN test reports.
6. WIFI 6 GHz operations are supported by SISO and MIMO both. WLAN Per KDB Publication 248227 D01v02r02, the simultaneous SAR provisions in KDB Publication 447498 D01v06 should be applied to determine simultaneous transmission SAR test exclusion for WIFI MIMO. If the sum of 1g single transmission chain SAR measurements is <1.6 W/kg, no additional SAR measurements for MIMO are required.
7. For testing the WIFI 6 GHz of this DUT, the selection of test channels was based on FCC guidance, with five channels selected across the entire WIFI 6 GHz Bands.
8. The device was configured to transmit continuously at the required data rated, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance. Procedures used to measure the duty factor are identical to that in the associated WLAN test reports.
9. For testing the WIFI 6 GHz of this DUT, the selection of test channels was based on FCC guidance, with five channels selected across the entire WIFI 6 GHz Bands.

Bluetooth Notes:

1. Bluetooth SAR was measured with the device connected to a call box with hopping disabled with DH5 operation and Tx Tests mode type. the duty cycle was compensated by applying test error tolerance 1%. Please see sec.11 for the time-domain plot and calculation for duty factor of the device.
2. Head and Bluetooth tethering SAR were evaluated for BT BDR tethering applications.

13.4 6GHz WLAN Power Density Results

6 GHz WLAN Power Density																		
Frequency		Mode	Ant.	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Distance (mm)	Test Position	Duty Cycle	Grid Step (λ)	Scaling Factor for Measurement Uncertainty per IEC 62479	Normal psPD (mW/㎠)	Scaled Normal psPD (mW/㎠)	Total psPD (mW/㎠)	Reported 4 ㎠ psPD (mW/㎠)	Plot No.
MHz	Ch.																	
6 505	111	802.11ax	Ant.1	160	MCS0	9.0	8.70	0.11	2	Rear	99.5	0.044	1.116	0.163	0.182	0.248	0.277	-
6 505	111	802.11ax	Ant.1	160	MCS0	9.0	8.70	-0.12	2	Front	99.5	0.044	1.116	0.126	0.141	0.292	0.326	-
6 505	111	802.11ax	Ant.1	160	MCS0	9.0	8.70	-0.09	2	Left	99.5	0.044	1.116	0.242	0.270	0.498	**0.556**	**D3**
6 505	111	802.11ax	Ant.1	160	MCS0	9.0	8.70	-0.13	2	Top	99.5	0.044	1.116	0.0599	0.067	0.110	0.123	-
6 025	15	802.11ax	Ant.1	160	MCS0	9.0	8.47	-0.13	2	Left	99.5	0.041	1.116	0.161	0.180	0.342	0.382	-
6 185	47	802.11ax	Ant.1	160	MCS0	9.0	8.88	0.04	2	Left	99.5	0.042	1.116	0.188	0.210	0.405	0.452	-
6 825	175	802.11ax	Ant.1	160	MCS0	9.0	7.91	0.01	2	Left	99.5	0.046	1.116	0.183	0.204	0.352	0.393	-
6 985	207	802.11ax	Ant.1	160	MCS0	9.0	8.91	-0.13	2	Left	99.5	0.048	1.116	0.166	0.185	0.298	0.333	-
6 505	111	802.11ax	Ant.2	160	MCS0	9.0	8.62	0.06	2	Rear	99.5	0.044	1.116	0.125	0.140	0.201	0.224	-
6 505	111	802.11ax	Ant.2	160	MCS0	9.0	8.62	0.10	2	Front	99.5	0.044	1.116	0.101	0.113	0.204	0.228	-
6 505	111	802.11ax	Ant.2	160	MCS0	9.0	8.62	-0.12	2	Right	99.5	0.044	1.116	0.0298	0.033	0.0416	0.046	-
6 505	111	802.11ax	Ant.2	160	MCS0	9.0	8.62	0.10	2	Top	99.5	0.044	1.116	0.0555	0.062	0.0749	0.084	-
6 025	15	802.11ax	Ant.2	160	MCS0	9.0	8.75	0.13	2	Front	99.5	0.041	1.116	0.0925	0.103	0.161	0.180	-
6 185	47	802.11ax	Ant.2	160	MCS0	9.0	8.59	-0.03	2	Front	99.5	0.042	1.116	0.103	0.115	0.188	0.210	-
6 825	175	802.11ax	Ant.2	160	MCS0	9.0	8.38	0.18	2	Front	99.5	0.046	1.116	0.0783	0.087	0.195	0.218	-
6 985	207	802.11ax	Ant.2	160	MCS0	9.0	8.15	0.12	2	Front	99.5	0.048	1.116	0.0626	0.070	0.107	0.119	-
47 CFR §1.1310 – Safety Limit Spatial Average Uncontrolled Exposure/ General Population															Power Density 1mW/㎠ Averaged over 4 ㎠			

Power Density General Notes:

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

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

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

   Power density was calculated by repeated E-field measurements on two measurement planes separated by λ/4.
5. 5. The device was configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools.
6. 6. Per FCC guidance and equipment manufacturer guidance, power density results were scaled according to IEC 62479:2010 for the portion of the measurement uncertainty >30%. Total expanded uncertainty of 1.51 dB(41.6%) was used to determine the psPD measurement scaling factor.

14. Simultaneous SAR Analysis

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

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

14.1 Sub6 Antenna Groups

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

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

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

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

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

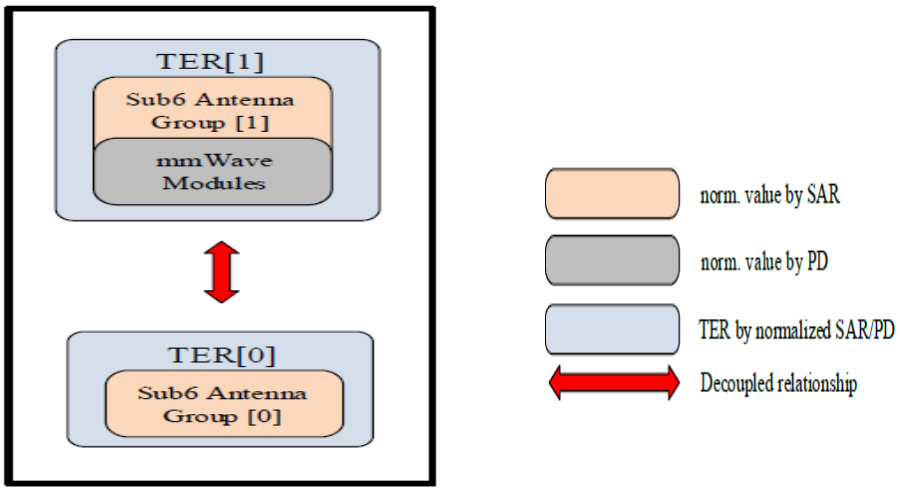
Obtain the worst-case reported SAR for each antenna group (i.e., maximum reported SAR at Plimit (or Pmax when Plimit > Pmax) out of all supported technologies, frequency bands and antennas in AG0 and AG1), denoted as max.SAR.AG0 and max.SAR.AG1, and obtain the worst-case RF exposure, and demonstrate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

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

AG0	
ANT A	GSM850, GSM1900, WCDMA 2/4/5, LTE 12/13/25/26/30/66/71 NR n12/n25/n26/n30/n66/n70/n71
ANT B	LTE 7/41 NR n7/n38/n41
ANT C	NR 48 SRS 1, NR 77 SRS 1
ANT D	NR n41 SRS 2, NR n48 SRS 2, NR n77 SRS 2

AG1	
ANT F	LTE 7/25/30/41/48/66 NR n7/n25/n30/n48/n66/n77, NR n41 SRS 1
ANT I	NR n48 SRS 3, NR n77 SRS 3
ANT E	NR n41 SRS3
ANT M	NR n258/n260/n261

WLAN/BT	
ANT H	WLAN 2.4GHz,5GHz,6GHz, Bluetooth
ANT J	WLAN 2.4GHz, Bluetooth
ANT E	WLAN 5GHz,6GHz



c) Decoupling concept in perspective of TER

In S.LSI TAS S5400document, the mmWave module and Sub6 antenna groups were decoupled by normalizing the maximum measurement results between the module and antenna based on TER, ensuring that the antenna group and module can operate independently while meeting regulatory requirements.

14.2 Head SAR Simultaneous Transmission Analysis

AG0					
Position	ANT A	ANT B	ANT C	ANT D	Max
Left Touch	0.220	0.239	0.021	0	0.239
Left Tilt	0.107	0.130	0	0.001	0.130
Right Touch	0.202	0.108	0	0.002	0.202
Right Tilt	0.108	0.071	0	0.004	0.108

AG1				
Position	ANT F	ANT I	ANT E	Max
Left Touch	0.561	0.290	0.354	0.561
Left Tilt	0.651	0.032	0.256	0.651
Right Touch	0.764	0.563	0.179	0.764
Right Tilt	0.938	0.045	0.109	0.938

14.2.1 WWAN+WLAN 2.4GHz + BT Simultaneous SAR Head Case

WLAN/BT			
Position	WLAN 2.4GHz Sub6(Ant 2)	BT Sub4(Ant 1)	Sum
Left Touch	0.140	0.064	0.204
Left Tilt	0.018	0.065	0.083
Right Touch	0.155	0.317	0.472
Right Tilt	0.021	0.249	0.270

WWAN +2.4GHz + BT Simultaneous SAR Results				
Position	AG0 Max	AG1 Max	WLAN Sub6(Ant 2) + BT Sub 4(Ant1)	∑ AG0+AG1+WLAN/BT
Left Touch	0.239	0.561	0.204	1.004
Left Tilt	0.130	0.651	0.083	0.864
Right Touch	0.202	0.764	0.472	1.438
Right Tilt	0.101	0.938	0.270	1.309

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

WLAN 5GHz/6GHz				
Position	Sub 1(Ant2) Max	Sub4(Ant1) Max	MIMO Max	Max
Left Touch	0.335	0.107	0.365	0.365
Left Tilt	0.292	0.093	0.295	0.295
Right Touch	0.232	0.291	0.288	0.291
Right Tilt	0.172	0.185	0.274	0.274

BT			
Position	BT Sub4(Ant 1)	BT Sub 6(Ant 2)	Max
Left Touch	0.064	0.081	0.081
Left Tilt	0.065	0.005	0.065
Right Touch	0.317	0.106	0.317
Right Tilt	0.249	0.004	0.249

WWAN +5GHz/6GHz + BT Simultaneous SAR Results				
Position	AG0 Max	AG1 Max	WLAN 5GHz/6GHz + BT	∑ AG0+AG1+ WLAN/BT
Left Touch	0.239	0.561	0.446	1.246
Left Tilt	0.130	0.651	0.360	1.141
Right Touch	0.202	0.764	0.608	1.574
Right Tilt	0.101	0.938	0.523	1.562

14.2.3 WWAN+WLAN Simultaneous SAR Head Case

WLAN			
Position	WLAN 2.4GHz MIMO	WLAN 5GHz/6GHz MIMO	Max
Left Touch	0.094	0.365	0.365
Left Tilt	0.058	0.295	0.295
Right Touch	0.328	0.288	0.328
Right Tilt	0.242	0.274	0.274

WWAN + WLAN Simultaneous SAR Results				
Position	AG0 Max	AG1 Max	WLAN Max	∑ AG0+AG1+WLAN
Left Touch	0.239	0.561	0.365	1.165
Left Tilt	0.130	0.651	0.295	1.076
Right Touch	0.202	0.764	0.328	1.294
Right Tilt	0.101	0.938	0.274	1.313

14.3 Hotspot SAR Simultaneous Transmission Analysis

AG0					
Position	ANT A	ANT B	ANT C	ANT D	Max
Rear	0.656	0.564	0.102	0.712	0.712
Front	0.488	0.366	0.118	0.015	0.488
Left	0.270	0.357	0.166		0.357
Right	0.424			0.023	0.424
Top					0.000
Bottom	1.077	0.521	0.035	0.072	1.077

AG1				
Position	ANT F	ANT I	ANT E	Max
Rear	0.572	0.184	0.104	0.572
Front	0.499	0.103	0.081	0.499
Left	0.165	0.038		0.165
Right			0.050	0.050
Top	0.930	0.148	0.061	0.930
Bottom				

14.3.1 WWAN+WLAN 2.4GHz + BT Simultaneous SAR Hotspot Case

WLAN/BT			
Position	WLAN 2.4G Sub6(Ant 2)	BT Sub4(Ant 1)	Sum
Rear	0.078	0.166	0.244
Front	0.132	0.177	0.309
Left		0.346	0.346
Right	0.046		0.046
Top		0.156	0.156
Bottom			

WWAN +2.4GHz + BT Simultaneous SAR Results					
Position	AG0 Max	AG1 Max	WLAN Sub6(Ant 2) + BT Sub 4(Ant1)	∑AG0+AG1+ WLAN/BT	Group analysis SPLSR
Rear	0.712	0.572	0.244	1.528	X
Front	0.488	0.499	0.309	1.296	X
Left	0.357	0.165	0.346	0.868	X
Right	0.424	0.050	0.046	0.520	X
Top	0.000	0.930	0.156	1.086	X
Bottom	1.077	0.000	0.000	1.077	X

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

WLAN 5GHz/6GHz				
Position	Sub 1(Ant2) Max	Sub4(Ant1) Max	MIMO Max	Max
Rear	0.519	0.122	0.547	0.547
Front	0.077	0.084	0.116	0.116
Left		0.231	0.185	0.231
Right	0.016		0.019	0.019
Top	0.089	0.054	0.085	0.089
Bottom				

BT			
Position	BT Sub4(Ant 1)	BT Sub 6(Ant 2)	Max
Rear	0.166	0.051	0.166
Front	0.177	0.050	0.177
Left	0.346		0.346
Right		0.018	0.018
Top	0.156		0.156
Bottom			

WWAN +5GHz/6GHz + BT Simultaneous SAR Results					
Position	AG0 Max	AG1 Max	WLAN 5GHz/6GHz + BT	∑AG0+AG1+ WLAN/BT	Group analysis SPLSR
Rear	0.712	0.572	0.713	1.997	0.017
Front	0.488	0.499	0.293	1.280	X
Left	0.357	0.165	0.577	1.099	X
Right	0.424	0.050	0.037	0.511	X
Top	0.000	0.930	0.245	1.175	X
Bottom	1.077	0.000	0.000	1.077	X

WWAN +5GHz/6GHz + BT Simultaneous SAR Results					
Position	AG0 Max	AG1 Max	WLAN 5GHz/6GHz + BT	∑AG0+ WLAN/BT	∑AG1+ WLAN/BT
Rear	0.712	0.572	0.713	1.425	1.285

14.3.3 WWAN+WLAN Simultaneous SAR Hotspot Case

WLAN			
Position	WLAN 2.4GHz MIMO	WLAN 5GHz/6GHz MIMO	Max
Rear	0.152	0.547	0.547
Front	0.133	0.116	0.133
Left	0.237	0.185	0.237
Right	0.013	0.019	0.019
Top	0.082	0.085	0.085
Bottom			

WWAN + WLAN Simultaneous SAR Results					
Position	AG0 Max	AG1 Max	WLAN Max	∑AG0+AG1+ WLAN/BT	Group analysis SPLSR
Rear	0.712	0.572	0.547	1.831	0.017
Front	0.488	0.499	0.133	1.120	X
Left	0.357	0.165	0.237	0.759	X
Right	0.424	0.050	0.019	0.493	X
Top	0.000	0.930	0.085	1.015	X
Bottom	1.077	0.000	0.000	1.077	X

WWAN + WLAN Simultaneous SAR Results					
Position	AG0 Max	AG1 Max	WLAN Max	∑AG0+ WLAN	∑AG1+ WLAN
Rear	0.712	0.572	0.547	1.262	1.119

14.3.4 Phablet SAR Simultaneous Transmission Analysis

Position	WLAN5G MIMO	NFC	Summation
Rear	0.631	0.022	0.653
Front	0.669	0.000	0.669
Left	0.996	0.000	0.996
Right	0.092	0.000	0.092
Top	0.251	0.000	0.251
Bottom			

14.3.5 SAR to Peak Location Separation Ratio (SPLSR)

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

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

Where:

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

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

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

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

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

14.3.6 Hotspot SPLSR Evaluation

Ant Group 0

Mode/Band	Antenna	X(mm)	Y(mm)	Z(mm)	Reported SAR [W/kg]
GSM1900	Main 1	-4	-74	-207	0.295
GSM850	Main 1	-31	-82.5	-207	0.656
WCDMA 2	Main 1	-40	-83	-207	0.446
WCDMA 4	Main 1	-34	-84.5	-207	0.587
WCDMA 5	Main 1	-10	-70.5	-207	0.344
LTE 7	Main 2	8.6	-78.6	-207	0.315
LTE 12	Main 1	2.5	-72	-204	0.456
LTE 13	Main 1	1	-72	-204	0.551
LTE 14	Main 1	1	-72	-204	0.635
LTE 25	Main 1	-15.5	-81	-205	0.298
LTE 26	Main 1	1	-70.5	-204	0.590
LTE 30	Main 1	-37	-87	-207	0.299
LTE 41 PC3	Main 2	-1	-82.2	-207	0.274
LTE 41 PC2	Main 2	1.4	-81	-207	0.315
LTE 66	Main 1	-14	-81	-206	0.591
LTE 71	Main 1	4	-69	-204	0.376
NR n7	Main 2	2.6	-79.8	-207	0.371

NR n12	Main 1	-8.5	-77	-207	0.429
NR n25	Main 1	-18.5	-82.5	-206	0.249
NR n26	Main 1	1	-67	-204	0.555
NR n30	Main 1	-27.4	-80.4	-207	0.459
NR n38	Main 2	2.6	-78.6	-207	0.564
NR n41	Main 2	-4	-79.8	-207	0.207
NR n66	Main 1	-14	-79.5	-206	0.485
NR n70	Main 1	-6.5	-81	-206	0.484
NR n71	Main 1	-0.5	-67.5	-204	0.237
NR n41 SRS2	Main 4	-32	-68	-204	0.094
NR n48 SRS1	Main 3	6.2	-51	-207	0.102
NR n48 SRS2	Main 4	-50.2	-70.2	-207	0.712
NR n77 SRS1	Main 3	11	-53.4	-207	0
NR n77 SRS2	Main 4	-47.8	-63	-207	0.530

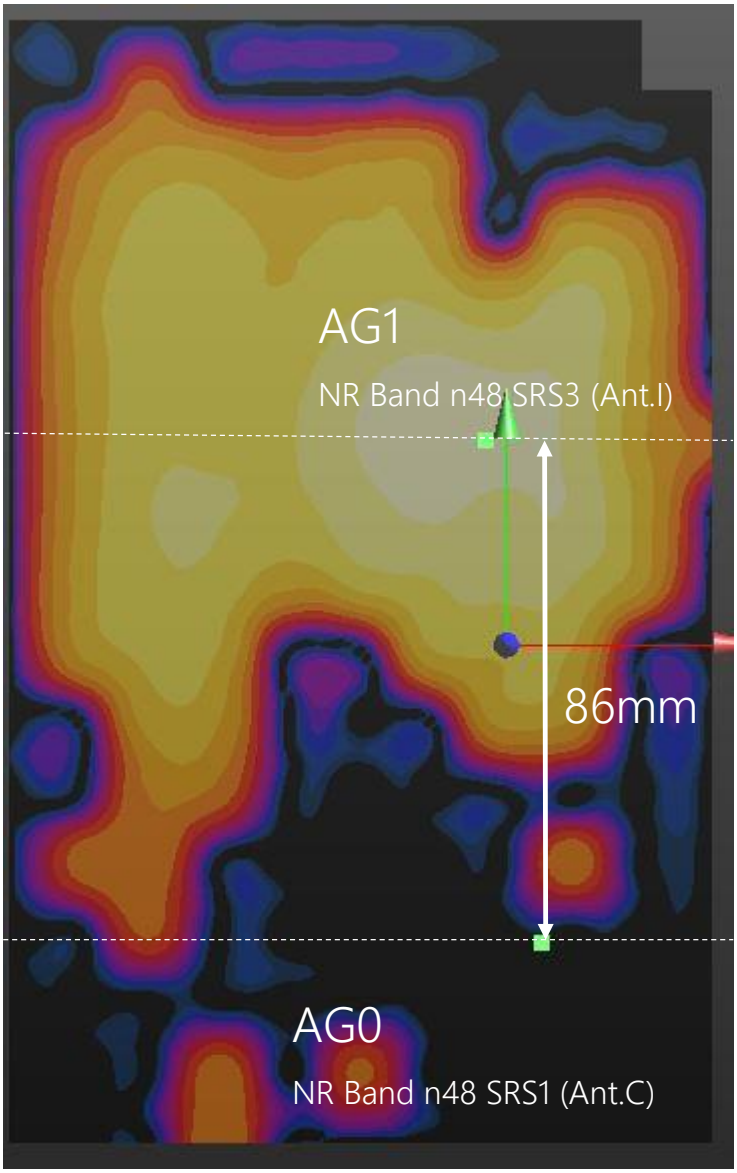
Ant Group 1

Mode/Band	Antenna	X(mm)	Y(mm)	Z(mm)	Reported SAR [W/kg]
LTE 7	Sub 2	-15.4	83	-207	0.415
LTE 25	Sub 2	-41.8	81.6	-208	0.354
LTE 30	Sub 2	-15.4	84	-208	0.379
LTE 41 PC3	Sub 2	-13	79.4	-208	0.203
LTE 41 PC2	Sub 2	-8.2	81.6	-207	0.313
LTE 48	Sub 2	-9.4	78	-207	0.383
LTE 66	Sub 2	8.5	83.5	-206	0.372
NR 7	Sub 2	-9.4	81.6	-209	0.417
NR 25	Sub 2	-0.5	89	-206	0.428
NR 30	Sub 2	-21.4	66	-207	0.378
NR 41 SRS1	Sub 2	-4	80	-204	0.080
NR 48	Sub 2	-9.4	71.8	-207	0.373
NR 66	Sub 2	2.5	89	-206	0.350
NR 77	Sub 2	-13	78	-207	0.572
NR 77 SRS3	Sub 5	1.4	35.4	-207	0.184
NR 48 SRS3	Sub 5	-2.2	35	-207	0.156
NR 41 SRS3	Sub 1				0
NR 41 SRS1	Sub 2	-4	80	-204	0.080

Group analysis SPLSR

	AG0	AG1
Max Y-axis(mm)	-51.0	
Max SAR(W/kg)	0.712	
Min Y-axis(mm)		35.0
Max SAR(W/kg)		0.572
AG0, AG1 Distance(mm)	86	
AG0, AG1 SPLSR	0.017	

SPLSR Plot for Antenna Group



14.3.7 Conclusion

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

15. SAR Measurement Variability and Uncertainty

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

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

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

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

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

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

16. Measurement Uncertainty

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

For SAR Measurement Uncertainty for Frequencies Above 6GHz

Measurement Uncertainty for handset SAR test According to IEEE 1528 and IEC 62209-1528 (6 - 10 GHz range)									
a	*b*	*c*	*d*	*e*	*f*	*g*	*h = c x f / e*	*i = c x g / e*	*k*
Source of uncertainty	**Simbol**	**Uncertainty ± %**	**Probability distribution**	**Div.**	**ci**	**ci**	**Standard Uncertainty**	**Standard Uncertainty**	**vi or veff**
Description					**(1 g)**	**(10 g)**	**± % (1 g)**	**± % (10 g)**	
Measurement system									
Probe calibration	CF	18.60	N	2	1	1	9.30	9.30	∞
Probe Calibration Drift	CFdrift	1.70	N	1	1	1	1.00	1.00	∞
Probe Linearity	LIN	4.70	R	1.73	1.00	1.00	2.71	2.71	∞
Broadband Signal	BBS	3.00	R	1.73	1.00	1.00	1.73	1.73	∞
Probe Isotropy	ISO	7.60	R	1.73	1	1	4.39	4.39	∞
Data Acquisition	DAE	2.40	N	1	1	1	2.40	2.40	∞
RF Ambient	AMB	1.80	N	1	1	1	1.80	1.80	∞
Probe Positioning	Δsys	0.20	N	1	0.33	0.33	0.07	0.07	∞
Data Processing	DAT	3.50	N	1	1	1	3.50	3.50	∞
Phantom and Device Errors									
Conductivity (meas.)DAK	LIQ(σ)	2.50	N	1	0.78	0.71	1.95	1.78	∞
Conductivity (temp.)BB	LIQ(Tσ)	3.40	R	1.73	0.78	0.71	1.53	1.39	∞
Phantom Permittivity	EPS	14.00	R	1.73	0.25	0.25	2.02	2.02	∞
Distance DUT - TSL	DAS	2.00	N	1	2	2	4.00	4.00	∞
Device Holder	H	3.60	N	1	1	1	3.60	3.60	∞
DUT Modulation	MOD	2.40	R	1.73	1	1	1.39	1.39	∞
DUT drift	RFdrift	2.50	N	1	1	1	2.50	2.50	∞
Deviation to Target	C(ε, σ)	1.90	N	1	1	0.84	1.90	1.60	∞
SAR scaling	C(R)	0.00	R	1.73	1	1	0.00	0.00	∞
Combined standard uncertainty	u(ΔSAR)		RSS				13.72	13.65	
Expanded uncertainty (95% confidence interval)	U		*k = 2*				**27.44**	**27.30**	

For Power Density Measurements Uncertainty for Frequencies Above 6GHz

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

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	cDASY6 5G Module Phantom		N/A	N/A	N/A
HP	SAR System Control PC	-	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F11/ 5K3RA1/ C/ 01	N/A	N/A	N/A
Staubli	CS7MB	F01/ 5L76A1/ C/ 01	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F17/ 59RAA1/ C/ 01	N/A	N/A	N/A
Staubli	CS9spe-TX2-90	F/24/0058554/C/001	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F13/ 5SD0A1/ C/ 01	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F07/56W9A1/C/01	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F08/5AJ0A1/C/01	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F07/55B8A1/C/01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F11/ 5K3RA1/ A/ 01	N/A	N/A	N/A
Staubli	RX90B L	F01/ 5L76A1/ A/ 01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F17/ 59RAA1/ A/ 01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F/24/0058554/A/001	N/A	N/A	N/A
Staubli	TX90 XLspeag	F13/ 5SD0A1/ A/ 01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F07/56W9A1/A/01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F08/5AJ0A1/A/01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F07/55B8A1/A/01	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	S-1203 0309	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	01.13P 00679	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	011578	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	D21144508	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	001729	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	S-0602	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	S-0008	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	S-0306	N/A	N/A	N/A
TESTO	175-H1/Thermometer	40331936309	12/26/2023	Annual	12/26/2024
TESTO	175-H1/Thermometer	40331953309	01/18/2024	Annual	01/18/2025
TESTO	175-H1/Thermometer	40331922309	12/26/2023	Annual	12/26/2024
TESTO	175-H1/Thermometer	40332651310	12/26/2023	Annual	12/26/2024
TESTO	608-H1/Thermometer	419535	03/20/2024	Annual	03/20/2025
TESTO	608-H1/Thermometer	83406789	06/26/2024	Annual	06/26/2025
TESTO	175-H1/Thermometer	40331949309	12/26/2023	Annual	12/26/2024
TESTO	175-H1/Thermometer	83348021	03/20/2024	Annual	03/20/2025
SPEAG	DAE4	648	04/19/2024	Annual	04/19/2025
SPEAG	DAE4	868	09/20/2023	Annual	09/20/2024
SPEAG	DAE4	869	03/15/2024	Annual	03/15/2025
SPEAG	DAE4	1225	02/15/2024	Annual	02/15/2025
SPEAG	DAE4	1720	04/19/2024	Annual	04/19/2025
SPEAG	DAE4	1750	09/19/2023	Annual	09/19/2024
SPEAG	DAE4	446	11/16/2023	Annual	11/16/2024
SPEAG	DAE4	1687	06/19/2024	Annual	06/19/2025
SPEAG	DAE4	1254	06/19/2024	Annual	06/19/2025
SPEAG	E-Field Probe EX3DV4	3797	01/23/2024	Annual	01/23/2025
SPEAG	E-Field Probe EX3DV4	7702	01/22/2024	Annual	01/22/2025
SPEAG	E-Field Probe EX3DV4	7681	11/27/2024	Annual	11/27/2025
SPEAG	E-Field Probe ESDV3	3076	07/18/2023	Annual	07/18/2024
SPEAG	E-Field Probe ESDV3	3076	07/17/2024	Annual	07/17/2025
SPEAG	E-Field Probe EX3DV4	7370	08/24/2023	Annual	08/24/2024
SPEAG	E-Field Probe EX3DV4	3968	09/27/2023	Annual	09/27/2024
SPEAG	E-Field Probe EX3DV4	7751	10/06/2023	Annual	10/06/2024
SPEAG	E-Field Probe EummWV4	9464	02/19/2024	Annual	02/19/2025
SPEAG	CLA13	1016	09/21/2023	Annual	09/21/2024
SPEAG	Dipole D750V3	1014	05/20/2024	Annual	05/20/2025
SPEAG	Dipole D835V2	441	04/18/2024	Annual	04/18/2026

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
SPEAG	Dipole D1640V2	345	07/12/2023	Annual	07/12/2024
SPEAG	Dipole D1800V2	2d007	04/15/2024	Annual	04/15/2026
SPEAG	Dipole D1900V2	5d032	01/18/2024	Annual	01/18/2025
SPEAG	Dipole D2300V2	1010	07/19/2023	Annual	07/19/2024
SPEAG	Dipole D2450V2	743	03/14/2024	Annual	03/14/2025
SPEAG	Dipole D2600V2	1015	04/22/2024	Annual	04/22/2026
SPEAG	Dipole D3500V2	1132	01/23/2024	Annual	01/23/2025
SPEAG	Dipole D3700V2	1105	11/20/2023	Annual	11/20/2024
SPEAG	Dipole D3900V2	1086	05/21/2024	Annual	05/21/2025
SPEAG	Dipole D5 GHz V2	1107	04/19/2024	Annual	04/19/2025
SPEAG	Dipole D6.5GHzV2	1012	09/21/2023	Annual	09/21/2024
SPEAG	5G Verification source 10GHz	1018	04/17/2024	Annual	04/17/2025
Agilent	Power Meter E4419B	MY41291386	09/21/2023	Annual	09/21/2024
Agilent	Power Meter N1911A	MY45101406	05/21/2024	Annual	05/21/2025
Agilent	Power Sensor 8481A	SG1091286	09/21/2023	Annual	09/21/2024
H.P	Power Sensor 8481A	MY41090675	09/21/2023	Annual	09/21/2024
Agilent	Wideband Power Sensor N1921A	MY55220026	07/28/2023	Annual	07/28/2024
Agilent	11636B/Power Divider	58698	01/15/2024	Annual	01/15/2025
SPEAG	DAKS 3.5	1038	01/22/2024	Annual	01/22/2025
SPEAG	Vector Reflectometer	141013	01/11/2024	Annual	01/11/2025
SPEAG	DAKS 12	1048	03/20/2024	Annual	03/20/2025
SPEAG	MXA Signal Analyzer	MY49100108	01/09/2024	Annual	01/09/2025
H.P	Network Analyzer /8753ES	JP39240221	12/26/2023	Annual	12/26/2024
Agilent	WIRELESS COMMUNICATION E5515C	MY48361100	09/21/2023	Annual	09/21/2024
Agilent	WIRELESS COMMUNICATION E5515C	MY48360252	07/27/2023	Annual	07/27/2024
R&S	Wireless Communication Test Set CMW500	115733	03/19/2024	Annual	03/19/2025
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	09/21/2023	Annual	09/21/2024
MICRO LAB	LP Filter / LA-15N	10453	09/21/2023	Annual	09/21/2024
MICRO LAB	LP Filter / LA-30N	-	09/21/2023	Annual	09/21/2024
MICRO LAB	LP Filter / LA-60N	32011	09/21/2023	Annual	09/21/2024
Agilent	Attenuator (3dB) 8693B	MY39260298	08/22/2023	Annual	08/22/2024
HP	Attenuator (3dB) 33340A	02427	08/22/2023	Annual	08/22/2024
HP	Attenuator (20dB) 8493C	09271	08/22/2023	Annual	08/22/2024
Agilent	Directional Bridge 86205A	3140A04581	04/22/2024	Annual	04/22/2025
OSI	Power Divider	#1	05/21/2024	Annual	05/21/2025
OSI	Power Divider	#2	05/21/2024	Annual	05/21/2025
OSI	Power Divider	#3	05/21/2024	Annual	05/21/2025
OSI	Power Divider	#4	05/21/2024	Annual	05/21/2025
OSI	Power Divider	#5	05/21/2024	Annual	05/21/2025
OSI	Power Divider	#6	05/21/2024	Annual	05/21/2025
OSI	Power Divider	#7	05/21/2024	Annual	05/21/2025
OSI	Power Divider	#8	05/21/2024	Annual	05/21/2025
Agilent	MXA Signal Analyzer N9020A	MY50510407	06/07/2023	Annual	06/07/2024
Agilent	MXA Signal Analyzer N9020A	MY50510407	06/04/2024	Annual	06/04/2025
KEYSIGHT	EXG Vector Signal Generator	MY50350097	03/05/2024	Annual	03/05/2025
HP	Dual Directional Coupler	16072	09/21/2023	Annual	09/21/2024
Anritsu	Radio Communication Test Station MT8000A	6262036812	11/28/2023	Annual	11/28/2024
Anritsu	Radio Communication Tester MT8820C	6201074225	01/17/2024	Annual	01/17/2025
Anritsu	Radio Communication Tester MT8820C	6200695605	03/19/2024	Annual	03/19/2025

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
Anritsu	Radio Communication Tester MT8821C	6201502997	05/21/2024	Annual	05/21/2025
Anritsu	Radio Communication Tester MT8821C	6262044720	11/28/2023	Annual	11/28/2024
Anritsu	Radio Communication Tester MT8821C	6201664725	01/17/2024	Annual	01/17/2025
Agilent	WIRELESS COMMUNICATION E5515C	MY50260992	05/22/2024	Annual	05/22/2025
ROHDE&SCHWARZ	BLUETOOTH TESTER CBT	100272	01/16/2024	Annual	01/16/2025

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

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

19. References

[1] Federal Communications Commission, ET Docket 93-62, Guidelines for Evaluating the Environmental Effects of Radio frequency Radiation, Aug. 1996.

[2] ANSI/IEEE C95.1 - 2005 , American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 300 kHz to 300 ㎓, New York: IEEE, Sept. 1992

[3] ANSI/IEEE C 95.1 - 2005, American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 3 kHz to 300 ㎓, New York: IEEE, 2006

[4 ANSI/IEEE C95.3 - 2002, IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave, New York: December 2002.

[5] IEEE Standards Coordinating Committee 34 – IEEE Std. 1528-2013, IEEE Recommended Practice or Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Body from Wireless Communications Devices

[6] NCRP, National Council on Radiation Protection and Measurements, Biological Effects and Exposure Criteria for Radio Frequency Electromagnetic Fields, NCRP Report No. 86, 1986. Reprinted Feb. 1995.

[7] T. Schmid, O. Egger, N. Kuster, Automated E-field scanning system for dosimetric assessments, IEEE Transaction on Microwave Theory and Techniques, vol. 44, Jan. 1996, pp. 105-113.

[8] K. Pokovic, T. Schmid, N. Kuster, Robust setup for precise calibration of E-field probes in tissue simulating liquids at mobile communications frequencies, ICECOM97, Oct. 1997, pp. 120-124.

[9] K. Pokovic, T. Schmid, and N. Kuster, E-field Probe with improved isotropy in brain simulating liquids, Proceedings of the ELMAR, Zadar, Croatia, June 23-25, 1996, pp. 172-175.

[10] Schmid& Partner Engineering AG, Application Note: Data Storage and Evaluation, June 1998, p2.

[11] V. Hombach, K. Meier, M. Burkhardt, E. Kuhn, N. Kuster, The Dependence of EM Energy Absorption upon Human Head Modeling at 900 ㎒, IEEE Transaction on Microwave Theory and Techniques, vol. 44 no. 10, Oct. 1996, pp. 1865-1873.

[12] N. Kuster and Q. Balzano, Energy absorption mechanism by biological bodies in the near field of dipole antennas above 300 ㎒, IEEE Transaction on Vehicular Technology, vol. 41, no. 1, Feb. 1992, pp. 17-23.

[13] G. Hartsgrove, A. Kraszewski, A. Surowiec, Simulated Biological Materials for Electromagnetic Radiation Absorption Studies, University of Ottawa, Bioelectro magnetics, Canada: 1987, pp. 29-36.

[14] Q. Balzano, O. Garay, T. Manning Jr., Electromagnetic Energy Exposure of Simulated Users of Portable Cellular Telephones, IEEE Transactions on Vehicular Technology, vol. 44, no.3, Aug. 1995.

[15] W. Gander, Computer mathematick, Birkhaeuser, Basel, 1992.

[16] W.H. Press, S.A. Teukolsky, W.T. Vetterling, and B.P. Flannery, Numerical Recepies in C, The Art of Scientific Computing, Second edition, Cambridge University Press, 1992.

[17] N. Kuster, R. Kastle, T. Schmid, Dosimetric evaluation of mobile communications equipment with known precision, IEEE Transaction on Communications, vol. E80-B, no. 5, May 1997, pp. 645-652.

[18] CENELEC CLC/SC111B, European Prestandard (prENV 50166-2), Human Exposure to Electromagnetic Fields High-frequency: 10 kHz-300 ㎓, Jan. 1995.

[19] Prof. Dr. Niels Kuster, ETH, EidgenØssischeTechnischeHoschschuleZòrich, Dosimetric Evaluation of the Cellular Phone.

[20] IEC 62209-1, Human exposure to radio frequency fields from hand-held and body-mounted wireless

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

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

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

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

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

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

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

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

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

[29] FCC 447498 D01 General RF Exposure Guidance v06

Appendix A. DUT Ant. Information & SETUP PHOTO

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

Report No.
HCT-SR-2407-FC004-P