HCT Co., Ltd.
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SAR TEST REPORT

Applicant Name: **Panasonic Corporation of North America.** Two Riverfront Plaza, 9th Floor, Newark, NJ 07102-5490, USA	**Date of Issue:** Jul. 29, 2022 **Test Report No.:** HCT-SR-2206-FC009 **Test Site: HCT CO., LTD.**

FCC ID: ACJ9TGWW22B

Equipment Type:	**Wireless module**
Application Type	**Certification**
FCC Rule Part(s):	**47CFR §2.1093**
Model Name:	**WW22B**
Host Model Name:	**CF-33**
Date of Test:	**Apr. 02, 2022 ~ May. 17, 2022**

This device has been shown to be capable of compliance for localized specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in FCC KDB procedures and had been tested in accordance with the measurement procedures specified in FCC KDB procedures.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Tested By

Kyung-Mo, Kim
Test Engineer
SAR Team
Certification Division

Reviewed By

Yun-jeang, Heo
Technical Manager
SAR Team
Certification Division

REVISION HISTORY

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

Revision No.	Date of Issue	Description
0	Jul. 29, 2022	Initial Release

This test results were applied only to the test methods required by the standard.

The above Test Report is not related to the accredited test result by (KS Q) ISO/IEC 17025 and KOLAS(Korea Laboratory Accreditation Scheme), which signed the ILAC-MRA.

Table of Contents

1. ATTESTATION OF TEST RESULT OF DEVICE UNDER TEST

Test Laboratory	
Company Name:	HCT Co., LTD
Address:	74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of Korea
Telephone:	+82 31 645 6300
Fax.:	+82 31 645 6401
Description of EUT	
Applicant Name:	Panasonic Corporation of North America.
FCC ID:	ACJ9TGWW22B
Model:	WW22B
Host Model Name	CF-33
EUT Type:	Wireless Module
Application Type:	Certification

1.1 Attestation of test result of device under test

The Highest Reported SAR			
Band	Tx. Frequency	Equipment Class	Reported SAR 1g Body
UMTS Band 5	826.4 ㎒ ~ 846.6 ㎒	PCE	1.017
UMTS Band 4	1 712.4 ㎒ ~ 1 752.6 ㎒	PCE	1.190
UMTS Band 2	1 852.4 ㎒ ~ 1 907.6 ㎒	PCE	1.262
LTE Band 2 (PCS)	1 850.7 ㎒ ~ 1 909.3 ㎒	PCE	N/A
LTE Band 4 (AWS)	1 710.7 ㎒ ~ 1 754.3 ㎒	PCE	N/A
LTE Band 5 (Cell)	824.7 ㎒ ~ 848.3 ㎒	PCE	0.741
LTE Band 7	2 502.5 ㎒ ~ 2 567.5 ㎒	PCE	1.192
LTE Band 12	699.7 ㎒ ~ 715.3 ㎒	PCE	0.700
LTE Band 13	779.5 ㎒ ~ 784.5 ㎒	PCE	0.870
LTE Band 14	790.5 ㎒ ~ 795.5 ㎒	PCE	0.893
LTE Band 17	706.5 ㎒ ~ 713.5 ㎒	PCE	N/A
LTE Band 25(PCS)	1 850.7 ㎒ ~ 1 914.3 ㎒	PCE	1.001
LTE Band 26(Cell)	814.7 ㎒ ~ 848.3 ㎒	PCE	0.890
LTE TDD Band 38	2 572.5 ㎒ ~ 2 617.5 ㎒	PCE	1.073
LTE TDD Band 41	2 498.5 ㎒ ~ 2 687.5 ㎒	PCE	1.427
LTE TDD Band 42	3 452.5 ㎒ ~ 3 597.5 ㎒	PCE	**1.438**
LTE TDD Band 48	3 552.5 ㎒ ~ 3697.5 ㎒	PCE	1.425
LTE Band 66 (AWS)	1 712.5 ㎒ ~ 1 777.5 ㎒	PCE	1.321
Simultaneous SAR per KDB 690783 D01v01r03			1.597
Date(s) of Tests:	Apr. 02, 2022 ~ May. 17, 2022		

2. DEVICE UNDER TEST DESCRIPTION

2.1 DUT specification

Device Wireless specification overview		
Band & Mode	**Operating Mode**	**Tx Frequency**
UMTS Band 5	Data	826.4 ㎒ ~ 846.6 ㎒
UMTS Band 4	Data	1 712.4 ㎒ ~ 1 752.6 ㎒
UMTS Band 2	Data	1 852.4 ㎒ ~ 1 907.6 ㎒
LTE Band 2 (PCS)	Data	1 850.7 ㎒ ~ 1 909.3 ㎒
LTE Band 4 (AWS)	Data	1 710.7 ㎒ ~ 1 754.3 ㎒
LTE Band 5	Data	824.7 ㎒ ~ 848.3 ㎒
LTE Band 7	Data	2 502.5 ㎒ ~ 2 567.5 ㎒
LTE Band 12	Data	699.7 ㎒ ~ 715.3 ㎒
LTE Band 13	Data	779.5 ㎒ ~ 784.5 ㎒
LTE Band 14	Data	790.5 ㎒ ~ 795.5 ㎒
LTE Band 17	Data	706.5 ㎒ ~ 713.5 ㎒
LTE Band 25 (PCS)	Data	1 850.7 ㎒ ~ 1 914.3 ㎒
LTE Band 26	Data	814.7 ㎒ ~ 848.3 ㎒
LTE Band 38	Data	2 572.5 ㎒ ~ 2 617.5 ㎒
LTE TDD Band 41	Data	2 498.5 ㎒ ~ 2 687.5 ㎒
LTE TDD Band 42	Data	3552.5 ㎒ ~ 3597.5 ㎒
LTE TDD Band 48	Data	3 552.5 ㎒ ~ 3697.5 ㎒
LTE Band 66 (AWS)	Data	1 712.5 ㎒ ~ 1 777.5 ㎒
Device Serial Numbers	**Mode**	**Serial Number**
	WWAN	S0P-21-03663, S0P-21-03453, S0P-21-03451

2.2 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.

2.2.1 PCE Output Power

Mode/Band		Max. Modulated Average (dBm)		
		3GPP WCDMA	3GPP HSDPA	3GPP HSUPA
UMTS Band 5 (850 MHz)	Maximum	24.5	24.5	24.5
	Nominal	23.5	23.5	23.5
UMTS Band 4 (1700 MHz)	Maximum	24.5	24.5	24.5
	Nominal	23.5	23.5	23.5
UMTS Band 2 (1900 MHz)	Maximum	24.5	24.5	24.5
	Nominal	23.5	23.5	23.5

Mode/Band		Grip Sensor ON (dBm)		
		3GPP WCDMA	3GPP HSDPA	3GPP HSUPA
UMTS Band 5 (850 MHz)	Maximum	18.5	18.5	18.5
	Nominal	17.5	17.5	17.5
UMTS Band 4 (1700 MHz)	Maximum	17.0	17.0	17.0
	Nominal	16.0	16.0	16.0
UMTS Band 2 (1900 MHz)	Maximum	16.8	16.8	16.8
	Nominal	15.8	15.8	15.8

Mode / Band		Max. Modulated Average (dBm)	Grip Sensor ON (dBm)
LTE Band 2	Maximum	24.5	16.5
	Nominal	23.5	15.5
LTE Band 4	Maximum	24.5	16.5
	Nominal	23.5	15.5
LTE Band 5	Maximum	24.5	18.3
	Nominal	23.5	17.3
LTE Band 7	Maximum	24.5	14.8
	Nominal	23.5	13.8
LTE Band 12	Maximum	24.5	19.7
	Nominal	23.5	18.7
LTE Band 13	Maximum	24.5	19.0
	Nominal	23.5	18.0
LTE Band 14	Maximum	24.5	19.0
	Nominal	23.5	18.0
LTE Band 17	Maximum	24.5	19.6
	Nominal	23.5	18.6
LTE Band 25	Maximum	23.5	16.8
	Nominal	22.5	15.8
LTE Band 26	Maximum	24.5	18.3
	Nominal	23.5	17.3
LTE TDD Band 38	Maximum	24.0	18.1
	Nominal	23.0	17.1
LTE TDD Band 41	Maximum	24.0	18.6
	Nominal	23.0	17.6
LTE TDD Band 42	Maximum	18.5	17.7
	Nominal	17.5	16.7
LTE TDD Band 48	Maximum	18.8	18.4
	Nominal	17.8	17.4
LTE Band 66	Maximum	24.5	16.8
	Nominal	23.5	15.8

2.3 LTE information

Item.		Description
Frequency Range	LTE Band 2 (PCS)	1 850.7 MHz ~ 1 909.3 MHz
	LTE Band 4 (AWS)	1 710.7 MHz ~ 1 754.3 MHz
	LTE Band 5 (Cell)	824.7 MHz ~ 848.3 MHz
	LTE Band 7	2 502.5 MHz ~ 2 567.5 MHz
	LTE Band 12	699.7 MHz ~ 715.3 MHz
	LTE Band 13	779.5 MHz ~ 784.5 MHz
	LTE Band 14	790.5 MHz ~ 795.5 MHz
	LTE Band 17	706.5 MHz ~ 713.5 MHz
	LTE Band 25 (PCS)	1 850.7 MHz ~ 1 914.3 MHz
	LTE Band 26 Cell)	814.7 MHz ~ 848.3 MHz
	LTE Band 38	2 572.5 MHz ~ 2 617.5 MHz
	LTE TDD Band 41	2 498.5 MHz ~ 2 687.5 MHz
	LTE TDD Band 42	3552.5 MHz ~ 3597.5 MHz
	LTE TDD Band 48	3 552.5 MHz ~ 3 697.5 MHz
	LTE Band 66 (AWS)	1 712.5 MHz ~ 1 777.5 MHz
Channel Bandwidths	LTE Band 2 (PCS)	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE Band 4 (AWS)	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE Band 5 (Cell)	5 MHz, 10 MHz
	LTE Band 7	5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE Band 12	1.4 MHz, 3 MHz, 5 MHz, 10 MHz
	LTE Band 13	5 MHz, 10 MHz
	LTE Band 14	5 MHz, 10 MHz
	LTE Band 17	5 MHz, 10 MHz
	LTE Band 25	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE Band 26	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz
	LTE Band 38	5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE TDD Band 41	5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE TDD Band 42	5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE TDD Band 48	5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE Band 66 (AWS)	5 MHz, 10 MHz, 15 MHz, 20 MHz

Ch. No.& Freq.(MHz)		Low	Mid	High
LTE 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 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	1 720.0 (20050)	1 732.5 (20175)	1 745.0 (20300)
LTE Band 5 (Cell)	5 MHz	826.5 (20425)	836.5 (20525)	846.5 (20625)
	10 MHz		836.5 (20525)	
LTE Band 7	5 MHz	2502.5 (20775)	2535 (21100)	2567.5 (21425)
	10 MHz	2505 (20800)	2535 (21100)	2565 (21400)
	15 MHz	2507.5 (20825)	2535 (21100)	2562.5 (21375)
	20 MHz	2510 (20850)	2535 (21100)	2560 (21350)
LTE 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 Band 13	5 MHz	779.5 (23205)	782 (23230)	784.5 (23255)
	10 MHz		782 (23230)	
LTE Band 14	5 MHz	790.5 (23305	793 (23330)	795.5 (23355)
	10 MHz		793 (23330)	
LTE Band 17	5 MHz	706.5(23755)	710.0(23790)	713.5(23825)
	10 MHz	709(23780)	710.0(23790)	711(23800)
LTE 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 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 TDD Band 38	5 MHz	2572.5 (37775)	2 595 (38000)	2617.5 (38225)
	10 MHz	2575 (37800)	2 595 (38000)	2615 (38200)
	15 MHz	2577.5 (37825)	2 595 (38000)	2612.5 (38175)
	20 MHz	2580 (37850)	2 595 (38000)	2610 (38150)

Ch. No.& Freq.(MHz)		Low	Mid	High
LTE 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 Band 42	5 MHz	3 552.5 (43115)	3 575 (43340)	3 597.5 (43565)
	10 MHz	3 555 (43140)	3 575 (43340)	3 595 (43540)
	15 MHz	3 557.5 (43165)	3 575 (43340)	3 592.5 (43515)
	20 MHz		3 575 (43340)	

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)

Item.	Description
UE Category	LTE Rel. 15, UL Category 13 DL Category 16
Modulations Supported in UL	QPSK, 16QAM, 64QAM
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3	Yes
A-MPR disabled for SAR Testing.	Yes
LTE Carrier Aggregation	Intra-Band & Inter-band DL CA, Intra-Band UL CA, and LAA are supported. Wi-Fi offloading using LTE-U and LWA is not supported. The technical description includes all the possible carrier aggregation combinations.
LTE Release 15 Additional Information	This device does not support full feature on 3GPP Release 15 All uplink communications are identical to the Release 8 specifications. The following LTE release 10 features are not supported: Replay, HetNet, Enhanced MIMO, elCl, WIFI offloading, MDH, eMBHA, Cross-Carrier Scheduling, Enhanced SC-FDMA.

2.4 Test Methodology and Procedures

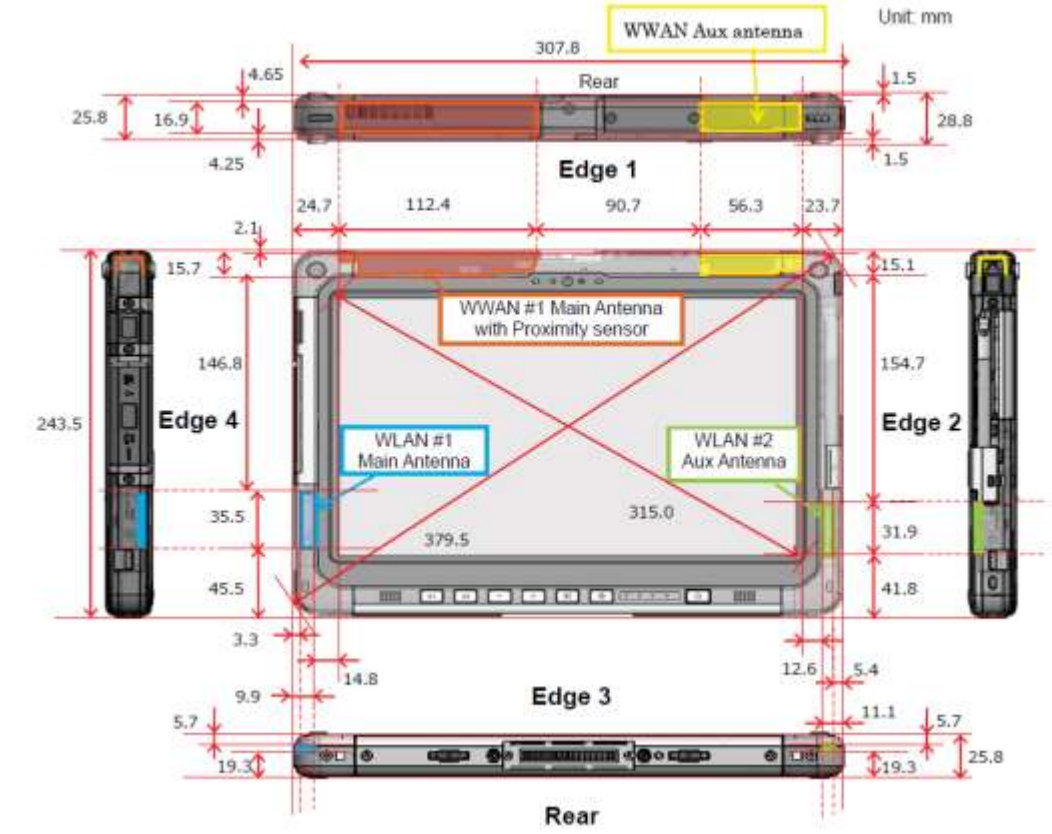
The tests documented in this report were performed in accordance with FCC CFR § 2.1093, IEEE 1528-2013, ANSI C63.26-2015 the following FCC Published RF exposure KDB procedures:

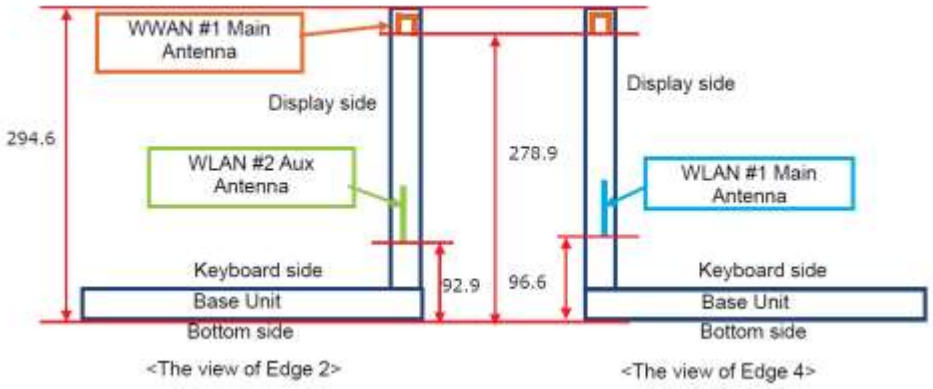
- FCC KDB Publication 941225 D01 3G SAR Procedures v03r01
- FCC KDB Publication 941225 D05 SAR for LTE Devices v02r05
- FCC KDB Publication 941225 D05A LTE Rel.10 KDB Inquiry sheet v01r02
- FCC KDB Publication 447498 D01 General SAR Guidance v06
- FCC KDB Publication 616217 D04 v01r02 (Proximity Sensor)
- FCC KDB Publication 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
- FCC KDB Publication 865664 D02 SAR Reporting v01r02
- FCC KDB Publication 690783 D01 SAR Listings on Grants v01r03
- FCC KDB616217 SAR for laptop 1 and tablets v01r02
- FCC KDB Publication 248227 D01 802.11 Wi-Fi SAR v02r02

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

- October 2014 TCB Workshop Notes (Overlapping LTE Bands)
- April 2015 TCB Workshop Notes (Simultaneous transmission summation clarified)
- November 2017 TCBC Workshop Notes (LTE Carrier Aggregation)
- April 2018 TCBC Workshop Notes (LTE DL CA SAR Test Exclusion)

2.5 DUT Antenna Locations





2.6 SAR Summation Scenario for Host Model

Simultaneous transmission paths

This device contains multiple transmitters that may operate simultaneously, and therefore requires a simultaneous transmission analysis according to FCC KDB 447498 D01v06.

Simultaneous Transmission Scenarios	
Applicable Combination	Body Exposure Condition
UMTS+2.4 GHz Wi-Fi #1(Main) + 2.4 GHz Wi-Fi #2(Aux)	Yes
LTE+2.4 GHz Wi-Fi #1(Main) + 2.4 GHz Wi-Fi #2(Aux)	Yes
UMTS+2.4 GHz Wi-Fi #1(Main) + 2.4 GHz Bluetooth	Yes
LTE+2.4 GHz Wi-Fi #1(Main) + 2.4 GHz Bluetooth	Yes
UMTS+5 GHz Wi-Fi #1(Main) + 5GHz Wi-Fi #2(Aux)	Yes
LTE+5 GHz Wi-Fi #1(Main) + 5GHz Wi-Fi #2(Aux)	Yes
UMTS +5 GHz Wi-Fi #1(Main)+ 2.4 GHz Bluetooth	Yes
LTE+5 GHz Wi-Fi #1(Main)+ 2.4 GHz Bluetooth	Yes

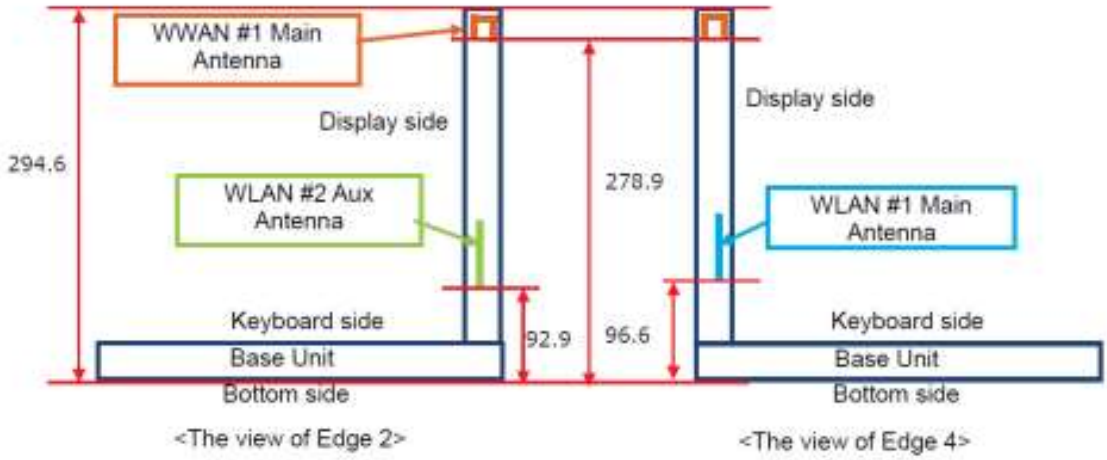
1. All licensed modes share the same antenna path and cannot transmit simultaneously.
2. The highest reported SAR for each exposure condition is used for SAR summation purpose.

3. SAR Test Considerations within Host Platform

3.1 Laptop host platform test requirements Per KDB Publication 447498 D01v06 and 616217 D04v01r02

The required minimum test separation distance for incorporating transmitters and antennas into laptop, notebook and netbook computer displays is determined with the display screen opened at an angle of 90° to the keyboard compartment. When antennas are incorporated in the keyboard section of a laptop computer, SAR is required for the Edge 3 surface of the keyboard. Provided tablet use conditions are not supported by the laptop computer, SAR tests for bystander exposure from the edges of the keyboard and display screen of laptop computers are generally not required

While users would normally keep the display open at angles greater than 90°degrees, for SAR testing purposes and to maintain conservativeness, we keep the display open at 90°degrees from the keyboard to perform the SAR measurement.



Considering the distance between the antenna of the WWAN and the Edge 3 side of the DUT, the SAR test of the WWAN was omitted according to KDB 447498 D01 and KDB 616217.

Test Configurations for the WWAN Main Module within Host

Test Configurations	Antenna-to-edge/surface	SAR Required	Note
Edge 3 Side (Laptop Mode)	278.9 mm	No	SAR is not required since separation distance from antenna to user is more far away

Per FCC KDB Publication 616217 D04v01r02, the Edge 3 surface should be tested for SAR compliance with the Laptop touching the phantom. The SAR Exclusion Threshold in KDB 447498 D01v06 can be applied to determine SAR test exclusion for adjacent edge configurations. The closet distance from the antenna to an adjacent tablet edge is used to determine if SAR testing is required for the adjacent edges, with the adjacent edge positioned against the phantom and the edge containing the antenna positioned perpendicular to the phantom

3.2 Estimated SAR Configurations

Antenna	RAT	Band	Frequency [MHz]	Output Power or ERP		Seperation Distance (mm)							Device Conifigurations for SAR Testing						
				dBm	mW	Edge1	Edge2	Edge3	Edge4	Rear	Edge4 Tilt	Edge2 Tilt	Edge1	Edge2	Edge3	Edge4	Rear	Edge4 Tilt	Edge2 Tilt
WWAN #1 Main Antenna	UMTS	B2	1907.6	23.5	224	2.1	170.7	227.8	24.7	4.65	0	N/A	YES	*YES	NO	YES	YES	YES	*YES
	UMTS	B4	1752.6	23.5	224	2.1	170.7	227.8	24.7	4.65	0	N/A	YES	*YES	NO	YES	YES	YES	*YES
	UMTS	B5	846.6	23.5	224	2.1	170.7	227.8	24.7	4.65	0	N/A	YES	*YES	NO	YES	YES	YES	*YES
	LTE	B2	1909.3	23.5	224	2.1	170.7	227.8	24.7	4.65	0	N/A	YES	*YES	NO	YES	YES	YES	*YES
	LTE	B4	1754.3	23.5	224	2.1	170.7	227.8	24.7	4.65	0	N/A	YES	*YES	NO	YES	YES	YES	*YES
	LTE	B5	846.5	23.5	224	2.1	170.7	227.8	24.7	4.65	0	N/A	YES	*YES	NO	YES	YES	YES	*YES
	LTE	B7	2567.5	23.5	224	2.1	170.7	227.8	24.7	4.65	0	N/A	YES	*YES	NO	YES	YES	YES	*YES
	LTE	B12	713.5	23.5	224	2.1	170.7	227.8	24.7	4.65	0	N/A	YES	*YES	NO	YES	YES	YES	*YES
	LTE	B13	784.5	23.5	224	2.1	170.7	227.8	24.7	4.65	0	N/A	YES	*YES	NO	YES	YES	YES	*YES
	LTE	B14	795.5	23.5	224	2.1	170.7	227.8	24.7	4.65	0	N/A	YES	*YES	NO	YES	YES	YES	*YES
	LTE	B17	713.5	23.5	224	2.1	170.7	227.8	24.7	4.65	0	N/A	YES	*YES	NO	YES	YES	YES	*YES
	LTE	B25	1914.3	23.5	224	2.1	170.7	227.8	24.7	4.65	0	N/A	YES	*YES	NO	YES	YES	YES	*YES
	LTE	B26	848.3	23.5	224	2.1	170.7	227.8	24.7	4.65	0	N/A	YES	*YES	NO	YES	YES	YES	*YES
	LTE	B38	2617.5	23	200	2.1	170.7	227.8	24.7	4.65	0	N/A	YES	*YES	NO	YES	YES	YES	*YES
	LTE	B41	2680	23	200	2.1	170.7	227.8	24.7	4.65	0	N/A	YES	*YES	NO	YES	YES	YES	*YES
	LTE	B42	3597.5	17.2	52	2.1	170.7	227.8	24.7	4.65	0	N/A	YES	*YES	NO	YES	YES	YES	*YES
	LTE	B48	3697.5	17.8	60	2.1	170.7	227.8	24.7	4.65	0	N/A	YES	*YES	NO	YES	YES	YES	*YES
	LTE	B66	1779.3	23.5	224	2.1	170.7	227.8	24.7	4.65	0	N/A	YES	*YES	NO	YES	YES	YES	*YES

Note; All test configurations are based on front view.
Per FCC KDB Publication 616217 D04v01r02, the rear surface and edges of tablet should be tested for SAR compliance with the tablet touching the phantom. The SAR Exclusion Threshold in KDB 447498 D01v06 can be applied to determine SAR test exclusion for adjacent edge configurations. The closet distance from the antenna to an adjacent tablet edge is used to determine if SAR testing is required for the adjacent edges, with the adjacent edge positioned against the phantom and the edge containing the antenna positioned perpendicular to the phantom.

Since the Dedicated Host Approach is applied, the standalone SAR test exclusion procedure in KDB447498 4.3.1 is applied in conjunction with KDB 616217 D04v01r02 4.3 to determine the minimum test separation distance:
This device was tested considering the Rear/left/right/top side for simultaneous transmission analysis of multiple transmitter conditions. The bottom side of the upper antenna excluded according to KDB 616217.

3.3 Test Configurations for the WWAN #1 Main Antenna

Tablet Mode:

Test Configurations	Antenna-to-edge/surface	SAR Required	Note
Rear	4.65 mm	Yes	-
Front	-	No	SAR is not required as this is not a typical use scenario.
Edge 1	2.1 mm	Yes	-
Edge 2	170.7 mm	Yes	Due to simultaneous transmission SAR analysis with WLAN MIMO, this position was tested even standalone SAR is excluded by SAR test exclusion consideration.
Edge 3	227.8 mm	No	SAR is not required since calculated threshold value is higher than maximum output power.
Edge 4	24.7 mm	Yes	-
Edge 2 Tilt	-	Yes	Due to simultaneous transmission SAR analysis with WLAN MIMO, this position was tested even standalone SAR is excluded by SAR test exclusion consideration.
Edge 4 Tilt	0 mm	Yes	-

Laptop Mode:

Test Configurations	Antenna-to-edge/surface	SAR Required	Note
Bottom Side (Laptop Mode)	278.9 mm	No	SAR is not required since separation distance from antenna to user is more far away compared with Edge3 tablet mode.

Convertible Mode:

Test Configurations	Antenna-to-edge/surface	SAR Required	Note
Rear	27.25 mm	No	SAR is not required since separation distance from antenna to user is more far away compared with Edge3 tablet mode.
Front	-	No	SAR is not required as this is not a typical use scenario.
Edge 1	2.1 mm	No	SAR is not required as this is accounted for by the Edge 1 test position for Tablet mode.
Edge 2	170.7 mm	No	SAR is not required as this is accounted for by the Edge 2 test position for Tablet mode.
Edge 3	278.9 mm	No	SAR is not required since calculated threshold value is higher than maximum output power.
Edge 4	3.3 mm	No	SAR is not required as this is accounted for by the Edge 4 test position for Tablet mode.
Edge 2 Tilt	-	No	SAR is not required as this is accounted for by the Edge 2 test position for Tablet mode.
Edge 4 Tilt	2.6 mm	No	SAR is not required as this is accounted for by the Edge 2 test position for Tablet mode.

LEGEND:

Edge 1 = Top Edge
Edge 2 = Right Edge
Edge 3 = Bottom Edge
Edge 4 = Left Edge
Rear = Rear of display

4. 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.

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

Figure 1. SAR Mathematical Equation

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

$$SAR = \sigma E^2 / \rho$$

Where:
σ = conductivity of the tissue-simulant material (S/m)
ρ = mass density of the tissue-simulant material (kg/㎥)
E = 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.

5. DESCRIPTION OF TEST EQUIPMENT

5.1 SAR MEASUREMENT SETUP

These measurements are performed using the DASY5 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 7 is working with SAR Measurement system DASY5, 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.

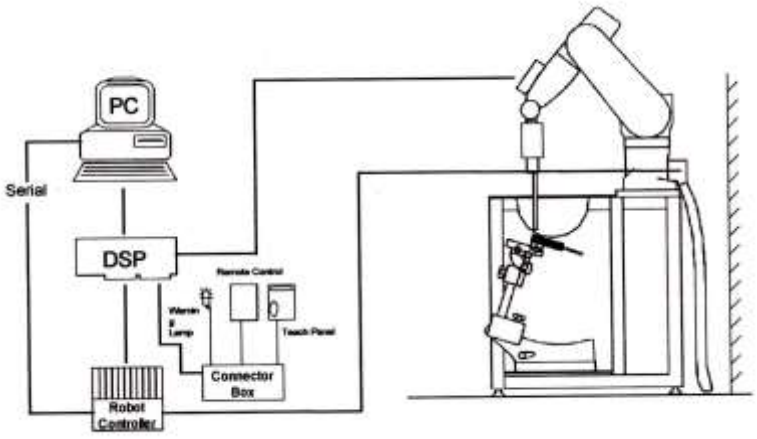


Figure 2. HCT SAR Lab. Test Measurement Set-up

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.

6. 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.

			≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5±1 mm	·δ·ln(2)±0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location			30°±1°	20°±1°
Maximumarea scanSpatial resolution: Δx_{Area}, Δy_{Area}			≤ 2 GHz: ≤15 mm 2-3 GHz: ≤12 mm	3-4 GHz: ≤12 mm 4-6 GHz: ≤10 mm
			When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan Spatial resolution: Δxzoom, Δyzoom			≤ 2 GHz: ≤8mm 2-3 GHz: ≤5mm*	3-4 GHz: ≤5 mm* 4-6 GHz: ≤4 mm*
Maximum zoom scan Spatial resolution normal to phantom surface	uniform grid: Δzzoom(n)		≤ 5 mm	3-4 GHz: ≤4 mm 4-5 GHz: ≤3 mm 5-6 GHz: ≤2 mm
	graded grid	$\Delta z_{zoom}(1)$: between1 st two Points closest to phantom surface	≤ 4 mm	3-4 GHz: ≤3 mm 4-5 GHz: ≤2.5 mm 5-6 GHz: ≤2 mm
		$\Delta z_{zoom}(n>1)$:between subsequent Points	≤1.5·$\Delta z_{zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3-4 GHz: ≥28 mm 4-5 GHz: ≥25 mm 5-6 GHz: ≥22 mm
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.				

7. RF EXPOSURE LIMITS

HUMAN EXPOSURE	UNCONTROLLED ENVIRONMENT General Population	CONTROLLED ENVIRONMENT Occupational
	W/kg	W/kg
The SAR averaged over the whole body mass.	0.08	0.4
The peak spatially-averaged SAR for the head, neck and trunk, averaged over any 1 g of tissue*	1.6	8
The peak spatially-averaged SAR in the limbs, averaged over any 10 g of tissue*	4	20

Table 7.1

SAR Human Exposure Specific in Health Canada Safety Code 6

NOTES:

* Defined as a tissue volume in the shape of a cube.

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.

8. SAR General Measurement Procedures

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

8.1 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.

8.2 SAR Measurement Conditions for UMTS

8.2.1 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.

8.2.2 Head SAR Measurements

SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”. The 3G SAR test reduction procedure is applied to AMR configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for 12.2 kbps AMR in 3.4 kbps SRB (signaling radio bearer) using the highest reported SAR configuration in 12.2 kbps RMC for head exposure.

8.2.3 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.

8.2.4 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.

8.2.5 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.

8.2.6 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.

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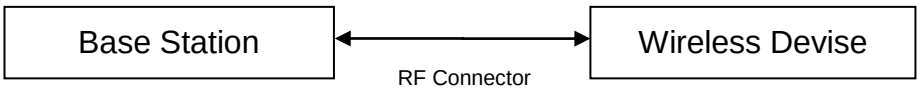


8.3 SAR Measurement Conditions for LTE

LTE modes are tested according to FCC KDB 941225 D05v02r05 publication. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluation SAR [4]. The R&S CMW500 or Anritsu MT8820C simulators are used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

8.3.1 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.

8.3.2 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.

8.3.3 A-MPR

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

8.3.4 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% all0cation 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.

8.3.5 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.

8.3.6 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 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	$13168 \cdot T_s$			-	-	-

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

Calculated Duty Cycle – Extended cyclic prefix in uplink x (T_s) x # of S + # of U
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

9. 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.

9.1 UMTS Maximum Conducted Output Power

HSPA+

This DUT is only capable of QPSK HSPA+ in uplink. Therefore, the RF conducted power is not measured according to 941225 D01 3G SAR.

UMTS Band 5

3GPP Release Version	Mode	3GPP 34.121	UMTS Band 5[dBm]			
		Subtest	UL 4132 DL 4357	UL 4183 DL 4408	UL 4233 DL 4458	3GPP MPR [dB]
99	UMTS	12.2 kbps RMC	23.72	23.91	23.92	-
99		12.2 kbps AMR				
5	HSDPA	Subtest 1	23.81	23.98	24.03	0
5		Subtest 2	23.83	23.98	24.03	0
5		Subtest 3	23.31	23.47	23.54	0.5
5		Subtest 4	23.30	23.45	23.54	0.5
6	HSUPA	Subtest 1	23.76	23.92	24.00	0
6		Subtest 2	21.73	21.91	22.00	2
6		Subtest 3	22.76	22.94	23.00	1
6		Subtest 4	21.75	21.90	21.99	2
6		Subtest 5	23.73	23.90	23.96	0
8	DC-HSDPA	Subtest 1				
8		Subtest 2				
8		Subtest 3				
8		Subtest 4				

UMTS Average Conducted output powers

UMTS Band 4

3GPP Release Version	Mode	3GPP 34.121	UMTS Band 4 [dBm]			
		Subtest	UL 1312 DL 1537	UL 1412 DL 1637	UL 1513 DL 1738	3GPP MPR [dB]
99	UMTS	12.2 kbps RMC	23.70	23.83	23.68	-
99		12.2 kbps AMR				
5	HSDPA	Subtest 1	23.92	24.04	23.87	0
5		Subtest 2	23.92	24.04	23.86	0
5		Subtest 3	23.41	23.54	23.37	0.5
5		Subtest 4	23.39	23.53	23.35	0.5
6	HSUPA	Subtest 1	23.89	24.02	23.83	0
6		Subtest 2	21.88	22.00	21.84	2
6		Subtest 3	22.89	22.04	22.86	1
6		Subtest 4	21.90	22.03	21.85	2
6		Subtest 5	23.86	24.01	23.84	0
8	DC-HSDPA	Subtest 1				
8		Subtest 2				
8		Subtest 3				
8		Subtest 4				

UMTS Average Conducted output powers

UMTS Band 2

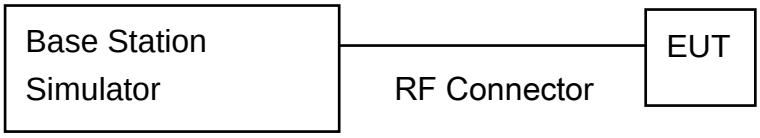
3GPP Release Version	Mode	3GPP 34.121	UMTS Band 2 [dBm]			3GPP MPR
		Subtest	UL 9262 DL 9662	UL 9400 DL 9800	UL 9538 DL 9938	
99	UMTS	12.2 kbps RMC	23.76	23.50	23.70	-
99	UMTS	12.2 kbps AMR				
5	HSDPA	Subtest 1	23.97	23.69	23.91	0
5		Subtest 2	23.97	23.70	23.92	0
5		Subtest 3	23.47	23.21	23.41	0.5
5		Subtest 4	23.46	23.19	23.41	0.5
6	HSUPA	Subtest 1	23.94	23.70	23.91	0
6		Subtest 2	21.93	21.68	21.92	2
6		Subtest 3	22.95	22.71	22.91	1
6		Subtest 4	21.96	21.66	21.92	2
6		Subtest 5	23.91	23.65	23.87	0
8	DC-HSDPA	Subtest 1				
8		Subtest 2				
8		Subtest 3				
8		Subtest 4				

UMTS Average Conducted output powers

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.

It is expected by the manufacturer that MPR for some HSPA Subtests may be up to 2 dB more than specified by 3GPP, But also as low as 1 dB according to the chipset implementation in this model to match manufacturer.



9.2 UMTS Reduced Conducted Output Power (Grip back Activated)

UMTS Band 5 Grip Back-off Power

3GPP Release Version	Mode	3GPP 34.121	UMTS Band 5[dBm]			
		Subtest	UL 4132 DL 4357	UL 4183 DL 4408	UL 4233 DL 4458	3GPP MPR [dB]
99	UMTS	12.2 kbps RMC	17.72	17.88	17.75	-
99		12.2 kbps AMR				
5	HSDPA	Subtest 1	17.72	17.87	17.74	0
5		Subtest 2	17.69	17.88	17.76	0
5		Subtest 3	17.23	17.37	17.25	0.5
5		Subtest 4	17.22	17.39	17.27	0.5
6	HSUPA	Subtest 1	17.69	17.87	17.74	0
6		Subtest 2	15.71	15.84	15.73	2
6		Subtest 3	16.72	16.88	16.75	1
6		Subtest 4	15.73	15.90	15.78	2
6		Subtest 5	17.72	17.89	17.76	0
8	DC-HSDPA	Subtest 1				
8		Subtest 2				
8		Subtest 3				
8		Subtest 4				

UMTS Average Conducted output powers

UMTS Band 4 Grip Back-off Power

3GPP Release Version	Mode	3GPP 34.121	UMTS Band 4 [dBm]			3GPP MPR
		Subtest	DL 1537 UL 1312	DL 1637 UL 1412	DL 1738 UL 1513	
99	UMTS	12.2 kbps RMC	15.97	16.33	16.05	-
99		12.2 kbps AMR				
5	HSDPA	Subtest 1	16.17	16.53	16.27	0
5		Subtest 2	16.17	16.50	16.28	0
5		Subtest 3	15.69	16.05	15.81	0.5
5		Subtest 4	15.70	16.05	15.82	0.5
6	HSUPA	Subtest 1	16.16	16.53	16.27	0
6		Subtest 2	14.21	14.59	14.30	2
6		Subtest 3	15.20	15.56	15.32	1
6		Subtest 4	14.22	14.39	14.31	2
6		Subtest 5	16.19	16.56	16.30	0
8	DC-HSDPA	Subtest 1				
8		Subtest 2				
8		Subtest 3				
8		Subtest 4				

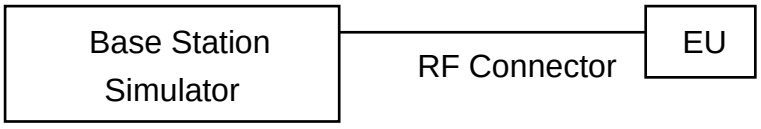
UMTS Average Conducted output powers

UMTS Band 2 Grip back-off Power

3GPP Release Version	Mode	3GPP 34.121	UMTS Band 2 [dBm]			3GPP MPR
		Subtest	DL 9662 UL 9262	DL 9800 UL 9400	DL 9938 UL 9538	
99	UMTS	12.2kbpsRMC	15.86	15.95	15.80	-
99		12.2kbpsAMR				
5	HSDPA	Subtest 1	16.06	15.95	16.03	0
5		Subtest 2	16.07	15.97	16.04	0
5		Subtest 3	15.57	15.53	15.57	0.5
5		Subtest 4	15.60	15.54	15.57	0.5
6	HSUPA	Subtest 1	16.04	15.96	16.04	0
6		Subtest 2	14.08	14.03	14.03	2
6		Subtest 3	15.13	15.02	15.10	1
6		Subtest 4	14.12	14.02	14.07	2
6		Subtest 5	16.10	16.03	16.08	0
8	DC-HSDPA	Subtest 1				
8		Subtest 2				
8		Subtest 3				
8		Subtest 4				

◆ 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.



9.3 LTE Maximum Conducted Output Power

LTE B7/13/14/42/48 does not support three non-overlapping channels at each supported max bandwidth. 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.

- LTE Band 2

LTE Band 2 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18607 Ch. 1850.7 ㎒	18900 Ch. 1880 ㎒	19193 Ch. 1909.3 ㎒		
1.4 ㎒	QPSK	1	0	22.77	22.95	23.14	0	0
		1	3	22.84	23.00	23.22	0	0
		1	5	22.76	22.93	23.15	0	0
		3	0	22.79	22.91	23.18	0	0
		3	1	22.86	22.96	23.22	0	0
		3	3	22.76	22.91	23.17	0	0
		6	0	21.77	21.94	22.18	0-1	1
	16QAM	1	0	22.08	22.21	22.49	0-1	1
		1	3	22.13	22.27	22.54	0-1	1
		1	5	22.01	22.23	22.59	0-1	1
		3	0	21.70	22.09	22.33	0-1	1
		3	1	21.95	22.11	22.40	0-1	1
		3	3	21.79	21.98	22.31	0-1	1
		6	0	20.84	21.11	21.35	0-2	2
	64QAM	1	0	21.00	21.12	21.47	0-2	2
		1	3	21.08	21.26	21.48	0-2	2
		1	5	21.01	21.18	21.43	0-2	2
		3	0	21.08	21.20	21.42	0-2	2
		3	1	21.02	21.20	21.44	0-2	2
		3	3	21.00	21.13	21.38	0-2	2
		6	0	19.91	20.02	20.24	0-3	3

LTE Band 2 _ 3 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18615 Ch. 1851.5 ㎒	18900 Ch. 1880 ㎒	19185 Ch. 1908.5 ㎒		
3 ㎒	QPSK	1	0	22.86	23.03	23.24	0	0
		1	7	22.97	23.06	23.34	0	0
		1	14	22.83	22.98	23.25	0	0
		8	0	21.86	22.00	22.26	0-1	1
		8	3	21.89	22.01	22.30	0-1	1
		8	7	21.88	22.03	22.23	0-1	1
		15	0	21.84	22.00	22.25	0-1	1
	16QAM	1	0	22.13	22.33	22.59	0-1	1
		1	7	22.34	22.46	22.65	0-1	1
		1	14	22.18	22.28	22.57	0-1	1
		8	0	20.94	21.15	21.42	0-2	2
		8	3	21.00	21.20	21.42	0-2	2
		8	7	20.90	21.12	21.38	0-2	2
		15	0	20.89	21.09	21.35	0-2	2
	64QAM	1	0	20.99	21.19	21.50	0-2	2
		1	7	21.13	21.29	21.60	0-2	2
		1	14	20.95	21.25	21.51	0-2	2
		8	0	19.95	20.18	20.37	0-3	3
		8	3	20.03	20.16	20.44	0-3	3
		8	7	20.03	20.16	20.37	0-3	3
		15	0	19.97	20.10	20.35	0-3	3

LTE Band 2 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18625 Ch. 1852.5 MHz	18900 Ch. 1880 MHz	19175 Ch. 1907.5 MHz		
5 MHz	QPSK	1	0	22.89	23.01	23.36	0	0
		1	12	22.81	22.96	23.28	0	0
		1	24	22.82	22.99	23.22	0	0
		12	0	21.88	22.08	22.32	0-1	1
		12	6	21.90	22.05	22.31	0-1	1
		12	11	21.87	22.07	22.27	0-1	1
		25	0	21.88	22.05	22.29	0-1	1
	16QAM	1	0	22.14	22.30	22.74	0-1	1
		1	12	22.13	22.33	22.54	0-1	1
		1	24	21.96	22.27	22.58	0-1	1
		12	0	20.87	21.15	21.40	0-2	2
		12	6	20.93	21.18	21.44	0-2	2
		12	11	20.88	21.11	21.39	0-2	2
		25	0	20.87	21.15	21.40	0-2	2
	64QAM	1	0	21.03	21.34	21.56	0-2	2
		1	12	21.10	21.30	21.54	0-2	2
		1	24	21.02	21.15	21.44	0-2	2
		12	0	19.91	20.20	20.44	0-3	3
		12	6	20.08	20.18	20.44	0-3	3
		12	11	20.02	20.17	20.41	0-3	3
		25	0	20.00	20.15	20.40	0-3	3

LTE Band 2 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18650 Ch. 1855 MHz	18900 Ch. 1880 MHz	19150 Ch. 1905 MHz		
10 MHz	QPSK	1	0	22.90	22.98	23.30	0	0
		1	24	22.86	22.90	23.25	0	0
		1	49	22.90	22.87	23.23	0	0
		25	0	21.91	22.01	22.31	0-1	1
		25	12	21.79	21.96	22.24	0-1	1
		25	24	21.85	21.93	22.32	0-1	1
		50	0	21.88	21.92	22.24	0-1	1
	16QAM	1	0	22.21	22.31	22.57	0-1	1
		1	24	22.11	22.26	22.65	0-1	1
		1	49	22.13	22.16	22.61	0-1	1
		25	0	20.90	21.11	21.33	0-2	2
		25	12	20.92	21.05	21.33	0-2	2
		25	24	20.91	20.99	21.35	0-2	2
		50	0	20.96	21.03	21.32	0-2	2
	64QAM	1	0	21.12	21.29	21.55	0-2	2
		1	24	20.97	21.21	21.60	0-2	2
		1	49	21.02	21.18	21.51	0-2	2
		25	0	19.90	20.20	20.39	0-3	3
		25	12	19.86	20.18	20.38	0-3	3
		25	24	19.97	20.12	20.39	0-3	3
		50	0	19.98	20.15	20.38	0-3	3

LTE Band 2 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18675 Ch. 1857.5 ㎒	18900 Ch. 1880 ㎒	19125 Ch. 1902.5 ㎒		
15 ㎒	QPSK	1	0	22.99	23.06	23.41	0	0
		1	36	22.72	22.90	23.20	0	0
		1	74	22.87	23.02	23.31	0	0
		36	0	21.84	22.01	22.33	0-1	1
		36	18	21.88	21.97	22.29	0-1	1
		36	39	21.85	21.91	22.24	0-1	1
		75	0	21.90	21.98	22.25	0-1	1
	16QAM	1	0	22.26	22.46	22.79	0-1	1
		1	36	22.13	22.29	22.48	0-1	1
		1	74	22.12	22.42	22.57	0-1	1
		36	0	20.92	21.10	21.45	0-2	2
		36	18	21.00	21.06	21.36	0-2	2
		36	39	20.95	21.00	21.35	0-2	2
		75	0	20.99	21.07	21.40	0-2	2
	64QAM	1	0	21.12	21.34	21.65	0-2	2
		1	36	21.00	21.18	21.51	0-2	2
		1	74	21.11	21.32	21.64	0-2	2
		36	0	19.96	20.14	20.48	0-3	3
		36	18	20.08	20.13	20.42	0-3	3
		36	39	19.98	20.05	20.37	0-3	3
		75	0	19.99	20.10	20.40	0-3	3

LTE Band 2 _ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 MHz	18900 Ch. 1880 MHz	19100 Ch. 1900 MHz		
20 MHz	QPSK	1	0	22.97	22.98	23.39	0	0
		1	49	22.95	22.94	23.22	0	0
		1	99	22.87	22.97	23.34	0	0
		50	0	22.06	22.04	22.28	0-1	1
		50	25	22.02	22.00	22.29	0-1	1
		50	49	21.91	21.94	22.23	0-1	1
		100	0	21.97	21.98	22.29	0-1	1
	16QAM	1	0	22.32	22.27	22.68	0-1	1
		1	49	22.22	22.24	22.48	0-1	1
		1	99	22.20	22.25	22.68	0-1	1
		50	0	21.17	21.15	21.36	0-2	2
		50	25	21.09	21.12	21.42	0-2	2
		50	49	21.01	21.02	21.33	0-2	2
		100	0	21.07	21.08	21.39	0-2	2
	64QAM	1	0	21.27	21.17	21.63	0-2	2
		1	49	21.26	21.25	21.49	0-2	2
		1	99	21.09	21.22	21.59	0-2	2
		50	0	20.16	20.17	20.43	0-3	3
		50	25	20.11	20.07	20.42	0-3	3
		50	49	20.08	20.05	20.34	0-3	3
		100	0	20.09	20.09	20.40	0-3	3

- LTE Band 4

LTE Band 4 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19957 Ch. 1710.7 ㎒	20175 Ch. 1732.5 ㎒	20393 Ch. 1754.3 ㎒		
1.4 ㎒	QPSK	1	0	23.16	23.00	22.71	0	0
		1	3	23.20	23.06	22.77	0	0
		1	5	23.12	23.02	22.70	0	0
		3	0	23.11	22.97	22.71	0	0
		3	1	23.15	23.04	22.77	0	0
		3	3	22.99	23.00	22.69	0	0
		6	0	22.03	22.07	21.71	0-1	1
	16QAM	1	0	22.42	22.25	22.14	0-1	1
		1	3	22.47	22.36	22.08	0-1	1
		1	5	22.46	22.29	22.03	0-1	1
		3	0	22.19	22.11	21.90	0-1	1
		3	1	22.23	22.16	21.89	0-1	1
		3	3	22.12	22.13	21.76	0-1	1
		6	0	21.21	21.20	20.92	0-2	2
	64QAM	1	0	21.42	21.33	21.05	0-2	2
		1	3	21.44	21.32	21.06	0-2	2
		1	5	21.41	21.21	21.00	0-2	2
		3	0	21.39	21.24	20.97	0-2	2
		3	1	21.43	21.29	20.98	0-2	2
		3	3	21.32	21.24	20.94	0-2	2
		6	0	20.28	20.07	19.81	0-3	3

LTE Band 4 _ 3 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19965 Ch. 1711.5 ㎒	20175 Ch. 1732.5 ㎒	20385 Ch. 1753.5 ㎒		
3 ㎒	QPSK	1	0	23.26	23.07	22.80	0	0
		1	7	23.33	23.14	22.87	0	0
		1	14	23.20	23.07	22.76	0	0
		8	0	22.19	22.10	21.79	0-1	1
		8	3	22.28	22.09	21.80	0-1	1
		8	7	22.24	22.10	21.80	0-1	1
		15	0	22.26	22.08	21.78	0-1	1
	16QAM	1	0	22.45	22.44	22.12	0-1	1
		1	7	22.69	22.50	22.19	0-1	1
		1	14	22.59	22.39	22.11	0-1	1
		8	0	21.42	21.22	20.94	0-2	2
		8	3	21.43	21.30	20.99	0-2	2
		8	7	21.38	21.22	20.91	0-2	2
		15	0	21.33	21.16	20.92	0-2	2
	64QAM	1	0	21.53	21.29	21.03	0-2	2
		1	7	21.50	21.45	21.15	0-2	2
		1	14	21.50	21.39	21.05	0-2	2
		8	0	20.36	20.18	19.91	0-3	3
		8	3	20.40	20.25	19.95	0-3	3
		8	7	20.35	20.20	19.87	0-3	3
		15	0	20.32	20.25	19.84	0-3	3

LTE Band 4 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19975 Ch. 1712.5 ㎒	20175 Ch. 1732.5 ㎒	20375 Ch. 1752.5 ㎒		
5 ㎒	QPSK	1	0	23.23	23.15	22.83	0	0
		1	12	23.16	23.06	22.79	0	0
		1	24	23.17	23.09	22.80	0	0
		12	0	22.23	22.09	21.81	0-1	1
		12	6	22.23	22.11	21.87	0-1	1
		12	11	22.19	22.11	21.77	0-1	1
		25	0	22.21	22.12	21.80	0-1	1
	16QAM	1	0	22.49	22.53	22.14	0-1	1
		1	12	22.61	22.38	22.05	0-1	1
		1	24	22.49	22.44	22.11	0-1	1
		12	0	21.33	21.23	20.92	0-2	2
		12	6	21.35	21.24	20.94	0-2	2
		12	11	21.33	21.16	20.86	0-2	2
		25	0	21.31	21.19	20.91	0-2	2
	64QAM	1	0	21.55	21.47	21.09	0-2	2
		1	12	21.52	21.28	21.11	0-2	2
		1	24	21.48	21.27	21.00	0-2	2
		12	0	20.34	20.25	19.96	0-3	3
		12	6	20.35	20.30	19.97	0-3	3
		12	11	20.31	20.21	19.92	0-3	3
		25	0	20.33	20.21	19.88	0-3	3

LTE Band 4 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20000 Ch. 1715 ㎒	20175 Ch. 1732.5 ㎒	20350 Ch. 1750 ㎒		
10 ㎒	QPSK	1	0	23.24	23.14	22.94	0	0
		1	24	23.16	23.06	22.79	0	0
		1	49	23.18	22.98	22.79	0	0
		25	0	22.25	22.16	21.89	0-1	1
		25	12	22.24	22.01	21.93	0-1	1
		25	24	22.09	22.01	21.72	0-1	1
		50	0	22.13	21.99	21.83	0-1	1
	16QAM	1	0	22.55	22.41	22.29	0-1	1
		1	24	22.54	22.31	22.16	0-1	1
		1	49	22.34	22.33	21.94	0-1	1
		25	0	21.24	21.15	20.94	0-2	2
		25	12	21.22	21.09	20.95	0-2	2
		25	24	21.18	21.10	20.86	0-2	2
		50	0	21.19	21.20	20.90	0-2	2
	64QAM	1	0	21.40	21.40	21.22	0-2	2
		1	24	21.19	21.33	21.04	0-2	2
		1	49	21.31	21.30	21.10	0-2	2
		25	0	20.21	20.27	20.11	0-3	3
		25	12	20.27	20.24	20.09	0-3	3
		25	24	20.29	20.22	19.89	0-3	3
		50	0	20.36	20.26	20.04	0-3	3

LTE Band 4 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20025 Ch. 1717.5 ㎒	20175 Ch. 1732.5 ㎒	20325 Ch. 1747.5 ㎒		
15 ㎒	QPSK	1	0	23.26	23.16	23.00	0	0
		1	36	23.06	22.93	22.83	0	0
		1	74	23.19	22.99	22.77	0	0
		36	0	22.16	22.08	21.94	0-1	1
		36	18	22.14	22.04	21.91	0-1	1
		36	39	22.23	22.02	21.86	0-1	1
		75	0	22.28	22.10	21.90	0-1	1
	16QAM	1	0	22.60	22.55	22.36	0-1	1
		1	36	22.25	22.41	22.25	0-1	1
		1	74	22.52	22.39	22.01	0-1	1
		36	0	21.28	21.17	20.97	0-2	2
		36	18	21.23	21.11	20.99	0-2	2
		36	39	21.31	21.10	20.94	0-2	2
		75	0	21.38	21.17	20.99	0-2	2
	64QAM	1	0	21.56	21.35	21.24	0-2	2
		1	36	21.36	21.19	21.03	0-2	2
		1	74	21.43	21.22	21.03	0-2	2
		36	0	20.31	20.20	20.01	0-3	3
		36	18	20.30	20.19	20.02	0-3	3
		36	39	20.36	20.14	19.93	0-3	3
		75	0	20.35	20.17	20.00	0-3	3

LTE Band 4 _ 20 ㎒ Bandwidth

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	23.27	23.21	23.13	0	0
		1	49	23.03	22.95	22.82	0	0
		1	99	23.19	22.89	22.77	0	0
		50	0	22.22	22.13	22.07	0-1	1
		50	25	22.24	22.09	21.90	0-1	1
		50	49	22.19	22.06	21.85	0-1	1
		100	0	22.27	22.05	21.91	0-1	1
	16QAM	1	0	22.59	22.57	22.55	0-1	1
		1	49	22.27	22.23	22.17	0-1	1
		1	99	22.49	22.32	22.20	0-1	1
		50	0	21.34	21.24	21.14	0-2	2
		50	25	21.33	21.19	21.00	0-2	2
		50	49	21.34	21.15	20.99	0-2	2
		100	0	21.33	21.17	20.99	0-2	2
	64QAM	1	0	21.54	21.49	21.38	0-2	2
		1	49	21.23	21.17	21.11	0-2	2
		1	99	21.39	21.20	21.07	0-2	2
		50	0	20.28	20.22	20.14	0-3	3
		50	25	20.35	20.15	19.98	0-3	3
		50	49	20.30	20.12	19.95	0-3	3
		100	0	20.33	20.17	20.00	0-3	3

- LTE Band 5

LTE Band 5 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20425 Ch. 826.5 ㎒	20525 Ch. 836.5 ㎒	20625 Ch. 846.5 ㎒		
5 ㎒	QPSK	1	0	23.40	23.38	23.37	0	0
		1	12	23.32	23.26	23.44	0	0
		1	24	23.42	23.34	23.39	0	0
		12	0	22.42	22.39	22.37	0-1	1
		12	6	22.50	22.34	22.48	0-1	1
		12	11	22.46	22.30	22.48	0-1	1
		25	0	22.49	22.35	22.35	0-1	1
	16QAM	1	0	22.75	22.72	22.63	0-1	1
		1	12	22.71	22.66	22.73	0-1	1
		1	24	22.79	22.77	22.75	0-1	1
		12	0	21.49	21.47	21.51	0-2	2
		12	6	21.59	21.47	21.58	0-2	2
		12	11	21.54	21.42	21.52	0-2	2
		25	0	21.59	21.46	21.48	0-2	2
	64QAM	1	0	21.74	21.66	21.65	0-2	2
		1	12	21.48	21.52	21.68	0-2	2
		1	24	21.64	21.57	21.68	0-2	2
		12	0	20.58	20.46	20.56	0-3	3
		12	6	20.67	20.48	20.62	0-3	3
		12	11	20.58	20.43	20.57	0-3	3
		25	0	20.54	20.44	20.48	0-3	3

LTE Band 5 _ 10 ㎒ Bandwidth

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	23.33	0	0
		1	24	23.32	0	0
		1	49	23.29	0	0
		25	0	22.45	0-1	1
		25	12	22.35	0-1	1
		25	24	22.25	0-1	1
		50	0	22.35	0-1	1
	16QAM	1	0	22.63	0-1	1
		1	24	22.70	0-1	1
		1	49	22.55	0-1	1
		25	0	21.51	0-2	2
		25	12	21.49	0-2	2
		25	24	21.38	0-2	2
		50	0	21.44	0-2	2
	64QAM	1	0	21.61	0-2	2
		1	24	21.58	0-2	2
		1	49	21.59	0-2	2
		25	0	20.53	0-3	3
		25	12	20.48	0-3	3
		25	24	20.36	0-3	3
		50	0	20.46	0-3	3

- LTE Band 7

LTE Band 7 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20775 Ch. 2502.5 ㎒	21100 Ch. 2535 ㎒	21425 Ch. 2567.5 ㎒		
5 ㎒	QPSK	1	0	22.98	22.80	22.72	0	0
		1	12	22.87	22.76	22.70	0	0
		1	24	22.84	22.63	22.65	0	0
		12	0	21.99	21.85	21.76	0-1	1
		12	6	21.97	21.80	21.81	0-1	1
		12	11	21.92	21.76	21.73	0-1	1
		25	0	21.94	21.77	21.71	0-1	1
	16QAM	1	0	22.28	22.16	22.16	0-1	1
		1	12	22.32	22.13	21.99	0-1	1
		1	24	22.25	22.04	21.90	0-1	1
		12	0	21.06	20.90	20.85	0-2	2
		12	6	21.08	20.90	20.86	0-2	2
		12	11	21.04	20.86	20.83	0-2	2
		25	0	21.03	20.88	20.79	0-2	2
	64QAM	1	0	21.25	21.05	20.96	0-2	2
		1	12	21.22	20.99	20.92	0-2	2
		1	24	21.09	20.93	20.82	0-2	2
		12	0	20.12	19.93	19.89	0-3	3
		12	6	20.14	19.96	19.91	0-3	3
		12	11	20.11	19.93	19.85	0-3	3
		25	0	20.06	19.90	19.85	0-3	3

LTE Band 7_ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20800 Ch. 2505 MHz	21100 Ch. 2535 MHz	21400 Ch. 2565 MHz		
10 MHz	QPSK	1	0	23.03	22.96	22.77	0	0
		1	24	22.95	22.75	22.75	0	0
		1	49	22.95	22.65	22.61	0	0
		25	0	21.99	21.84	21.74	0-1	1
		25	12	21.94	21.85	21.71	0-1	1
		25	24	21.91	21.73	21.75	0-1	1
		50	0	21.94	21.76	21.65	0-1	1
	16QAM	1	0	22.39	22.40	22.05	0-1	1
		1	24	22.29	22.06	22.10	0-1	1
		1	49	22.31	21.91	21.85	0-1	1
		25	0	21.13	20.93	20.83	0-2	2
		25	12	21.09	20.94	20.77	0-2	2
		25	24	20.99	20.81	20.81	0-2	2
		50	0	21.07	20.85	20.74	0-2	2
	64QAM	1	0	21.30	21.18	21.03	0-2	2
		1	24	21.21	21.01	20.97	0-2	2
		1	49	21.19	20.91	20.81	0-2	2
		25	0	20.10	19.94	19.82	0-3	3
		25	12	20.10	19.92	19.77	0-3	3
		25	24	20.02	19.84	19.85	0-3	3
		50	0	20.04	19.86	19.78	0-3	3

LTE Band 7 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20825 Ch. 2507.5 ㎒	21100 Ch. 2535 ㎒	21375 Ch. 2562.5 ㎒		
15 ㎒	QPSK	1	0	23.12	23.08	22.83	0	0
		1	36	23.09	22.73	22.59	0	0
		1	74	22.96	22.59	22.62	0	0
		36	0	22.02	21.89	21.67	0-1	1
		36	18	21.97	21.82	21.70	0-1	1
		36	39	21.98	21.70	21.55	0-1	1
		75	0	21.98	21.79	21.69	0-1	1
	16QAM	1	0	22.39	22.36	22.15	0-1	1
		1	36	22.25	22.01	21.93	0-1	1
		1	74	22.31	21.92	21.94	0-1	1
		36	0	21.16	21.00	20.83	0-2	2
		36	18	21.08	20.91	20.80	0-2	2
		36	39	21.12	20.77	20.66	0-2	2
		75	0	21.09	20.90	20.77	0-2	2
	64QAM	1	0	21.38	21.37	21.10	0-2	2
		1	36	21.22	20.96	20.89	0-2	2
		1	74	21.17	20.84	20.76	0-2	2
		36	0	20.15	19.97	19.80	0-3	3
		36	18	20.12	19.95	19.88	0-3	3
		36	39	20.14	19.81	19.69	0-3	3
		75	0	20.06	19.88	19.81	0-3	3

LTE Band 7 _ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20850 Ch. 2510 MHz	21100 Ch. 2535 MHz	21350 Ch. 2560 MHz		
20 MHz	QPSK	1	0	23.21	23.18	23.02	0	0
		1	49	23.03	22.75	22.62	0	0
		1	99	22.97	22.55	22.55	0	0
		50	0	22.08	21.95	21.81	0-1	1
		50	25	22.13	21.82	21.70	0-1	1
		50	49	21.96	21.65	21.62	0-1	1
		100	0	22.02	21.79	21.78	0-1	1
	16QAM	1	0	22.55	22.46	22.27	0-1	1
		1	49	22.40	22.10	21.96	0-1	1
		1	99	22.42	21.94	21.91	0-1	1
		50	0	21.16	21.08	20.89	0-2	2
		50	25	21.20	20.91	20.85	0-2	2
		50	49	21.09	20.78	20.70	0-2	2
		100	0	21.05	20.89	20.83	0-2	2
	64QAM	1	0	21.47	21.34	21.23	0-2	2
		1	49	21.26	21.00	20.90	0-2	2
		1	99	21.28	20.83	20.80	0-2	2
		50	0	20.20	19.99	19.86	0-3	3
		50	25	20.19	19.93	19.87	0-3	3
		50	49	20.16	19.79	19.67	0-3	3
		100	0	20.06	19.89	19.85	0-3	3

- LTE Band 12

LTE Band 12 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23017 Ch. 699.7 ㎒	23095 Ch. 707.5 ㎒	23173 Ch. 715.3 ㎒		
1.4 ㎒	QPSK	1	0	23.35	23.51	23.48	0	0
		1	3	23.43	23.56	23.54	0	0
		1	5	23.36	23.48	23.44	0	0
		3	0	23.46	23.51	23.51	0-1	1
		3	1	23.43	23.49	23.55	0-1	1
		3	3	23.38	23.50	23.49	0-1	1
		6	0	22.42	22.52	22.50	0-1	1
	16QAM	1	0	22.70	22.80	22.80	0-1	1
		1	3	22.83	22.92	22.88	0-1	1
		1	5	22.63	22.81	22.69	0-1	1
		3	0	22.52	22.58	22.54	0-2	2
		3	1	22.58	22.56	22.66	0-2	2
		3	3	22.46	22.54	22.52	0-2	2
		6	0	21.54	21.70	21.67	0-2	2
	64QAM	1	0	21.55	21.75	21.60	0-2	2
		1	3	21.72	21.80	21.78	0-2	2
		1	5	21.58	21.67	21.62	0-2	2
		3	0	21.63	21.68	21.66	0-3	3
		3	1	21.59	21.80	21.69	0-3	3
		3	3	21.59	21.68	21.58	0-3	3
		6	0	20.49	20.59	20.51	0-3	3

LTE Band 12 _ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23025 Ch. 700.5 MHz	23095 Ch. 707.5 MHz	23165 Ch. 714.5 MHz		
3 MHz	QPSK	1	0	23.50	23.60	23.56	0	0
		1	7	23.56	23.63	23.56	0	0
		1	14	23.55	23.45	23.48	0	0
		8	0	22.48	22.60	22.57	0-1	1
		8	3	22.48	22.64	22.59	0-1	1
		8	7	22.56	22.57	22.53	0-1	1
		15	0	22.57	22.62	22.57	0-1	1
	16QAM	1	0	22.86	22.96	22.87	0-1	1
		1	7	22.90	23.03	22.91	0-1	1
		1	14	22.76	22.78	22.82	0-1	1
		8	0	21.65	21.73	21.69	0-2	2
		8	3	21.61	21.75	21.65	0-2	2
		8	7	21.64	21.69	21.61	0-2	2
		15	0	21.67	21.68	21.64	0-2	2
	64QAM	1	0	21.76	21.87	21.80	0-2	2
		1	7	21.75	21.94	21.81	0-2	2
		1	14	21.77	21.78	21.68	0-2	2
		8	0	20.56	20.68	20.67	0-3	3
		8	3	20.66	20.71	20.70	0-3	3
		8	7	20.67	20.68	20.63	0-3	3
		15	0	20.62	20.69	20.58	0-3	3

LTE Band 12 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23035 Ch. 701.5 ㎒	23095 Ch. 707.5 ㎒	23155 Ch. 713.5 ㎒		
5 ㎒	QPSK	1	0	23.55	23.54	23.58	0	0
		1	12	23.52	23.52	23.52	0	0
		1	24	23.49	23.48	23.52	0	0
		12	0	22.61	22.64	22.66	0-1	1
		12	6	22.58	22.64	22.59	0-1	1
		12	11	22.53	22.57	22.58	0-1	1
		25	0	22.58	22.58	22.60	0-1	1
	16QAM	1	0	22.87	22.90	22.93	0-1	1
		1	12	22.80	22.86	22.99	0-1	1
		1	24	22.84	22.89	22.82	0-1	1
		12	0	21.73	21.71	21.71	0-2	2
		12	6	21.66	21.69	21.74	0-2	2
		12	11	21.66	21.69	21.63	0-2	2
		25	0	21.64	21.66	21.66	0-2	2
	64QAM	1	0	21.73	21.74	21.80	0-2	2
		1	12	21.85	21.76	21.79	0-2	2
		1	24	21.69	21.79	21.68	0-2	2
		12	0	20.70	20.74	20.76	0-3	3
		12	6	20.69	20.75	20.73	0-3	3
		12	11	20.67	20.68	20.67	0-3	3
		25	0	20.65	20.72	20.67	0-3	3

LTE Band 12 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 23095 Ch. 707.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	23.62	0	0
		1	24	23.56	0	0
		1	49	23.43	0	0
		25	0	22.65	0-1	1
		25	12	22.60	0-1	1
		25	24	22.54	0-1	1
		50	0	22.63	0-1	1
	16QAM	1	0	22.97	0-1	1
		1	24	22.78	0-1	1
		1	49	22.82	0-1	1
		25	0	21.79	0-2	2
		25	12	21.72	0-2	2
		25	24	21.64	0-2	2
		50	0	21.71	0-2	2
	64QAM	1	0	21.87	0-2	2
		1	24	21.80	0-2	2
		1	49	21.71	0-2	2
		25	0	20.75	0-3	3
		25	12	20.76	0-3	3
		25	24	20.64	0-3	3
		50	0	20.73	0-3	3

- LTE Band 13

LTE Band 13 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23205 Ch. 779.5 ㎒	23230 Ch. 782 ㎒	23205 Ch. 784.5 ㎒		
5 ㎒	QPSK	1	0	23.84	23.91	23.88	0	0
		1	12	23.75	23.83	23.88	0	0
		1	24	23.79	23.76	23.86	0	0
		12	0	22.87	22.94	22.91	0-1	1
		12	6	22.96	22.94	22.89	0-1	1
		12	11	22.91	22.89	22.93	0-1	1
		25	0	22.96	22.94	22.91	0-1	1
	16QAM	1	0	23.09	23.21	23.20	0-1	1
		1	12	23.15	23.13	23.22	0-1	1
		1	24	23.05	23.00	23.23	0-1	1
		12	0	22.00	22.05	22.03	0-2	2
		12	6	22.06	22.06	22.00	0-2	2
		12	11	22.01	22.00	22.00	0-2	2
		25	0	22.02	21.99	21.95	0-2	2
	64QAM	1	0	22.08	22.16	22.11	0-2	2
		1	12	21.99	22.08	22.13	0-2	2
		1	24	22.04	22.02	22.09	0-2	2
		12	0	20.96	21.06	21.03	0-3	3
		12	6	21.09	21.03	21.06	0-3	3
		12	11	21.04	20.97	21.03	0-3	3
		25	0	21.03	21.00	20.99	0-3	3

LTE Band 13 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 23230 Ch. 782 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	23.83	0	0
		1	24	23.80	0	0
		1	49	23.84	0	0
		25	0	22.90	0-1	1
		25	12	22.93	0-1	1
		25	24	22.83	0-1	1
		50	0	22.95	0-1	1
	16QAM	1	0	23.13	0-1	1
		1	24	22.96	0-1	1
		1	49	22.98	0-1	1
		25	0	21.96	0-2	2
		25	12	21.90	0-2	2
		25	24	21.86	0-2	2
		50	0	22.01	0-2	2
	64QAM	1	0	22.07	0-2	2
		1	24	22.05	0-2	2
		1	49	22.07	0-2	2
		25	0	21.03	0-3	3
		25	12	21.01	0-3	3
		25	24	20.94	0-3	3
		50	0	20.99	0-3	3

- LTE Band 14

LTE Band 14 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23305 Ch. 790.5 ㎒	23330 Ch. 793 ㎒	23355 Ch. 795.5 ㎒		
5 ㎒	QPSK	1	0	23.55	23.55	23.48	0	0
		1	12	23.49	23.46	23.40	0	0
		1	24	23.45	23.39	23.38	0	0
		12	0	22.61	22.57	22.54	0-1	1
		12	6	22.60	22.54	22.53	0-1	1
		12	11	22.55	22.50	22.44	0-1	1
		25	0	22.60	22.51	22.50	0-1	1
	16QAM	1	0	22.82	22.85	22.93	0-1	1
		1	12	22.89	22.85	22.65	0-1	1
		1	24	22.87	22.71	22.67	0-1	1
		12	0	21.73	21.70	21.61	0-2	2
		12	6	21.73	21.66	21.58	0-2	2
		12	11	21.64	21.67	21.60	0-2	2
		25	0	21.67	21.65	21.65	0-2	2
	64QAM	1	0	21.82	21.78	21.80	0-2	2
		1	12	21.82	21.68	21.61	0-2	2
		1	24	21.77	21.64	21.63	0-2	2
		12	0	20.78	20.71	20.64	0-3	3
		12	6	20.75	20.70	20.66	0-3	3
		12	11	20.71	20.71	20.58	0-3	3
		25	0	20.67	20.66	20.60	0-3	3

LTE Band 14 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 23330 Ch. 793 MHz	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 MHz	QPSK	1	0	23.78	0	0
		1	24	23.77	0	0
		1	49	23.77	0	0
		25	0	22.88	0-1	1
		25	12	22.83	0-1	1
		25	24	22.80	0-1	1
		50	0	22.80	0-1	1
	16QAM	1	0	23.07	0-1	1
		1	24	23.02	0-1	1
		1	49	23.05	0-1	1
		25	0	21.99	0-2	2
		25	12	21.96	0-2	2
		25	24	21.83	0-2	2
		50	0	21.87	0-2	2
	64QAM	1	0	21.94	0-2	2
		1	24	21.92	0-2	2
		1	49	21.98	0-2	2
		25	0	20.95	0-3	3
		25	12	20.95	0-3	3
		25	24	20.81	0-3	3
		50	0	20.88	0-3	3

- LTE Band 17

LTE Band 17 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23755	23790	23825		
				706.5 ㎒	710 ㎒	713.5 ㎒		
5 ㎒	QPSK	1	0	23.71	23.74	23.64	0	0
		1	12	23.54	23.67	23.68	0	0
		1	24	23.65	23.60	23.62	0	0
		12	0	22.70	22.75	22.71	0-1	1
		12	6	22.76	22.75	22.70	0-1	1
		12	11	22.73	22.69	22.70	0-1	1
		25	0	22.74	22.73	22.62	0-1	1
	16QAM	1	0	23.01	23.10	22.98	0-1	1
		1	12	23.02	23.11	23.13	0-1	1
		1	24	22.97	22.87	22.87	0-1	1
		12	0	21.78	21.83	21.79	0-2	2
		12	6	21.87	21.83	21.74	0-2	2
		12	11	21.82	21.77	21.77	0-2	2
		25	0	21.85	21.79	21.78	0-2	2
	64QAM	1	0	22.03	21.96	21.93	0-2	2
		1	12	21.90	21.92	21.99	0-2	2
		1	24	21.87	21.79	21.89	0-2	2
		12	0	20.82	20.86	20.82	0-3	3
		12	6	20.98	20.87	20.80	0-3	3
		12	11	20.85	20.81	20.90	0-3	3
		25	0	20.89	20.80	20.77	0-3	3

LTE Band 17 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23780	23790	23800		
				709 MHz	710 MHz	711 MHz		
10 ㎒	QPSK	1	0	23.70	23.70	23.69	0	0
		1	24	23.63	23.68	23.62	0	0
		1	49	23.66	23.67	23.61	0	0
		25	0	22.81	22.77	22.74	0-1	1
		25	12	22.72	22.72	22.75	0-1	1
		25	24	22.65	22.62	22.59	0-1	1
		50	0	22.71	22.73	22.69	0-1	1
	16QAM	1	0	23.04	23.00	23.02	0-1	1
		1	24	23.08	23.04	22.99	0-1	1
		1	49	22.99	23.01	22.92	0-1	1
		25	0	21.86	21.89	21.85	0-2	2
		25	12	21.86	21.86	21.80	0-2	2
		25	24	21.76	21.71	21.71	0-2	2
		50	0	21.78	21.79	21.75	0-2	2
	64QAM	1	0	21.97	21.96	21.92	0-2	2
		1	24	21.96	21.92	21.95	0-2	2
		1	49	21.89	21.86	21.92	0-2	2
		25	0	20.91	20.92	20.87	0-3	3
		25	12	20.87	20.86	20.84	0-3	3
		25	24	20.80	20.77	20.74	0-3	3
		50	0	20.86	20.81	20.77	0-3	3

- LTE Band 25

LTE Band 25 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26047 Ch. 1850.7 ㎒	26365 Ch. 1882.5 ㎒	26683 Ch. 1914.3 ㎒		
1.4 ㎒	QPSK	1	0	22.63	22.72	22.90	0	0
		1	3	22.70	22.82	22.98	0	0
		1	5	22.62	22.75	22.90	0	0
		3	0	22.62	22.72	22.90	0	0
		3	1	22.69	22.80	22.95	0	0
		3	3	22.65	22.76	22.93	0	0
		6	0	21.66	21.72	21.90	0-1	1
	16QAM	1	0	21.99	22.03	22.09	0-1	1
		1	3	21.98	22.03	22.23	0-1	1
		1	5	21.90	21.88	22.27	0-1	1
		3	0	21.80	21.85	21.98	0-1	1
		3	1	21.79	21.84	22.00	0-1	1
		3	3	21.76	21.78	22.01	0-1	1
		6	0	20.84	20.93	21.10	0-2	2
	64QAM	1	0	20.94	20.99	20.88	0-2	2
		1	3	21.00	21.00	21.14	0-2	2
		1	5	20.99	20.92	21.12	0-2	2
		3	0	20.86	20.94	21.07	0-2	2
		3	1	20.92	20.97	21.10	0-2	2
		3	3	20.88	20.91	21.16	0-2	2
		6	0	19.78	19.84	19.85	0-3	3

LTE Band 25_3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26055 Ch. 1851.5 MHz	26365 Ch. 1882.5 MHz	26675Ch. 1913.5 MHz		
3 MHz	QPSK	1	0	22.68	22.61	22.99	0	0
		1	7	22.89	22.66	23.07	0	0
		1	14	22.76	22.53	23.00	0	0
		8	0	21.75	21.65	21.96	0-1	1
		8	3	21.75	21.62	22.04	0-1	1
		8	7	21.75	21.59	22.00	0-1	1
		15	0	21.73	21.65	22.00	0-1	1
	16QAM	1	0	21.99	21.91	22.21	0-1	1
		1	7	22.20	21.87	22.25	0-1	1
		1	14	22.02	21.87	22.27	0-1	1
		8	0	20.86	20.77	21.08	0-2	2
		8	3	20.93	20.78	21.13	0-2	2
		8	7	20.84	20.76	21.10	0-2	2
		15	0	20.81	20.71	21.06	0-2	2
	64QAM	1	0	20.96	20.87	21.22	0-2	2
		1	7	21.01	20.90	21.19	0-2	2
		1	14	21.00	20.84	21.17	0-2	2
		8	0	19.90	19.76	20.08	0-3	3
		8	3	19.90	19.76	20.07	0-3	3
		8	7	19.84	19.69	20.02	0-3	3
		15	0	19.87	19.75	20.09	0-3	3

LTE Band 25 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26065 Ch. 1852.5 MHz	26365 Ch. 1882.5 MHz	26665 Ch. 1912.5 MHz		
5 MHz	QPSK	1	0	22.75	22.65	22.91	0	0
		1	12	22.74	22.63	22.98	0	0
		1	24	22.71	22.62	23.00	0	0
		12	0	21.77	21.64	21.90	0-1	1
		12	6	21.80	21.65	21.89	0-1	1
		12	11	21.77	21.63	21.92	0-1	1
		25	0	21.74	21.61	20.11	0-1	1
	16QAM	1	0	22.13	21.89	22.18	0-1	1
		1	12	22.09	21.81	22.26	0-1	1
		1	24	22.06	21.84	22.31	0-1	1
		12	0	20.92	20.74	20.96	0-2	2
		12	6	20.86	20.74	20.96	0-2	2
		12	11	20.83	20.69	21.09	0-2	2
		25	0	20.89	20.72	20.18	0-2	2
	64QAM	1	0	20.99	20.89	21.13	0-2	2
		1	12	20.99	20.79	21.14	0-2	2
		1	24	20.97	20.77	21.15	0-2	2
		12	0	19.91	19.77	20.04	0-3	3
		12	6	19.89	19.80	20.01	0-3	3
		12	11	19.88	19.75	20.08	0-3	3
		25	0	19.85	19.72	20.17	0-3	3

LTE Band 25 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26090 Ch. 1855 MHz	26365 Ch. 1882.5 MHz	26640 Ch. 1910 MHz		
10 MHz	QPSK	1	0	22.80	22.67	22.90	0	0
		1	24	22.74	22.59	22.88	0	0
		1	49	22.66	22.54	23.00	0	0
		25	0	21.80	21.69	21.87	0-1	1
		25	12	21.78	21.67	21.89	0-1	1
		25	24	21.74	21.64	21.89	0-1	1
		50	0	21.78	21.65	21.89	0-1	1
	16QAM	1	0	22.10	21.94	22.28	0-1	1
		1	24	22.07	21.88	22.18	0-1	1
		1	49	22.05	21.90	22.30	0-1	1
		25	0	20.88	20.82	20.89	0-2	2
		25	12	20.91	20.76	21.01	0-2	2
		25	24	20.82	20.72	20.99	0-2	2
		50	0	20.89	20.75	21.06	0-2	2
	64QAM	1	0	21.00	20.94	21.12	0-2	2
		1	24	20.96	20.88	20.96	0-2	2
		1	49	20.88	20.83	20.98	0-2	2
		25	0	19.90	19.80	19.95	0-3	3
		25	12	19.91	19.78	20.02	0-3	3
		25	24	19.86	19.75	19.98	0-3	3
		50	0	19.85	19.76	20.05	0-3	3

LTE Band 25 _ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26115 Ch. 1857.5 MHz	26365 Ch. 1882.5 MHz	26615 Ch. 1907.5 MHz		
15 MHz	QPSK	1	0	22.90	22.77	23.01	0	0
		1	36	22.75	22.60	22.85	0	0
		1	74	22.74	22.59	23.08	0	0
		36	0	21.83	21.77	21.92	0-1	1
		36	18	21.82	21.66	21.84	0-1	1
		36	39	21.77	21.62	21.92	0-1	1
		75	0	21.84	21.70	21.86	0-1	1
	16QAM	1	0	22.21	22.06	22.40	0-1	1
		1	36	22.04	21.77	22.18	0-1	1
		1	74	22.17	21.91	22.33	0-1	1
		36	0	20.91	20.85	20.96	0-2	2
		36	18	20.92	20.78	20.97	0-2	2
		36	39	20.85	20.70	20.96	0-2	2
		75	0	20.90	20.80	20.94	0-2	2
	64QAM	1	0	21.22	21.07	21.31	0-2	2
		1	36	20.99	20.89	21.03	0-2	2
		1	74	20.97	20.83	21.16	0-2	2
		36	0	19.97	19.89	20.05	0-3	3
		36	18	19.90	19.82	20.00	0-3	3
		36	39	19.85	19.78	19.99	0-3	3
		75	0	19.86	19.78	19.95	0-3	3

LTE Band 25 _ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26140 Ch. 1860 MHz	26365 Ch. 1882.5 MHz	26590 Ch. 1905 MHz		
20 MHz	QPSK	1	0	22.88	22.80	23.02	0	0
		1	49	22.70	22.57	22.83	0	0
		1	99	22.65	22.50	22.97	0	0
		50	0	21.85	21.78	21.89	0-1	1
		50	25	21.76	21.68	21.88	0-1	1
		50	49	21.75	21.62	21.91	0-1	1
		100	0	21.84	21.74	21.96	0-1	1
	16QAM	1	0	22.23	22.15	22.31	0-1	1
		1	49	22.07	21.86	22.27	0-1	1
		1	99	22.03	21.76	22.32	0-1	1
		50	0	20.94	20.91	20.99	0-2	2
		50	25	20.86	20.80	20.97	0-2	2
		50	49	20.82	20.74	21.03	0-2	2
		100	0	20.90	20.78	21.02	0-2	2
	64QAM	1	0	21.08	21.04	21.28	0-2	2
		1	49	21.01	20.90	21.14	0-2	2
		1	99	20.89	20.70	21.18	0-2	2
		50	0	20.00	19.89	20.00	0-3	3
		50	25	19.90	19.78	19.99	0-3	3
		50	49	19.84	19.76	20.05	0-3	3
		100	0	19.87	19.79	19.94	0-3	3

- LTE Band 26

LTE Band 26 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26697 Ch. 814.7 ㎒	26865 Ch. 831.5 ㎒	27033 Ch. 848.3 ㎒		
1.4 ㎒	QPSK	1	0	23.33	23.40	23.30	0	0
		1	3	23.36	23.39	23.31	0	0
		1	5	23.29	23.30	23.28	0	0
		3	0	23.36	23.37	23.32	0-1	1
		3	1	23.35	23.42	23.34	0-1	1
		3	3	23.27	23.37	23.30	0-1	1
		6	0	22.28	22.39	22.31	0-1	1
	16QAM	1	0	22.71	22.66	22.64	0-1	1
		1	3	22.75	22.73	22.72	0-1	1
		1	5	22.60	22.63	22.65	0-1	1
		3	0	22.48	22.51	22.45	0-2	2
		3	1	22.43	22.58	22.46	0-2	2
		3	3	22.43	22.42	22.42	0-2	2
		6	0	21.46	21.54	21.49	0-2	2
	64QAM	1	0	21.63	21.63	21.53	0-2	2
		1	3	21.66	21.70	21.54	0-2	2
		1	5	21.47	21.63	21.45	0-2	2
		3	0	21.52	21.59	21.55	0-3	3
		3	1	21.52	21.59	21.56	0-3	3
		3	3	21.56	21.60	21.49	0-3	3
		6	0	20.41	20.49	20.40	0-3	3

LTE Band 26 _ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26705 Ch. 815.5 MHz	26865 Ch. 831.5 MHz	27025 Ch. 847.5 MHz		
3 MHz	QPSK	1	0	23.39	23.32	23.40	0	0
		1	7	23.48	23.46	23.44	0	0
		1	14	23.27	23.39	23.33	0	0
		8	0	22.37	22.36	22.41	0-1	1
		8	3	22.40	22.37	22.44	0-1	1
		8	7	22.35	22.39	22.36	0-1	1
		15	0	22.34	22.30	22.39	0-1	1
	16QAM	1	0	22.65	22.63	22.76	0-1	1
		1	7	22.77	22.95	22.84	0-1	1
		1	14	22.67	22.74	22.70	0-1	1
		8	0	21.53	21.49	21.52	0-2	2
		8	3	21.54	21.53	21.56	0-2	2
		8	7	21.50	21.55	21.48	0-2	2
		15	0	21.46	21.44	21.50	0-2	2
	64QAM	1	0	21.73	21.62	21.72	0-2	2
		1	7	21.75	21.78	21.76	0-2	2
		1	14	21.63	21.66	21.56	0-2	2
		8	0	20.54	20.49	20.53	0-3	3
		8	3	20.55	20.50	20.56	0-3	3
		8	7	20.56	20.54	20.50	0-3	3
		15	0	20.47	20.46	20.50	0-3	3

LTE Band 26 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26715 Ch. 816.5 MHz	26865 Ch. 831.5 MHz	27015 Ch. 846.5 MHz		
5 MHz	QPSK	1	0	23.42	23.44	23.42	0	0
		1	12	23.37	23.43	23.39	0	0
		1	24	23.38	23.37	23.30	0	0
		12	0	22.41	22.39	22.48	0-1	1
		12	6	22.44	22.42	22.42	0-1	1
		12	11	22.42	22.41	22.44	0-1	1
		25	0	22.46	22.38	22.44	0-1	1
	16QAM	1	0	22.80	22.74	22.71	0-1	1
		1	12	22.59	22.71	22.72	0-1	1
		1	24	22.62	22.74	22.66	0-1	1
		12	0	21.55	21.53	21.56	0-2	2
		12	6	21.53	21.46	21.55	0-2	2
		12	11	21.58	21.57	21.51	0-2	2
		25	0	21.54	21.45	21.53	0-2	2
	64QAM	1	0	21.63	21.64	21.75	0-2	2
		1	12	21.58	21.65	21.65	0-2	2
		1	24	21.73	21.64	21.60	0-2	2
		12	0	20.53	20.54	20.53	0-3	3
		12	6	20.52	20.52	20.55	0-3	3
		12	11	20.60	20.54	20.48	0-3	3
		25	0	20.56	20.45	20.54	0-3	3

LTE Band 26 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26740 Ch. 819 ㎒	26865 Ch. 831.5 ㎒	26990 Ch. 844 ㎒		
10 ㎒	QPSK	1	0	23.43	23.42	23.45	0	0
		1	24	23.41	23.43	23.47	0	0
		1	49	23.31	23.28	23.33	0	0
		25	0	22.50	22.44	22.44	0-1	1
		25	12	22.50	22.41	22.41	0-1	1
		25	24	22.39	22.42	22.45	0-1	1
		50	0	22.44	22.41	22.39	0-1	1
	16QAM	1	0	22.78	22.81	22.80	0-1	1
		1	24	22.65	22.79	22.81	0-1	1
		1	49	22.70	22.60	22.64	0-1	1
		25	0	21.60	21.53	21.53	0-2	2
		25	12	21.59	21.46	21.48	0-2	2
		25	24	21.46	21.52	21.49	0-2	2
		50	0	21.55	21.50	21.47	0-2	2
	64QAM	1	0	21.67	21.65	21.76	0-2	2
		1	24	21.67	21.68	21.71	0-2	2
		1	49	21.45	21.51	21.53	0-2	2
		25	0	20.62	20.53	20.55	0-3	3
		25	12	20.55	20.46	20.49	0-3	3
		25	24	20.46	20.54	20.49	0-3	3
		50	0	20.57	20.44	20.44	0-3	3

LTE Band 26 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				26865		
				831.5 ㎒		
15 ㎒	QPSK	1	0	23.55	0	0
		1	36	23.47	0	0
		1	74	23.33	0	0
		36	0	22.53	0-1	1
		36	18	22.43	0-1	1
		36	39	22.40	0-1	1
		75	0	22.41	0-1	1
	16QAM	1	0	22.99	0-1	1
		1	36	22.85	0-1	1
		1	74	22.76	0-1	1
		36	0	21.59	0-2	2
		36	18	21.49	0-2	2
		36	39	21.45	0-2	2
		75	0	21.47	0-2	2
	64QAM	1	0	21.77	0-2	2
		1	36	21.74	0-2	2
		1	74	21.59	0-2	2
		36	0	20.59	0-3	3
		36	18	20.56	0-3	3
		36	39	20.53	0-3	3
		75	0	20.43	0-3	3

- LTE Band 38

LTE Band 38 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				37775 Ch. 2572.5 ㎒	38000 Ch. 2595 ㎒	38225 Ch. 2617.5 ㎒		
5 ㎒	QPSK	1	0	23.37	23.51	23.38	0	0
		1	12	23.34	23.48	23.31	0	0
		1	24	23.36	23.43	23.29	0	0
		12	0	22.40	22.55	22.41	0-1	1
		12	6	22.47	22.57	22.41	0-1	1
		12	11	22.47	22.52	22.34	0-1	1
		25	0	22.46	22.54	22.37	0-1	1
	16QAM	1	0	22.57	22.70	22.53	0-1	1
		1	12	22.51	22.67	22.52	0-1	1
		1	24	22.55	22.63	22.45	0-1	1
		12	0	21.48	21.59	21.44	0-2	2
		12	6	21.58	21.64	21.44	0-2	2
		12	11	21.49	21.58	21.42	0-2	2
		25	0	21.59	21.62	21.49	0-2	2
	64QAM	1	0	21.16	21.35	21.17	0-2	2
		1	12	21.11	21.29	21.13	0-2	2
		1	24	21.15	21.27	21.08	0-2	2
		12	0	20.56	20.69	20.55	0-3	3
		12	6	20.66	20.73	20.54	0-3	3
		12	11	20.60	20.66	20.52	0-3	3
		25	0	20.64	20.67	20.51	0-3	3

LTE Band 38 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				37800 Ch. 2575 MHz	38000 Ch. 2595 MHz	38200 Ch. 2615 MHz		
10 MHz	QPSK	1	0	23.46	23.53	23.49	0	0
		1	24	23.41	23.49	23.37	0	0
		1	49	23.27	23.41	23.28	0	0
		25	0	22.50	22.57	22.46	0-1	1
		25	12	22.44	22.56	22.42	0-1	1
		25	24	22.38	22.47	22.37	0-1	1
		50	0	22.46	22.55	22.44	0-1	1
	16QAM	1	0	22.67	22.73	22.66	0-1	1
		1	24	22.61	22.72	22.53	0-1	1
		1	49	22.44	22.60	22.46	0-1	1
		25	0	21.62	21.69	21.58	0-2	2
		25	12	21.60	21.68	21.53	0-2	2
		25	24	21.49	21.60	21.48	0-2	2
		50	0	21.56	21.70	21.58	0-2	2
	64QAM	1	0	21.30	21.33	21.29	0-2	2
		1	24	21.21	21.31	21.17	0-2	2
		1	49	21.10	21.20	21.07	0-2	2
		25	0	20.72	20.77	20.59	0-3	3
		25	12	20.60	20.76	20.57	0-3	3
		25	24	20.52	20.67	20.49	0-3	3
		50	0	20.59	20.66	20.50	0-3	3

LTE Band 38 _ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				37825 Ch. 2507.5 MHz	38000 Ch. 2595 MHz	38175 Ch. 2612.5 MHz		
15 MHz	QPSK	1	0	23.54	23.61	23.65	0	0
		1	36	23.35	23.48	23.36	0	0
		1	74	23.30	23.39	23.28	0	0
		36	0	22.56	22.69	22.62	0-1	1
		36	18	22.56	22.62	22.53	0-1	1
		36	39	22.41	22.50	22.41	0-1	1
		75	0	22.55	22.57	22.54	0-1	1
	16QAM	1	0	22.74	22.81	22.86	0-1	1
		1	36	22.56	22.58	22.55	0-1	1
		1	74	22.51	22.60	22.48	0-1	1
		36	0	21.63	21.69	21.65	0-2	2
		36	18	21.61	21.62	21.56	0-2	2
		36	39	21.46	21.55	21.41	0-2	2
		75	0	21.63	21.68	21.64	0-2	2
	64QAM	1	0	21.33	21.42	21.46	0-2	2
		1	36	21.16	21.25	21.17	0-2	2
		1	74	21.09	21.22	21.09	0-2	2
		36	0	20.61	20.77	20.68	0-3	3
		36	18	20.65	20.66	20.57	0-3	3
		36	39	20.50	20.60	20.49	0-3	3
		75	0	20.66	20.71	20.69	0-3	3

LTE Band 38 _ 20 ㎒ Bandwidth

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	23.64	23.73	23.72	0	0
		1	49	23.42	23.49	23.35	0	0
		1	99	23.34	23.37	23.25	0	0
		50	0	22.58	22.71	22.70	0-1	1
		50	25	22.53	22.61	22.58	0-1	1
		50	49	22.50	22.51	22.40	0-1	1
		100	0	22.54	22.59	22.57	0-1	1
	16QAM	1	0	22.83	22.93	22.93	0-1	1
		1	49	22.63	22.62	22.58	0-1	1
		1	99	22.55	22.58	22.44	0-1	1
		50	0	21.71	21.85	21.79	0-2	2
		50	25	21.63	21.72	21.68	0-2	2
		50	49	21.62	21.61	21.49	0-2	2
		100	0	21.67	21.70	21.70	0-2	2
	64QAM	1	0	21.42	21.52	21.54	0-2	2
		1	49	21.22	21.26	21.16	0-2	2
		1	99	21.14	21.18	21.07	0-2	2
		50	0	20.70	20.84	20.77	0-3	3
		50	25	20.65	20.73	20.69	0-3	3
		50	49	20.59	20.62	20.50	0-3	3
		100	0	20.65	20.70	20.69	0-3	3

- LTE TDD Band 41

LTE Band 41 _ 5 ㎒ Bandwidth

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
5 ㎒	QPSK	1	0	23.67	23.41	23.28	23.27	23.22	0	0
		1	12	23.75	23.34	23.24	23.31	23.17	0	0
		1	24	23.65	23.27	23.20	23.27	23.09	0	0
		12	0	22.79	22.38	22.30	22.29	22.28	0-1	1
		12	6	22.79	22.44	22.29	22.28	22.27	0-1	1
		12	11	22.73	22.37	22.29	22.33	22.22	0-1	1
		25	0	22.72	22.37	22.26	22.26	22.25	0-1	1
	16QAM	1	0	22.87	22.60	22.45	22.49	22.39	0-1	1
		1	12	22.94	22.52	22.45	22.49	22.39	0-1	1
		1	24	22.92	22.45	22.40	22.47	22.29	0-1	1
		12	0	21.86	21.47	21.39	21.34	21.34	0-2	2
		12	6	21.84	21.44	21.39	21.33	21.33	0-2	2
		12	11	21.78	21.42	21.31	21.36	21.29	0-2	2
		25	0	21.85	21.46	21.41	21.36	21.36	0-2	2
	64QAM	1	0	21.52	21.19	21.13	21.12	21.02	0-2	2
		1	12	21.54	21.15	21.08	21.11	20.98	0-2	2
		1	24	21.52	21.06	21.02	21.08	20.94	0-2	2
		12	0	20.93	20.54	20.47	20.45	20.43	0-3	3
		12	6	20.92	20.57	20.45	20.46	20.42	0-3	3
		12	11	20.87	20.51	20.42	20.49	20.35	0-3	3
		25	0	20.94	20.54	20.43	20.44	20.38	0-3	3

LTE Band 41 _ 10 MHz Bandwidth

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 MHz	40185 Ch. 2549.5 MHz	40620 Ch. 2593.0 MHz	41055 Ch. 2636.5 MHz	41490 Ch. 2680.0 MHz		
10 MHz	QPSK	1	0	23.75	23.49	23.38	23.40	23.27	0	0
		1	24	23.73	23.36	23.24	23.31	23.16	0	0
		1	49	23.68	23.26	23.17	23.24	23.08	0	0
		25	0	22.83	22.45	22.33	22.39	22.24	0-1	1
		25	12	22.78	22.41	22.31	22.31	22.27	0-1	1
		25	24	22.73	22.34	22.27	22.35	22.20	0-1	1
		50	0	22.77	22.42	22.31	22.32	22.21	0-1	1
	16QAM	1	0	22.99	22.70	22.62	22.57	22.47	0-1	1
		1	24	22.96	22.55	22.47	22.51	22.37	0-1	1
		1	49	22.87	22.42	22.37	22.43	22.29	0-1	1
		25	0	21.93	21.56	21.43	21.44	21.31	0-2	2
		25	12	21.88	21.54	21.44	21.37	21.38	0-2	2
		25	24	21.85	21.40	21.34	21.43	21.29	0-2	2
		50	0	21.90	21.56	21.46	21.41	21.31	0-2	2
	64QAM	1	0	21.59	21.33	21.21	21.20	21.07	0-2	2
		1	24	21.57	21.17	21.07	21.13	20.99	0-2	2
		1	49	21.50	21.04	20.97	21.08	20.92	0-2	2
		25	0	20.90	20.58	20.49	20.49	20.38	0-3	3
		25	12	20.95	20.57	20.49	20.45	20.45	0-3	3
		25	24	20.92	20.51	20.40	20.50	20.39	0-3	3
		50	0	20.93	20.54	20.42	20.41	20.29	0-3	3

LTE Band 41 _ 15 ㎒ Bandwidth

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 ㎒		
15 ㎒	QPSK	1	0	23.85	23.61	23.52	23.49	23.36	0	0
		1	36	23.71	23.34	23.25	23.29	23.17	0	0
		1	74	23.69	23.33	23.17	23.24	23.00	0	0
		36	0	22.86	22.55	22.44	22.42	22.30	0-1	1
		36	18	22.81	22.44	22.40	22.33	22.34	0-1	1
		36	39	22.74	22.41	22.28	22.34	22.21	0-1	1
		75	0	22.76	22.42	22.35	22.34	22.19	0-1	1
	16QAM	1	0	22.99	22.81	22.72	22.69	22.57	0-1	1
		1	36	22.94	22.54	22.48	22.49	22.38	0-1	1
		1	74	22.88	22.50	22.35	22.43	22.24	0-1	1
		36	0	21.94	21.61	21.49	21.45	21.37	0-2	2
		36	18	21.88	21.48	21.44	21.37	21.36	0-2	2
		36	39	21.81	21.50	21.28	21.39	21.26	0-2	2
		75	0	21.94	21.62	21.47	21.42	21.29	0-2	2
	64QAM	1	0	21.69	21.43	21.34	21.28	21.19	0-2	2
		1	36	21.54	21.15	21.02	21.10	20.97	0-2	2
		1	74	21.49	21.08	20.96	21.05	20.83	0-2	2
		36	0	20.98	20.60	20.48	20.49	20.41	0-3	3
		36	18	20.92	20.50	20.43	20.45	20.39	0-3	3
		36	39	20.84	20.48	20.37	20.41	20.25	0-3	3
		75	0	20.93	20.66	20.47	20.42	20.33	0-3	3

LTE Band 41 _ 20 MHz Bandwidth

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 MHz	40185 Ch. 2549.5 MHz	40620 Ch. 2593.0 MHz	41055 Ch. 2636.5 MHz	41490 Ch. 2680.0 MHz		
20 MHz	QPSK	1	0	23.94	23.71	23.61	23.58	23.46	0	0
		1	49	23.71	23.34	23.24	23.29	23.18	0	0
		1	99	23.73	23.27	23.12	23.24	23.05	0	0
		50	0	22.91	22.60	22.50	22.50	22.34	0-1	1
		50	25	22.80	22.47	22.36	22.36	22.25	0-1	1
		50	49	22.85	22.44	22.25	22.36	22.18	0-1	1
		100	0	22.81	22.18	22.39	22.17	21.97	0-1	1
	16QAM	1	0	22.99	22.91	22.81	22.77	22.66	0-1	1
		1	49	22.93	22.53	22.43	22.48	22.37	0-1	1
		1	99	22.95	22.43	22.33	22.45	22.25	0-1	1
		50	0	21.93	21.70	21.61	21.58	21.46	0-2	2
		50	25	21.91	21.56	21.50	21.45	21.34	0-2	2
		50	49	21.90	21.52	21.39	21.42	21.30	0-2	2
		100	0	21.94	21.66	21.47	21.43	21.31	0-2	2
	64QAM	1	0	21.76	21.50	21.41	21.39	21.27	0-2	2
		1	49	21.53	21.14	21.06	21.10	20.98	0-2	2
		1	99	21.54	21.05	20.93	21.07	20.85	0-2	2
		50	0	20.93	20.68	20.60	20.60	20.49	0-3	3
		50	25	20.95	20.57	20.50	20.45	20.33	0-3	3
		50	49	20.92	20.52	20.36	20.43	20.32	0-3	3
		100	0	20.94	20.66	20.49	20.47	20.32	0-3	3

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

- LTE Band 42

LTE Band 42 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				43115 Ch. 3552.5 ㎒	43340Ch. 3575 ㎒	43565 Ch. 3597.5 ㎒		
5 ㎒	QPSK	1	0	18.23	18.10	18.09	0	0
		1	12	18.18	18.09	17.99	0	0
		1	24	18.13	18.00	18.03	0	0
		12	0	17.20	17.10	17.11	0-1	1
		12	6	17.18	17.12	17.07	0-1	1
		12	11	17.16	17.10	17.06	0-1	1
		25	0	17.19	17.01	17.07	0-1	1
	16QAM	1	0	17.46	17.35	17.32	0-1	1
		1	12	17.38	17.32	17.26	0-1	1
		1	24	17.34	17.26	17.29	0-1	1
		12	0	16.32	16.23	16.21	0-2	2
		12	6	16.30	16.23	16.21	0-2	2
		12	11	16.26	16.21	16.19	0-2	2
		25	0	16.28	16.17	16.19	0-2	2
	64QAM	1	0	16.31	16.23	16.16	0-2	2
		1	12	16.18	16.12	16.07	0-2	2
		1	24	16.22	16.07	16.11	0-2	2
		12	0	15.39	15.33	15.25	0-3	3
		12	6	15.33	15.30	15.26	0-3	3
		12	11	15.31	15.24	15.24	0-3	3
		25	0	15.33	15.21	15.24	0-3	3

LTE Band 42 _10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				43140 Ch. 3555 MHz	43340Ch. 3575 MHz	43540 Ch. 3595 MHz		
10 MHz	QPSK	1	0	18.26	18.25	18.11	0	0
		1	24	18.10	18.08	17.98	0	0
		1	49	18.06	18.03	17.99	0	0
		25	0	17.25	17.21	17.15	0-1	1
		25	12	17.19	17.10	17.12	0-1	1
		25	24	17.12	17.05	17.08	0-1	1
		50	0	17.21	17.09	17.13	0-1	1
	16QAM	1	0	17.49	17.43	17.39	0-1	1
		1	24	17.36	17.35	17.29	0-1	1
		1	49	17.35	17.24	17.28	0-1	1
		25	0	16.37	16.33	16.26	0-2	2
		25	12	16.33	16.22	16.21	0-2	2
		25	24	16.26	16.13	16.19	0-2	2
		50	0	16.33	16.18	16.25	0-2	2
	64QAM	1	0	16.35	16.30	16.24	0-2	2
		1	24	16.18	16.15	16.10	0-2	2
		1	49	16.19	16.08	16.12	0-2	2
		25	0	15.40	15.36	15.31	0-3	3
		25	12	15.37	15.25	15.26	0-3	3
		25	24	15.29	15.22	15.25	0-3	3
		50	0	15.32	15.22	15.24	0-3	3

LTE Band 42 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				43165 Ch. 3557.5 ㎒	43340Ch. 3575 ㎒	43515 Ch. 3592.5 ㎒		
15 ㎒	QPSK	1	0	18.37	18.34	18.22	0	0
		1	36	18.11	18.11	18.00	0	0
		1	74	18.07	18.09	18.03	0	0
		36	0	17.29	17.23	17.19	0-1	1
		36	18	17.20	17.14	17.14	0-1	1
		36	39	17.12	17.10	17.08	0-1	1
		75	0	17.22	17.12	17.13	0-1	1
	16QAM	1	0	17.48	17.49	17.47	0-1	1
		1	36	17.35	17.33	17.28	0-1	1
		1	74	17.33	17.27	17.27	0-1	1
		36	0	16.37	16.31	16.24	0-2	2
		36	18	16.29	16.16	16.20	0-2	2
		36	39	16.24	16.13	16.15	0-2	2
		75	0	16.35	16.22	16.25	0-2	2
	64QAM	1	0	16.48	16.40	16.29	0-2	2
		1	36	16.18	16.16	16.05	0-2	2
		1	74	16.17	16.10	16.12	0-2	2
		36	0	15.39	15.34	15.27	0-3	3
		36	18	15.33	15.20	15.24	0-3	3
		36	39	15.22	15.13	15.19	0-3	3
		75	0	15.34	15.23	15.25	0-3	3

LTE Band 42 _ 20 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 43340Ch. 3575 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
20 ㎒	QPSK	1	0	18.42	0	0
		1	49	18.13	0	0
		1	99	18.01	0	0
		50	0	17.29	0-1	1
		50	25	17.11	0-1	1
		50	49	17.09	0-1	1
		100	0	17.17	0-1	1
	16QAM	1	0	17.48	0-1	1
		1	49	17.34	0-1	1
		1	99	17.28	0-1	1
		50	0	16.42	0-2	2
		50	25	16.22	0-2	2
		50	49	16.18	0-2	2
		100	0	16.25	0-2	2
	64QAM	1	0	16.47	0-2	2
		1	49	16.14	0-2	2
		1	99	16.08	0-2	2
		50	0	15.38	0-3	3
		50	25	15.21	0-3	3
		50	49	15.16	0-3	3
		100	0	15.26	0-3	3

- LTE Band 48

LTE Band 48 _ 5 MHz Bandwidth

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]				MPR Allowed Per GPP [dB]	MPR [dB]
				55265	55748	56232	56715		
				3552.5 MHz	3600.8 MHz	3649.2 MHz	3697.5 MHz		
5 MHz	QPSK	1	0	18.48	18.29	18.04	18.29	0	0
		1	12	18.41	18.25	17.95	18.25	0	0
		1	24	18.40	18.26	17.96	18.24	0	0
		12	0	17.48	17.37	17.01	17.27	0-1	1
		12	6	17.45	17.29	16.99	17.30	0-1	1
		12	11	17.41	17.32	16.95	17.29	0-1	1
		25	0	17.44	17.32	17.01	17.26	0-1	1
	16QAM	1	0	17.63	17.47	17.17	17.41	0-1	1
		1	12	17.55	17.44	17.09	17.38	0-1	1
		1	24	17.53	17.45	17.09	17.41	0-1	1
		12	0	16.54	16.36	16.09	16.33	0-2	2
		12	6	16.49	16.37	16.07	16.36	0-2	2
		12	11	16.49	16.33	16.05	16.33	0-2	2
		25	0	16.56	16.41	16.09	16.36	0-2	2
	64QAM	1	0	16.30	16.18	15.98	16.25	0-2	2
		1	12	16.19	16.09	15.88	16.16	0-2	2
		1	24	16.26	16.10	15.90	16.20	0-2	2
		12	0	15.66	15.55	15.30	15.60	0-3	3
		12	6	15.66	15.49	15.31	15.62	0-3	3
		12	11	15.61	15.49	15.26	15.59	0-3	3
		25	0	15.63	15.55	15.33	15.60	0-3	3

LTE Band 48 _10 MHz Bandwidth

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]				MPR Allowed Per GPP [dB]	MPR [dB]
				55290	55757	56223	55290		
				3555 MHz	3601.7 MHz	3648.3 MHz	3555 MHz		
10 MHz	QPSK	1	0	18.60	18.41	18.15	18.34	0	0
		1	24	18.41	18.27	17.97	18.20	0	0
		1	49	18.39	18.30	18.08	18.25	0	0
		25	0	17.52	17.36	17.12	17.31	0-1	1
		25	12	17.44	17.33	17.02	17.32	0-1	1
		25	24	17.43	17.30	17.01	17.25	0-1	1
		50	0	17.51	17.36	17.06	17.33	0-1	1
	16QAM	1	0	17.72	17.59	17.31	17.49	0-1	1
		1	24	17.54	17.44	17.09	17.34	0-1	1
		1	49	17.49	17.41	17.15	17.40	0-1	1
		25	0	16.59	16.46	16.17	16.41	0-2	2
		25	12	16.58	16.44	16.16	16.38	0-2	2
		25	24	16.49	16.40	16.07	16.36	0-2	2
		50	0	16.61	16.49	16.16	16.41	0-2	2
	64QAM	1	0	16.44	16.25	16.13	16.29	0-2	2
		1	24	16.22	16.10	15.87	16.14	0-2	2
		1	49	16.20	16.13	16.02	16.22	0-2	2
		25	0	15.75	15.61	15.45	15.62	0-3	3
		25	12	15.66	15.54	15.36	15.64	0-3	3
		25	24	15.64	15.52	15.34	15.58	0-3	3
		50	0	15.65	15.53	15.36	15.59	0-3	3

LTE Band 48 _ 15 MHz Bandwidth

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]				MPR Allowed Per GPP [dB]	MPR [dB]
				55315	55765	56215	56665		
				3557.5 MHz	3602.5 MHz	3647.5 MHz	3692.5 MHz		
15 MHz	QPSK	1	0	18.68	18.49	18.28	18.29	0	0
		1	36	18.38	18.26	17.97	18.23	0	0
		1	74	18.38	18.28	18.02	18.30	0	0
		36	0	17.58	17.43	17.17	17.25	0-1	1
		36	18	17.49	17.36	17.06	17.31	0-1	1
		36	39	17.40	17.34	17.01	17.27	0-1	1
		75	0	17.49	17.36	17.06	17.22	0-1	1
	16QAM	1	0	17.78	17.70	17.40	17.47	0-1	1
		1	36	17.54	17.44	17.12	17.36	0-1	1
		1	74	17.53	17.45	17.17	17.48	0-1	1
		36	0	16.62	16.47	16.21	16.32	0-2	2
		36	18	16.56	16.40	16.10	16.39	0-2	2
		36	39	16.48	16.39	16.02	16.36	0-2	2
		75	0	16.59	16.48	16.16	16.34	0-2	2
	64QAM	1	0	16.48	16.36	16.25	16.25	0-2	2
		1	36	16.25	16.12	15.94	16.19	0-2	2
		1	74	16.20	16.11	16.00	16.24	0-2	2
		36	0	15.72	15.57	15.43	15.50	0-3	3
		36	18	15.63	15.51	15.36	15.59	0-3	3
		36	39	15.54	15.49	15.29	15.53	0-3	3
		75	0	15.67	15.55	15.40	15.52	0-3	3

LTE Band 48 _ 20 MHz Bandwidth

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]				MPR Allowed Per GPP [dB]	MPR [dB]
				55340	55773	56207	56640		
				3560 MHz	3603.3 MHz	3646.7 MHz	3690 MHz		
20 MHz	QPSK	1	0	18.75	18.61	18.39	18.39	0	0
		1	49	18.39	18.27	17.96	18.23	0	0
		1	99	18.37	18.24	18.02	18.34	0	0
		50	0	17.66	17.48	17.24	17.29	0-1	1
		50	25	17.53	17.38	17.07	17.23	0-1	1
		50	49	17.45	17.34	17.00	17.33	0-1	1
		100	0	17.54	17.39	17.13	17.26	0-1	1
	16QAM	1	0	17.79	17.80	17.55	17.52	0-1	1
		1	49	17.56	17.45	17.12	17.35	0-1	1
		1	99	17.59	17.45	17.19	17.47	0-1	1
		50	0	16.77	16.59	16.37	16.40	0-2	2
		50	25	16.63	16.49	16.19	16.34	0-2	2
		50	49	16.57	16.44	16.14	16.43	0-2	2
		100	0	16.66	16.48	16.24	16.36	0-2	2
	64QAM	1	0	16.59	16.43	16.37	16.30	0-2	2
		1	49	16.25	16.09	15.94	16.15	0-2	2
		1	99	16.23	16.11	16.01	16.25	0-2	2
		50	0	15.79	15.64	15.53	15.57	0-3	3
		50	25	15.68	15.54	15.38	15.51	0-3	3
		50	49	15.60	15.48	15.31	15.56	0-3	3
		100	0	15.71	15.57	15.44	15.49	0-3	3

- LTE Band 66

LTE Band 66 _ 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131979Ch. 1710.7 MHz	132322 Ch. 1745 MHz	132665 Ch. 1779.3 MHz		
1.4 MHz	QPSK	1	0	23.11	22.96	22.76	0	0
		1	3	23.21	23.01	22.81	0	0
		1	5	23.09	22.93	22.72	0	0
		3	0	23.14	22.99	22.72	0	0
		3	1	23.23	23.02	22.80	0	0
		3	3	23.17	22.98	22.75	0	0
		6	0	22.12	22.01	21.78	0-1	1
	16QAM	1	0	22.44	22.28	22.09	0-1	1
		1	3	22.62	22.43	22.26	0-1	1
		1	5	22.41	22.28	22.09	0-1	1
		3	0	22.30	22.08	21.89	0-1	1
		3	1	22.30	22.07	21.96	0-1	1
		3	3	22.28	22.16	21.87	0-1	1
		6	0	21.30	21.18	20.98	0-2	2
	64QAM	1	0	21.42	21.35	21.05	0-2	2
		1	3	21.48	21.33	21.08	0-2	2
		1	5	21.47	21.17	21.04	0-2	2
		3	0	21.44	21.20	21.00	0-2	2
		3	1	21.43	21.23	21.10	0-2	2
		3	3	21.34	21.24	20.97	0-2	2
		6	0	20.26	20.10	19.92	0-3	3

LTE Band 66 _ 3 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131987 Ch. 1711.5 ㎒	132322 Ch. 1745 ㎒	132657 Ch. 1778.5 ㎒		
3 ㎒	QPSK	1	0	23.24	23.03	22.83	0	0
		1	7	23.34	23.11	22.93	0	0
		1	14	23.21	23.04	22.78	0	0
		8	0	22.20	22.05	21.85	0-1	1
		8	3	22.23	22.07	21.82	0-1	1
		8	7	22.20	22.04	21.81	0-1	1
		15	0	22.22	22.01	21.81	0-1	1
	16QAM	1	0	22.60	22.38	22.18	0-1	1
		1	7	22.64	22.54	22.25	0-1	1
		1	14	22.54	22.34	22.13	0-1	1
		8	0	21.38	21.23	21.01	0-2	2
		8	3	21.44	21.23	21.00	0-2	2
		8	7	21.32	21.20	20.94	0-2	2
		15	0	21.35	21.15	20.91	0-2	2
	64QAM	1	0	21.62	21.30	21.01	0-2	2
		1	7	21.66	21.41	21.19	0-2	2
		1	14	21.41	21.30	21.14	0-2	2
		8	0	20.39	20.19	19.95	0-3	3
		8	3	20.41	20.23	20.01	0-3	3
		8	7	20.35	20.19	19.96	0-3	3
		15	0	20.31	20.16	19.92	0-3	3

LTE Band 66 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131997 Ch. 1712.5 MHz	132322Ch. 1745 MHz	132647 Ch. 1777.5 MHz		
5 MHz	QPSK	1	0	23.27	23.09	22.88	0	0
		1	12	23.22	23.02	22.76	0	0
		1	24	23.17	23.04	22.83	0	0
		12	0	22.20	22.07	21.91	0-1	1
		12	6	22.29	22.07	21.89	0-1	1
		12	11	22.25	22.07	21.84	0-1	1
		25	0	22.22	22.08	21.86	0-1	1
	16QAM	1	0	22.62	22.44	22.16	0-1	1
		1	12	22.54	22.43	22.11	0-1	1
		1	24	22.48	22.38	22.22	0-1	1
		12	0	21.39	21.16	20.95	0-2	2
		12	6	21.41	21.24	20.99	0-2	2
		12	11	21.31	21.17	20.90	0-2	2
		25	0	21.33	21.20	20.99	0-2	2
	64QAM	1	0	21.53	21.32	21.15	0-2	2
		1	12	21.42	21.34	21.18	0-2	2
		1	24	21.40	21.34	21.06	0-2	2
		12	0	20.38	20.24	20.01	0-3	3
		12	6	20.37	20.27	20.01	0-3	3
		12	11	20.39	20.22	20.00	0-3	3
		25	0	20.30	20.16	19.98	0-3	3

LTE Band 66 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132022 Ch. 1715 MHz	132322 Ch. 1745 MHz	132622 Ch. 1775 MHz		
10 MHz	QPSK	1	0	23.25	23.16	22.97	0	0
		1	24	23.18	23.02	22.87	0	0
		1	49	23.17	23.06	22.78	0	0
		25	0	22.31	22.06	21.93	0-1	1
		25	12	22.23	22.10	21.92	0-1	1
		25	24	22.24	22.10	21.89	0-1	1
		50	0	22.29	22.08	21.86	0-1	1
	16QAM	1	0	22.57	22.40	22.30	0-1	1
		1	24	22.36	22.46	22.13	0-1	1
		1	49	22.43	22.45	22.27	0-1	1
		25	0	21.40	21.23	21.08	0-2	2
		25	12	21.31	21.21	21.00	0-2	2
		25	24	21.33	21.21	20.98	0-2	2
		50	0	21.30	21.17	20.96	0-2	2
	64QAM	1	0	21.57	21.39	21.20	0-2	2
		1	24	21.43	21.29	21.10	0-2	2
		1	49	21.41	21.41	21.16	0-2	2
		25	0	20.34	20.22	20.08	0-3	3
		25	12	20.33	20.23	20.01	0-3	3
		25	24	20.30	20.15	19.94	0-3	3
		50	0	20.37	20.22	19.97	0-3	3

LTE Band 66 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132047 Ch. 1717.5 ㎒	132322 Ch. 1745 ㎒	132597 Ch. 1772.5 ㎒		
15 ㎒	QPSK	1	0	23.40	23.22	23.11	0	0
		1	36	23.12	23.09	22.81	0	0
		1	74	23.20	23.16	22.90	0	0
		36	0	22.33	22.11	21.98	0-1	1
		36	18	22.28	22.11	21.98	0-1	1
		36	39	22.19	22.05	21.93	0-1	1
		75	0	22.22	22.11	21.94	0-1	1
	16QAM	1	0	22.72	22.59	22.46	0-1	1
		1	36	22.54	22.48	22.17	0-1	1
		1	74	22.50	22.53	22.31	0-1	1
		36	0	21.37	21.20	21.09	0-2	2
		36	18	21.36	21.19	21.04	0-2	2
		36	39	21.32	21.22	20.96	0-2	2
		75	0	21.36	21.19	21.03	0-2	2
	64QAM	1	0	21.65	21.46	21.31	0-2	2
		1	36	21.49	21.37	21.10	0-2	2
		1	74	21.49	21.36	21.22	0-2	2
		36	0	20.40	20.24	20.11	0-3	3
		36	18	20.39	20.28	20.13	0-3	3
		36	39	20.32	20.27	20.01	0-3	3
		75	0	20.34	20.23	20.01	0-3	3

LTE Band 66 _ 20 ㎒ Bandwidth

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	23.38	23.26	23.15	0	0
		1	49	23.19	23.02	22.89	0	0
		1	99	23.17	23.04	22.86	0	0
		50	0	22.32	22.16	22.04	0-1	1
		50	25	22.23	22.11	21.96	0-1	1
		50	49	22.23	22.10	21.92	0-1	1
		100	0	22.27	22.13	21.97	0-1	1
	16QAM	1	0	22.62	22.64	22.33	0-1	1
		1	49	22.42	22.29	22.21	0-1	1
		1	99	22.43	22.34	22.15	0-1	1
		50	0	21.42	21.28	21.15	0-2	2
		50	25	21.38	21.23	21.09	0-2	2
		50	49	21.33	21.24	21.00	0-2	2
		100	0	21.32	21.22	21.10	0-2	2
	64QAM	1	0	21.73	21.56	21.42	0-2	2
		1	49	21.35	21.27	21.12	0-2	2
		1	99	21.43	21.30	21.22	0-2	2
		50	0	20.40	20.30	20.18	0-3	3
		50	25	20.36	20.23	20.10	0-3	3
		50	49	20.29	20.23	20.05	0-3	3
		100	0	20.34	20.26	20.06	0-3	3

Note;

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.

9.4 LTE Reduced Conducted Power(Grip Sensor on)

- LTE Band 2

LTE Band 2 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18607 Ch. 1850.7 ㎒	18900 Ch. 1880 ㎒	19193 Ch. 1909.3 ㎒		
1.4 ㎒	QPSK	1	0	15.00	15.19	15.48	0	0
		1	3	15.09	15.23	15.63	0	0
		1	5	15.02	15.12	15.50	0	0
		3	0	14.99	15.17	15.57	0	0
		3	1	15.05	15.21	15.53	0	0
		3	3	15.04	15.21	15.47	0	0
		6	0	15.03	15.16	15.56	0-1	0
	16QAM	1	0	15.42	15.55	15.81	0-1	0
		1	3	15.50	15.50	15.95	0-1	0
		1	5	15.38	15.48	15.77	0-1	0
		3	0	15.13	15.25	15.62	0-1	0
		3	1	15.17	15.36	15.66	0-1	0
		3	3	15.20	15.30	15.58	0-1	0
		6	0	15.17	15.35	15.69	0-2	0
	64QAM	1	0	15.25	15.47	15.76	0-2	0
		1	3	15.32	15.50	15.78	0-2	0
		1	5	15.32	15.45	15.80	0-2	0
		3	0	15.26	15.44	15.74	0-2	0
		3	1	15.29	15.42	15.80	0-2	0
		3	3	15.24	15.42	15.70	0-2	0
		6	0	15.16	15.32	15.65	0-3	0

LTE Band 2 _ 3 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18615 Ch. 1851.5 ㎒	18900 Ch. 1880 ㎒	19185 Ch. 1908.5 ㎒		
3 ㎒	QPSK	1	0	15.13	15.24	15.61	0	0
		1	7	15.17	15.28	15.71	0	0
		1	14	15.09	15.20	15.56	0	0
		8	0	15.15	15.25	15.59	0-1	0
		8	3	15.16	15.30	15.68	0-1	0
		8	7	15.13	15.27	15.60	0-1	0
		15	0	15.13	15.28	15.64	0-1	0
	16QAM	1	0	15.40	15.66	15.84	0-1	0
		1	7	15.58	15.61	16.09	0-1	0
		1	14	15.44	15.60	15.91	0-1	0
		8	0	15.27	15.41	15.74	0-2	0
		8	3	15.31	15.46	15.77	0-2	0
		8	7	15.27	15.40	15.76	0-2	0
		15	0	15.22	15.41	15.72	0-2	0
	64QAM	1	0	15.43	15.50	15.88	0-2	0
		1	7	15.39	15.60	15.97	0-2	0
		1	14	15.41	15.44	15.87	0-2	0
		8	0	15.29	15.39	15.77	0-3	0
		8	3	15.31	15.48	15.76	0-3	0
		8	7	15.23	15.42	15.76	0-3	0
		15	0	15.24	15.37	15.71	0-3	0

LTE Band 2 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18625 Ch. 1852.5 MHz	18900 Ch. 1880 MHz	19175 Ch. 1907.5 MHz		
5 MHz	QPSK	1	0	15.19	15.24	15.64	0	0
		1	12	15.10	15.24	15.62	0	0
		1	24	15.06	15.21	15.57	0	0
		12	0	15.13	15.27	15.68	0-1	0
		12	6	15.16	15.29	15.67	0-1	0
		12	11	15.13	15.27	15.64	0-1	0
		25	0	15.11	15.26	15.66	0-1	0
	16QAM	1	0	15.52	15.65	16.02	0-1	0
		1	12	15.48	15.56	16.03	0-1	0
		1	24	15.44	15.52	15.99	0-1	0
		12	0	15.28	15.41	15.78	0-2	0
		12	6	15.25	15.38	15.76	0-2	0
		12	11	15.20	15.39	15.69	0-2	0
		25	0	15.22	15.37	15.71	0-2	0
	64QAM	1	0	15.40	15.57	16.01	0-2	0
		1	12	15.33	15.51	15.93	0-2	0
		1	24	15.30	15.50	15.79	0-2	0
		12	0	15.32	15.44	15.80	0-3	0
		12	6	15.33	15.49	15.83	0-3	0
		12	11	15.28	15.40	15.83	0-3	0
		25	0	15.30	15.41	15.74	0-3	0

LTE Band 2 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18650 Ch. 1855 ㎒	18900 Ch. 1880 ㎒	19150 Ch. 1905 ㎒		
10 ㎒	QPSK	1	0	15.12	15.31	15.61	0	0
		1	24	15.07	15.21	15.57	0	0
		1	49	15.14	15.19	15.57	0	0
		25	0	15.14	15.33	15.60	0-1	0
		25	12	15.17	15.32	15.61	0-1	0
		25	24	15.24	15.27	15.63	0-1	0
		50	0	15.23	15.29	15.59	0-1	0
	16QAM	1	0	15.48	15.67	15.99	0-1	0
		1	24	15.46	15.62	15.96	0-1	0
		1	49	15.47	15.55	15.95	0-1	0
		25	0	15.29	15.46	15.67	0-2	0
		25	12	15.23	15.44	15.68	0-2	0
		25	24	15.29	15.37	15.76	0-2	0
		50	0	15.32	15.40	15.73	0-2	0
	64QAM	1	0	15.41	15.62	15.85	0-2	0
		1	24	15.26	15.50	15.88	0-2	0
		1	49	15.45	15.46	15.89	0-2	0
		25	0	15.29	15.46	15.68	0-3	0
		25	12	15.31	15.42	15.71	0-3	0
		25	24	15.34	15.38	15.73	0-3	0
		50	0	15.40	15.46	15.71	0-3	0

LTE Band 2 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18675 Ch. 1857.5 ㎒	18900 Ch. 1880 ㎒	19125 Ch. 1902.5 ㎒		
15 ㎒	QPSK	1	0	15.25	15.40	15.71	0	0
		1	36	15.07	15.25	15.54	0	0
		1	74	15.18	15.35	15.64	0	0
		36	0	15.17	15.36	15.69	0-1	0
		36	18	15.30	15.37	15.57	0-1	0
		36	39	15.19	15.29	15.58	0-1	0
		75	0	15.28	15.29	15.58	0-1	0
	16QAM	1	0	15.62	15.81	16.11	0-1	0
		1	36	15.43	15.70	15.89	0-1	0
		1	74	15.53	15.68	15.85	0-1	0
		36	0	15.26	15.49	15.76	0-2	0
		36	18	15.34	15.47	15.60	0-2	0
		36	39	15.34	15.38	15.54	0-2	0
		75	0	15.31	15.46	15.69	0-2	0
	64QAM	1	0	15.53	15.68	15.96	0-2	0
		1	36	15.32	15.50	15.82	0-2	0
		1	74	15.36	15.67	15.89	0-2	0
		36	0	15.34	15.50	15.78	0-3	0
		36	18	15.40	15.45	15.78	0-3	0
		36	39	15.34	15.43	15.65	0-3	0
		75	0	15.42	15.47	15.75	0-3	0

LTE Band 2 _ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 MHz	18900 Ch. 1880 MHz	19100 Ch. 1900 MHz		
20 MHz	QPSK	1	0	15.36	15.33	15.69	0	0
		1	49	15.26	15.24	15.51	0	0
		1	99	15.22	15.28	15.59	0	0
		50	0	15.43	15.41	15.60	0-1	0
		50	25	15.34	15.35	15.66	0-1	0
		50	49	15.30	15.31	15.56	0-1	0
		100	0	15.34	15.35	15.64	0-1	0
	16QAM	1	0	15.65	15.73	16.10	0-1	0
		1	49	15.63	15.58	15.87	0-1	0
		1	99	15.55	15.65	15.98	0-1	0
		50	0	15.53	15.50	15.66	0-2	0
		50	25	15.47	15.44	15.64	0-2	0
		50	49	15.41	15.37	15.60	0-2	0
		100	0	15.45	15.44	15.62	0-2	0
	64QAM	1	0	15.72	15.52	15.88	0-2	0
		1	49	15.60	15.50	15.76	0-2	0
		1	99	15.43	15.55	15.81	0-2	0
		50	0	15.57	15.52	15.66	0-3	0
		50	25	15.47	15.47	15.69	0-3	0
		50	49	15.42	15.44	15.58	0-3	0
		100	0	15.45	15.48	15.69	0-3	0

- LTE Band 4

LTE Band 4 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19957 Ch. 1710.7 ㎒	20175 Ch. 1732.5 ㎒	20393 Ch. 1754.3 ㎒		
1.4 ㎒	QPSK	1	0	15.70	15.56	15.26	0	0
		1	3	15.81	15.58	15.40	0	0
		1	5	15.68	15.54	15.23	0	0
		3	0	15.73	15.56	15.27	0	0
		3	1	15.76	15.60	15.34	0	0
		3	3	15.72	15.55	15.27	0	0
		6	0	15.69	15.59	15.26	0-1	0
	16QAM	1	0	15.92	15.82	15.56	0-1	0
		1	3	16.06	15.97	15.64	0-1	0
		1	5	15.91	15.83	15.62	0-1	0
		3	0	15.75	15.69	15.37	0-1	0
		3	1	15.86	15.70	15.44	0-1	0
		3	3	15.85	15.61	15.42	0-1	0
		6	0	15.83	15.72	15.45	0-2	0
	64QAM	1	0	15.91	15.81	15.55	0-2	0
		1	3	15.96	15.83	15.47	0-2	0
		1	5	15.91	15.78	15.48	0-2	0
		3	0	15.82	15.69	15.40	0-2	0
		3	1	15.85	15.74	15.45	0-2	0
		3	3	15.81	15.70	15.42	0-2	0
		6	0	15.80	15.64	15.42	0-3	0

LTE Band 4 _ 3 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19965 Ch. 1711.5 ㎒	20175 Ch. 1732.5 ㎒	20385 Ch. 1753.5 ㎒		
3 ㎒	QPSK	1	0	15.81	15.66	15.34	0	0
		1	7	15.94	15.75	15.53	0	0
		1	14	15.73	15.64	15.31	0	0
		8	0	15.84	15.64	15.36	0-1	0
		8	3	15.87	15.66	15.43	0-1	0
		8	7	15.75	15.65	15.38	0-1	0
		15	0	15.83	15.64	15.37	0-1	0
	16QAM	1	0	16.12	16.00	15.63	0-1	0
		1	7	16.21	16.17	15.77	0-1	0
		1	14	16.04	16.01	15.62	0-1	0
		8	0	15.96	15.79	15.50	0-2	0
		8	3	15.92	15.81	15.53	0-2	0
		8	7	15.89	15.73	15.45	0-2	0
		15	0	15.89	15.72	15.44	0-2	0
	64QAM	1	0	15.98	15.83	15.60	0-2	0
		1	7	15.95	15.97	15.73	0-2	0
		1	14	15.85	15.72	15.54	0-2	0
		8	0	15.86	15.75	15.49	0-3	0
		8	3	15.90	15.80	15.47	0-3	0
		8	7	15.92	15.68	15.43	0-3	0
		15	0	15.83	15.70	15.43	0-3	0

LTE Band 4 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19975 Ch. 1712.5 MHz	20175 Ch. 1732.5 MHz	20375 Ch. 1752.5 MHz		
5 MHz	QPSK	1	0	15.78	15.66	15.37	0	0
		1	12	15.79	15.59	15.36	0	0
		1	24	15.77	15.65	15.35	0	0
		12	0	15.83	15.73	15.38	0-1	0
		12	6	15.81	15.67	15.39	0-1	0
		12	11	15.79	15.66	15.38	0-1	0
		25	0	15.83	15.66	15.35	0-1	0
	16QAM	1	0	16.14	16.04	15.74	0-1	0
		1	12	16.02	16.04	15.61	0-1	0
		1	24	16.06	16.01	15.71	0-1	0
		12	0	15.86	15.78	15.51	0-2	0
		12	6	15.94	15.77	15.50	0-2	0
		12	11	15.85	15.72	15.47	0-2	0
		25	0	15.89	15.76	15.47	0-2	0
	64QAM	1	0	15.92	15.80	15.51	0-2	0
		1	12	15.96	15.90	15.53	0-2	0
		1	24	15.94	15.82	15.57	0-2	0
		12	0	15.84	15.74	15.49	0-3	0
		12	6	15.91	15.71	15.52	0-3	0
		12	11	15.84	15.71	15.41	0-3	0
		25	0	15.89	15.77	15.49	0-3	0

LTE Band 4 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20000 Ch. 1715 MHz	20175 Ch. 1732.5 MHz	20350 Ch. 1750 MHz		
10 MHz	QPSK	1	0	15.84	15.71	15.53	0	0
		1	24	15.70	15.63	15.35	0	0
		1	49	15.76	15.67	15.37	0	0
		25	0	15.84	15.74	15.58	0-1	0
		25	12	15.85	15.71	15.52	0-1	0
		25	24	15.81	15.68	15.43	0-1	0
		50	0	15.81	15.68	15.53	0-1	0
	16QAM	1	0	16.13	15.97	15.90	0-1	0
		1	24	15.97	15.94	15.76	0-1	0
		1	49	15.95	16.01	15.71	0-1	0
		25	0	15.93	15.80	15.67	0-2	0
		25	12	15.89	15.80	15.66	0-2	0
		25	24	15.84	15.80	15.50	0-2	0
		50	0	15.86	15.81	15.63	0-2	0
	64QAM	1	0	15.99	15.92	15.74	0-2	0
		1	24	15.94	15.87	15.57	0-2	0
		1	49	15.93	15.86	15.63	0-2	0
		25	0	15.90	15.83	15.64	0-3	0
		25	12	15.87	15.80	15.60	0-3	0
		25	24	15.84	15.74	15.50	0-3	0
		50	0	15.88	15.79	15.59	0-3	0

LTE Band 4 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20025 Ch. 1717.5 ㎒	20175 Ch. 1732.5 ㎒	20325 Ch. 1747.5 ㎒		
15 ㎒	QPSK	1	0	15.92	15.87	15.63	0	0
		1	36	15.71	15.69	15.49	0	0
		1	74	15.86	15.60	15.41	0	0
		36	0	15.87	15.73	15.60	0-1	0
		36	18	15.83	15.78	15.58	0-1	0
		36	39	15.86	15.73	15.50	0-1	0
		75	0	15.93	15.72	15.58	0-1	0
	16QAM	1	0	16.26	16.05	16.01	0-1	0
		1	36	16.09	15.93	15.94	0-1	0
		1	74	16.13	15.90	15.83	0-1	0
		36	0	15.95	15.80	15.70	0-2	0
		36	18	15.88	15.82	15.66	0-2	0
		36	39	15.94	15.80	15.67	0-2	0
		75	0	16.02	15.78	15.65	0-2	0
	64QAM	1	0	16.12	15.91	15.92	0-2	0
		1	36	15.97	15.90	15.70	0-2	0
		1	74	16.05	15.83	15.65	0-2	0
		36	0	15.95	15.83	15.71	0-3	0
		36	18	15.88	15.78	15.64	0-3	0
		36	39	15.95	15.76	15.67	0-3	0
		75	0	16.03	15.83	15.70	0-3	0

LTE Band 4 _ 20 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20050 Ch. 1720 ㎒	20175 Ch. 1732.5 ㎒	20300 Ch. 1745 ㎒		
20 ㎒	QPSK	1	0	15.91	15.80	15.82	0	0
		1	49	15.72	15.64	15.50	0	0
		1	99	15.81	15.54	15.42	0	0
		50	0	15.90	15.78	15.74	0-1	0
		50	25	15.91	15.73	15.59	0-1	0
		50	49	15.89	15.75	15.53	0-1	0
		100	0	15.92	15.75	15.60	0-1	0
	16QAM	1	0	16.25	16.22	16.09	0-1	0
		1	49	15.95	15.94	15.84	0-1	0
		1	99	16.20	15.96	15.72	0-1	0
		50	0	15.97	15.92	15.83	0-2	0
		50	25	15.98	15.80	15.70	0-2	0
		50	49	15.97	15.81	15.66	0-2	0
		100	0	16.02	15.83	15.69	0-2	0
	64QAM	1	0	16.01	15.98	16.01	0-2	0
		1	49	15.89	15.84	15.73	0-2	0
		1	99	16.05	15.82	15.62	0-2	0
		50	0	15.90	15.88	15.83	0-3	0
		50	25	15.98	15.79	15.73	0-3	0
		50	49	15.95	15.80	15.65	0-3	0
		100	0	16.03	15.83	15.72	0-3	0

- LTE Band 5

LTE Band 5 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20425 Ch. 826.5 ㎒	20525 Ch. 836.5 ㎒	20625 Ch. 846.5 ㎒		
5 ㎒	QPSK	1	0	17.32	17.32	17.42	0	0
		1	12	17.26	17.18	17.43	0	0
		1	24	17.28	17.24	17.42	0	0
		12	0	17.35	17.28	17.47	0-1	0
		12	6	17.47	17.30	17.57	0-1	0
		12	11	17.41	17.23	17.47	0-1	0
		25	0	17.40	17.27	17.40	0-1	0
	16QAM	1	0	17.61	17.45	17.69	0-1	0
		1	12	17.52	17.58	17.76	0-1	0
		1	24	17.68	17.50	17.70	0-1	0
		12	0	17.37	17.35	17.52	0-2	0
		12	6	17.56	17.40	17.63	0-2	0
		12	11	17.49	17.40	17.58	0-2	0
		25	0	17.54	17.35	17.48	0-2	0
	64QAM	1	0	17.64	17.57	17.70	0-2	0
		1	12	17.61	17.49	17.69	0-2	0
		1	24	17.67	17.53	17.73	0-2	0
		12	0	17.49	17.45	17.55	0-3	0
		12	6	17.64	17.46	17.65	0-3	0
		12	11	17.56	17.43	17.64	0-3	0
		25	0	17.57	17.39	17.53	0-3	0

LTE Band 5 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm] 20525 Ch. 836.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	17.33	0	0
		1	24	17.23	0	0
		1	49	17.20	0	0
		25	0	17.30	0-1	0
		25	12	17.32	0-1	0
		25	24	17.21	0-1	0
		50	0	17.27	0-1	0
	16QAM	1	0	17.59	0-1	0
		1	24	17.54	0-1	0
		1	49	17.47	0-1	0
		25	0	17.43	0-2	0
		25	12	17.45	0-2	0
		25	24	17.35	0-2	0
		50	0	17.44	0-2	0
	64QAM	1	0	17.51	0-2	0
		1	24	17.58	0-2	0
		1	49	17.47	0-2	0
		25	0	17.48	0-3	0
		25	12	17.43	0-3	0
		25	24	17.37	0-3	0
		50	0	17.41	0-3	0

- LTE Band 7

LTE Band 7 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20775 Ch. 2502.5 ㎒	21100 Ch. 2535 ㎒	21425 Ch. 2567.5 ㎒		
5 ㎒	QPSK	1	0	13.97	13.79	13.62	0	0
		1	12	13.90	13.75	13.60	0	0
		1	24	13.81	13.62	13.63	0	0
		12	0	13.94	13.78	13.73	0-1	0
		12	6	14.00	13.70	13.70	0-1	0
		12	11	13.95	13.76	13.70	0-1	0
		25	0	13.82	13.67	13.66	0-1	0
	16QAM	1	0	14.39	14.27	14.38	0-1	0
		1	12	14.29	14.27	14.24	0-1	0
		1	24	14.45	14.18	14.15	0-1	0
		12	0	14.17	14.05	13.86	0-2	0
		12	6	14.18	14.08	13.89	0-2	0
		12	11	14.21	13.88	13.93	0-2	0
		25	0	14.01	13.83	13.82	0-2	0
	64QAM	1	0	14.46	14.15	14.36	0-2	0
		1	12	14.32	14.13	14.14	0-2	0
		1	24	14.30	14.01	14.10	0-2	0
		12	0	14.32	14.14	14.08	0-3	0
		12	6	14.35	14.03	14.11	0-3	0
		12	11	14.28	14.05	14.02	0-3	0
		25	0	14.01	13.91	13.93	0-3	0

LTE Band 7_ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20800 Ch. 2505 MHz	21100 Ch. 2535 MHz	21400 Ch. 2565 MHz		
10 MHz	QPSK	1	0	14.02	13.95	13.83	0	0
		1	24	13.81	13.76	13.72	0	0
		1	49	13.84	13.60	13.61	0	0
		25	0	13.89	13.80	13.70	0-1	0
		25	12	13.90	13.75	13.60	0-1	0
		25	24	13.79	13.65	13.60	0-1	0
		50	0	13.89	13.75	13.62	0-1	0
	16QAM	1	0	14.48	14.39	14.29	0-1	0
		1	24	14.41	14.08	14.14	0-1	0
		1	49	14.44	13.99	14.09	0-1	0
		25	0	14.03	13.89	13.71	0-2	0
		25	12	14.01	13.85	13.75	0-2	0
		25	24	13.96	13.75	13.75	0-2	0
		50	0	13.98	13.82	13.64	0-2	0
	64QAM	1	0	14.43	14.47	14.18	0-2	0
		1	24	14.28	14.05	14.14	0-2	0
		1	49	14.50	14.12	14.06	0-2	0
		25	0	14.12	13.88	13.82	0-3	0
		25	12	14.08	13.85	13.74	0-3	0
		25	24	13.97	13.75	13.77	0-3	0
		50	0	14.00	13.82	13.69	0-3	0

LTE Band 7 _ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20825 Ch. 2507.5 MHz	21100 Ch. 2535 MHz	21375 Ch. 2562.5 MHz		
15 MHz	QPSK	1	0	14.05	14.02	13.93	0	0
		1	36	14.07	13.82	13.68	0	0
		1	74	13.99	13.65	13.61	0	0
		36	0	13.99	13.88	13.65	0-1	0
		36	18	13.93	13.84	13.71	0-1	0
		36	39	13.92	13.67	13.55	0-1	0
		75	0	13.93	13.75	13.67	0-1	0
	16QAM	1	0	14.47	14.41	14.23	0-1	0
		1	36	14.54	14.05	13.86	0-1	0
		1	74	14.15	14.03	14.05	0-1	0
		36	0	14.05	13.87	13.70	0-2	0
		36	18	13.94	13.77	13.73	0-2	0
		36	39	14.00	13.64	13.53	0-2	0
		75	0	13.90	13.71	13.63	0-2	0
	64QAM	1	0	14.37	14.46	14.25	0-2	0
		1	36	14.36	14.12	14.03	0-2	0
		1	74	14.27	13.93	13.77	0-2	0
		36	0	14.14	13.92	13.79	0-3	0
		36	18	14.07	13.84	13.78	0-3	0
		36	39	14.04	13.71	13.64	0-3	0
		75	0	13.94	13.76	13.65	0-3	0

LTE Band 7 _ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20850 Ch. 2510 MHz	21100 Ch. 2535 MHz	21350 Ch. 2560 MHz		
20 MHz	QPSK	1	0	14.31	14.24	13.99	0	0
		1	49	14.11	13.78	13.86	0	0
		1	99	14.09	13.63	13.71	0	0
		50	0	13.99	13.85	13.72	0-1	0
		50	25	13.97	13.79	13.69	0-1	0
		50	49	13.87	13.66	13.68	0-1	0
		100	0	13.90	13.75	13.69	0-1	0
	16QAM	1	0	14.68	14.70	14.43	0-1	0
		1	49	14.73	14.41	14.19	0-1	0
		1	99	14.66	14.06	14.09	0-1	0
		50	0	14.15	14.06	13.90	0-2	0
		50	25	14.19	13.93	13.90	0-2	0
		50	49	14.09	13.79	13.69	0-2	0
		100	0	14.13	13.95	13.86	0-2	0
	64QAM	1	0	14.66	14.71	14.55	0-2	0
		1	49	14.63	14.37	14.23	0-2	0
		1	99	14.68	14.01	14.12	0-2	0
		50	0	14.25	14.09	13.96	0-3	0
		50	25	14.23	13.97	13.88	0-3	0
		50	49	14.17	13.88	13.71	0-3	0
		100	0	14.10	13.97	13.91	0-3	0

- LTE Band 12

LTE Band 12 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23017 Ch. 699.7 ㎒	23095 Ch. 707.5 ㎒	23173 Ch. 715.3 ㎒		
1.4 ㎒	QPSK	1	0	18.80	18.80	18.80	0	0
		1	3	18.80	18.88	18.87	0	0
		1	5	18.72	18.83	18.76	0	0
		3	0	18.80	18.86	18.83	0-1	0
		3	1	18.80	18.86	18.88	0-1	0
		3	3	18.77	18.79	18.83	0-1	0
		6	0	18.78	18.84	18.81	0-1	0
	16QAM	1	0	19.06	19.15	19.14	0-1	0
		1	3	19.13	19.13	19.07	0-1	0
		1	5	19.01	19.20	19.02	0-1	0
		3	0	18.82	18.86	18.93	0-2	0
		3	1	18.89	18.93	18.89	0-2	0
		3	3	18.77	18.90	18.87	0-2	0
		6	0	18.95	19.04	18.99	0-2	0
	64QAM	1	0	19.03	19.01	19.10	0-2	0
		1	3	19.09	19.16	19.10	0-2	0
		1	5	19.04	19.04	19.02	0-2	0
		3	0	18.94	19.06	19.03	0-3	0
		3	1	19.04	19.10	19.13	0-3	0
		3	3	18.95	18.96	19.01	0-3	0
		6	0	18.85	18.88	18.94	0-3	0

LTE Band 12 _ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23025 Ch. 700.5 MHz	23095 Ch. 707.5 MHz	23165 Ch. 714.5 MHz		
3 MHz	QPSK	1	0	18.84	18.95	18.90	0	0
		1	7	18.93	18.95	18.99	0	0
		1	14	18.84	18.89	18.82	0	0
		8	0	18.88	18.93	18.93	0-1	0
		8	3	18.86	18.91	18.91	0-1	0
		8	7	18.87	18.88	18.88	0-1	0
		15	0	18.92	18.97	18.88	0-1	0
	16QAM	1	0	19.13	19.21	19.19	0-1	0
		1	7	19.22	19.27	19.29	0-1	0
		1	14	19.13	19.12	19.05	0-1	0
		8	0	18.99	19.08	19.04	0-2	0
		8	3	19.05	19.12	19.10	0-2	0
		8	7	19.04	19.05	19.00	0-2	0
		15	0	19.07	19.09	18.94	0-2	0
	64QAM	1	0	19.15	19.12	19.12	0-2	0
		1	7	19.19	19.26	19.13	0-2	0
		1	14	19.14	19.15	19.08	0-2	0
		8	0	18.95	19.05	19.02	0-3	0
		8	3	19.01	19.06	19.07	0-3	0
		8	7	19.00	19.00	18.97	0-3	0
		15	0	19.04	19.00	19.00	0-3	0

LTE Band 12 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23035 Ch. 701.5 MHz	23095 Ch. 707.5 MHz	23155 Ch. 713.5 MHz		
5 MHz	QPSK	1	0	18.85	18.86	18.97	0	0
		1	12	18.91	18.87	18.86	0	0
		1	24	18.84	18.90	18.84	0	0
		12	0	18.95	18.98	19.01	0-1	0
		12	6	18.96	18.99	18.96	0-1	0
		12	11	18.91	18.92	18.91	0-1	0
		25	0	18.88	19.02	18.94	0-1	0
	16QAM	1	0	19.14	19.15	19.24	0-1	0
		1	12	19.17	19.18	19.16	0-1	0
		1	24	19.21	19.19	19.11	0-1	0
		12	0	19.04	19.07	19.10	0-2	0
		12	6	19.05	19.14	19.09	0-2	0
		12	11	18.99	19.07	19.04	0-2	0
		25	0	19.06	19.07	19.06	0-2	0
	64QAM	1	0	19.04	19.13	19.29	0-2	0
		1	12	19.13	19.12	19.14	0-2	0
		1	24	19.06	19.18	19.12	0-2	0
		12	0	19.06	19.08	19.10	0-3	0
		12	6	19.09	19.06	19.10	0-3	0
		12	11	19.02	19.01	19.02	0-3	0
		25	0	18.98	18.97	19.03	0-3	0

LTE Band 12 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm] 23095 Ch. 707.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	18.90	0	0
		1	24	18.93	0	0
		1	49	18.75	0	0
		25	0	19.03	0-1	0
		25	12	19.01	0-1	0
		25	24	18.89	0-1	0
		50	0	18.93	0-1	0
	16QAM	1	0	19.18	0-1	0
		1	24	19.15	0-1	0
		1	49	19.09	0-1	0
		25	0	19.14	0-2	0
		25	12	19.07	0-2	0
		25	24	18.97	0-2	0
		50	0	19.08	0-2	0
	64QAM	1	0	19.19	0-2	0
		1	24	19.11	0-2	0
		1	49	19.07	0-2	0
		25	0	19.08	0-3	0
		25	12	19.08	0-3	0
		25	24	19.01	0-3	0
		50	0	19.05	0-3	0

- LTE Band 13

LTE Band 13 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23205 Ch. 779.5 ㎒	23230 Ch. 782 ㎒	23205 Ch. 784.5 ㎒		
5 ㎒	QPSK	1	0	18.10	18.27	18.16	0	0
		1	12	18.02	18.19	18.17	0	0
		1	24	18.09	18.09	18.16	0	0
		12	0	18.16	18.21	18.20	0-1	0
		12	6	18.24	18.24	18.24	0-1	0
		12	11	18.23	18.17	18.23	0-1	0
		25	0	18.24	18.20	18.17	0-1	0
	16QAM	1	0	18.53	18.63	18.50	0-1	0
		1	12	18.38	18.51	18.53	0-1	0
		1	24	18.37	18.43	18.58	0-1	0
		12	0	18.25	18.32	18.28	0-2	0
		12	6	18.38	18.31	18.31	0-2	0
		12	11	18.30	18.28	18.33	0-2	0
		25	0	18.28	18.29	18.27	0-2	0
	64QAM	1	0	18.42	18.48	18.52	0-2	0
		1	12	18.38	18.37	18.50	0-2	0
		1	24	18.43	18.40	18.36	0-2	0
		12	0	18.27	18.41	18.31	0-3	0
		12	6	18.38	18.39	18.31	0-3	0
		12	11	18.33	18.30	18.38	0-3	0
		25	0	18.32	18.34	18.32	0-3	0

LTE Band 13 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm] 23230 Ch. 782 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	18.19	0	0
		1	24	18.12	0	0
		1	49	18.12	0	0
		25	0	18.24	0-1	0
		25	12	18.23	0-1	0
		25	24	18.18	0-1	0
		50	0	18.22	0-1	0
	16QAM	1	0	18.55	0-1	0
		1	24	18.52	0-1	0
		1	49	18.51	0-1	0
		25	0	18.37	0-2	0
		25	12	18.29	0-2	0
		25	24	18.24	0-2	0
		50	0	18.29	0-2	0
	64QAM	1	0	18.39	0-2	0
		1	24	18.41	0-2	0
		1	49	18.56	0-2	0
		25	0	18.41	0-3	0
		25	12	18.31	0-3	0
		25	24	18.28	0-3	0
		50	0	18.33	0-3	0

- LTE Band 14

LTE Band 14 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23305 Ch. 790.5 ㎒	23330 Ch. 793 ㎒	23355 Ch. 795.5 ㎒		
5 ㎒	QPSK	1	0	18.25	18.17	18.14	0	0
		1	12	18.14	18.09	18.11	0	0
		1	24	18.06	18.02	18.02	0	0
		12	0	18.25	18.16	18.10	0-1	0
		12	6	18.20	18.16	18.12	0-1	0
		12	11	18.16	18.13	18.07	0-1	0
		25	0	18.20	18.12	18.11	0-1	0
	16QAM	1	0	18.40	18.37	18.48	0-1	0
		1	12	18.49	18.45	18.36	0-1	0
		1	24	18.31	18.36	18.34	0-1	0
		12	0	18.33	18.28	18.19	0-2	0
		12	6	18.39	18.28	18.23	0-2	0
		12	11	18.26	18.19	18.17	0-2	0
		25	0	18.27	18.22	18.16	0-2	0
	64QAM	1	0	18.50	18.37	18.47	0-2	0
		1	12	18.39	18.39	18.24	0-2	0
		1	24	18.31	18.29	18.21	0-2	0
		12	0	18.36	18.34	18.29	0-3	0
		12	6	18.36	18.37	18.28	0-3	0
		12	11	18.33	18.28	18.29	0-3	0
		25	0	18.34	18.24	18.23	0-3	0

LTE Band 14 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm] 23330 Ch. 793 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	18.19	0	0
		1	24	18.14	0	0
		1	49	18.18	0	0
		25	0	18.26	0-1	0
		25	12	18.22	0-1	0
		25	24	18.13	0-1	0
		50	0	18.20	0-1	0
	16QAM	1	0	18.47	0-1	0
		1	24	18.54	0-1	0
		1	49	18.51	0-1	0
		25	0	18.35	0-2	0
		25	12	18.34	0-2	0
		25	24	18.22	0-2	0
		50	0	18.25	0-2	0
	64QAM	1	0	18.41	0-2	0
		1	24	18.43	0-2	0
		1	49	18.54	0-2	0
		25	0	18.36	0-3	0
		25	12	18.32	0-3	0
		25	24	18.26	0-3	0
		50	0	18.31	0-3	0

- LTE Band 17

LTE Band 17 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23755	23790	23825		
				706.5 ㎒	710 ㎒	713.5 ㎒		
5 ㎒	QPSK	1	0	18.91	18.99	18.92	0	0
		1	12	18.85	18.89	18.93	0	0
		1	24	18.90	18.84	18.87	0	0
		12	0	18.93	19.04	18.93	0-1	0
		12	6	19.04	19.02	18.92	0-1	0
		12	11	19.00	18.96	18.97	0-1	0
		25	0	19.01	18.97	18.85	0-1	0
	16QAM	1	0	19.26	19.43	19.29	0-1	0
		1	12	19.16	19.23	19.24	0-1	0
		1	24	19.21	19.18	19.31	0-1	0
		12	0	19.06	19.10	19.05	0-2	0
		12	6	19.15	19.15	19.02	0-2	0
		12	11	19.08	19.07	19.08	0-2	0
		25	0	19.13	19.05	18.98	0-2	0
	64QAM	1	0	19.25	19.21	19.21	0-2	0
		1	12	19.18	19.24	19.32	0-2	0
		1	24	19.27	19.16	19.19	0-2	0
		12	0	19.10	19.12	19.11	0-3	0
		12	6	19.17	19.16	19.08	0-3	0
		12	11	19.15	19.12	19.15	0-3	0
		25	0	19.13	19.08	19.03	0-3	0

LTE Band 17 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23780	23790	23800		
				709 MHz	710 MHz	711 MHz		
10 ㎒	QPSK	1	0	18.97	18.98	18.91	0	0
		1	24	18.89	18.96	18.88	0	0
		1	49	18.87	18.90	18.85	0	0
		25	0	19.00	19.03	19.02	0-1	0
		25	12	18.99	18.97	19.00	0-1	0
		25	24	18.96	18.87	18.90	0-1	0
		50	0	18.93	18.98	18.94	0-1	0
	16QAM	1	0	19.37	19.39	19.26	0-1	0
		1	24	19.15	19.22	19.21	0-1	0
		1	49	19.27	19.16	19.24	0-1	0
		25	0	19.12	19.17	19.14	0-2	0
		25	12	19.14	19.12	19.17	0-2	0
		25	24	19.05	19.02	18.98	0-2	0
		50	0	19.12	19.06	19.05	0-2	0
	64QAM	1	0	19.30	19.24	19.23	0-2	0
		1	24	19.19	19.21	19.21	0-2	0
		1	49	19.19	19.19	19.23	0-2	0
		25	0	19.17	19.11	19.10	0-3	0
		25	12	19.14	19.12	19.08	0-3	0
		25	24	19.01	18.97	19.02	0-3	0
		50	0	19.12	19.11	19.04	0-3	0

- LTE Band 25

LTE Band 25_1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26047 Ch. 1850.7 ㎒	26365 Ch. 1882.5 ㎒	26683 Ch. 1914.3 ㎒		
1.4 ㎒	QPSK	1	0	15.51	15.56	15.76	0	0
		1	3	15.59	15.60	15.86	0	0
		1	5	15.55	15.60	15.74	0	0
		3	0	15.50	15.61	15.75	0	0
		3	1	15.56	15.65	15.82	0	0
		3	3	15.53	15.64	15.79	0	0
		6	0	15.52	15.63	15.77	0-1	0
	16QAM	1	0	15.88	15.92	16.13	0-1	0
		1	3	15.88	15.90	16.19	0-1	0
		1	5	15.87	15.85	16.11	0-1	0
		3	0	15.61	15.71	15.95	0-1	0
		3	1	15.66	15.72	15.89	0-1	0
		3	3	15.64	15.69	15.91	0-1	0
		6	0	15.69	15.77	15.99	0-2	0
	64QAM	1	0	15.79	15.92	15.95	0-2	0
		1	3	15.85	15.89	16.15	0-2	0
		1	5	15.76	15.86	16.03	0-2	0
		3	0	15.68	15.79	15.93	0-2	0
		3	1	15.69	15.86	15.97	0-2	0
		3	3	15.69	15.83	15.97	0-2	0
		6	0	15.68	15.64	15.84	0-3	0

LTE Band 25_3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26055 Ch. 1851.5 MHz	26365 Ch. 1882.5 MHz	26675Ch. 1913.5 MHz		
3 MHz	QPSK	1	0	15.62	15.47	15.81	0	0
		1	7	15.70	15.68	15.88	0	0
		1	14	15.54	15.44	15.79	0	0
		8	0	15.63	15.49	15.85	0-1	0
		8	3	15.68	15.50	15.92	0-1	0
		8	7	15.59	15.44	15.86	0-1	0
		15	0	15.62	15.49	15.85	0-1	0
	16QAM	1	0	15.85	15.83	16.11	0-1	0
		1	7	15.94	15.82	16.23	0-1	0
		1	14	15.95	15.72	16.06	0-1	0
		8	0	15.76	15.64	16.00	0-2	0
		8	3	15.79	15.65	16.04	0-2	0
		8	7	15.76	15.61	16.02	0-2	0
		15	0	15.71	15.59	15.93	0-2	0
	64QAM	1	0	15.74	15.69	16.02	0-2	0
		1	7	15.90	15.83	16.25	0-2	0
		1	14	15.78	15.69	16.08	0-2	0
		8	0	15.76	15.64	15.96	0-3	0
		8	3	15.76	15.67	15.97	0-3	0
		8	7	15.71	15.63	15.98	0-3	0
		15	0	15.68	15.54	15.92	0-3	0

LTE Band 25 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26065 Ch. 1852.5 MHz	26365 Ch. 1882.5 MHz	26665 Ch. 1912.5 MHz		
5 MHz	QPSK	1	0	15.66	15.52	15.76	0	0
		1	12	15.61	15.43	15.79	0	0
		1	24	15.60	15.43	15.89	0	0
		12	0	15.63	15.49	15.76	0-1	0
		12	6	15.65	15.53	15.80	0-1	0
		12	11	15.62	15.48	15.85	0-1	0
		25	0	15.65	15.50	15.76	0-1	0
	16QAM	1	0	15.95	15.77	16.05	0-1	0
		1	12	15.87	15.85	16.22	0-1	0
		1	24	15.81	15.69	16.16	0-1	0
		12	0	15.73	15.60	15.92	0-2	0
		12	6	15.74	15.62	15.87	0-2	0
		12	11	15.73	15.57	15.95	0-2	0
		25	0	15.68	15.61	15.86	0-2	0
	64QAM	1	0	15.80	15.71	15.95	0-2	0
		1	12	15.73	15.68	16.11	0-2	0
		1	24	15.79	15.65	16.07	0-2	0
		12	0	15.77	15.62	15.92	0-3	0
		12	6	15.78	15.61	15.87	0-3	0
		12	11	15.72	15.58	15.99	0-3	0
		25	0	15.71	15.57	15.87	0-3	0

LTE Band 25 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26090 Ch. 1855 MHz	26365 Ch. 1882.5 MHz	26640 Ch. 1910 MHz		
10 MHz	QPSK	1	0	15.61	15.54	15.69	0	0
		1	24	15.57	15.45	15.70	0	0
		1	49	15.55	15.42	15.79	0	0
		25	0	15.66	15.54	15.72	0-1	0
		25	12	15.70	15.52	15.78	0-1	0
		25	24	15.61	15.52	15.80	0-1	0
		50	0	15.66	15.48	15.78	0-1	0
	16QAM	1	0	15.96	15.79	16.04	0-1	0
		1	24	15.89	15.74	16.13	0-1	0
		1	49	15.89	15.72	16.27	0-1	0
		25	0	15.79	15.64	15.80	0-2	0
		25	12	15.79	15.63	15.90	0-2	0
		25	24	15.69	15.60	15.91	0-2	0
		50	0	15.71	15.60	15.94	0-2	0
	64QAM	1	0	15.92	15.77	16.01	0-2	0
		1	24	15.78	15.68	15.86	0-2	0
		1	49	15.71	15.68	16.11	0-2	0
		25	0	15.75	15.61	15.79	0-3	0
		25	12	15.74	15.63	15.91	0-3	0
		25	24	15.70	15.55	15.86	0-3	0
		50	0	15.72	15.61	15.88	0-3	0

LTE Band 25 _ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26115 Ch. 1857.5 MHz	26365 Ch. 1882.5 MHz	26615 Ch. 1907.5 MHz		
15 MHz	QPSK	1	0	15.73	15.63	15.87	0	0
		1	36	15.63	15.59	15.73	0	0
		1	74	15.58	15.41	15.87	0	0
		36	0	15.74	15.58	15.76	0-1	0
		36	18	15.67	15.57	15.72	0-1	0
		36	39	15.66	15.49	15.78	0-1	0
		75	0	15.65	15.56	15.74	0-1	0
	16QAM	1	0	16.11	15.97	16.16	0-1	0
		1	36	15.89	15.80	16.02	0-1	0
		1	74	15.94	15.83	16.16	0-1	0
		36	0	15.79	15.67	15.83	0-2	0
		36	18	15.74	15.64	15.78	0-2	0
		36	39	15.68	15.56	15.90	0-2	0
		75	0	15.78	15.63	15.80	0-2	0
	64QAM	1	0	15.99	15.91	16.12	0-2	0
		1	36	15.86	15.78	15.93	0-2	0
		1	74	15.87	15.78	16.25	0-2	0
		36	0	15.80	15.75	15.89	0-3	0
		36	18	15.82	15.67	15.80	0-3	0
		36	39	15.75	15.63	15.89	0-3	0
		75	0	15.74	15.65	15.84	0-3	0

LTE Band 25 _ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26140 Ch. 1860 MHz	26365 Ch. 1882.5 MHz	26590 Ch. 1905 MHz		
20 MHz	QPSK	1	0	15.76	15.58	15.82	0	0
		1	49	15.59	15.45	15.65	0	0
		1	99	15.48	15.37	15.83	0	0
		50	0	15.73	15.65	15.74	0-1	0
		50	25	15.66	15.53	15.73	0-1	0
		50	49	15.60	15.52	15.79	0-1	0
		100	0	15.66	15.58	15.79	0-1	0
	16QAM	1	0	16.07	16.00	16.16	0-1	0
		1	49	15.89	15.78	15.94	0-1	0
		1	99	15.86	15.70	16.25	0-1	0
		50	0	15.82	15.73	15.84	0-2	0
		50	25	15.78	15.66	15.83	0-2	0
		50	49	15.71	15.59	15.93	0-2	0
		100	0	15.77	15.68	15.78	0-2	0
	64QAM	1	0	15.99	15.89	16.13	0-2	0
		1	49	15.79	15.78	16.03	0-2	0
		1	99	15.76	15.55	15.98	0-2	0
		50	0	15.81	15.72	15.85	0-3	0
		50	25	15.74	15.67	15.84	0-3	0
		50	49	15.68	15.56	15.90	0-3	0
		100	0	15.78	15.67	15.84	0-3	0

- LTE Band 26

LTE Band 26 _ 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26697 Ch. 814.7 MHz	26865 Ch. 831.5 MHz	27033 Ch. 848.3 MHz		
1.4 MHz	QPSK	1	0	17.18	17.26	17.29	0	0
		1	3	17.26	17.32	17.35	0	0
		1	5	17.14	17.21	17.23	0	0
		3	0	17.22	17.29	17.33	0-1	0
		3	1	17.23	17.32	17.35	0-1	0
		3	3	17.21	17.27	17.31	0-1	0
		6	0	17.25	17.30	17.33	0-1	0
	16QAM	1	0	17.47	17.70	17.61	0-1	0
		1	3	17.67	17.70	17.78	0-1	0
		1	5	17.48	17.66	17.68	0-1	0
		3	0	17.34	17.36	17.44	0-2	0
		3	1	17.42	17.46	17.49	0-2	0
		3	3	17.33	17.41	17.40	0-2	0
		6	0	17.40	17.51	17.51	0-2	0
	64QAM	1	0	17.51	17.55	17.59	0-2	0
		1	3	17.60	17.62	17.61	0-2	0
		1	5	17.43	17.51	17.52	0-2	0
		3	0	17.45	17.52	17.52	0-3	0
		3	1	17.49	17.54	17.60	0-3	0
		3	3	17.40	17.52	17.53	0-3	0
		6	0	17.34	17.42	17.45	0-3	0

LTE Band 26 _ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26705 Ch. 815.5 MHz	26865 Ch. 831.5 MHz	27025 Ch. 847.5 MHz		
3 MHz	QPSK	1	0	17.27	17.25	17.38	0	0
		1	7	17.35	17.44	17.46	0	0
		1	14	17.20	17.29	17.30	0	0
		8	0	17.30	17.30	17.43	0-1	0
		8	3	17.31	17.30	17.42	0-1	0
		8	7	17.24	17.37	17.37	0-1	0
		15	0	17.26	17.26	17.41	0-1	0
	16QAM	1	0	17.60	17.67	17.68	0-1	0
		1	7	17.74	17.75	17.75	0-1	0
		1	14	17.57	17.70	17.70	0-1	0
		8	0	17.46	17.39	17.59	0-2	0
		8	3	17.46	17.43	17.61	0-2	0
		8	7	17.40	17.51	17.50	0-2	0
		15	0	17.39	17.35	17.52	0-2	0
	64QAM	1	0	17.60	17.47	17.76	0-2	0
		1	7	17.63	17.65	17.81	0-2	0
		1	14	17.48	17.48	17.68	0-2	0
		8	0	17.48	17.40	17.57	0-3	0
		8	3	17.44	17.47	17.58	0-3	0
		8	7	17.38	17.50	17.52	0-3	0
		15	0	17.45	17.35	17.54	0-3	0

LTE Band 26 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26715 Ch. 816.5 MHz	26865 Ch. 831.5 MHz	27015 Ch. 846.5 MHz		
5 MHz	QPSK	1	0	17.35	17.26	17.47	0	0
		1	12	17.24	17.31	17.37	0	0
		1	24	17.25	17.26	17.33	0	0
		12	0	17.36	17.30	17.46	0-1	0
		12	6	17.30	17.33	17.43	0-1	0
		12	11	17.37	17.35	17.44	0-1	0
		25	0	17.36	17.26	17.40	0-1	0
	16QAM	1	0	17.63	17.72	17.81	0-1	0
		1	12	17.53	17.75	17.72	0-1	0
		1	24	17.70	17.71	17.64	0-1	0
		12	0	17.41	17.39	17.53	0-2	0
		12	6	17.39	17.38	17.55	0-2	0
		12	11	17.48	17.47	17.51	0-2	0
		25	0	17.48	17.38	17.52	0-2	0
	64QAM	1	0	17.61	17.57	17.66	0-2	0
		1	12	17.55	17.64	17.71	0-2	0
		1	24	17.60	17.56	17.59	0-2	0
		12	0	17.52	17.45	17.61	0-3	0
		12	6	17.52	17.45	17.58	0-3	0
		12	11	17.52	17.56	17.59	0-3	0
		25	0	17.49	17.37	17.53	0-3	0

LTE Band 26 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26740 Ch. 819 MHz	26865 Ch. 831.5 MHz	26990 Ch. 844 MHz		
10 MHz	QPSK	1	0	17.29	17.37	17.45	0	0
		1	24	17.33	17.35	17.42	0	0
		1	49	17.18	17.18	17.29	0	0
		25	0	17.39	17.35	17.47	0-1	0
		25	12	17.36	17.31	17.40	0-1	0
		25	24	17.25	17.31	17.42	0-1	0
		50	0	17.33	17.28	17.39	0-1	0
	16QAM	1	0	17.69	17.69	17.83	0-1	0
		1	24	17.74	17.67	17.76	0-1	0
		1	49	17.58	17.50	17.63	0-1	0
		25	0	17.56	17.43	17.53	0-2	0
		25	12	17.48	17.41	17.51	0-2	0
		25	24	17.40	17.46	17.52	0-2	0
		50	0	17.48	17.42	17.49	0-2	0
	64QAM	1	0	17.69	17.62	17.67	0-2	0
		1	24	17.54	17.55	17.63	0-2	0
		1	49	17.42	17.47	17.55	0-2	0
		25	0	17.51	17.45	17.57	0-3	0
		25	12	17.48	17.41	17.55	0-3	0
		25	24	17.38	17.47	17.55	0-3	0
		50	0	17.50	17.41	17.52	0-3	0

LTE Band 26 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				26865		
				831.5 ㎒		
15 ㎒	QPSK	1	0	17.46	0	0
		1	36	17.39	0	0
		1	74	17.32	0	0
		36	0	17.41	0-1	0
		36	18	17.32	0-1	0
		36	39	17.29	0-1	0
		75	0	17.29	0-1	0
	16QAM	1	0	17.90	0-1	0
		1	36	17.73	0-1	0
		1	74	17.56	0-1	0
		36	0	17.48	0-2	0
		36	18	17.42	0-2	0
		36	39	17.37	0-2	0
		75	0	17.42	0-2	0
	64QAM	1	0	17.66	0-2	0
		1	36	17.66	0-2	0
		1	74	17.56	0-2	0
		36	0	17.50	0-3	0
		36	18	17.45	0-3	0
		36	39	17.45	0-3	0
		75	0	17.41	0-3	0

- LTE Band 38

LTE Band 38 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				37775 Ch. 2572.5 ㎒	38000 Ch. 2595 ㎒	38225 Ch. 2617.5 ㎒		
5 ㎒	QPSK	1	0	17.15	17.43	17.27	0	0
		1	12	17.27	17.48	17.27	0	0
		1	24	17.16	17.40	17.21	0	0
		12	0	17.28	17.49	17.32	0-1	0
		12	6	17.25	17.52	17.36	0-1	0
		12	11	17.24	17.47	17.31	0-1	0
		25	0	17.24	17.48	17.30	0-1	0
	16QAM	1	0	17.46	17.75	17.59	0-1	0
		1	12	17.51	17.70	17.57	0-1	0
		1	24	17.44	17.72	17.50	0-1	0
		12	0	17.39	17.65	17.48	0-2	0
		12	6	17.38	17.64	17.47	0-2	0
		12	11	17.32	17.60	17.43	0-2	0
		25	0	17.34	17.62	17.44	0-2	0
	64QAM	1	0	17.25	17.51	17.38	0-2	0
		1	12	17.33	17.55	17.36	0-2	0
		1	24	17.26	17.51	17.35	0-2	0
		12	0	17.47	17.66	17.54	0-3	0
		12	6	17.46	17.69	17.51	0-3	0
		12	11	17.41	17.66	17.49	0-3	0
		25	0	17.42	17.68	17.51	0-3	0

LTE Band 38 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				37800 Ch. 2575 MHz	38000 Ch. 2595 MHz	38200 Ch. 2615 MHz		
10 MHz	QPSK	1	0	17.27	17.45	17.36	0	0
		1	24	17.24	17.45	17.26	0	0
		1	49	17.15	17.33	17.14	0	0
		25	0	17.32	17.56	17.37	0-1	0
		25	12	17.34	17.52	17.38	0-1	0
		25	24	17.24	17.46	17.27	0-1	0
		50	0	17.35	17.51	17.36	0-1	0
	16QAM	1	0	17.56	17.80	17.69	0-1	0
		1	24	17.46	17.69	17.52	0-1	0
		1	49	17.49	17.68	17.51	0-1	0
		25	0	17.38	17.64	17.48	0-2	0
		25	12	17.49	17.64	17.49	0-2	0
		25	24	17.39	17.54	17.39	0-2	0
		50	0	17.49	17.61	17.50	0-2	0
	64QAM	1	0	17.34	17.61	17.53	0-2	0
		1	24	17.32	17.54	17.39	0-2	0
		1	49	17.32	17.49	17.33	0-2	0
		25	0	17.52	17.76	17.56	0-3	0
		25	12	17.53	17.72	17.53	0-3	0
		25	24	17.45	17.62	17.44	0-3	0
		50	0	17.45	17.64	17.45	0-3	0

LTE Band 38 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				37825 Ch. 2507.5 ㎒	38000 Ch. 2595 ㎒	38175 Ch. 2612.5 ㎒		
15 ㎒	QPSK	1	0	17.31	17.52	17.61	0	0
		1	36	17.21	17.40	17.32	0	0
		1	74	17.17	17.33	17.26	0	0
		36	0	17.36	17.63	17.53	0-1	0
		36	18	17.38	17.54	17.43	0-1	0
		36	39	17.30	17.42	17.28	0-1	0
		75	0	17.31	17.51	17.45	0-1	0
	16QAM	1	0	17.67	17.82	17.91	0-1	0
		1	36	17.53	17.72	17.58	0-1	0
		1	74	17.55	17.66	17.52	0-1	0
		36	0	17.41	17.70	17.60	0-2	0
		36	18	17.46	17.62	17.49	0-2	0
		36	39	17.40	17.52	17.37	0-2	0
		75	0	17.45	17.64	17.59	0-2	0
	64QAM	1	0	17.44	17.60	17.71	0-2	0
		1	36	17.35	17.56	17.39	0-2	0
		1	74	17.30	17.45	17.35	0-2	0
		36	0	17.51	17.80	17.72	0-3	0
		36	18	17.53	17.73	17.58	0-3	0
		36	39	17.49	17.61	17.48	0-3	0
		75	0	17.49	17.68	17.63	0-3	0

LTE Band 38 _ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				37850 Ch. 2580 MHz	38000 Ch. 2595 MHz	38150 Ch. 2610 MHz		
20 MHz	QPSK	1	0	17.53	17.63	17.70	0	0
		1	49	17.24	17.43	17.32	0	0
		1	99	17.34	17.29	17.25	0	0
		50	0	17.45	17.56	17.57	0-1	0
		50	25	17.41	17.53	17.51	0-1	0
		50	49	17.39	17.43	17.30	0-1	0
		100	0	17.42	17.55	17.51	0-1	0
	16QAM	1	0	17.75	17.96	17.98	0-1	0
		1	49	17.54	17.66	17.64	0-1	0
		1	99	17.68	17.64	17.54	0-1	0
		50	0	17.58	17.69	17.70	0-2	0
		50	25	17.55	17.65	17.60	0-2	0
		50	49	17.52	17.56	17.46	0-2	0
		100	0	17.56	17.68	17.63	0-2	0
	64QAM	1	0	17.50	17.75	17.82	0-2	0
		1	49	17.34	17.53	17.41	0-2	0
		1	99	17.43	17.43	17.32	0-2	0
		50	0	17.62	17.72	17.75	0-3	0
		50	25	17.59	17.70	17.64	0-3	0
		50	49	17.51	17.58	17.45	0-3	0
		100	0	17.60	17.71	17.67	0-3	0

- LTE TDD Band 41

LTE Band 41 _ 5 ㎒ Bandwidth

Band width	Modulation	RB Size	RB Offset	Reduced Power [dBm]					MPR Allowed Per GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
5 ㎒	QPSK	1	0	17.64	17.43	17.41	17.39	17.46	0	0
		1	12	17.71	17.43	17.34	17.47	17.40	0	0
		1	24	17.64	17.29	17.26	17.36	17.32	0	0
		12	0	17.72	17.50	17.39	17.40	17.42	0-1	0
		12	6	17.73	17.46	17.41	17.41	17.45	0-1	0
		12	11	17.73	17.41	17.31	17.47	17.37	0-1	0
		25	0	17.70	17.40	17.36	17.37	17.40	0-1	0
	16QAM	1	0	17.78	17.51	17.54	17.52	17.55	0-1	0
		1	12	17.84	17.45	17.48	17.57	17.53	0-1	0
		1	24	17.78	17.41	17.40	17.48	17.44	0-1	0
		12	0	17.77	17.49	17.41	17.48	17.53	0-2	0
		12	6	17.76	17.45	17.40	17.43	17.49	0-2	0
		12	11	17.73	17.42	17.39	17.50	17.45	0-2	0
		25	0	17.76	17.49	17.46	17.48	17.51	0-2	0
	64QAM	1	0	17.36	17.17	17.17	17.20	17.22	0-2	0
		1	12	17.41	17.12	17.08	17.25	17.17	0-2	0
		1	24	17.39	17.06	17.03	17.19	17.12	0-2	0
		12	0	17.88	17.60	17.52	17.55	17.58	0-3	0
		12	6	17.87	17.55	17.53	17.53	17.57	0-3	0
		12	11	17.80	17.55	17.45	17.64	17.51	0-3	0
		25	0	17.85	17.55	17.51	17.58	17.56	0-3	0

LTE Band 41 _ 10 MHz Bandwidth

Band width	Modulation	RB Size	RB Offset	Reduced Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 MHz	40185 Ch. 2549.5 MHz	40620 Ch. 2593.0 MHz	41055 Ch. 2636.5 MHz	41490 Ch. 2680.0 MHz		
10 MHz	QPSK	1	0	17.68	17.55	17.48	17.49	17.45	0	0
		1	24	17.73	17.39	17.35	17.49	17.37	0	0
		1	49	17.68	17.27	17.22	17.42	17.31	0	0
		25	0	17.79	17.48	17.44	17.48	17.38	0-1	0
		25	12	17.74	17.49	17.35	17.40	17.46	0-1	0
		25	24	17.72	17.41	17.29	17.44	17.37	0-1	0
		50	0	17.74	17.45	17.37	17.41	17.34	0-1	0
	16QAM	1	0	17.86	17.63	17.68	17.65	17.63	0-1	0
		1	24	17.84	17.50	17.49	17.60	17.54	0-1	0
		1	49	17.78	17.34	17.35	17.46	17.48	0-1	0
		25	0	17.85	17.57	17.53	17.58	17.52	0-2	0
		25	12	17.79	17.51	17.47	17.50	17.59	0-2	0
		25	24	17.77	17.44	17.40	17.57	17.51	0-2	0
		50	0	17.82	17.54	17.49	17.54	17.46	0-2	0
	64QAM	1	0	17.47	17.32	17.30	17.32	17.28	0-2	0
		1	24	17.44	17.12	17.11	17.28	17.20	0-2	0
		1	49	17.39	17.05	16.95	17.21	17.11	0-2	0
		25	0	17.89	17.62	17.59	17.66	17.57	0-3	0
		25	12	17.87	17.61	17.53	17.62	17.63	0-3	0
		25	24	17.82	17.52	17.48	17.61	17.60	0-3	0
		50	0	17.81	17.53	17.48	17.53	17.47	0-3	0

LTE Band 41 _ 15 ㎒ Bandwidth

Band width	Modulation	RB Size	RB Offset	Reduced 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 ㎒		
15 ㎒	QPSK	1	0	17.82	17.66	17.56	17.64	17.54	0	0
		1	36	17.70	17.39	17.28	17.46	17.37	0	0
		1	74	17.65	17.37	17.19	17.38	17.24	0	0
		36	0	17.85	17.60	17.47	17.54	17.48	0-1	0
		36	18	17.79	17.53	17.44	17.48	17.52	0-1	0
		36	39	17.69	17.49	17.30	17.47	17.36	0-1	0
		75	0	17.74	17.59	17.37	17.45	17.33	0-1	0
	16QAM	1	0	17.97	17.83	17.74	17.80	17.76	0-1	0
		1	36	17.87	17.57	17.50	17.71	17.53	0-1	0
		1	74	17.84	17.55	17.38	17.59	17.45	0-1	0
		36	0	17.88	17.57	17.56	17.61	17.55	0-2	0
		36	18	17.84	17.55	17.50	17.55	17.59	0-2	0
		36	39	17.73	17.53	17.37	17.54	17.47	0-2	0
		75	0	17.84	17.68	17.49	17.61	17.48	0-2	0
	64QAM	1	0	17.64	17.39	17.41	17.38	17.40	0-2	0
		1	36	17.42	17.13	17.11	17.24	17.17	0-2	0
		1	74	17.40	17.09	17.00	17.17	17.06	0-2	0
		36	0	17.94	17.65	17.63	17.68	17.63	0-3	0
		36	18	17.90	17.59	17.57	17.60	17.65	0-3	0
		36	39	17.81	17.58	17.45	17.59	17.52	0-3	0
		75	0	17.88	17.69	17.53	17.61	17.54	0-3	0

LTE Band 41 _ 20 MHz Bandwidth

Band width	Modulation	RB Size	RB Offset	Reduced Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 MHz	40185 Ch. 2549.5 MHz	40620 Ch. 2593.0 MHz	41055 Ch. 2636.5 MHz	41490 Ch. 2680.0 MHz		
20 MHz	QPSK	1	0	17.88	17.77	17.68	17.67	17.64	0	0
		1	49	17.68	17.39	17.27	17.42	17.39	0	0
		1	99	17.71	17.29	17.14	17.38	17.21	0	0
		50	0	17.97	17.72	17.55	17.60	17.55	0-1	0
		50	25	17.79	17.52	17.40	17.44	17.40	0-1	0
		50	49	17.82	17.47	17.27	17.47	17.34	0-1	0
		100	0	17.89	17.63	17.40	17.51	17.39	0-1	0
	16QAM	1	0	18.05	17.96	17.87	17.89	17.85	0-1	0
		1	49	17.78	17.55	17.48	17.54	17.56	0-1	0
		1	99	17.90	17.48	17.33	17.61	17.45	0-1	0
		50	0	17.96	17.76	17.68	17.72	17.65	0-2	0
		50	25	17.89	17.58	17.53	17.57	17.52	0-2	0
		50	49	17.90	17.58	17.40	17.60	17.49	0-2	0
		100	0	17.90	17.70	17.54	17.57	17.50	0-2	0
	64QAM	1	0	17.71	17.49	17.52	17.48	17.50	0-2	0
		1	49	17.43	17.12	17.12	17.24	17.21	0-2	0
		1	99	17.49	17.05	16.98	17.18	17.05	0-2	0
		50	0	17.98	17.74	17.71	17.72	17.68	0-3	0
		50	25	17.88	17.58	17.56	17.59	17.56	0-3	0
		50	49	17.90	17.57	17.44	17.63	17.51	0-3	0
		100	0	17.91	17.70	17.55	17.59	17.54	0-3	0

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

- LTE Band 42

LTE Band 42 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				43115 Ch. 3552.5 ㎒	43340Ch. 3575 ㎒	43565 Ch. 3597.5 ㎒		
5 ㎒	QPSK	1	0	17.42	17.33	17.42	0	0
		1	12	17.34	17.24	17.33	0	0
		1	24	17.33	17.21	17.36	0	0
		12	0	17.22	17.15	17.23	0-1	0
		12	6	17.21	17.13	17.22	0-1	0
		12	11	17.21	17.13	17.21	0-1	0
		25	0	17.20	17.04	17.23	0-1	0
	16QAM	1	0	17.37	17.31	17.31	0-1	0
		1	12	17.32	17.25	17.28	0-1	0
		1	24	17.37	17.17	17.32	0-1	0
		12	0	16.30	16.16	16.30	0-2	0
		12	6	16.27	16.15	16.25	0-2	0
		12	11	16.25	16.12	16.22	0-2	0
		25	0	16.32	16.15	16.32	0-2	0
	64QAM	1	0	16.04	15.89	16.00	0-2	0
		1	12	15.92	15.83	15.92	0-2	0
		1	24	15.95	15.75	15.94	0-2	0
		12	0	15.37	15.25	15.37	0-3	0
		12	6	15.34	15.26	15.35	0-3	0
		12	11	15.32	15.22	15.30	0-3	0
		25	0	15.34	15.16	15.36	0-3	0

LTE Band 42 _10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				43140 Ch. 3555 ㎒	43340Ch. 3575 ㎒	43540 Ch. 3595 ㎒		
10 ㎒	QPSK	1	0	17.52	17.40	17.46	0	0
		1	24	17.35	17.29	17.38	0	0
		1	49	17.37	17.23	17.43	0	0
		25	0	17.25	17.17	17.28	0-1	0
		25	12	17.23	17.06	17.26	0-1	0
		25	24	17.17	17.05	17.25	0-1	0
		50	0	17.24	17.06	17.27	0-1	0
	16QAM	1	0	17.50	17.40	17.43	0-1	0
		1	24	17.27	17.21	17.30	0-1	0
		1	49	17.26	17.15	17.35	0-1	0
		25	0	16.37	16.24	16.32	0-2	0
		25	12	16.31	16.17	16.35	0-2	0
		25	24	16.26	16.12	16.33	0-2	0
		50	0	16.34	16.18	16.38	0-2	0
	64QAM	1	0	16.10	15.98	16.06	0-2	0
		1	24	15.92	15.84	15.91	0-2	0
		1	49	15.89	15.82	16.00	0-2	0
		25	0	15.39	15.34	15.41	0-3	0
		25	12	15.34	15.18	15.37	0-3	0
		25	24	15.33	15.20	15.36	0-3	0
		50	0	15.34	15.20	15.37	0-3	0

LTE Band 42 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				43165 Ch. 3557.5 ㎒	43340Ch. 3575 ㎒	43515 Ch. 3592.5 ㎒		
15 ㎒	QPSK	1	0	17.56	17.50	17.57	0	0
		1	36	17.29	17.29	17.35	0	0
		1	74	17.33	17.25	17.42	0	0
		36	0	17.29	17.20	17.30	0-1	0
		36	18	17.24	17.08	17.31	0-1	0
		36	39	17.20	17.06	17.25	0-1	0
		75	0	17.23	17.09	17.31	0-1	0
	16QAM	1	0	17.57	17.46	17.52	0-1	0
		1	36	17.23	17.27	17.31	0-1	0
		1	74	17.29	17.25	17.39	0-1	0
		36	0	16.35	16.28	16.36	0-2	0
		36	18	16.30	16.16	16.28	0-2	0
		36	39	16.19	16.15	16.29	0-2	0
		75	0	16.32	16.20	16.40	0-2	0
	64QAM	1	0	16.15	16.06	16.12	0-2	0
		1	36	15.90	15.87	15.95	0-2	0
		1	74	15.94	15.85	16.03	0-2	0
		36	0	15.36	15.28	15.40	0-3	0
		36	18	15.30	15.15	15.37	0-3	0
		36	39	15.27	15.13	15.35	0-3	0
		75	0	15.34	15.21	15.41	0-3	0

LTE Band 42 _ 20 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm] 43340Ch. 3575 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
20 ㎒	QPSK	1	0	17.52	0	0
		1	49	17.27	0	0
		1	99	17.27	0	0
		50	0	17.28	0-1	0
		50	25	17.12	0-1	0
		50	49	17.09	0-1	0
		100	0	17.13	0-1	0
	16QAM	1	0	17.52	0-1	0
		1	49	17.19	0-1	0
		1	99	17.19	0-1	0
		50	0	16.38	0-2	0
		50	25	16.23	0-2	0
		50	49	16.21	0-2	0
		100	0	16.26	0-2	0
	64QAM	1	0	16.09	0-2	0
		1	49	15.87	0-2	0
		1	99	15.82	0-2	0
		50	0	15.38	0-3	0
		50	25	15.20	0-3	0
		50	49	15.21	0-3	0
		100	0	15.27	0-3	0

- LTE Band 48

LTE Band 48 _ 5 MHz Bandwidth

Band width	Modulation	RB Size	RB Offset	Reduced Power [dBm]				MPR Allowed Per GPP [dB]	MPR [dB]
				55265	55748	56232	56715		
				3552.5 MHz	3600.8 MHz	3649.2 MHz	3697.5 MHz		
5 MHz	QPSK	1	0	17.91	17.75	17.53	17.81	0	0
		1	12	17.82	17.68	17.40	17.76	0	0
		1	24	17.80	17.69	17.40	17.72	0	0
		12	0	17.49	17.38	17.11	17.36	0-1	0
		12	6	17.47	17.36	17.08	17.40	0-1	0
		12	11	17.44	17.35	17.03	17.38	0-1	0
		25	0	17.49	17.34	17.06	17.36	0-1	0
	16QAM	1	0	17.66	17.57	17.20	17.53	0-1	0
		1	12	17.60	17.48	17.14	17.47	0-1	0
		1	24	17.62	17.51	17.13	17.49	0-1	0
		12	0	16.53	16.44	16.16	16.40	0-2	0
		12	6	16.56	16.42	16.08	16.42	0-2	0
		12	11	16.52	16.40	16.07	16.39	0-2	0
		25	0	16.56	16.45	16.15	16.48	0-2	0
	64QAM	1	0	16.26	16.18	15.90	16.16	0-2	0
		1	12	16.17	16.07	15.75	16.10	0-2	0
		1	24	16.22	16.12	15.74	16.11	0-2	0
		12	0	15.64	15.53	15.20	15.49	0-3	0
		12	6	15.62	15.51	15.17	15.51	0-3	0
		12	11	15.57	15.48	15.15	15.48	0-3	0
		25	0	15.60	15.50	15.20	15.52	0-3	0

LTE Band 48 _10 MHz Bandwidth

Band width	Modulation	RB Size	RB Offset	Reduced Power [dBm]				MPR Allowed Per GPP [dB]	MPR [dB]
				55290	55757	56223	55290		
				3555 MHz	3601.7 MHz	3648.3 MHz	3555 MHz		
10 MHz	QPSK	1	0	18.03	17.85	17.61	17.79	0	0
		1	24	17.85	17.70	17.38	17.70	0	0
		1	49	17.81	17.73	17.46	17.77	0	0
		25	0	17.54	17.41	17.15	17.40	0-1	0
		25	12	17.50	17.40	17.08	17.38	0-1	0
		25	24	17.45	17.32	17.04	17.38	0-1	0
		50	0	17.53	17.40	17.14	17.38	0-1	0
	16QAM	1	0	17.80	17.62	17.39	17.53	0-1	0
		1	24	17.57	17.46	17.16	17.47	0-1	0
		1	49	17.54	17.48	17.27	17.49	0-1	0
		25	0	16.64	16.51	16.25	16.49	0-2	0
		25	12	16.59	16.46	16.20	16.48	0-2	0
		25	24	16.54	16.42	16.14	16.46	0-2	0
		50	0	16.62	16.51	16.25	16.48	0-2	0
	64QAM	1	0	16.40	16.24	16.00	16.21	0-2	0
		1	24	16.18	16.04	15.76	16.08	0-2	0
		1	49	16.19	16.08	15.88	16.16	0-2	0
		25	0	15.70	15.58	15.31	15.54	0-3	0
		25	12	15.63	15.50	15.22	15.54	0-3	0
		25	24	15.60	15.47	15.19	15.53	0-3	0
		50	0	15.61	15.50	15.24	15.48	0-3	0

LTE Band 48 _ 15 MHz Bandwidth

Band width	Modulation	RB Size	RB Offset	Reduced Power [dBm]				MPR Allowed Per GPP [dB]	MPR [dB]
				55315	55765	56215	56665		
				3557.5 MHz	3602.5 MHz	3647.5 MHz	3692.5 MHz		
15 MHz	QPSK	1	0	18.17	17.92	17.79	17.73	0	0
		1	36	17.83	17.69	17.46	17.69	0	0
		1	74	17.80	17.70	17.52	17.78	0	0
		36	0	17.62	17.46	17.26	17.32	0-1	0
		36	18	17.51	17.42	17.16	17.37	0-1	0
		36	39	17.47	17.33	17.04	17.37	0-1	0
		75	0	17.51	17.42	17.16	17.27	0-1	0
	16QAM	1	0	17.88	17.71	17.50	17.53	0-1	0
		1	36	17.59	17.49	17.18	17.45	0-1	0
		1	74	17.56	17.51	17.27	17.54	0-1	0
		36	0	16.64	16.49	16.31	16.40	0-2	0
		36	18	16.58	16.49	16.22	16.45	0-2	0
		36	39	16.50	16.41	16.10	16.44	0-2	0
		75	0	16.62	16.55	16.26	16.42	0-2	0
	64QAM	1	0	16.51	16.35	16.10	16.15	0-2	0
		1	36	16.22	16.10	15.79	16.07	0-2	0
		1	74	16.18	16.07	15.87	16.16	0-2	0
		36	0	15.66	15.53	15.34	15.43	0-3	0
		36	18	15.57	15.49	15.23	15.44	0-3	0
		36	39	15.55	15.40	15.13	15.50	0-3	0
		75	0	15.65	15.55	15.28	15.43	0-3	0

LTE Band 48 _ 20 MHz Bandwidth

Band width	Modulation	RB Size	RB Offset	Reduced Power [dBm]				MPR Allowed Per GPP [dB]	MPR [dB]
				55340	55773	56207	56640		
				3560 MHz	3603.3 MHz	3646.7 MHz	3690 MHz		
20 MHz	QPSK	1	0	18.23	18.01	17.87	17.82	0	0
		1	49	17.79	17.68	17.42	17.68	0	0
		1	99	17.83	17.71	17.48	17.87	0	0
		50	0	17.69	17.53	17.30	17.35	0-1	0
		50	25	17.54	17.45	17.18	17.31	0-1	0
		50	49	17.48	17.38	17.08	17.39	0-1	0
		100	0	17.59	17.47	17.23	17.33	0-1	0
	16QAM	1	0	17.99	17.82	17.62	17.58	0-1	0
		1	49	17.60	17.47	17.19	17.40	0-1	0
		1	99	17.61	17.47	17.24	17.55	0-1	0
		50	0	16.76	16.63	16.40	16.46	0-2	0
		50	25	16.67	16.54	16.30	16.41	0-2	0
		50	49	16.58	16.46	16.19	16.51	0-2	0
		100	0	16.68	16.56	16.32	16.41	0-2	0
	64QAM	1	0	16.62	16.44	16.21	16.19	0-2	0
		1	49	16.19	16.07	15.83	16.05	0-2	0
		1	99	16.22	16.10	15.87	16.16	0-2	0
		50	0	15.76	15.63	15.40	15.45	0-3	0
		50	25	15.66	15.53	15.24	15.40	0-3	0
		50	49	15.58	15.47	15.14	15.48	0-3	0
		100	0	15.65	15.56	15.28	15.39	0-3	0

- LTE Band 66

LTE Band 66 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131979Ch. 1710.7 ㎒	132322 Ch. 1745 ㎒	132665 Ch. 1779.3 ㎒		
1.4 ㎒	QPSK	1	0	16.01	15.76	15.58	0	0
		1	3	16.00	15.83	15.62	0	0
		1	5	15.99	15.81	15.55	0	0
		3	0	15.99	15.83	15.60	0	0
		3	1	16.04	15.84	15.65	0	0
		3	3	16.00	15.80	15.58	0	0
		6	0	15.98	15.84	15.60	0-1	0
	16QAM	1	0	16.24	16.05	15.95	0-1	0
		1	3	16.32	16.21	16.01	0-1	0
		1	5	16.22	16.12	15.83	0-1	0
		3	0	16.15	15.96	15.71	0-1	0
		3	1	16.15	15.93	15.76	0-1	0
		3	3	16.09	15.90	15.67	0-1	0
		6	0	16.20	16.01	15.78	0-2	0
	64QAM	1	0	16.27	16.04	15.84	0-2	0
		1	3	16.28	16.15	15.91	0-2	0
		1	5	16.22	16.04	15.84	0-2	0
		3	0	16.19	16.03	15.80	0-2	0
		3	1	16.31	16.07	15.83	0-2	0
		3	3	16.24	16.05	15.78	0-2	0
		6	0	16.09	15.91	15.71	0-3	0

LTE Band 66 _ 3 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131987 Ch. 1711.5 ㎒	132322 Ch. 1745 ㎒	132657 Ch. 1778.5 ㎒		
3 ㎒	QPSK	1	0	16.05	15.86	15.66	0	0
		1	7	16.16	15.95	15.76	0	0
		1	14	15.99	15.88	15.60	0	0
		8	0	16.09	15.91	15.68	0-1	0
		8	3	16.07	15.92	15.68	0-1	0
		8	7	16.05	15.88	15.68	0-1	0
		15	0	16.09	15.93	15.67	0-1	0
	16QAM	1	0	16.31	16.15	16.04	0-1	0
		1	7	16.46	16.22	16.23	0-1	0
		1	14	16.29	16.19	15.85	0-1	0
		8	0	16.22	16.01	15.79	0-2	0
		8	3	16.25	16.06	15.82	0-2	0
		8	7	16.21	16.02	15.78	0-2	0
		15	0	16.16	16.01	15.79	0-2	0
	64QAM	1	0	16.32	16.15	15.82	0-2	0
		1	7	16.35	16.17	15.99	0-2	0
		1	14	16.29	16.12	15.89	0-2	0
		8	0	16.20	16.07	15.80	0-3	0
		8	3	16.20	16.06	15.79	0-3	0
		8	7	16.20	16.01	15.81	0-3	0
		15	0	16.20	15.99	15.76	0-3	0

LTE Band 66 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131997 Ch. 1712.5 MHz	132322Ch. 1745 MHz	132647 Ch. 1777.5 MHz		
5 MHz	QPSK	1	0	16.11	15.91	15.73	0	0
		1	12	16.02	15.89	15.65	0	0
		1	24	16.05	15.84	15.61	0	0
		12	0	16.13	15.96	15.74	0-1	0
		12	6	16.10	15.93	15.75	0-1	0
		12	11	16.07	15.89	15.67	0-1	0
		25	0	16.10	15.93	15.69	0-1	0
	16QAM	1	0	16.48	16.19	16.05	0-1	0
		1	12	16.28	16.20	16.05	0-1	0
		1	24	16.34	16.24	16.01	0-1	0
		12	0	16.18	16.01	15.77	0-2	0
		12	6	16.17	16.03	15.78	0-2	0
		12	11	16.15	16.01	15.75	0-2	0
		25	0	16.21	16.03	15.78	0-2	0
	64QAM	1	0	16.39	16.20	16.06	0-2	0
		1	12	16.33	16.12	15.86	0-2	0
		1	24	16.35	16.17	15.93	0-2	0
		12	0	16.20	16.07	15.89	0-3	0
		12	6	16.26	16.12	15.90	0-3	0
		12	11	16.22	16.05	15.84	0-3	0
		25	0	16.17	16.06	15.82	0-3	0

LTE Band 66 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132022 Ch. 1715 MHz	132322 Ch. 1745 MHz	132622 Ch. 1775 MHz		
10 MHz	QPSK	1	0	16.07	15.96	15.74	0	0
		1	24	15.95	15.82	15.64	0	0
		1	49	15.96	15.88	15.63	0	0
		25	0	16.07	15.97	15.81	0-1	0
		25	12	16.11	15.93	15.73	0-1	0
		25	24	16.07	15.93	15.75	0-1	0
		50	0	16.08	15.95	15.76	0-1	0
	16QAM	1	0	16.49	16.29	16.16	0-1	0
		1	24	16.20	16.11	15.99	0-1	0
		1	49	16.24	16.17	15.95	0-1	0
		25	0	16.15	16.07	15.86	0-2	0
		25	12	16.14	16.03	15.86	0-2	0
		25	24	16.12	15.99	15.79	0-2	0
		50	0	16.19	16.07	15.84	0-2	0
	64QAM	1	0	16.36	16.21	16.08	0-2	0
		1	24	16.23	16.04	15.96	0-2	0
		1	49	16.22	16.14	15.94	0-2	0
		25	0	16.20	16.10	15.91	0-3	0
		25	12	16.18	16.04	15.86	0-3	0
		25	24	16.14	16.06	15.83	0-3	0
		50	0	16.17	16.07	15.85	0-3	0

LTE Band 66 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132047 Ch. 1717.5 ㎒	132322 Ch. 1745 ㎒	132597 Ch. 1772.5 ㎒		
15 ㎒	QPSK	1	0	16.19	16.08	15.87	0	0
		1	36	16.00	15.87	15.71	0	0
		1	74	16.02	15.89	15.68	0	0
		36	0	16.15	15.98	15.84	0-1	0
		36	18	16.09	15.99	15.81	0-1	0
		36	39	16.01	15.97	15.72	0-1	0
		75	0	16.11	15.97	15.83	0-1	0
	16QAM	1	0	16.50	16.44	16.23	0-1	0
		1	36	16.41	16.17	16.15	0-1	0
		1	74	16.33	16.30	16.04	0-1	0
		36	0	16.23	16.10	15.91	0-2	0
		36	18	16.15	16.02	15.86	0-2	0
		36	39	16.19	16.03	15.81	0-2	0
		75	0	16.16	16.07	15.90	0-2	0
	64QAM	1	0	16.40	16.32	16.11	0-2	0
		1	36	16.29	16.09	15.97	0-2	0
		1	74	16.32	16.27	16.07	0-2	0
		36	0	16.25	16.13	15.99	0-3	0
		36	18	16.25	16.15	15.97	0-3	0
		36	39	16.20	16.09	15.87	0-3	0
		75	0	16.18	16.07	15.89	0-3	0

LTE Band 66 _ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 MHz	132322 Ch. 1745 MHz	132572 Ch. 1770 MHz		
20 MHz	QPSK	1	0	16.19	16.05	15.97	0	0
		1	49	16.01	15.87	15.71	0	0
		1	99	15.99	15.86	15.71	0	0
		50	0	16.17	16.02	15.86	0-1	0
		50	25	16.07	16.00	15.84	0-1	0
		50	49	16.05	15.95	15.77	0-1	0
		100	0	16.11	16.00	15.84	0-1	0
	16QAM	1	0	16.54	16.40	16.26	0-1	0
		1	49	16.25	16.19	16.11	0-1	0
		1	99	16.37	16.13	16.07	0-1	0
		50	0	16.26	16.14	16.00	0-2	0
		50	25	16.19	16.07	15.94	0-2	0
		50	49	16.14	16.06	15.85	0-2	0
		100	0	16.19	16.09	15.93	0-2	0
	64QAM	1	0	16.45	16.27	16.15	0-2	0
		1	49	16.19	16.12	15.94	0-2	0
		1	99	16.25	16.22	15.97	0-2	0
		50	0	16.29	16.15	16.01	0-3	0
		50	25	16.18	16.16	15.95	0-3	0
		50	49	16.16	16.08	15.87	0-3	0
		100	0	16.21	16.11	15.95	0-3	0

Note;

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.

9.5 LTE Up-link Carrier Aggregation Conducted Powers

Up link CA	PCC						SCC						Tx. Power [dBm]	
	Bandwidth [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	Bandwidth [MHz]	Channel	Frequency [MHz]	Mod	RB	RB Offset	LTE Single Carrier Tx	LTE Tx Power with UL CA Enabled
5	10	20525	836.5	QPSK	1	0	5	2453	874.3	QPSK	1	24	17.33	17.58
7	20	21350	2560	QPSK	1	0	20	21152	2540.2	QPSK	1	99	22.92	22.81
38	20	37850	2580	QPSK	1	0	20	38048	2599.8	QPSK	1	99	17.62	17.64
41	20	40185	2549.5	QPSK	1	0	20	39987	2529.7	QPSK	1	99	17.62	17.31
41	20	39750	2506	QPSK	1	99	20	39948	2525.8	QPSK	1	0	17.88	17.96
41	20	40620	2593	QPSK	1	0	20	40422	2573.2	QPSK	1	99	17.68	17.71
41	20	41055	2636.5	QPSK	1	0	20	40857	2616.7	QPSK	1	99	17.67	17.55
41	20	41490	2680	QPSK	1	0	20	41292	2660.2	QPSK	1	99	17.64	17.65
42	20	43340	3575	QPSK	1	0	5	43223	3563.3	QPSK	1	99	17.52	17.68

SAR test exclusion for LTE downlink Carrier Aggregation is determined by power measurements according to the number component carriers(CCs) supported by test product implementation. For those configurations required by April 2018 TCBC Workshop notes, 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(s)(SCC) on the downlink only.

Uplink Carrier aggregation:

1 This device supports uplink carrier aggregation for LTE CA_41C with a maximum of 20 MHz component carriers. For intra-band contiguous carrier aggregation scenarios, 3GPP36.101 Table 6.2.2A-1 specifies that aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when non-contiguous RB allocation is implemented. The conducted Powers and MPR setting in this device are permanently implemented per the above 3GPP requirements.

2. Per Fall 2017 TCBC Workshop Notes, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.

Power Measurement setup

10. System Verification

10.1 Tissue Verification

The body 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. (MHz)	Measured Conductivity σ (S/m)	Measured Dielectric Constant, ε	Target Conductivity σ (S/m)	Target Dielectric Constant, ε	% dev σ	% dev ε
04/08/2022	20.0	750H	705	0.857	43.296	0.889	42.174	-3.60	2.66
			710	0.862	43.217	0.890	42.148	-3.15	2.54
			750	0.902	42.606	0.893	41.940	1.01	1.59
04/11/2022	22.5	750H	750	0.906	42.639	0.893	41.940	1.46	1.67
			785	0.939	42.122	0.896	41.758	4.80	0.87
04/12/2022	22.4	750H	750	0.902	42.625	0.893	41.940	1.01	1.63
			785	0.935	42.125	0.896	41.758	4.35	0.88
04/05/2022	21.5	835H	820	0.906	42.057	0.899	41.577	0.78	1.15
			835	0.924	41.822	0.900	41.500	2.67	0.78
			850	0.939	41.593	0.916	41.500	2.51	0.22
05/09/2022	21.1	835H	820	0.908	40.768	0.899	41.577	1.00	-1.95
			835	0.926	40.534	0.900	41.500	2.89	-2.33
			850	0.942	40.305	0.916	41.500	2.84	-2.88
04/06/2022	20.4	835H	820	0.908	40.794	0.899	41.577	1.00	-1.88
			835	0.926	40.563	0.900	41.500	2.89	-2.26
			850	0.942	40.339	0.916	41.500	2.84	-2.80
04/03/2022	21.5	1800H	1710	1.299	41.666	1.348	40.144	-3.64	3.79
			1750	1.339	41.514	1.371	40.080	-2.33	3.58
			1800	1.393	41.288	1.400	40.000	-0.50	3.22
04/10/2022	21.0	1800H	1710	1.298	40.512	1.348	40.144	-3.71	0.92
			1750	1.335	40.396	1.371	40.080	-2.63	0.79
			1800	1.383	40.237	1.400	40.000	-1.21	0.59
04/02/2022	21.5	1900H	1850	1.365	41.485	1.400	40.000	-2.50	3.71
			1900	1.417	41.303	1.400	40.000	1.21	3.26
			1910	1.424	41.274	1.400	40.000	1.71	3.18
04/04/2022	21.7	1900H	1850	1.364	41.493	1.400	40.000	-2.57	3.73
			1900	1.416	41.307	1.400	40.000	1.14	3.27
			1910	1.424	41.274	1.400	40.000	1.71	3.18
04/07/2022	20.5	2600H	2500	1.885	38.784	1.855	39.140	1.62	-0.91
			2550	1.932	38.599	1.909	39.070	1.20	-1.21
			2600	1.984	38.368	1.964	39.010	1.02	-1.65
04/09/2022	20.7	2600H	2500	1.906	38.404	1.855	39.140	2.75	-1.88
			2550	1.956	38.201	1.909	39.070	2.46	-2.22
			2600	2.006	37.963	1.964	39.010	2.14	-2.68
04/13/2022	22.7	2600H	2500	1.883	38.891	1.855	39.140	1.51	-0.64
			2550	1.929	38.704	1.909	39.070	1.05	-0.94
			2600	1.981	38.445	1.964	39.010	0.87	-1.45
05/09/2022	21.1	2600H	2500	1.862	38.441	1.855	39.140	0.38	-1.79
			2550	1.912	38.240	1.909	39.070	0.16	-2.12
			2600	1.963	38.005	1.964	39.010	-0.05	-2.58
05/16/2022	20.5	2600H	2500	1.804	37.982	1.855	39.140	-2.75	-2.96
			2550	1.853	37.783	1.909	39.070	-2.93	-3.29
			2600	1.901	37.544	1.964	39.010	-3.31	-3.76

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
04/20/2022	20.2	3400H~3550	3400	2.836	37.416	2.810	38.040	0.93	-1.64
			3500	2.914	37.246	2.913	37.930	0.03	-1.80
			3550	2.951	37.226	2.964	37.870	-0.44	-1.70
05/17/2022	20.3	3400H~3550	3400	2.763	36.767	2.810	38.040	-1.67	-3.35
			3500	2.843	36.581	2.913	37.930	-2.54	-3.56
			3550	2.879	36.541	2.964	37.870	-2.87	-3.51
04/14/2022	20.6	3500H~3700	3500	2.924	37.347	2.913	37.930	0.38	-1.54
			3550	2.961	37.316	2.964	37.870	-0.10	-1.46
			3650	3.036	37.264	3.066	37.760	-0.98	-1.31
			3700	3.074	37.175	3.118	37.770	-1.41	-1.58

10.2 System Verification

Input Power: 50 mW

Freq. [Mhz]	Date	Probe (S/N)	Dipole (S/N)	Liquid	Amb. Temp. [°C]	Liquid Temp. [°C]	1 W Target SAR_{1g} (SPEAG) [W/kg]	50mW Measured SAR_{1g} [W/kg]	1 W Normalized SAR_{1g} [W/kg]	Deviation [%]	Limit [%]
750	04/08/2022	7654	1014	Head	20.1	20.0	8.55	0.433	8.66	+ 1.29	± 10
750	04/11/2022	7654		Head	22.7	22.5	8.55	0.434	8.68	+ 1.52	± 10
750	04/12/2022	7654		Head	22.6	22.4	8.55	0.436	8.72	+ 1.99	± 10
835	04/05/2022	7654	4d165	Head	21.7	21.5	9.68	0.495	9.9	+ 2.27	± 10
835	05/09/2022	7654		Head	21.2	21.1	9.68	0.511	10.22	+ 5.58	± 10
835	04/06/2022	7654		Head	20.5	20.4	9.68	0.521	10.42	+ 7.64	± 10
1 800	04/03/2022	7654	2d015	Head	21.7	21.5	38.8	1.880	37.6	- 3.09	± 10
1 800	04/10/2022	7654		Head	21.1	21.0	38.8	1.870	37.4	- 3.61	± 10
1 900	04/02/2022	7654	5d032	Head	21.6	21.5	41.2	1.980	39.6	- 3.88	± 10
1 900	04/04/2022	7654		Head	21.8	21.7	41.2	1.980	39.6	- 3.88	± 10
2 600	04/07/2022	7654	1106	Head	20.6	20.5	56.3	2.710	54.2	- 3.73	± 10
2 600	04/09/2022	7654		Head	20.8	20.7	56.3	2.750	55	- 2.31	± 10
2 600	04/13/2022	7654		Head	22.8	22.7	56.3	2.700	54	- 4.09	± 10
2 600	05/09/2022	7654		Head	21.2	21.1	56.3	2.770	55.4	- 1.60	± 10
2 600	05/16/2022	3968		Head	20.7	20.5	56.3	2.680	53.6	-4.80	± 10
3 500	04/20/2022	7654	1132	Head	20.3	20.2	66.3	3.370	67.4	+ 1.66	± 10
3 500	05/17/2022	7680		Head	20.5	20.3	66.3	3.180	63.6	-4.07	± 10
3 500	04/14/2022	7654		Head	20.8	20.6	66.3	3.380	67.6	+ 1.96	± 10
3 700	04/14/2022	7654	1105	Head	20.8	20.6	66.6	3.550	71	+ 6.61	± 10

10.3 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.
- Generate about 50 ㎽ Input level from the signal generator to the Dipole Antenna.
- Dipole antenna was placed below the flat phantom.
- The measured one-gram SAR at the surface of the phantom above the dipole feed-point should be within 10 % of the target reference value.
- The results are normalized to 1 W input power.

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

11. SAR Test Data Summary

11.1 Body SAR Measurement Results

UMTS Band 2 Body SAR												
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)			(mm)	(W/kg)		(W/kg)	
1 880	9400	RMC	16.8	15.95	0.01	Rear	1:1	0	0.390	1.216	0.474	-
1 880	9400	RMC	24.5	23.50	0.17	Edge 4	1:1	0	0.972	1.259	1.224	-
1 852.4	9262	RMC	24.5	23.76	0.15	Edge 4	1:1	0	0.966	1.186	1.145	-
1 907.6	9538	RMC	24.5	23.70	-0.02	Edge 4	1:1	0	**1.050**	1.202	**1.262**	1
1 880	9400	RMC	24.5	23.50	0.00	Edge 2	1:1	0	0.035	1.259	0.044	-
1 880	9400	RMC	16.8	15.95	-0.02	Edge 1	1:1	0	0.676	1.216	0.822	-
1 852.4	9262	RMC	16.8	15.86	0.00	Edge 1	1:1	0	0.626	1.242	0.777	-
1 907.6	9538	RMC	16.8	15.80	-0.03	Edge 1	1:1	0	0.756	1.259	0.952	-
1 880	9400	RMC	24.5	23.50	0.08	Edge 4 Tilt	1:1	0	0.871	1.259	1.097	-
1 852.4	9262	RMC	24.5	23.76	0.03	Edge 4 Tilt	1:1	0	0.875	1.186	1.038	-
1 907.6	9538	RMC	24.5	23.70	0.02	Edge 4 Tilt	1:1	0	0.907	1.202	1.090	-
1 880	9400	RMC	24.5	23.50	0.00	Edge 2 Tilt	1:1	0	0.032	1.259	0.040	-
1 880	9400	RMC	24.5	23.50	0.01	Rear	1:1	15	0.575	1.259	0.724	-
1 880	9400	RMC	24.5	23.50	0.07	Edge 1	1:1	37	0.206	1.259	0.259	-
1 907.6	9538	RMC	24.5	23.70	0.12	Edge 4	1:1	0	1.030	1.202	1.238	*
1 907.6	9538	RMC	24.5	23.70	0.06	Edge 4	1:1	0	1.000	1.202	1.202	**
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Body 1.6 W/kg Averaged over 1 gram						

Note: * Data entry indicate Variability measurement.

Note: ** Data entry indicate Device holder perturbation measurement.

UMTS Band 4 Body SAR												
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)			(mm)	(W/kg)		(W/kg)	
1 732.4	1412	RMC	17.0	16.33	0.01	Rear	1:1	0	0.703	1.167	0.820	-
1 712.4	1312	RMC	17.0	15.97	0.01	Rear	1:1	0	0.685	1.268	0.868	-
1 752.6	1513	RMC	17.0	16.05	0.01	Rear	1:1	0	0.652	1.245	0.811	-
1 732.4	1412	RMC	24.5	23.83	0.17	Edge 4	1:1	0	0.613	1.167	0.715	-
1 732.4	1412	RMC	24.5	23.83	0.01	Edge 2	1:1	0	0.011	1.167	0.013	-
1 732.4	1412	RMC	17.0	16.33	0.14	Edge 1	1:1	0	0.848	1.167	0.989	-
1 712.4	1312	RMC	17.0	15.97	0.17	Edge 1	1:1	0	0.880	1.268	1.116	-
1 752.6	1513	RMC	17.0	16.05	0.07	Edge 1	1:1	0	0.791	1.245	0.984	-
1 732.4	1412	RMC	24.5	23.83	0.10	Edge 4 Tilt	1:1	0	0.517	1.167	0.603	-
1 732.4	1412	RMC	24.5	23.83	0.01	Edge 2 Tilt	1:1	0	0.011	1.167	0.013	-
1 732.4	1412	RMC	24.5	23.83	0.05	Rear	1:1	15	**1.020**	1.167	**1.190**	2
1 712.4	1312	RMC	24.5	23.70	0.07	Rear	1:1	15	0.945	1.202	1.136	-
1 752.6	1513	RMC	24.5	23.68	0.07	Rear	1:1	15	0.946	1.208	1.143	-
1 732.4	1412	RMC	24.5	23.83	0.13	Edge 1	1:1	37	0.246	1.167	0.287	-
1 732.4	1412	RMC	24.5	23.83	0.12	Rear	1:1	15	0.966	1.167	1.127	*
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Body 1.6 W/kg Averaged over 1 gram						

Note: * Data entry indicate Variability measurement.

UMTS Band 5 Body SAR												
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)			(mm)	(W/kg)		(W/kg)	
836.6	4183	RMC	18.5	17.88	0.01	Rear	1:1	0	0.288	1.153	0.332	-
836.6	4183	RMC	24.5	23.91	-0.16	Edge 4	1:1	0	0.294	1.146	0.337	-
836.6	4183	RMC	24.5	23.91	0.01	Edge 2	1:1	0	0.017	1.146	0.019	-
836.6	4183	RMC	18.5	17.88	-0.08	Edge 1	1:1	0	0.820	1.153	0.946	-
826.4	4132	RMC	18.5	17.72	0.10	Edge 1	1:1	0	0.770	1.197	0.921	-
846.6	4233	RMC	18.5	17.75	-0.07	Edge 1	1:1	0	0.855	1.189	1.016	-
836.6	4183	RMC	24.5	23.91	0.08	Edge 4 Tilt	1:1	0	0.323	1.146	0.370	-
836.6	4183	RMC	24.5	23.91	0.05	Edge 2 Tilt	1:1	0	0.033	1.146	0.038	-
836.6	4183	RMC	24.5	23.91	0.18	Rear	1:1	15	0.370	1.146	0.424	-
836.6	4183	RMC	24.5	23.91	0.03	Edge 1	1:1	37	0.217	1.146	0.249	-
846.6	4233	RMC	18.5	17.75	0.02	Edge 1	1:1	0	**0.856**	1.189	**1.017**	3*
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Body 1.6 W/kg Averaged over 1 gram						

Note: * Data entry indicate Variability measurement.

LTE Band 5 Body SAR																
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB Offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)				(mm)	(W/kg)		(W/kg)	
Up-link Carrier Aggregation																
836.5	20525	QPSK	20	18.3	17.58	-0.09	Edge 1	0	1	0	1:1	0	0.628	1.180	0.741	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram								

LTE Band 7 Body SAR																
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB Offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)				(mm)	(W/kg)		(W/kg)	
2 510	20850	QPSK	20	14.8	14.31	0.01	Rear	0	1	0	1:1	0	0.414	1.119	0.463	-
2 510	20850	QPSK	20	14.8	13.99	0.01	Rear	0	50	0	1:1	0	0.411	1.205	0.495	-
2 510	20850	QPSK	20	24.5	23.21	-0.08	Edge 4	0	1	0	1:1	0	0.360	1.346	0.485	-
2 510	20850	QPSK	20	23.5	22.13	-0.03	Edge 4	1	50	25	1:1	0	0.272	1.371	0.373	-
2 510	20850	QPSK	20	24.5	23.21	0.00	Edge 2	0	1	0	1:1	0	0.024	1.346	0.032	-
2 510	20850	QPSK	20	23.5	22.13	0.00	Edge 2	1	50	25	1:1	0	0.019	1.371	0.026	-
2 510	20850	QPSK	20	14.8	14.31	-0.08	Edge 1	0	1	0	1:1	0	0.758	1.119	0.849	-
2 535	21100	QPSK	20	14.8	14.24	-0.08	Edge 1	0	1	0	1:1	0	0.769	1.138	0.875	-
2 560	21350	QPSK	20	14.8	13.99	-0.12	Edge 1	0	1	0	1:1	0	0.720	1.205	0.868	-
2 510	20850	QPSK	20	14.8	13.99	-0.16	Edge 1	0	50	0	1:1	0	0.753	1.205	0.907	-
2 535	21100	QPSK	20	14.8	13.85	-0.19	Edge 1	0	50	0	1:1	0	0.726	1.245	0.904	-
2 560	21350	QPSK	20	14.8	13.72	-0.03	Edge 1	0	50	0	1:1	0	0.696	1.282	0.893	-
2 510	20850	QPSK	20	14.8	13.90	-0.10	Edge 1	0	100	0	1:1	0	0.736	1.230	0.905	-
2 510	20850	QPSK	20	24.5	23.21	-0.10	Edge 4 Tilt	0	1	0	1:1	0	0.423	1.346	0.569	-
2 510	20850	QPSK	20	23.5	22.13	0.03	Edge 4 Tilt	1	50	25	1:1	0	0.308	1.371	0.422	-
2 510	20850	QPSK	20	24.5	23.21	0.11	Edge 2 Tilt	0	1	0	1:1	0	0.029	1.346	0.039	-
2 510	20850	QPSK	20	23.5	22.13	0.00	Edge 2 Tilt	1	50	25	1:1	0	0.027	1.371	0.037	-
2 510	20850	QPSK	20	24.5	23.21	0.05	Rear	0	1	0	1:1	15	0.772	1.346	1.039	-
2 535	21100	QPSK	20	24.5	23.18	0.01	Rear	0	1	0	1:1	15	0.799	1.355	1.083	-
2 560	21350	QPSK	20	24.5	23.02	-0.12	Rear	0	1	0	1:1	15	**0.848**	1.406	**1.192**	4
2 510	20850	QPSK	20	23.5	22.13	0.16	Rear	1	50	25	1:1	15	0.608	1.371	0.833	-
2 535	21100	QPSK	20	23.5	21.95	0.00	Rear	1	50	0	1:1	15	0.605	1.429	0.864	-
2 560	21350	QPSK	20	23.5	21.81	0.11	Rear	1	50	0	1:1	15	0.667	1.476	0.984	-
2 510	20850	QPSK	20	23.5	22.02	0.05	Rear	1	100	0	1:1	15	0.646	1.406	0.908	-
2 510	20850	QPSK	20	24.5	23.21	-0.11	Edge 1	0	1	0	1:1	37	0.539	1.346	0.725	-
2 510	20850	QPSK	20	23.5	22.13	-0.10	Edge 1	1	50	25	1:1	37	0.425	1.371	0.583	-
2 560	21350	QPSK	20	24.5	23.02	0.17	Rear	0	1	0	1:1	15	0.801	1.406	1.126	*
2 560	21350	QPSK	20	24.5	23.02	-0.08	Rear	0	1	0	1:1	15	0.805	1.406	1.132	**
Up-link Carrier Aggregation																
2 560	21350	QPSK	20	24.5	22.81	0.04	Rear	0	1	0	1:1	15	0.613	1.476	0.905	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram								

Note: * Data entry indicate Variability measurement.

Note: ** Data entry indicate Device holder perturbation measurement.

LTE Band 12 Body SAR																
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB Offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)				(mm)	(W/kg)		(W/kg)	
707.5	23095	QPSK	10	19.7	18.93	0.01	Rear	0	1	24	1:1	0	0.237	1.194	0.283	-
707.5	23095	QPSK	10	19.7	19.03	0.01	Rear	0	25	0	1:1	0	0.241	1.167	0.281	-
707.5	23095	QPSK	10	24.5	23.62	0.05	Edge 4	0	1	0	1:1	0	0.163	1.225	0.200	-
707.5	23095	QPSK	10	23.5	22.65	-0.06	Edge 4	1	25	0	1:1	0	0.134	1.216	0.163	-
707.5	23095	QPSK	10	24.5	23.62	0.10	Edge 2	0	1	0	1:1	0	0.024	1.225	0.029	-
707.5	23095	QPSK	10	23.5	22.65	-0.08	Edge 2	1	25	0	1:1	0	0.020	1.216	0.024	-
707.5	23095	QPSK	10	19.7	18.93	-0.02	Edge 1	0	1	24	1:1	0	0.584	1.194	0.697	-
707.5	23095	QPSK	10	19.7	19.03	-0.09	Edge 1	0	25	0	1:1	0	**0.600**	1.167	**0.700**	5
707.5	23095	QPSK	10	24.5	23.62	0.13	Edge 4 Tilt	0	1	0	1:1	0	0.153	1.225	0.187	-
707.5	23095	QPSK	10	23.5	22.65	0.01	Edge 4 Tilt	1	25	0	1:1	0	0.128	1.216	0.156	-
707.5	23095	QPSK	10	24.5	23.62	0.16	Edge 2 Tilt	0	1	0	1:1	0	0.023	1.225	0.028	-
707.5	23095	QPSK	10	23.5	22.65	0.01	Edge 2 Tilt	1	25	0	1:1	0	0.018	1.216	0.022	-
707.5	23095	QPSK	10	24.5	23.62	0.17	Rear	0	1	0	1:1	15	0.196	1.225	0.240	-
707.5	23095	QPSK	10	23.5	22.65	0.09	Rear	1	25	0	1:1	15	0.161	1.216	0.196	-
707.5	23095	QPSK	10	24.5	23.62	-0.10	Edge 1	0	1	0	1:1	37	0.042	1.225	0.051	-
707.5	23095	QPSK	10	23.5	22.65	0.11	Edge 1	1	25	0	1:1	37	0.035	1.216	0.043	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram								

LTE Band 13 Body SAR																
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB Offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)				(mm)	(W/kg)		(W/kg)	
782	23230	QPSK	10	19.0	18.19	0.01	Rear	0	1	0	1:1	0	0.338	1.205	0.407	-
782	23230	QPSK	10	19.0	18.24	0.01	Rear	0	25	0	1:1	0	0.348	1.191	0.415	-
782	23230	QPSK	10	24.5	23.84	-0.10	Edge 4	0	1	49	1:1	0	0.477	1.164	0.555	-
782	23230	QPSK	10	23.5	22.93	0.03	Edge 4	1	25	12	1:1	0	0.390	1.140	0.445	-
782	23230	QPSK	10	24.5	23.84	0.09	Edge 2	0	1	49	1:1	0	0.010	1.164	0.012	-
782	23230	QPSK	10	23.5	22.93	0.04	Edge 2	1	25	12	1:1	0	0.00893	1.140	0.010	-
782	23230	QPSK	10	19.0	18.19	0.12	Edge 1	0	1	0	1:1	0	0.680	1.205	0.819	-
782	23230	QPSK	10	19.0	18.24	-0.17	Edge 1	0	25	0	1:1	0	0.725	1.191	0.864	-
782	23230	QPSK	10	19.0	18.22	-0.11	Edge 1	0	50	0	1:1	0	**0.727**	1.197	**0.870**	6
782	23230	QPSK	10	24.5	23.84	0.05	Edge 4 Tilt	0	1	49	1:1	0	0.468	1.164	0.545	-
782	23230	QPSK	10	23.5	22.93	0.11	Edge 4 Tilt	1	25	12	1:1	0	0.384	1.140	0.438	-
782	23230	QPSK	10	24.5	23.84	0.01	Edge 2 Tilt	0	1	49	1:1	0	0.016	1.164	0.019	-
782	23230	QPSK	10	23.5	22.93	0.05	Edge 2 Tilt	1	25	12	1:1	0	0.012	1.140	0.014	-
782	23230	QPSK	10	24.5	23.84	-0.13	Rear	0	1	49	1:1	15	0.338	1.164	0.393	-
782	23230	QPSK	10	24.5	22.93	0.04	Rear	0	25	12	1:1	15	0.285	1.140	0.325	-
782	23230	QPSK	10	24.5	23.84	0.03	Edge 1	0	1	49	1:1	37	0.164	1.164	0.191	-
782	23230	QPSK	10	23.5	22.93	0.12	Edge 1	1	25	12	1:1	37	0.135	1.140	0.154	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram								

LTE Band 14 Body SAR																
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB Offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)				(mm)	(W/kg)		(W/kg)	
793	23330	QPSK	10	19.0	18.19	0.01	Rear	0	1	0	1:1	0	0.333	1.205	0.401	-
793	23330	QPSK	10	19.0	18.26	0.01	Rear	0	25	0	1:1	0	0.334	1.186	0.396	-
793	23330	QPSK	10	24.5	23.78	-0.08	Edge 4	0	1	0	1:1	0	0.425	1.180	0.502	-
793	23330	QPSK	10	23.5	22.88	-0.04	Edge 4	1	25	0	1:1	0	0.338	1.153	0.390	-
793	23330	QPSK	10	24.5	23.78	0.16	Edge 2	0	1	0	1:1	0	0.019	1.180	0.022	-
793	23330	QPSK	10	23.5	22.88	-0.10	Edge 2	1	25	0	1:1	0	0.015	1.153	0.017	-
793	23330	QPSK	10	19.0	18.19	-0.11	Edge 1	0	1	0	1:1	0	0.729	1.205	0.878	-
793	23330	QPSK	10	19.0	18.26	-0.12	Edge 1	0	25	0	1:1	0	0.736	1.186	0.873	-
793	23330	QPSK	10	19.0	18.20	-0.10	Edge 1	0	50	0	1:1	0	**0.743**	1.202	**0.893**	7
793	23330	QPSK	10	24.5	23.78	0.13	Edge 4 Tilt	0	1	0	1:1	0	0.418	1.180	0.493	-
793	23330	QPSK	10	23.5	22.88	0.04	Edge 4 Tilt	1	25	0	1:1	0	0.334	1.153	0.385	-
793	23330	QPSK	10	24.5	23.78	0.16	Edge 2 Tilt	0	1	0	1:1	0	0.026	1.180	0.031	-
793	23330	QPSK	10	23.5	22.88	0.12	Edge 2 Tilt	1	25	0	1:1	0	0.020	1.153	0.023	-
793	23330	QPSK	10	24.5	23.78	0.05	Rear	0	1	0	1:1	15	0.366	1.180	0.432	-
793	23330	QPSK	10	23.5	22.88	0.18	Rear	1	25	0	1:1	15	0.297	1.153	0.343	-
793	23330	QPSK	10	24.5	23.78	-0.08	Edge 1	0	1	0	1:1	37	0.137	1.180	0.162	-
793	23330	QPSK	10	23.5	22.88	0.01	Edge 1	1	25	0	1:1	37	0.111	1.153	0.128	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram								

LTE Band 25 Body SAR																
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB Offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)				(mm)	(W/kg)		(W/kg)	
1 905	26590	QPSK	20	16.8	15.83	0.03	Rear	0	1	99	1:1	0	0.348	1.250	0.435	-
1 905	26590	QPSK	20	16.8	15.79	0.07	Rear	0	50	49	1:1	0	0.345	1.262	0.435	-
1 905	26590	QPSK	20	23.5	23.02	-0.03	Edge 4	0	1	0	1:1	0	0.748	1.117	0.835	-
1 860	26140	QPSK	20	23.5	22.88	-0.17	Edge 4	0	1	0	1:1	0	0.754	1.153	0.870	-
1 882.5	26365	QPSK	20	23.5	22.80	-0.12	Edge 4	0	1	0	1:1	0	0.739	1.175	0.868	-
1 905	26590	QPSK	20	22.5	21.91	-0.12	Edge 4	1	50	49	1:1	0	0.660	1.146	0.756	-
1 860	26140	QPSK	20	22.5	21.85	-0.03	Edge 4	1	50	0	1:1	0	0.597	1.161	0.693	-
1 882.5	26365	QPSK	20	22.5	21.78	-0.17	Edge 4	1	50	0	1:1	0	0.581	1.180	0.686	-
1 905	26590	QPSK	20	22.5	21.96	-0.10	Edge 4	1	100	0	1:1	0	0.642	1.132	0.727	-
1 905	26590	QPSK	20	23.5	23.02	0.01	Edge 2	0	1	0	1:1	0	0.029	1.117	0.032	-
1 905	26590	QPSK	20	22.5	21.91	0.01	Edge 2	1	50	49	1:1	0	0.024	1.146	0.027	-
1 860	26140	QPSK	20	16.8	15.76	-0.08	Edge 1	0	1	0	1:1	0	0.639	1.271	0.812	-
1 882.5	26365	QPSK	20	16.8	15.58	-0.02	Edge 1	0	1	0	1:1	0	0.649	1.324	0.859	-
1 905	26590	QPSK	20	16.8	15.83	-0.05	Edge 1	0	1	99	1:1	0	0.656	1.250	0.820	-
1 860	26140	QPSK	20	16.8	15.73	-0.04	Edge 1	0	50	0	1:1	0	0.633	1.279	0.810	-
1 882.5	26365	QPSK	20	16.8	15.65	-0.03	Edge 1	0	50	0	1:1	0	0.658	1.303	0.857	-
1 905	26590	QPSK	20	16.8	15.79	-0.06	Edge 1	0	50	49	1:1	0	0.640	1.262	0.808	-
1 905	26590	QPSK	20	16.8	15.79	-0.11	Edge 1	0	100	0	1:1	0	0.595	1.262	0.751	-
1 905	26590	QPSK	20	23.5	23.02	0.10	Edge 4 Tilt	0	1	0	1:1	0	0.825	1.117	0.921	-
1 860	26140	QPSK	20	23.5	22.88	0.07	Edge 4 Tilt	0	1	0	1:1	0	0.865	1.153	0.998	-
1 882.5	26365	QPSK	20	23.5	22.80	0.06	Edge 4 Tilt	0	1	0	1:1	0	0.804	1.175	0.945	-
1 905	26590	QPSK	20	22.5	21.91	0.13	Edge 4 Tilt	1	50	49	1:1	0	0.626	1.146	0.717	-
1 860	26140	QPSK	20	22.5	21.85	0.15	Edge 4 Tilt	1	50	0	1:1	0	0.675	1.161	0.784	-
1 882.5	26365	QPSK	20	22.5	21.78	0.16	Edge 4 Tilt	1	50	0	1:1	0	0.636	1.180	0.751	-
1 905	26590	QPSK	20	22.5	21.96	0.10	Edge 4 Tilt	1	100	0	1:1	0	0.635	1.132	0.719	-
1 905	26590	QPSK	20	23.5	23.02	0.03	Edge 2 Tilt	0	1	0	1:1	0	0.033	1.117	0.037	-
1 905	26590	QPSK	20	22.5	21.91	0.08	Edge 2 Tilt	1	50	49	1:1	0	0.024	1.146	0.027	-
1 905	26590	QPSK	20	23.5	23.02	0.03	Rear	0	1	0	1:1	15	0.483	1.117	0.539	-
1 905	26590	QPSK	20	22.5	21.91	0.08	Rear	1	50	49	1:1	15	0.344	1.146	0.394	-
1 905	26590	QPSK	20	23.5	23.02	-0.17	Edge 1	0	1	0	1:1	37	0.214	1.117	0.239	-
1 905	26590	QPSK	20	22.5	21.91	-0.14	Edge 1	1	50	49	1:1	37	0.175	1.146	0.200	-
1 860	26140	QPSK	20	23.5	22.88	0.08	Edge 4 Tilt	0	1	0	1:1	0	0.867	1.153	1.000	*
1 860	26140	QPSK	20	23.5	22.88	0.14	Edge 4 Tilt	0	1	0	1:1	0	**0.868**	1.153	**1.001**	8**
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram								

Note: * Data entry indicate Variability measurement.

Note: ** Data entry indicate Device holder perturbation measurement.

LTE Band 26 Body SAR																
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB Offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)				(mm)	(W/kg)		(W/kg)	
831.5	26865	QPSK	15	18.3	17.46	0.00	Rear	0	1	0	1:1	0	0.263	1.213	0.319	-
831.5	26865	QPSK	15	18.3	17.41	0.00	Rear	0	36	0	1:1	0	0.262	1.227	0.322	-
831.5	26865	QPSK	15	24.5	23.55	-0.17	Edge 4	0	1	0	1:1	0	0.277	1.245	0.345	-
831.5	26865	QPSK	15	23.5	22.53	-0.11	Edge 4	1	36	0	1:1	0	0.211	1.250	0.264	-
831.5	26865	QPSK	15	24.5	23.55	0.08	Edge 2	0	1	0	1:1	0	0.010	1.245	0.012	-
831.5	26865	QPSK	15	23.5	22.53	0.08	Edge 2	1	36	0	1:1	0	0.00766	1.250	0.010	-
831.5	26865	QPSK	15	18.3	17.46	-0.04	Edge 1	0	1	0	1:1	0	0.694	1.213	0.842	-
831.5	26865	QPSK	15	18.3	17.41	-0.18	Edge 1	0	36	0	1:1	0	0.701	1.227	0.860	-
831.5	26865	QPSK	15	18.3	17.29	-0.10	Edge 1	0	75	0	1:1	0	**0.705**	1.262	**0.890**	9
831.5	26865	QPSK	15	24.5	23.55	0.10	Edge 4 Tilt	0	1	0	1:1	0	0.319	1.245	0.397	-
831.5	26865	QPSK	15	23.5	22.53	0.05	Edge 4 Tilt	1	36	0	1:1	0	0.241	1.250	0.301	-
831.5	26865	QPSK	15	24.5	23.55	-0.05	Edge 2 Tilt	0	1	0	1:1	0	0.027	1.245	0.034	-
831.5	26865	QPSK	15	23.5	22.53	0.04	Edge 2 Tilt	1	36	0	1:1	0	0.022	1.250	0.028	-
831.5	26865	QPSK	15	24.5	23.55	-0.10	Rear	0	1	0	1:1	15	0.337	1.245	0.419	-
831.5	26865	QPSK	15	23.5	22.53	0.05	Rear	1	36	0	1:1	15	0.260	1.250	0.325	-
831.5	26865	QPSK	15	24.5	23.55	-0.05	Edge 1	0	1	0	1:1	37	0.170	1.245	0.212	-
831.5	26865	QPSK	15	23.5	22.53	-0.18	Edge 1	1	36	0	1:1	37	0.140	1.250	0.175	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram								

LTE Band 38 Body SAR																
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB Offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)				(mm)	(W/kg)		(W/kg)	
2 610	38150	QPSK	20	18.1	17.70	0.01	Rear	0	1	0	1:1.58	10	0.633	1.096	0.694	-
2 610	38150	QPSK	20	18.1	17.57	0.01	Rear	0	50	0	1:1.58	10	0.620	1.130	0.700	-
2 595	38000	QPSK	20	24.0	23.73	0.04	Edge 4	0	1	0	1:1.58	10	0.250	1.064	0.266	-
2 595	38000	QPSK	20	23.0	22.71	0.09	Edge 4	1	50	0	1:1.58	10	0.197	1.069	0.211	-
2 595	38000	QPSK	20	24.0	23.73	0.01	Edge 2	0	1	0	1:1.58	10	0.033	1.064	0.035	-
2 595	38000	QPSK	20	23.0	22.71	0.01	Edge 2	1	50	0	1:1.58	10	0.023	1.069	0.025	-
2 610	38150	QPSK	20	18.1	17.70	0.05	Edge 1	0	1	0	1:1.58	10	0.896	1.096	0.982	-
2 580	37850	QPSK	20	18.1	17.53	0.03	Edge 1	0	1	0	1:1.58	10	0.941	1.140	**1.073**	10
2 595	38000	QPSK	20	18.1	17.63	0.08	Edge 1	0	1	0	1:1.58	10	**0.961**	1.114	1.071	11
2 610	38150	QPSK	20	18.1	17.57	-0.05	Edge 1	0	50	0	1:1.58	10	0.813	1.130	0.919	-
2 580	37850	QPSK	20	18.1	17.45	0.00	Edge 1	0	50	0	1:1.58	10	0.856	1.161	0.994	-
2 595	38000	QPSK	20	18.1	17.56	0.11	Edge 1	0	50	0	1:1.58	10	0.848	1.132	0.960	-
2 595	38000	QPSK	20	18.1	17.55	0.02	Edge 1	0	100	0	1:1.58	10	0.823	1.135	0.934	-
2 595	38000	QPSK	20	24.0	23.73	0.08	Edge 4 Tilt	0	1	0	1:1.58	10	0.224	1.064	0.238	-
2 595	38000	QPSK	20	23.0	22.71	0.11	Edge 4 Tilt	1	50	0	1:1.58	10	0.181	1.069	0.193	-
2 595	38000	QPSK	20	24.0	23.73	0.01	Edge 2 Tilt	0	1	0	1:1.58	10	0.038	1.064	0.040	-
2 595	38000	QPSK	20	23.0	22.71	0.01	Edge 2 Tilt	1	50	0	1:1.58	10	0.025	1.069	0.028	-
2 595	38000	QPSK	20	24.0	23.73	0.01	Rear	0	1	0	1:1.58	10	0.551	1.064	0.586	-
2 595	38000	QPSK	20	23.0	22.71	0.01	Rear	1	50	0	1:1.58	10	0.437	1.069	0.467	-
2 595	38000	QPSK	20	24.0	23.73	0.10	Edge 1	0	1	0	1:1.58	10	0.393	1.064	0.418	-
2 595	38000	QPSK	20	23.0	22.71	0.12	Edge 1	1	50	0	1:1.58	10	0.315	1.069	0.337	-
2 595	38000	QPSK	20	18.1	17.63	0.00	Edge 1	0	1	0	1:1.58	10	0.943	1.114	1.051	*
Up-link Carrier Aggregation																
2 580	37850	QPSK	20	18.1	17.64	0.06	Edge 1	0	1	99	1:1.58	0	0.823	1.112	0.915	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram								

Note: * Data entry indicate Variability measurement.

LTE Band 41 Body SAR																
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB Offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)				(mm)	(W/kg)		(W/kg)	
2 506	39750	QPSK	20	18.6	17.88	0.00	Rear	0	1	0	1:1.58	0	0.583	1.180	0.688	-
2 549.5	40185	QPSK	20	18.6	17.77	0.00	Rear	0	1	0	1:1.58	0	0.524	1.211	0.634	-
2 593	40620	QPSK	20	18.6	17.68	0.00	Rear	0	1	0	1:1.58	0	0.596	1.236	0.737	-
2 636.5	41055	QPSK	20	18.6	17.67	0.00	Rear	0	1	0	1:1.58	0	0.572	1.239	0.709	-
2 680	41490	QPSK	20	18.6	17.64	0.00	Rear	0	1	0	1:1.58	0	0.489	1.247	0.610	-
2 506	39750	QPSK	20	18.6	17.97	0.00	Rear	0	50	0	1:1.58	0	0.599	1.156	0.693	-
2 549.5	40185	QPSK	20	18.6	17.72	0.00	Rear	0	50	0	1:1.58	0	0.530	1.225	0.649	-
2 593	40620	QPSK	20	18.6	17.55	0.00	Rear	0	50	0	1:1.58	0	0.584	1.274	0.744	-
2 636.5	41055	QPSK	20	18.6	17.60	0.00	Rear	0	50	0	1:1.58	0	0.558	1.259	0.702	-
2 680	41490	QPSK	20	18.6	17.55	0.00	Rear	0	50	0	1:1.58	0	0.480	1.274	0.611	-
2 506	39750	QPSK	20	18.6	17.89	0.00	Rear	0	100	0	1:1.58	0	0.494	1.178	0.582	-
2 506	39750	QPSK	20	24.0	23.94	0.13	Edge 4	0	1	0	1:1.58	0	0.287	1.014	0.291	-
2 506	39750	QPSK	20	23.0	22.91	-0.16	Edge 4	1	50	0	1:1.58	0	0.226	1.021	0.231	-
2 506	39750	QPSK	20	24.0	23.94	0.00	Edge 2	0	1	0	1:1.58	0	0.020	1.014	0.020	-
2 506	39750	QPSK	20	23.0	22.91	0.00	Edge 2	1	50	0	1:1.58	0	0.016	1.021	0.016	-
2 506	39750	QPSK	20	18.6	17.88	0.01	Edge 1	0	1	0	1:1.58	0	1.020	1.180	1.204	-
2 549.5	40185	QPSK	20	18.6	17.77	0.17	Edge 1	0	1	0	1:1.58	0	0.996	1.211	1.206	-
2 593	40620	QPSK	20	18.6	17.68	0.16	Edge 1	0	1	0	1:1.58	0	0.951	1.236	1.175	-
2 636.5	41055	QPSK	20	18.6	17.67	0.17	Edge 1	0	1	0	1:1.58	0	0.890	1.239	1.103	-
2 680	41490	QPSK	20	18.6	17.64	0.04	Edge 1	0	1	0	1:1.58	0	0.895	1.247	1.116	-
2 506	39750	QPSK	20	18.6	17.97	-0.04	Edge 1	0	50	0	1:1.58	0	1.040	1.156	1.202	-
2 549.5	40185	QPSK	20	18.6	17.72	0.05	Edge 1	0	50	0	1:1.58	0	0.982	1.225	1.203	-
2 593	40620	QPSK	20	18.6	17.55	-0.14	Edge 1	0	50	0	1:1.58	0	0.923	1.274	1.175	-
2 636.5	41055	QPSK	20	18.6	17.60	0.10	Edge 1	0	50	0	1:1.58	0	0.874	1.259	1.100	-
2 680	41490	QPSK	20	18.6	17.55	0.17	Edge 1	0	50	0	1:1.58	0	0.884	1.274	1.126	-
2 506	39750	QPSK	20	18.6	17.89	0.10	Edge 1	0	100	0	1:1.58	0	1.020	1.178	1.201	-
2 506	39750	QPSK	20	24.0	23.94	0.15	Edge 4 Tilt	0	1	0	1:1.58	0	0.248	1.014	0.251	-
2 506	39750	QPSK	20	23.0	22.91	0.18	Edge 4 Tilt	1	50	0	1:1.58	0	0.195	1.021	0.199	-
2 506	39750	QPSK	20	24.0	23.94	0.00	Edge 2 Tilt	0	1	0	1:1.58	0	0.015	1.014	0.015	-
2 506	39750	QPSK	20	23.0	22.91	0.00	Edge 2 Tilt	1	50	0	1:1.58	0	0.015	1.021	0.015	-
2 506	39750	QPSK	20	24.0	23.94	0.00	Rear	0	1	0	1:1.58	15	0.445	1.014	0.451	-
2 506	39750	QPSK	20	23.0	22.91	0.00	Rear	1	50	0	1:1.58	15	0.360	1.021	0.368	-
2 506	39750	QPSK	20	24.0	23.94	0.19	Edge 1	0	1	0	1:1.58	37	0.331	1.014	0.336	-
2 506	39750	QPSK	20	23.0	22.91	0.09	Edge 1	1	50	0	1:1.58	37	0.268	1.021	0.274	-
2 506	39750	QPSK	20	18.6	17.97	0.11	Edge 1	0	50	0	1:1.58	0	1.040	1.156	1.202	*
2 549.5	40185	QPSK	20	18.6	17.77	-0.17	Edge 1	0	1	0	1:1.58	0	0.980	1.211	1.186	**
Up-link Carrier Aggregation																
2506	39750	QPSK	20	18.6	17.96	-0.05	Edge 1	1	99	0	1:1.58	0	1.120	1.159	1.298	-
2549.5	40185	QPSK	20	18.6	17.31	-0.04	Edge 1	1	0	0	1:1.58	0	**1.060**	1.346	**1.427**	12
2593	40620	QPSK	20	18.6	17.71	-0.09	Edge 1	1	0	0	1:1.58	0	1.160	1.227	1.424	-
2636.5	41055	QPSK	20	18.6	17.55	-0.09	Edge 1	1	0	0	1:1.58	0	1.070	1.274	1.363	-
2680	41490	QPSK	20	18.6	17.65	-0.07	Edge 1	1	0	0	1:1.58	0	1.010	1.245	1.257	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram								

Note: * Data entry indicate Variability measurement.

Note: ** Data entry indicate Device holder perturbation measurement.

LTE Band 42 Body SAR																
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB Offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)				(mm)	(W/kg)		(W/kg)	
3 575	43340	QPSK	20	17.7	17.52	0.01	Rear	0	1	0	1:1	0	0.241	1.042	0.251	-
3 575	43340	QPSK	20	17.7	17.28	0.03	Rear	0	50	0	1:1	0	0.219	1.102	0.241	-
3 575	43340	QPSK	20	18.5	18.42	0.08	Edge 4	0	1	0	1:1	0	0.072	1.019	0.073	-
3 575	43340	QPSK	20	17.5	17.29	0.11	Edge 4	1	50	0	1:1	0	0.065	1.050	0.068	-
3 575	43340	QPSK	20	18.5	18.42	0.12	Edge 2	0	1	0	1:1	0	0.000	1.019	0.000	-
3 575	43340	QPSK	20	18.5	18.42	0.07	Edge 2	0	50	0	1:1	0	0.000	1.019	0.000	-
3 575	43340	QPSK	20	17.7	17.52	0.04	Edge 1	0	1	0	1:1	0	1.170	1.042	1.220	-
3 575	43340	QPSK	20	17.7	17.28	0.02	Edge 1	0	50	0	1:1	0	1.040	1.102	1.146	-
3 575	43340	QPSK	20	17.7	17.13	0.05	Edge 1	0	100	0	1:1	0	1.060	1.140	1.209	-
3 575	43340	QPSK	20	18.5	18.42	0.01	Edge 4 Tilt	0	1	0	1:1	0	0.086	1.019	0.088	-
3 575	43340	QPSK	20	17.5	17.29	0.19	Edge 4 Tilt	1	50	0	1:1	0	0.078	1.050	0.082	-
3 575	43340	QPSK	20	18.5	18.42	0.03	Edge 2 Tilt	0	1	0	1:1	0	0.00184	1.019	0.002	-
3 575	43340	QPSK	20	18.5	18.42	0.11	Edge 2 Tilt	0	50	0	1:1	0	0.00196	1.019	0.002	-
3 575	43340	QPSK	20	18.5	18.42	0.07	Rear	0	1	0	1:1	15	0.037	1.019	0.038	-
3 575	43340	QPSK	20	17.5	17.29	0.09	Rear	1	50	0	1:1	15	0.033	1.050	0.035	-
3 575	43340	QPSK	20	18.5	18.42	0.08	Edge 1	0	1	0	1:1	37	0.083	1.019	0.085	-
3 575	43340	QPSK	20	17.5	17.29	0.03	Edge 1	1	50	0	1:1	37	0.072	1.050	0.076	-
3 575	43340	QPSK	20	17.7	17.52	0.12	Edge 1	0	1	0	1:1	0	1.130	1.042	1.178	*
3 575	43340	QPSK	20	17.7	17.52	-0.05	Edge 1	0	1	0	1:1	0	1.160	1.042	1.209	**
Up-link Carrier Aggregation																
3 460	42190	QPSK	20	17.7	17.49	0.04	Edge 1	0	1	0	1:1	0	1.370	1.050	**1.438**	13
3 525	42840	QPSK	20	17.7	17.64	0.05	Edge 1	0	1	0	1:1	0	1.350	1.014	1.369	-
3 590	43490	QPSK	20	17.7	17.58	0.02	Edge 1	0	1	0	1:1	0	1.070	1.028	1.100	-
3 575	43340	QPSK	20	17.7	17.68	-0.01	Edge 1	0	1	0	1:1	0	1.230	1.005	1.236	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram								

Note: * Data entry indicate Variability measurement.

Note: ** Data entry indicate Device holder perturbation measurement.

LTE Band 48 Body SAR																
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB Offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)				(mm)	(W/kg)		(W/kg)	
3 560	55340	QPSK	20	18.4	18.23	0.01	Rear	0	1	0	1:1.58	0	0.321	1.040	0.334	-
3 560	55340	QPSK	20	18.4	17.69	0.01	Rear	0	50	0	1:1.58	0	0.277	1.178	0.326	-
3 560	55340	QPSK	20	18.8	18.75	0.08	Edge 4	0	1	0	1:1.58	0	0.161	1.012	0.163	-
3 560	55340	QPSK	20	17.8	17.66	0.01	Edge 4	1	50	0	1:1.58	0	0.118	1.033	0.122	-
3 560	55340	QPSK	20	18.8	18.75	0.07	Edge 2	0	1	0	1:1.58	0	0.00336	1.012	0.003	-
3 560	55340	QPSK	20	17.8	17.66	0.11	Edge 2	1	50	0	1:1.58	0	0.000	1.033	0.000	-
3 560	55340	QPSK	20	18.4	18.23	0.12	Edge 1	0	1	0	1:1.58	0	1.330	1.040	1.383	-
3 603.3	55773	QPSK	20	18.4	18.01	0.16	Edge 1	0	1	0	1:1.58	0	1.140	1.094	1.247	-
3 646.7	56207	QPSK	20	18.4	17.87	0.11	Edge 1	0	1	0	1:1.58	0	1.100	1.130	1.243	-
3 690	56640	QPSK	20	18.4	17.87	0.06	Edge 1	0	1	99	1:1.58	0	1.210	1.130	1.367	-
3 560	55340	QPSK	20	17.8	17.69	0.03	Edge 1	0	50	0	1:1.58	0	1.160	1.026	1.190	-
3 603.3	55773	QPSK	20	17.8	17.53	0.02	Edge 1	0	50	0	1:1.58	0	1.000	1.064	1.064	-
3 646.7	56207	QPSK	20	17.8	17.30	0.03	Edge 1	0	50	0	1:1.58	0	0.988	1.122	1.109	-
3 690	56640	QPSK	20	17.8	17.39	0.01	Edge 1	0	50	49	1:1.58	0	1.170	1.099	1.286	-
3 560	55340	QPSK	20	17.8	17.59	0.09	Edge 1	0	100	0	1:1.58	0	1.150	1.050	1.207	-
3 560	55340	QPSK	20	18.8	18.75	0.19	Edge 4 Tilt	0	1	0	1:1.58	0	0.171	1.012	0.173	-
3 560	55340	QPSK	20	17.8	17.66	0.03	Edge 4 Tilt	1	50	0	1:1.58	0	0.125	1.033	0.129	-
3 560	55340	QPSK	20	18.8	18.75	0.12	Edge 2 Tilt	0	1	0	1:1.58	0	0.000	1.012	0.000	-
3 560	55340	QPSK	20	17.8	17.66	0.07	Edge 2 Tilt	1	50	0	1:1.58	0	0.000	1.033	0.000	-
3560	55340	QPSK	20	18.8	18.75	0.9	Rear	0	1	0	1:1.58	15	0.071	1.012	0.072	-
3 560	55340	QPSK	20	17.8	17.66	0.10	Rear	1	50	0	1:1.58	15	0.053	1.033	0.055	-
3 560	55340	QPSK	20	18.8	18.75	0.04	Edge 1	0	1	0	1:1.58	37	0.122	1.012	0.123	-
3 560	55340	QPSK	20	17.8	17.66	0.14	Edge 1	1	50	0	1:1.58	37	0.090	1.033	0.093	-
3 560	55340	QPSK	20	18.4	18.23	0.09	Edge 1	0	1	0	1:1.58	0	**1.370**	1.040	**1.425**	14*
3 560	55340	QPSK	20	18.4	18.23	0.05	Edge 1	0	1	0	1:1.58	0	1.370	1.040	1.425	**
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram								

Note: * Data entry indicate Variability measurement.

Note: ** Data entry indicate Device holder perturbation measurement.

LTE Band 66 Body SAR																
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB Offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)				(mm)	(W/kg)		(W/kg)	
1 720	132072	QPSK	20	16.8	16.19	0.01	Rear	0	1	0	1:1	0	0.645	1.151	0.742	-
1 720	132072	QPSK	20	16.8	16.17	0.01	Rear	0	50	0	1:1	0	0.641	1.156	0.741	-
1 720	132072	QPSK	20	24.5	23.38	-0.06	Edge 4	0	1	0	1:1	0	0.404	1.294	0.523	-
1 720	132072	QPSK	20	23.5	22.32	-0.03	Edge 4	1	50	0	1:1	0	0.323	1.312	0.424	-
1 720	132072	QPSK	20	24.5	23.38	0.01	Edge 2	0	1	0	1:1	0	0.015	1.294	0.019	-
1 720	132072	QPSK	20	23.5	22.32	0.01	Edge 2	1	50	0	1:1	0	0.011	1.312	0.014	-
1 720	132072	QPSK	20	16.8	16.19	-0.10	Edge 1	0	1	0	1:1	0	0.789	1.151	0.908	-
1 745	132322	QPSK	20	16.8	16.05	-0.06	Edge 1	0	1	0	1:1	0	0.827	1.189	0.983	-
1 770	132572	QPSK	20	16.8	15.97	-0.12	Edge 1	0	1	0	1:1	0	0.764	1.211	0.925	-
1 720	132072	QPSK	20	16.8	16.17	-0.03	Edge 1	0	50	0	1:1	0	0.784	1.156	0.906	-
1 745	132322	QPSK	20	16.8	16.02	-0.10	Edge 1	0	50	0	1:1	0	0.814	1.197	0.974	-
1 770	132572	QPSK	20	16.8	15.86	-0.07	Edge 1	0	50	0	1:1	0	0.746	1.242	0.926	-
1 720	132072	QPSK	20	16.8	16.11	-0.08	Edge 1	0	100	0	1:1	0	0.860	1.172	1.008	-
1 720	132072	QPSK	20	24.5	23.38	0.03	Edge 4 Tilt	0	1	0	1:1	0	0.428	1.294	0.554	-
1 720	132072	QPSK	20	23.5	22.32	0.14	Edge 4 Tilt	1	50	0	1:1	0	0.349	1.312	0.458	-
1 720	132072	QPSK	20	24.5	23.38	0.01	Edge 2 Tilt	0	1	0	1:1	0	0.011	1.294	0.014	-
1 720	132072	QPSK	20	23.5	22.32	0.01	Edge 2 Tilt	1	50	0	1:1	0	0.00877	1.312	0.012	-
1 720	132072	QPSK	20	24.5	23.38	0.10	Rear	0	1	0	1:1	15	0.873	1.294	1.130	-
1 745	132322	QPSK	20	24.5	23.26	0.01	Rear	0	1	0	1:1	15	**0.993**	1.330	**1.321**	15
1 770	132572	QPSK	20	24.5	23.15	0.15	Rear	0	1	0	1:1	15	0.826	1.365	1.127	-
1 720	132072	QPSK	20	23.5	22.32	-0.14	Rear	1	50	0	1:1	15	0.691	1.312	0.907	-
1 745	132322	QPSK	20	23.5	22.16	0.08	Rear	1	50	0	1:1	15	0.685	1.361	0.933	-
1 770	132572	QPSK	20	23.5	22.04	0.05	Rear	1	50	0	1:1	15	0.635	1.400	0.889	-
1 720	132072	QPSK	20	23.5	22.27	0.04	Rear	1	100	0	1:1	15	0.683	1.327	0.907	-
1 720	132072	QPSK	20	24.5	23.38	0.05	Edge 1	0	1	0	1:1	37	0.245	1.294	0.317	-
1 720	132072	QPSK	20	23.5	22.32	0.15	Edge 1	1	50	0	1:1	37	0.187	1.312	0.245	-
1 745	132322	QPSK	20	24.5	23.26	0.02	Rear	0	1	0	1:1	15	0.941	1.330	1.252	-
1 745	132322	QPSK	20	24.5	23.26	0.01	Rear	0	1	0	1:1	15	0.990	1.330	1.317	*
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram								

Note: * Data entry indicate Variability measurement.

11.2 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 15 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 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.
9. 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.

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
7. 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.
8. TDD LTE (Power Class 3) was tested using UL-DL configuration 0 with 6 UL sub frames and 2S subframes 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).
9. 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.
10. This device supports LTE Carrier Aggregation(CA) in Uplink for LTE 5B, 7C, 38C, 41C, 42C 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 2017 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 5B, 7C, 38C, 41C, 42C is ≤ standalone LTE mode (without CA), SAR for LTE41C Up link CA was performed at the highest standalone SAR configuration without CA. UL CA SAR of 41C, 42C is measured for all required test channels, because the reported SAR for ULCA 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.

12. Simultaneous SAR Analysis

This device is contains 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 supports LTE Carrier Aggregation(CA) in Uplink for LTE 5B, 7C, 38C, 41C, 42C 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 2017 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 5B, 7C, 38C, 41C, 42C is ≤ standalone LTE mode (without CA), SAR for LTE41C Up link CA was performed at the highest standalone SAR configuration without CA. UL CA SAR of 41C, 42C is measured for all required test channels, because the reported SAR for ULCA 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.

13. Simultaneous Transmission Summation.

The highest reported SAR for each exposure condition is used for SAR summation purpose.

The highest reported SAR for each exposure condition is used for SAR summation purpose. The WLAN/BT SAR testing results were used to perform transmission simultaneous analysis from SAR Test Report[HCT-SR-2206-FC004],Module model: WL22B with FCC: ACJ9TGWL22B

Simultaneous Transmission Summation Scenario (2.4 GHz)									
Band	Configuration	Main	2.4GHz Ant1	2.4GHz Ant2	2.4GHz MIMO	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	Yes/No
		1	2	3	4	1+2	1+3	1+4	
UMTS Band 2	Rear	0.724	0.174	0.201	0.375	0.898	0.925	1.099	No
	Edge 4	1.262	1.095	0.000	1.095	2.357	1.262	2.357	Yes
	Edge 2	0.044	0.002	1.084	1.086	0.046	1.128	1.130	No
	Edge 1	0.952	0.013	0.017	0.030	0.965	0.969	0.982	No
	Edge 4 Tilt	1.097	1.317	0.007	1.324	2.414	1.104	2.421	Yes
	Edge 2 Tilt	0.040	0.007	1.133	1.140	0.047	1.173	1.180	No
UMTS Band 4	Rear	1.190	0.174	0.201	0.375	1.364	1.391	1.565	No
	Edge 4	0.715	1.095	0.000	1.095	1.810	0.715	1.810	Yes
	Edge 2	0.013	0.002	1.084	1.086	0.015	1.097	1.099	No
	Edge 1	1.116	0.013	0.017	0.030	1.129	1.133	1.146	No
	Edge 4 Tilt	0.603	1.317	0.007	1.324	1.920	0.610	1.927	Yes
	Edge 2 Tilt	0.013	0.007	1.133	1.140	0.020	1.146	1.153	No
UMTS Band 5	Rear	0.424	0.174	0.201	0.375	0.598	0.625	0.799	No
	Edge 4	0.337	1.095	0.000	1.095	1.432	0.337	1.432	No
	Edge 2	0.019	0.002	1.084	1.086	0.021	1.103	1.105	No
	Edge 1	1.017	0.013	0.017	0.030	1.030	1.034	1.047	No
	Edge 4 Tilt	0.370	1.317	0.007	1.324	1.687	0.377	1.694	Yes
	Edge 2 Tilt	0.038	0.007	1.133	1.140	0.045	1.171	1.178	No
LTE Band 7	Rear	1.192	0.174	0.201	0.375	1.366	1.393	1.567	No
	Edge 4	0.485	1.095	0.000	1.095	1.580	0.485	1.580	No
	Edge 2	0.032	0.002	1.084	1.086	0.034	1.116	1.118	No
	Edge 1	0.907	0.013	0.017	0.030	0.920	0.924	0.937	No
	Edge 4 Tilt	0.569	1.317	0.007	1.324	1.886	0.576	1.893	Yes
	Edge 2 Tilt	0.039	0.007	1.133	1.140	0.046	1.172	1.179	No

Simultaneous Transmission Summation Scenario (2.4 GHz)									
Band	Configuration	Main	2.4GHz Ant1	2.4GHz Ant2	2.4GHz MIMO	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	Yes/No
		1	2	3	4	1+2	1+3	1+4	
LTE Band 12	Rear	0.283	0.174	0.201	0.375	0.457	0.484	0.658	No
	Edge 4	0.200	1.095	0.000	1.095	1.295	0.200	1.295	No
	Edge 2	0.029	0.002	1.084	1.086	0.031	1.113	1.115	No
	Edge 1	0.700	0.013	0.017	0.030	0.713	0.717	0.730	No
	Edge 4 Tilt	0.187	1.317	0.007	1.324	1.504	0.194	1.511	No
	Edge 2 Tilt	0.028	0.007	1.133	1.140	0.035	1.161	1.168	No
LTE Band 13	Rear	0.415	0.174	0.201	0.375	0.589	0.616	0.790	No
	Edge 4	0.555	1.095	0.000	1.095	1.650	0.555	1.650	Yes
	Edge 2	0.012	0.002	1.084	1.086	0.014	1.096	1.098	No
	Edge 1	0.870	0.013	0.017	0.030	0.883	0.887	0.900	No
	Edge 4 Tilt	0.545	1.317	0.007	1.324	1.862	0.552	1.869	Yes
	Edge 2 Tilt	0.019	0.007	1.133	1.140	0.026	1.152	1.159	No
LTE Band 14	Rear	0.432	0.174	0.201	0.375	0.606	0.633	0.807	No
	Edge 4	0.502	1.095	0.000	1.095	1.597	0.502	1.597	No
	Edge 2	0.022	0.002	1.084	1.086	0.024	1.106	1.108	No
	Edge 1	0.893	0.013	0.017	0.030	0.906	0.910	0.923	No
	Edge 4 Tilt	0.493	1.317	0.007	1.324	1.810	0.500	1.817	Yes
	Edge 2 Tilt	0.031	0.007	1.133	1.140	0.038	1.164	1.171	No
LTE Band 25	Rear	0.539	0.174	0.201	0.375	0.713	0.740	0.914	No
	Edge 4	0.870	1.095	0.000	1.095	1.965	0.870	1.965	Yes
	Edge 2	0.032	0.002	1.084	1.086	0.034	1.116	1.118	No
	Edge 1	0.859	0.013	0.017	0.030	0.872	0.876	0.889	No
	Edge 4 Tilt	1.001	1.317	0.007	1.324	2.318	1.008	2.325	Yes
	Edge 2 Tilt	0.037	0.007	1.133	1.140	0.044	1.170	1.177	No

Simultaneous Transmission Summation Scenario (2.4 GHz)									
Band	Configuration	Main	2.4GHz Ant1	2.4GHz Ant2	2.4GHz MIMO	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	Yes/No
		1	2	3	4	1+2	1+3	1+4	
LTE Band 26	Rear	0.419	0.174	0.201	0.375	0.593	0.620	0.794	No
	Edge 4	0.345	1.095	0.000	1.095	1.440	0.345	1.440	No
	Edge 2	0.012	0.002	1.084	1.086	0.014	1.096	1.098	No
	Edge 1	0.890	0.013	0.017	0.030	0.903	0.907	0.920	No
	Edge 4 Tilt	0.397	1.317	0.007	1.324	1.714	0.404	1.721	Yes
	Edge 2 Tilt	0.034	0.007	1.133	1.140	0.041	1.167	1.174	No
LTE Band 38	Rear	0.700	0.174	0.201	0.375	0.874	0.901	1.075	No
	Edge 4	0.266	1.095	0.000	1.095	1.361	0.266	1.361	No
	Edge 2	0.035	0.002	1.084	1.086	0.037	1.119	1.121	No
	Edge 1	1.073	0.013	0.017	0.030	1.086	1.090	1.103	No
	Edge 4 Tilt	0.238	1.317	0.007	1.324	1.555	0.245	1.562	No
	Edge 2 Tilt	0.040	0.007	1.133	1.140	0.047	1.173	1.180	No
LTE Band 41	Rear	0.744	0.174	0.201	0.375	0.918	0.945	1.119	No
	Edge 4	0.291	1.095	0.000	1.095	1.386	0.291	1.386	No
	Edge 2	0.020	0.002	1.084	1.086	0.022	1.104	1.106	No
	Edge 1	1.206	0.013	0.017	0.030	1.219	1.223	1.236	No
	Edge 4 Tilt	0.251	1.317	0.007	1.324	1.568	0.258	1.575	No
	Edge 2 Tilt	0.015	0.007	1.133	1.140	0.022	1.148	1.155	No
LTE Band 42	Rear	0.251	0.174	0.201	0.375	0.425	0.452	0.626	No
	Edge 4	0.073	1.095	0.000	1.095	1.168	0.073	1.168	No
	Edge 2	0.000	0.002	1.084	1.086	0.002	1.084	1.086	No
	Edge 1	1.220	0.013	0.017	0.030	1.233	1.237	1.250	No
	Edge 4 Tilt	0.088	1.317	0.007	1.324	1.405	0.095	1.412	No
	Edge 2 Tilt	0.002	0.007	1.133	1.140	0.009	1.135	1.142	No

Simultaneous Transmission Summation Scenario (2.4 GHz)									
Band	Configuration	Main	2.4GHz Ant1	2.4GHz Ant2	2.4GHz MIMO	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	Yes/No
		1	2	3	4	1+2	1+3	1+4	
LTE Band 48	Rear	0.334	0.174	0.201	0.375	0.508	0.535	0.709	No
	Edge 4	0.163	1.095	0.000	1.095	1.258	0.163	1.258	No
	Edge 2	0.003	0.002	1.084	1.086	0.005	1.087	1.089	No
	Edge 1	1.425	0.013	0.017	0.030	1.438	1.442	1.455	No
	Edge 4 Tilt	0.173	1.317	0.007	1.324	1.490	0.180	1.497	No
	Edge 2 Tilt	0.000	0.007	1.133	1.140	0.007	1.133	1.140	No
LTE Band 66	Rear	1.321	0.174	0.201	0.375	1.495	1.522	1.696	Yes
	Edge 4	0.523	1.095	0.000	1.095	1.618	0.523	1.618	Yes
	Edge 2	0.019	0.002	1.084	1.086	0.021	1.103	1.105	No
	Edge 1	1.008	0.013	0.017	0.030	1.021	1.025	1.038	No
	Edge 4 Tilt	0.554	1.317	0.007	1.324	1.871	0.561	1.878	Yes
	Edge 2 Tilt	0.014	0.007	1.133	1.140	0.021	1.147	1.154	No

Simultaneous Transmission Summation Scenario (5 GHz)									
Band	Configuration	Main	5GHz Ant1	5GHz Ant2	5GHz MIMO	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	Yes/No
		1	2	3	4	1+2	1+3	1+4	
UMTS Band 2	Rear	0.724	0.436	0.204	0.640	1.160	0.928	1.364	No
	Edge 4	1.262	0.827	0.000	0.827	2.089	1.262	2.089	Yes
	Edge 2	0.044	0.000	0.971	0.971	0.044	1.015	1.015	No
	Edge 1	0.952	0.056	0.021	0.077	1.008	0.973	1.029	No
	Edge 4 Tilt	1.097	1.089	0.000	1.089	2.186	1.097	2.186	Yes
	Edge 2 Tilt	0.040	0.002	1.195	1.197	0.042	1.235	1.237	No
UMTS Band 4	Rear	1.190	0.436	0.204	0.640	1.626	1.394	1.830	Yes
	Edge 4	0.715	0.827	0.000	0.827	1.542	0.715	1.542	No
	Edge 2	0.013	0.000	0.971	0.971	0.013	0.984	0.984	No
	Edge 1	1.116	0.056	0.021	0.077	1.172	1.137	1.193	No
	Edge 4 Tilt	0.603	1.089	0.000	1.089	1.692	0.603	1.692	Yes
	Edge 2 Tilt	0.013	0.002	1.195	1.197	0.015	1.208	1.210	No
UMTS Band 5	Rear	0.424	0.436	0.204	0.640	0.860	0.628	1.064	No
	Edge 4	0.337	0.827	0.000	0.827	1.164	0.337	1.164	No
	Edge 2	0.019	0.000	0.971	0.971	0.019	0.990	0.990	No
	Edge 1	1.017	0.056	0.021	0.077	1.073	1.038	1.094	No
	Edge 4 Tilt	0.370	1.089	0.000	1.089	1.459	0.370	1.459	No
	Edge 2 Tilt	0.038	0.002	1.195	1.197	0.040	1.233	1.235	No
LTE Band 7	Rear	1.192	0.436	0.204	0.640	1.628	1.396	1.832	Yes
	Edge 4	0.485	0.827	0.000	0.827	1.312	0.485	1.312	No
	Edge 2	0.032	0.000	0.971	0.971	0.032	1.003	1.003	No
	Edge 1	0.907	0.056	0.021	0.077	0.963	0.928	0.984	No
	Edge 4 Tilt	0.569	1.089	0.000	1.089	1.658	0.569	1.658	Yes
	Edge 2 Tilt	0.039	0.002	1.195	1.197	0.041	1.234	1.236	No

Simultaneous Transmission Summation Scenario (5 GHz)									
Band	Configuration	Main	5GHz Ant1	5GHz Ant2	5GHz MIMO	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	Yes/No
		1	2	3	4	1+2	1+3	1+4	
LTE Band 12	Rear	0.283	0.436	0.204	0.640	0.719	0.487	0.923	No
	Edge 4	0.200	0.827	0.000	0.827	1.027	0.200	1.027	No
	Edge 2	0.029	0.000	0.971	0.971	0.029	1.000	1.000	No
	Edge 1	0.700	0.056	0.021	0.077	0.756	0.721	0.777	No
	Edge 4 Tilt	0.187	1.089	0.000	1.089	1.276	0.187	1.276	No
	Edge 2 Tilt	0.028	0.002	1.195	1.197	0.030	1.223	1.225	No
LTE Band 13	Rear	0.415	0.436	0.204	0.640	0.851	0.619	1.055	No
	Edge 4	0.555	0.827	0.000	0.827	1.382	0.555	1.382	No
	Edge 2	0.012	0.000	0.971	0.971	0.012	0.983	0.983	No
	Edge 1	0.870	0.056	0.021	0.077	0.926	0.891	0.947	No
	Edge 4 Tilt	0.545	1.089	0.000	1.089	1.634	0.545	1.634	Yes
	Edge 2 Tilt	0.019	0.002	1.195	1.197	0.021	1.214	1.216	No
LTE Band 14	Rear	0.432	0.436	0.204	0.640	0.868	0.636	1.072	No
	Edge 4	0.502	0.827	0.000	0.827	1.329	0.502	1.329	No
	Edge 2	0.022	0.000	0.971	0.971	0.022	0.993	0.993	No
	Edge 1	0.893	0.056	0.021	0.077	0.949	0.914	0.970	No
	Edge 4 Tilt	0.493	1.089	0.000	1.089	1.582	0.493	1.582	No
	Edge 2 Tilt	0.031	0.002	1.195	1.197	0.033	1.226	1.228	No
LTE Band 25	Rear	0.539	0.436	0.204	0.640	0.975	0.743	1.179	No
	Edge 4	0.870	0.827	0.000	0.827	1.697	0.870	1.697	Yes
	Edge 2	0.032	0.000	0.971	0.971	0.032	1.003	1.003	No
	Edge 1	0.859	0.056	0.021	0.077	0.915	0.880	0.936	No
	Edge 4 Tilt	1.001	1.089	0.000	1.089	2.090	1.001	2.090	Yes
	Edge 2 Tilt	0.037	0.002	1.195	1.197	0.039	1.232	1.234	No

Simultaneous Transmission Summation Scenario (5 GHz)									
Band	Configuration	Main	5GHz Ant1	5GHz Ant2	5GHz MIMO	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	Yes/No
		1	2	3	4	1+2	1+3	1+4	
LTE Band 26	Rear	0.419	0.436	0.204	0.640	0.855	0.623	1.059	No
	Edge 4	0.345	0.827	0.000	0.827	1.172	0.345	1.172	No
	Edge 2	0.012	0.000	0.971	0.971	0.012	0.983	0.983	No
	Edge 1	0.890	0.056	0.021	0.077	0.946	0.911	0.967	No
	Edge 4 Tilt	0.397	1.089	0.000	1.089	1.486	0.397	1.486	No
	Edge 2 Tilt	0.034	0.002	1.195	1.197	0.036	1.229	1.231	No
LTE Band 38	Rear	0.700	0.436	0.204	0.640	1.136	0.904	1.340	No
	Edge 4	0.266	0.827	0.000	0.827	1.093	0.266	1.093	No
	Edge 2	0.035	0.000	0.971	0.971	0.035	1.006	1.006	No
	Edge 1	1.073	0.056	0.021	0.077	1.129	1.094	1.150	No
	Edge 4 Tilt	0.238	1.089	0.000	1.089	1.327	0.238	1.327	No
	Edge 2 Tilt	0.040	0.002	1.195	1.197	0.042	1.235	1.237	No
LTE Band 41	Rear	0.744	0.436	0.204	0.640	1.180	0.948	1.384	No
	Edge 4	0.291	0.827	0.000	0.827	1.118	0.291	1.118	No
	Edge 2	0.020	0.000	0.971	0.971	0.020	0.991	0.991	No
	Edge 1	1.206	0.056	0.021	0.077	1.262	1.227	1.283	No
	Edge 4 Tilt	0.251	1.089	0.000	1.089	1.340	0.251	1.340	No
	Edge 2 Tilt	0.015	0.002	1.195	1.197	0.017	1.210	1.212	No
LTE Band 42	Rear	0.251	0.436	0.204	0.640	0.687	0.455	0.891	No
	Edge 4	0.073	0.827	0.000	0.827	0.900	0.073	0.900	No
	Edge 2	0.000	0.000	0.971	0.971	0.000	0.971	0.971	No
	Edge 1	1.220	0.056	0.021	0.077	1.276	1.241	1.297	No
	Edge 4 Tilt	0.088	1.089	0.000	1.089	1.177	0.088	1.177	No
	Edge 2 Tilt	0.002	0.002	1.195	1.197	0.004	1.197	1.199	No

Simultaneous Transmission Summation Scenario (5 GHz)									
Band	Configuration	Main	5GHz Ant1	5GHz Ant2	5GHz MIMO	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	Yes/No
		1	2	3	4	1+2	1+3	1+4	
LTE Band 48	Rear	0.334	0.436	0.204	0.640	0.770	0.538	0.974	No
	Edge 4	0.163	0.827	0.000	0.827	0.990	0.163	0.990	No
	Edge 2	0.003	0.000	0.971	0.971	0.003	0.974	0.974	No
	Edge 1	1.425	0.056	0.021	0.077	1.481	1.446	1.502	No
	Edge 4 Tilt	0.173	1.089	0.000	1.089	1.262	0.173	1.262	No
	Edge 2 Tilt	0.000	0.002	1.195	1.197	0.002	1.195	1.197	No
LTE Band 66	Rear	1.321	0.436	0.204	0.640	1.757	1.525	1.961	Yes
	Edge 4	0.523	0.827	0.000	0.827	1.350	0.523	1.350	Yes
	Edge 2	0.019	0.000	0.971	0.971	0.019	0.990	0.990	No
	Edge 1	1.008	0.056	0.021	0.077	1.064	1.029	1.085	No
	Edge 4 Tilt	0.554	1.089	0.000	1.089	1.643	0.554	1.643	Yes
	Edge 2 Tilt	0.014	0.002	1.195	1.197	0.016	1.209	1.211	No

Simultaneous Transmission Summation Scenario (WI-FI 6E)									
Band	Configuration	Main	WI-FI 6E Ant1	WI-FI 6E Ant2	WI-FI 6E MIMO	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	Yes/No
		1	2	3	4	1+2	1+3	1+4	
UMTS Band 2	Rear	0.724	0.056	0.126	0.182	0.780	0.850	0.906	No
	Edge 4	1.262	0.431	0.000	0.431	1.693	1.262	1.693	Yes
	Edge 2	0.044	0.000	0.447	0.447	0.044	0.491	0.491	No
	Edge 1	0.952	0.008	0.000	0.008	0.960	0.952	0.960	No
	Edge 4 Tilt	1.097	0.627	0.000	0.627	1.724	1.097	1.724	Yes
	Edge 2 Tilt	0.040	0.003	0.644	0.647	0.043	0.684	0.687	No
UMTS Band 4	Rear	1.190	0.056	0.126	0.182	1.246	1.316	1.372	No
	Edge 4	0.715	0.431	0.000	0.431	1.146	0.715	1.146	No
	Edge 2	0.013	0.000	0.447	0.447	0.013	0.460	0.460	No
	Edge 1	1.116	0.008	0.000	0.008	1.124	1.116	1.124	No
	Edge 4 Tilt	0.603	0.627	0.000	0.627	1.230	0.603	1.230	No
	Edge 2 Tilt	0.013	0.003	0.644	0.647	0.016	0.657	0.660	No
UMTS Band 5	Rear	0.424	0.056	0.126	0.182	0.480	0.550	0.606	No
	Edge 4	0.337	0.431	0.000	0.431	0.768	0.337	0.768	No
	Edge 2	0.019	0.000	0.447	0.447	0.019	0.466	0.466	No
	Edge 1	1.017	0.008	0.000	0.008	1.025	1.017	1.025	No
	Edge 4 Tilt	0.370	0.627	0.000	0.627	0.997	0.370	0.997	No
	Edge 2 Tilt	0.038	0.003	0.644	0.647	0.041	0.682	0.685	No
LTE Band 7	Rear	1.192	0.056	0.126	0.182	1.248	1.318	1.374	No
	Edge 4	0.485	0.431	0.000	0.431	0.916	0.485	0.916	No
	Edge 2	0.032	0.000	0.447	0.447	0.032	0.479	0.479	No
	Edge 1	0.907	0.008	0.000	0.008	0.915	0.907	0.915	No
	Edge 4 Tilt	0.569	0.627	0.000	0.627	1.196	0.569	1.196	No
	Edge 2 Tilt	0.039	0.003	0.644	0.647	0.042	0.683	0.686	No

Simultaneous Transmission Summation Scenario (WI-FI 6E)									
Band	Configuration	Main	WI-FI 6E Ant1	WI-FI 6E Ant2	WI-FI 6E MIMO	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	Yes/No
		1	2	3	4	1+2	1+3	1+4	
LTE Band 12	Rear	0.283	0.056	0.126	0.182	0.339	0.409	0.465	No
	Edge 4	0.200	0.431	0.000	0.431	0.631	0.200	0.631	No
	Edge 2	0.029	0.000	0.447	0.447	0.029	0.476	0.476	No
	Edge 1	0.700	0.008	0.000	0.008	0.708	0.700	0.708	No
	Edge 4 Tilt	0.187	0.627	0.000	0.627	0.814	0.187	0.814	No
	Edge 2 Tilt	0.028	0.003	0.644	0.647	0.031	0.672	0.675	No
LTE Band 13	Rear	0.415	0.056	0.126	0.182	0.471	0.541	0.597	No
	Edge 4	0.555	0.431	0.000	0.431	0.986	0.555	0.986	No
	Edge 2	0.012	0.000	0.447	0.447	0.012	0.459	0.459	No
	Edge 1	0.870	0.008	0.000	0.008	0.878	0.870	0.878	No
	Edge 4 Tilt	0.545	0.627	0.000	0.627	1.172	0.545	1.172	No
	Edge 2 Tilt	0.019	0.003	0.644	0.647	0.022	0.663	0.666	No
LTE Band 14	Rear	0.432	0.056	0.126	0.182	0.488	0.558	0.614	No
	Edge 4	0.502	0.431	0.000	0.431	0.933	0.502	0.933	No
	Edge 2	0.022	0.000	0.447	0.447	0.022	0.469	0.469	No
	Edge 1	0.893	0.008	0.000	0.008	0.901	0.893	0.901	No
	Edge 4 Tilt	0.493	0.627	0.000	0.627	1.120	0.493	1.120	No
	Edge 2 Tilt	0.031	0.003	0.644	0.647	0.034	0.675	0.678	No
LTE Band 25	Rear	0.539	0.056	0.126	0.182	0.595	0.665	0.721	No
	Edge 4	0.870	0.431	0.000	0.431	1.301	0.870	1.301	No
	Edge 2	0.032	0.000	0.447	0.447	0.032	0.479	0.479	No
	Edge 1	0.859	0.008	0.000	0.008	0.867	0.859	0.867	No
	Edge 4 Tilt	1.001	0.627	0.000	0.627	1.628	1.001	1.628	Yes
	Edge 2 Tilt	0.037	0.003	0.644	0.647	0.040	0.681	0.684	No

Simultaneous Transmission Summation Scenario (WI-FI 6E)									
Band	Configuration	Main	WI-FI 6E Ant1	WI-FI 6E Ant2	WI-FI 6E MIMO	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	Yes/No
		1	2	3	4	1+2	1+3	1+4	
LTE Band 26	Rear	0.419	0.056	0.126	0.182	0.475	0.545	0.601	No
	Edge 4	0.345	0.431	0.000	0.431	0.776	0.345	0.776	No
	Edge 2	0.012	0.000	0.447	0.447	0.012	0.459	0.459	No
	Edge 1	0.890	0.008	0.000	0.008	0.898	0.890	0.898	No
	Edge 4 Tilt	0.397	0.627	0.000	0.627	1.024	0.397	1.024	No
	Edge 2 Tilt	0.034	0.003	0.644	0.647	0.037	0.678	0.681	No
LTE Band 38	Rear	0.700	0.056	0.126	0.182	0.756	0.826	0.882	No
	Edge 4	0.266	0.431	0.000	0.431	0.697	0.266	0.697	No
	Edge 2	0.035	0.000	0.447	0.447	0.035	0.482	0.482	No
	Edge 1	1.073	0.008	0.000	0.008	1.081	1.073	1.081	No
	Edge 4 Tilt	0.238	0.627	0.000	0.627	0.865	0.238	0.865	No
	Edge 2 Tilt	0.040	0.003	0.644	0.647	0.043	0.684	0.687	No
LTE Band 41	Rear	0.744	0.056	0.126	0.182	0.800	0.870	0.926	No
	Edge 4	0.291	0.431	0.000	0.431	0.722	0.291	0.722	No
	Edge 2	0.020	0.000	0.447	0.447	0.020	0.467	0.467	No
	Edge 1	1.206	0.008	0.000	0.008	1.214	1.206	1.214	No
	Edge 4 Tilt	0.251	0.627	0.000	0.627	0.878	0.251	0.878	No
	Edge 2 Tilt	0.015	0.003	0.644	0.647	0.018	0.659	0.662	No
LTE Band 42	Rear	0.251	0.056	0.126	0.182	0.307	0.377	0.433	No
	Edge 4	0.073	0.431	0.000	0.431	0.504	0.073	0.504	No
	Edge 2	0.000	0.000	0.447	0.447	0.000	0.447	0.447	No
	Edge 1	1.220	0.008	0.000	0.008	1.228	1.220	1.228	No
	Edge 4 Tilt	0.088	0.627	0.000	0.627	0.715	0.088	0.715	No
	Edge 2 Tilt	0.002	0.003	0.644	0.647	0.005	0.646	0.649	No

Simultaneous Transmission Summation Scenario (WI-FI 6E)									
Band	Configuration	Main	WI-FI 6E Ant1	WI-FI 6E Ant2	WI-FI 6E MIMO	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	Yes/No
		1	2	3	4	1+2	1+3	1+4	
LTE Band 48	Rear	0.334	0.056	0.126	0.182	0.390	0.460	0.516	No
	Edge 4	0.163	0.431	0.000	0.431	0.594	0.163	0.594	No
	Edge 2	0.003	0.000	0.447	0.447	0.003	0.450	0.450	No
	Edge 1	1.425	0.008	0.000	0.008	1.433	1.425	1.433	No
	Edge 4 Tilt	0.173	0.627	0.000	0.627	0.800	0.173	0.800	No
	Edge 2 Tilt	0.000	0.003	0.644	0.647	0.003	0.644	0.647	No
LTE Band 66	Rear	1.321	0.056	0.126	0.182	1.377	1.447	1.503	No
	Edge 4	0.523	0.431	0.000	0.431	0.954	0.523	0.954	No
	Edge 2	0.019	0.000	0.447	0.447	0.019	0.466	0.466	No
	Edge 1	1.008	0.008	0.000	0.008	1.016	1.008	1.016	No
	Edge 4 Tilt	0.554	0.627	0.000	0.627	1.181	0.554	1.181	No
	Edge 2 Tilt	0.014	0.003	0.644	0.647	0.017	0.658	0.661	No

Simultaneous Transmission Summation Scenario (Bluetooth&2.4 GHz&5GHz&WI-FI 6E)											
Band	Configuration	Main	Bluetooth	2.4GHz Ant1	5GHz Ant1	WI-FI 6E Ant1	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	Yes/No
		1	2	3	4	5	1+2	2+3	2+4	2+5	
UMTS Band 2	Rear	0.724	0.085	0.174	0.436	0.056	0.809	0.259	0.521	0.141	No
	Edge 4	1.262	0.000	1.095	0.827	0.431	1.262	1.095	0.827	0.431	No
	Edge 2	0.044	0.269	0.002	0.000	0.000	0.313	0.271	0.269	0.269	No
	Edge 1	0.952	0.000	0.013	0.056	0.008	0.952	0.013	0.056	0.008	No
	Edge 4 Tilt	1.097	0.000	1.317	1.089	0.627	1.097	1.317	1.089	0.627	No
	Edge 2 Tilt	0.040	0.292	0.007	0.002	0.003	0.332	0.299	0.294	0.295	No
UMTS Band 4	Rear	1.190	0.085	0.174	0.436	0.056	1.275	0.259	0.521	0.141	No
	Edge 4	0.715	0.000	1.095	0.827	0.431	0.715	1.095	0.827	0.431	No
	Edge 2	0.013	0.269	0.002	0.000	0.000	0.282	0.271	0.269	0.269	No
	Edge 1	1.116	0.000	0.013	0.056	0.008	1.116	0.013	0.056	0.008	No
	Edge 4 Tilt	0.603	0.000	1.317	1.089	0.627	0.603	1.317	1.089	0.627	No
	Edge 2 Tilt	0.013	0.292	0.007	0.002	0.003	0.305	0.299	0.294	0.295	No
UMTS Band 5	Rear	0.424	0.085	0.174	0.436	0.056	0.509	0.259	0.521	0.141	No
	Edge 4	0.337	0.000	1.095	0.827	0.431	0.337	1.095	0.827	0.431	No
	Edge 2	0.019	0.269	0.002	0.000	0.000	0.288	0.271	0.269	0.269	No
	Edge 1	1.017	0.000	0.013	0.056	0.008	1.017	0.013	0.056	0.008	No
	Edge 4 Tilt	0.370	0.000	1.317	1.089	0.627	0.370	1.317	1.089	0.627	No
	Edge 2 Tilt	0.038	0.292	0.007	0.002	0.003	0.330	0.299	0.294	0.295	No
LTE Band 7	Rear	1.192	0.085	0.174	0.436	0.056	1.277	0.259	0.521	0.141	No
	Edge 4	0.485	0.000	1.095	0.827	0.431	0.485	1.095	0.827	0.431	No
	Edge 2	0.032	0.269	0.002	0.000	0.000	0.301	0.271	0.269	0.269	No
	Edge 1	0.907	0.000	0.013	0.056	0.008	0.907	0.013	0.056	0.008	No
	Edge 4 Tilt	0.569	0.000	1.317	1.089	0.627	0.569	1.317	1.089	0.627	No
	Edge 2 Tilt	0.039	0.292	0.007	0.002	0.003	0.331	0.299	0.294	0.295	No

Simultaneous Transmission Summation Scenario (Bluetooth&2.4 GHz&5GHz& WI-FI 6E)											
Band	Configuration	Main	Bluetooth	2.4GHz Ant1	5GHz Ant1	WI-FI 6E Ant1	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	Yes/No
		1	2	3	4	5	1+2	2+3	2+4	2+5	
LTE Band 12	Rear	0.283	0.085	0.174	0.436	0.056	0.368	0.259	0.521	0.141	No
	Edge 4	0.200	0.000	1.095	0.827	0.431	0.200	1.095	0.827	0.431	No
	Edge 2	0.029	0.269	0.002	0.000	0.000	0.298	0.271	0.269	0.269	No
	Edge 1	0.700	0.000	0.013	0.056	0.008	0.700	0.013	0.056	0.008	No
	Edge 4 Tilt	0.187	0.000	1.317	1.089	0.627	0.187	1.317	1.089	0.627	No
	Edge 2 Tilt	0.028	0.292	0.007	0.002	0.003	0.320	0.299	0.294	0.295	No
LTE Band 13	Rear	0.415	0.085	0.174	0.436	0.056	0.500	0.259	0.521	0.141	No
	Edge 4	0.555	0.000	1.095	0.827	0.431	0.555	1.095	0.827	0.431	No
	Edge 2	0.012	0.269	0.002	0.000	0.000	0.281	0.271	0.269	0.269	No
	Edge 1	0.870	0.000	0.013	0.056	0.008	0.870	0.013	0.056	0.008	No
	Edge 4 Tilt	0.545	0.000	1.317	1.089	0.627	0.545	1.317	1.089	0.627	No
	Edge 2 Tilt	0.019	0.292	0.007	0.002	0.003	0.311	0.299	0.294	0.295	No
LTE Band 14	Rear	0.432	0.085	0.174	0.436	0.056	0.517	0.259	0.521	0.141	No
	Edge 4	0.502	0.000	1.095	0.827	0.431	0.502	1.095	0.827	0.431	No
	Edge 2	0.022	0.269	0.002	0.000	0.000	0.291	0.271	0.269	0.269	No
	Edge 1	0.893	0.000	0.013	0.056	0.008	0.893	0.013	0.056	0.008	No
	Edge 4 Tilt	0.493	0.000	1.317	1.089	0.627	0.493	1.317	1.089	0.627	No
	Edge 2 Tilt	0.031	0.292	0.007	0.002	0.003	0.323	0.299	0.294	0.295	No
LTE Band 25	Rear	0.539	0.085	0.174	0.436	0.056	0.624	0.259	0.521	0.141	No
	Edge 4	0.870	0.000	1.095	0.827	0.431	0.870	1.095	0.827	0.431	No
	Edge 2	0.032	0.269	0.002	0.000	0.000	0.301	0.271	0.269	0.269	No
	Edge 1	0.859	0.000	0.013	0.056	0.008	0.859	0.013	0.056	0.008	No
	Edge 4 Tilt	1.001	0.000	1.317	1.089	0.627	1.001	1.317	1.089	0.627	No
	Edge 2 Tilt	0.037	0.292	0.007	0.002	0.003	0.329	0.299	0.294	0.295	No

Simultaneous Transmission Summation Scenario (Bluetooth&2.4 GHz&5GHz& WI-FI 6E)											
Band	Configuration	Main	Bluetooth	2.4GHz Ant1	5GHz Ant1	WI-FI 6E Ant1	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	Yes/No
		1	2	3	4	5	1+2	2+3	2+4	2+5	
LTE Band 26	Rear	0.419	0.085	0.174	0.436	0.056	0.504	0.259	0.521	0.141	No
	Edge 4	0.345	0.000	1.095	0.827	0.431	0.345	1.095	0.827	0.431	No
	Edge 2	0.012	0.269	0.002	0.000	0.000	0.281	0.271	0.269	0.269	No
	Edge 1	0.890	0.000	0.013	0.056	0.008	0.890	0.013	0.056	0.008	No
	Edge 4 Tilt	0.397	0.000	1.317	1.089	0.627	0.397	1.317	1.089	0.627	No
	Edge 2 Tilt	0.034	0.292	0.007	0.002	0.003	0.326	0.299	0.294	0.295	No
LTE Band 38	Rear	0.700	0.085	0.174	0.436	0.056	0.785	0.259	0.521	0.141	No
	Edge 4	0.266	0.000	1.095	0.827	0.431	0.266	1.095	0.827	0.431	No
	Edge 2	0.035	0.269	0.002	0.000	0.000	0.304	0.271	0.269	0.269	No
	Edge 1	1.073	0.000	0.013	0.056	0.008	1.073	0.013	0.056	0.008	No
	Edge 4 Tilt	0.238	0.000	1.317	1.089	0.627	0.238	1.317	1.089	0.627	No
	Edge 2 Tilt	0.040	0.292	0.007	0.002	0.003	0.332	0.299	0.294	0.295	No
LTE Band 41	Rear	0.744	0.085	0.174	0.436	0.056	0.829	0.259	0.521	0.141	No
	Edge 4	0.291	0.000	1.095	0.827	0.431	0.291	1.095	0.827	0.431	No
	Edge 2	0.020	0.269	0.002	0.000	0.000	0.289	0.271	0.269	0.269	No
	Edge 1	1.206	0.000	0.013	0.056	0.008	1.206	0.013	0.056	0.008	No
	Edge 4 Tilt	0.251	0.000	1.317	1.089	0.627	0.251	1.317	1.089	0.627	No
	Edge 2 Tilt	0.015	0.292	0.007	0.002	0.003	0.307	0.299	0.294	0.295	No
LTE Band 42	Rear	0.251	0.085	0.174	0.436	0.056	0.336	0.259	0.521	0.141	No
	Edge 4	0.073	0.000	1.095	0.827	0.431	0.073	1.095	0.827	0.431	No
	Edge 2	0.000	0.269	0.002	0.000	0.000	0.269	0.271	0.269	0.269	No
	Edge 1	1.220	0.000	0.013	0.056	0.008	1.220	0.013	0.056	0.008	No
	Edge 4 Tilt	0.088	0.000	1.317	1.089	0.627	0.088	1.317	1.089	0.627	No
	Edge 2 Tilt	0.002	0.292	0.007	0.002	0.003	0.294	0.299	0.294	0.295	No

Simultaneous Transmission Summation Scenario (Bluetooth&2.4 GHz&5GHz& WI-FI 6E)											
Band	Configuration	Main	Bluetooth	2.4GHz Ant1	5GHz Ant1	WI-FI 6E Ant1	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	Yes/No
		1	2	3	4	5	1+2	2+3	2+4	2+5	
LTE Band 48	Rear	0.334	0.085	0.174	0.436	0.056	0.419	0.259	0.521	0.141	No
	Edge 4	0.163	0.000	1.095	0.827	0.431	0.163	1.095	0.827	0.431	No
	Edge 2	0.003	0.269	0.002	0.000	0.000	0.272	0.271	0.269	0.269	No
	Edge 1	1.425	0.000	0.013	0.056	0.008	1.425	0.013	0.056	0.008	No
	Edge 4 Tilt	0.173	0.000	1.317	1.089	0.627	0.173	1.317	1.089	0.627	No
	Edge 2 Tilt	0.000	0.292	0.007	0.002	0.003	0.292	0.299	0.294	0.295	No
LTE Band 66	Rear	1.321	0.085	0.174	0.436	0.056	1.406	0.259	0.521	0.141	No
	Edge 4	0.523	0.000	1.095	0.827	0.431	0.523	1.095	0.827	0.431	No
	Edge 2	0.019	0.269	0.002	0.000	0.000	0.288	0.271	0.269	0.269	No
	Edge 1	1.008	0.000	0.013	0.056	0.008	1.008	0.013	0.056	0.008	No
	Edge 4 Tilt	0.554	0.000	1.317	1.089	0.627	0.554	1.317	1.089	0.627	No
	Edge 2 Tilt	0.334	0.292	0.007	0.002	0.003	0.306	0.299	0.294	0.295	No

Simultaneous Transmission Summation Scenario (Bluetooth&2.4 GHz&5GHz&WI-FI 6E)										
Band	Configuration	Main	Bluetooth	2.4GHz Ant1	5GHz Ant1	WI-FI 6E Ant1	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	Yes/No
		1	2	3	4	5	1+2+3	1+2+4	1+2+5	
UMTS Band 2	Rear	0.724	0.085	0.174	0.436	0.056	0.983	1.245	0.865	No
	Edge 4	1.262	0.000	1.095	0.827	0.431	2.357	2.089	1.693	Yes
	Edge 2	0.044	0.269	0.002	0.000	0.000	0.315	0.313	0.313	No
	Edge 1	0.952	0.000	0.013	0.056	0.008	0.965	1.008	0.960	No
	Edge 4 Tilt	1.097	0.000	1.317	1.089	0.627	2.414	2.186	1.724	Yes
	Edge 2 Tilt	0.040	0.292	0.007	0.002	0.003	0.339	0.334	0.335	No
UMTS Band 4	Rear	1.190	0.085	0.174	0.436	0.056	1.449	1.711	1.331	Yes
	Edge 4	0.715	0.000	1.095	0.827	0.431	1.810	1.542	1.146	Yes
	Edge 2	0.013	0.269	0.002	0.000	0.000	0.284	0.282	0.282	No
	Edge 1	1.116	0.000	0.013	0.056	0.008	1.129	1.172	1.124	No
	Edge 4 Tilt	0.603	0.000	1.317	1.089	0.627	1.920	1.692	1.230	Yes
	Edge 2 Tilt	0.013	0.292	0.007	0.002	0.003	0.312	0.307	0.308	No
UMTS Band 5	Rear	0.424	0.085	0.174	0.436	0.056	0.683	0.945	0.565	No
	Edge 4	0.337	0.000	1.095	0.827	0.431	1.432	1.164	0.768	No
	Edge 2	0.019	0.269	0.002	0.000	0.000	0.290	0.288	0.288	No
	Edge 1	1.017	0.000	0.013	0.056	0.008	1.030	1.073	1.025	No
	Edge 4 Tilt	0.370	0.000	1.317	1.089	0.627	1.687	1.459	0.997	Yes
	Edge 2 Tilt	0.038	0.292	0.007	0.002	0.003	0.337	0.332	0.333	No
LTE Band 7	Rear	1.192	0.085	0.174	0.436	0.056	1.451	1.713	1.333	Yes
	Edge 4	0.485	0.000	1.095	0.827	0.431	1.580	1.312	0.916	No
	Edge 2	0.032	0.269	0.002	0.000	0.000	0.303	0.301	0.301	No
	Edge 1	0.907	0.000	0.013	0.056	0.008	0.920	0.963	0.915	No
	Edge 4 Tilt	0.569	0.000	1.317	1.089	0.627	1.886	1.658	1.196	Yes
	Edge 2 Tilt	0.039	0.292	0.007	0.002	0.003	0.338	0.333	0.334	No

Simultaneous Transmission Summation Scenario (Bluetooth&2.4 GHz&5GHz& WI-FI 6E)										
Band	Configuration	Main	Bluetooth	2.4GHz Ant1	5GHz Ant1	WI-FI 6E Ant1	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	Yes/No
		1	2	3	4	5	1+2+3	1+2+4	1+2+5	
LTE Band 12	Rear	0.283	0.085	0.174	0.436	0.056	0.542	0.804	0.424	No
	Edge 4	0.200	0.000	1.095	0.827	0.431	1.295	1.027	0.631	No
	Edge 2	0.029	0.269	0.002	0.000	0.000	0.300	0.298	0.298	No
	Edge 1	0.700	0.000	0.013	0.056	0.008	0.713	0.756	0.708	No
	Edge 4 Tilt	0.187	0.000	1.317	1.089	0.627	1.504	1.276	0.814	No
	Edge 2 Tilt	0.028	0.292	0.007	0.002	0.003	0.327	0.322	0.323	No
LTE Band 13	Rear	0.415	0.085	0.174	0.436	0.056	0.674	0.936	0.556	No
	Edge 4	0.555	0.000	1.095	0.827	0.431	1.650	1.382	0.986	Yes
	Edge 2	0.012	0.269	0.002	0.000	0.000	0.283	0.281	0.281	No
	Edge 1	0.870	0.000	0.013	0.056	0.008	0.883	0.926	0.878	No
	Edge 4 Tilt	0.545	0.000	1.317	1.089	0.627	1.862	1.634	1.172	Yes
	Edge 2 Tilt	0.019	0.292	0.007	0.002	0.003	0.318	0.313	0.314	No
LTE Band 14	Rear	0.432	0.085	0.174	0.436	0.056	0.691	0.953	0.573	No
	Edge 4	0.502	0.000	1.095	0.827	0.431	1.597	1.329	0.933	No
	Edge 2	0.022	0.269	0.002	0.000	0.000	0.293	0.291	0.291	No
	Edge 1	0.893	0.000	0.013	0.056	0.008	0.906	0.949	0.901	No
	Edge 4 Tilt	0.493	0.000	1.317	1.089	0.627	1.810	1.582	1.120	Yes
	Edge 2 Tilt	0.031	0.292	0.007	0.002	0.003	0.330	0.325	0.326	No
LTE Band 25	Rear	0.539	0.085	0.174	0.436	0.056	0.798	1.060	0.680	No
	Edge 4	0.870	0.000	1.095	0.827	0.431	1.965	1.697	1.301	Yes
	Edge 2	0.032	0.269	0.002	0.000	0.000	0.303	0.301	0.301	No
	Edge 1	0.859	0.000	0.013	0.056	0.008	0.872	0.915	0.867	No
	Edge 4 Tilt	1.001	0.000	1.317	1.089	0.627	2.318	2.090	1.628	Yes
	Edge 2 Tilt	0.037	0.292	0.007	0.002	0.003	0.336	0.331	0.332	No

Simultaneous Transmission Summation Scenario (Bluetooth&2.4 GHz&5GHz& WI-FI 6E)										
Band	Configuration	Main	Bluetooth	2.4GHz Ant1	5GHz Ant1	WI-FI 6E Ant1	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	Yes/No
		1	2	3	4	5	1+2+3	1+2+4	1+2+5	
LTE Band 26	Rear	0.419	0.085	0.174	0.436	0.056	0.678	0.940	0.560	No
	Edge 4	0.345	0.000	1.095	0.827	0.431	1.440	1.172	0.776	No
	Edge 2	0.012	0.269	0.002	0.000	0.000	0.283	0.281	0.281	No
	Edge 1	0.890	0.000	0.013	0.056	0.008	0.903	0.946	0.898	No
	Edge 4 Tilt	0.397	0.000	1.317	1.089	0.627	1.714	1.486	1.024	Yes
	Edge 2 Tilt	0.034	0.292	0.007	0.002	0.003	0.333	0.328	0.329	No
LTE Band 38	Rear	0.700	0.085	0.174	0.436	0.056	0.959	1.221	0.841	No
	Edge 4	0.266	0.000	1.095	0.827	0.431	1.361	1.093	0.697	No
	Edge 2	0.035	0.269	0.002	0.000	0.000	0.306	0.304	0.304	No
	Edge 1	1.073	0.000	0.013	0.056	0.008	1.086	1.129	1.081	No
	Edge 4 Tilt	0.238	0.000	1.317	1.089	0.627	1.555	1.327	0.865	No
	Edge 2 Tilt	0.040	0.292	0.007	0.002	0.003	0.339	0.334	0.335	No
LTE Band 41	Rear	0.744	0.085	0.174	0.436	0.056	1.003	1.265	0.885	No
	Edge 4	0.291	0.000	1.095	0.827	0.431	1.386	1.118	0.722	No
	Edge 2	0.020	0.269	0.002	0.000	0.000	0.291	0.289	0.289	No
	Edge 1	1.206	0.000	0.013	0.056	0.008	1.219	1.262	1.214	No
	Edge 4 Tilt	0.251	0.000	1.317	1.089	0.627	1.568	1.340	0.878	No
	Edge 2 Tilt	0.015	0.292	0.007	0.002	0.003	0.314	0.309	0.310	No
LTE Band 42	Rear	0.251	0.085	0.174	0.436	0.056	0.510	0.772	0.392	No
	Edge 4	0.073	0.000	1.095	0.827	0.431	1.168	0.900	0.504	No
	Edge 2	0.000	0.269	0.002	0.000	0.000	0.271	0.269	0.269	No
	Edge 1	1.220	0.000	0.013	0.056	0.008	1.233	1.276	1.228	No
	Edge 4 Tilt	0.088	0.000	1.317	1.089	0.627	1.405	1.177	0.715	No
	Edge 2 Tilt	0.002	0.292	0.007	0.002	0.003	0.301	0.296	0.297	No

Simultaneous Transmission Summation Scenario (Bluetooth&2.4 GHz&5GHz& WI-FI 6E)										
Band	Configuration	Main	Bluetooth	2.4GHz Ant1	5GHz Ant1	WI-FI 6E Ant1	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	Yes/No
		1	2	3	4	5	1+2+3	1+2+4	1+2+5	
LTE Band 48	Rear	0.334	0.085	0.174	0.436	0.056	0.593	0.855	0.475	No
	Edge 4	0.163	0.000	1.095	0.827	0.431	1.258	0.990	0.594	No
	Edge 2	0.003	0.269	0.002	0.000	0.000	0.274	0.272	0.272	No
	Edge 1	1.425	0.000	0.013	0.056	0.008	1.438	1.481	1.433	No
	Edge 4 Tilt	0.173	0.000	1.317	1.089	0.627	1.490	1.262	0.800	No
	Edge 2 Tilt	0.000	0.292	0.007	0.002	0.003	0.299	0.294	0.295	No
LTE Band 66	Rear	1.321	0.085	0.174	0.436	0.056	1.580	1.842	1.462	Yes
	Edge 4	0.523	0.000	1.095	0.827	0.431	1.618	1.350	0.954	Yes
	Edge 2	0.019	0.269	0.002	0.000	0.000	0.290	0.288	0.288	No
	Edge 1	1.008	0.000	0.013	0.056	0.008	1.021	1.064	1.016	No
	Edge 4 Tilt	0.554	0.000	1.317	1.089	0.627	1.871	1.643	1.181	Yes
	Edge 2 Tilt	0.334	0.292	0.007	0.002	0.003	0.313	0.308	0.309	No

Note:

1. Since antenna separation distance of Edge 3 side was >50mm, an estimated 1g SARfor Edge 3 side of 0.4 /kg was used to the simultaneous transmission SAR anaysis per FCC KDB Publication 447498D01v06.

13.1 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:

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

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 $[(\mathbf{X_1}-\mathbf{X_2})^2+(\mathbf{Y_1}-\mathbf{Y_2})^2+(\mathbf{Z_1}-\mathbf{Z_2})^2]$

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:

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

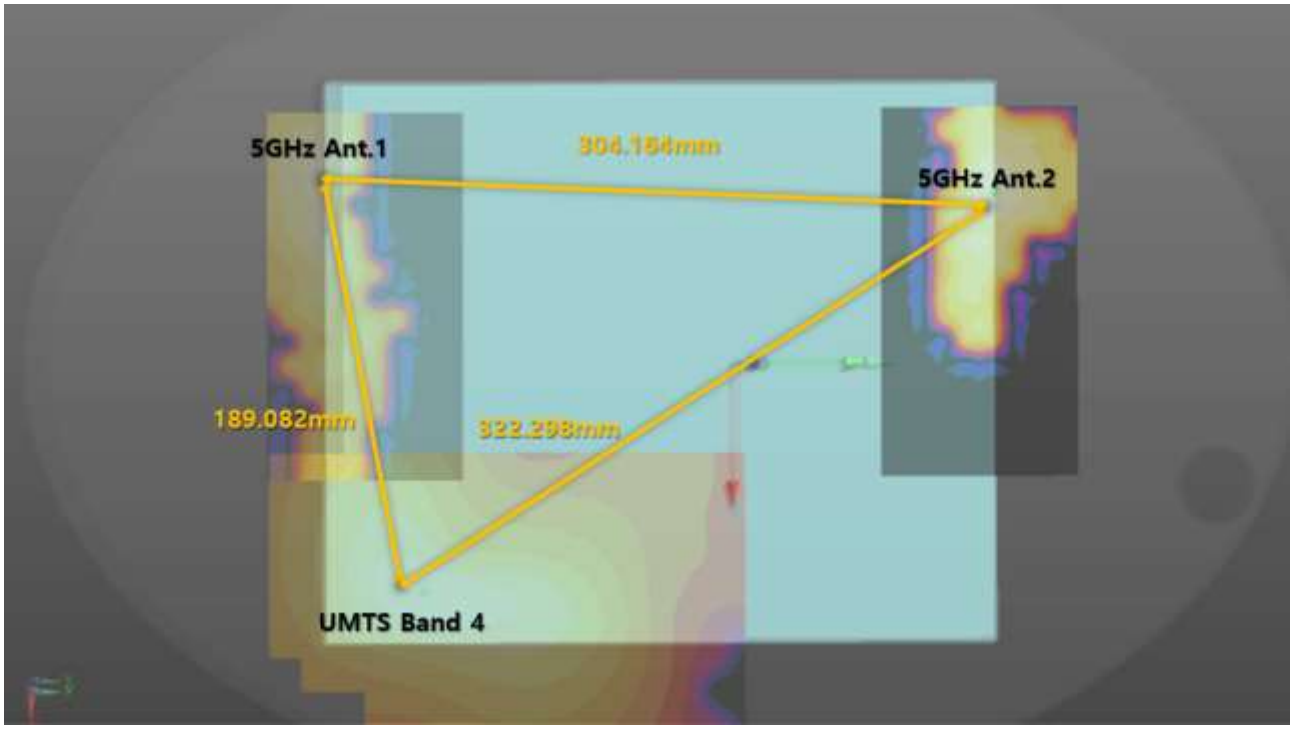
SPLSR Evaluation

Potsition	Band	X(m)	Y(m)	Z(m)	Reported SAR [W/kg]
Rear	UMTS B4	0.102	-0.118	-0.177	1.190
	LTE 7	0.119	-0.0412	-0.177	1.192
	LTE 66	0.136	-0.117	-0.177	1.321
	2.4G Ant.1	-0.0748	-0.155	-0.177	0.174
	2.4G Ant.2	-0.082	0.161	-0.177	0.201
	5G Ant.1	-0.084	-0.152	-0.177	0.436
	5G Ant.2	-0.074	0.152	-0.177	0.204
	BT	-0.0872	0.154	-0.177	0.085
Edge 4	UMTS B2	0.0015	0.102	-0.178	1.262
	UMTS B4	-2.17E-19	0.109	-0.176	0.715
	LTE 13	8.74E-11	0.0865	-0.178	0.555
	LTE 25	-1.08E-19	0.097	-0.178	0.870
	LTE 66	-0.003	0.106	-0.178	0.523
	2.4G Ant.1	0.012	-0.0678	-0.178	1.095
	2.4G Ant.2				0.000
	5G Ant.1	0.0120	-0.068	-0.178	0.827
	5G Ant.2				0.000
	6E Ant.1	0.01105	-0.05525	-0.17804	0.431
	6E Ant.2				0.000
	BT				0.000
Edge 4 Tilt	UMTS B2	-0.0105	0.1	-0.178	1.097
	UMTS B4	-0.012	0.1	-0.178	0.603
	UMTS B5	-0.0075	0.109	-0.178	0.370
	LTE 7	-0.006	0.108	-0.178	0.569
	LTE 13	-0.0015	0.097	-0.175	0.545
	LTE 14	-0.0015	0.097	-0.175	0.493
	LTE 25	-0.009	0.106	-0.178	1.001
	LTE 26	-0.0045	0.091	-0.175	0.397
	LTE 66	-0.009	0.0985	-0.175	0.554
	2.4G Ant.1	-0.0024	-0.0698	-0.178	1.317
	2.4G Ant.2	-0.030	-0.101	-0.177	0.007
	5G Ant.1	0.0020	-0.0760	-0.178	1.089
	5G Ant.2				0.000
	6E Ant.1	-0.00085	-0.05015	-0.17804	0.627
	6E Ant.2				0.000
	BT				0.000

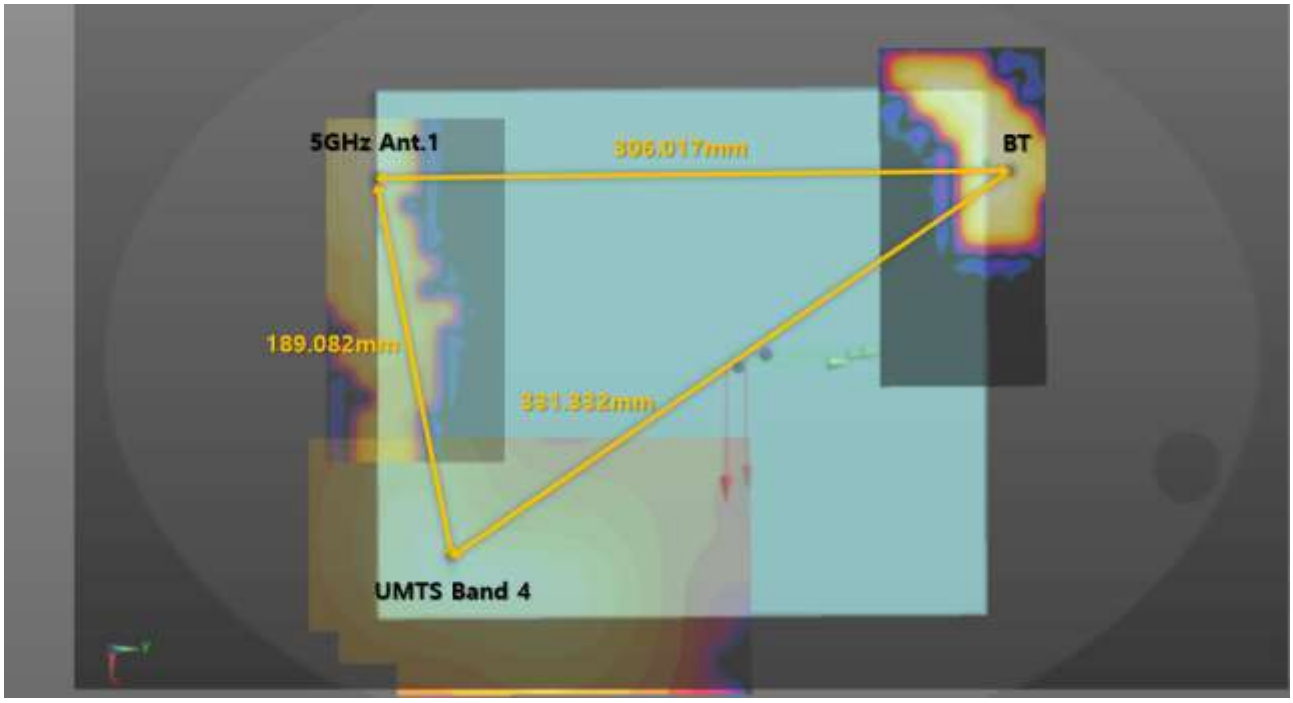
Position	Max Mode			Sum 1g SAR [W/kg]	Sum 1g SAR [W/kg]	Sum 1g SAR [W/kg]	1+2 Peak SAR Separation Distance	1+3 Peak SAR Separation Distance	2+4 Peak SAR Separation Distance	SPLSR			Plot No.
	1	3	4	1+2	1+3	2+4	[mm]	[mm]	[mm]	1+2	1+3	2+4	
Rear	UMTS B4	5GHz Ant.1	5GHz Ant.2	1.626	1.394	0.640	189.082	322.298	304.164	0.011	0.005	0.002	#1
			BT	1.626	1.275	0.521	189.082	331.332	306.017	0.011	0.004	0.001	#2
	LTE 7	2.4GHz Ant.1	2.4GHz Ant.2	1.366	1.393	0.375	224.742	285.107	316.082	0.007	0.006	0.001	#3
		5GHz Ant.1	5GHz Ant.2	1.628	1.396	0.640	231.270	273.085	304.164	0.009	0.006	0.002	#4
			BT	1.628	1.277	0.521	231.270	283.939	306.017	0.009	0.005	0.001	#5
	LTE 66	2.4GHz Ant.1	2.4GHz Ant.2	1.495	1.522	0.375	214.198	353.282	316.082	0.009	0.005	0.001	#6
			BT	1.495	1.406	0.259	214.198	351.083	309.249	0.009	0.005	0.000	#7
		5GHz Ant.1	5GHz Ant.2	1.757	1.525	0.640	222.767	341.264	304.164	0.010	0.006	0.002	#8
			BT	1.757	1.406	0.521	222.767	351.083	306.017	0.010	0.005	0.001	#9
Left	UMTS B2	2.4GHz Ant.1	2.4GHz Ant.2	2.357			170.124			0.021			#10
			BT	2.357			170.124			0.021			
		5GHz Ant.1	5GHz Ant.2	2.089			170.324			0.018			#11
			BT	2.089			170.324			0.018			
		6E Ant.1	6E Ant.2	1.693			157.540			0.014			#12
			BT	1.693			157.540			0.014			
	UMTS B4	2.4GHz Ant.1	2.4GHz Ant.2	1.810			177.218			0.014			#13
			BT	1.810			177.218			0.014			
	LTE 13	2.4GHz Ant.1	2.4GHz Ant.2	1.650			154.766			0.014			#14
			BT	1.650			154.766			0.014			
	LTE 25	2.4GHz Ant.1	2.4GHz Ant.2	1.965			165.236			0.017			#15
			BT	1.965			165.236			0.017			
		5GHz Ant.1	5GHz Ant.2	1.697			165.436			0.013			#16
			BT	1.697			165.436			0.013			
	LTE 66	2.4GHz Ant.1	2.4GHz Ant.2	1.618			174.446			0.012			#17
			BT	1.618			174.446			0.012			
Left Tilt	UMTS B2	2.4GHz Ant.1	2.4GHz Ant.2	2.414	1.104	1.324	169.993	201.946	41.668	0.022	0.006	0.037	#18
			BT	2.414			169.993			0.022			
		5GHz Ant.1	5GHz Ant.2	2.186			176.443			0.018			#19
			BT	2.186			176.443			0.018			
		6E Ant.1	6E Ant.2	1.724			150.460			0.015			#20
			BT	1.724			150.460			0.015			
	UMTS B4	2.4GHz Ant.1	2.4GHz Ant.2	1.920	0.610	1.324	170.071	201.807	41.668	0.016	0.002	0.037	#21
			BT	1.920			170.071			0.016			
		5GHz Ant.1	5GHz Ant.2	1.692			176.556			0.012			#22
			BT	1.692			176.556			0.012			
	UMTS B5	2.4GHz Ant.1	2.4GHz Ant.2	1.687	0.377	1.324	178.873	211.204	41.668	0.012	0.001	0.037	#23
			BT	1.687			178.873			0.012			
	LTE 7	2.4GHz Ant.1	2.4GHz Ant.2	1.886	0.576	1.324	177.836	210.376	41.668	0.015	0.002	0.037	#24
			BT	1.886			177.836			0.015			
		5GHz Ant.1	5GHz Ant.2	1.658			184.174			0.012			#25
			BT	1.658			184.174			0.012			
	LTE 13	2.4GHz Ant.1	2.4GHz Ant.2	1.862	0.552	1.324	166.829	200.051	41.668	0.015	0.002	0.037	#26
			BT	1.862			166.829			0.015			
		5GHz Ant.1	5GHz Ant.2	1.634			173.061			0.012			#27
			BT	1.634			173.061			0.012			
	LTE 14	2.4GHz Ant.1	2.4GHz Ant.2	1.810	0.500	1.324	166.829	200.051	41.668	0.015	0.002	0.037	#28
			BT	1.810			166.829			0.015			
	LTE 25	2.4GHz Ant.1	2.4GHz Ant.2	2.318	1.008	1.324	175.924	208.065	41.668	0.020	0.005	0.037	#29
			BT	2.318			175.924			0.020			
		5GHz Ant.1	5GHz Ant.2	2.090			182.332			0.017			#30
			BT	2.090			182.332			0.017			
		6E Ant.1	6E Ant.2	1.628			156.363			0.013			#31
			BT	1.628			156.363			0.013			
	LTE 26	2.4GHz Ant.1	2.4GHz Ant.2	1.714	0.404	1.324	160.842	193.696	41.668	0.014	0.001	0.037	#32
			BT	1.714			160.842			0.014			
	LTE 66	2.4GHz Ant.1	2.4GHz Ant.2	1.871	0.561	1.324	168.456	200.612	41.668	0.015	0.002	0.037	#33
			BT	1.871			168.456			0.015			
		5GHz Ant.1	5GHz Ant.2	1.643			174.872			0.012			#34
			BT	1.643			174.872			0.012			

SPLSR Plot

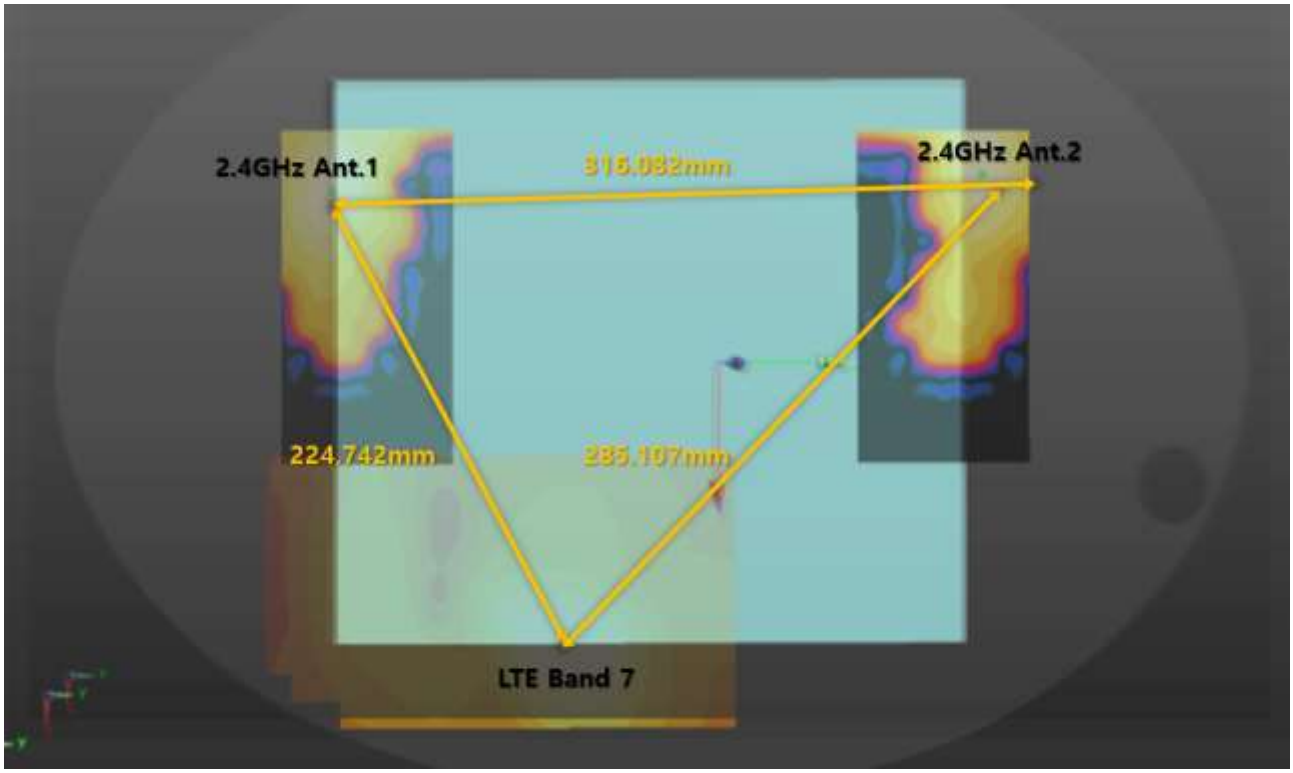
#1 Rear : UMTS Band 4 + 5GHz Ant.1 + 5GHz Ant.2



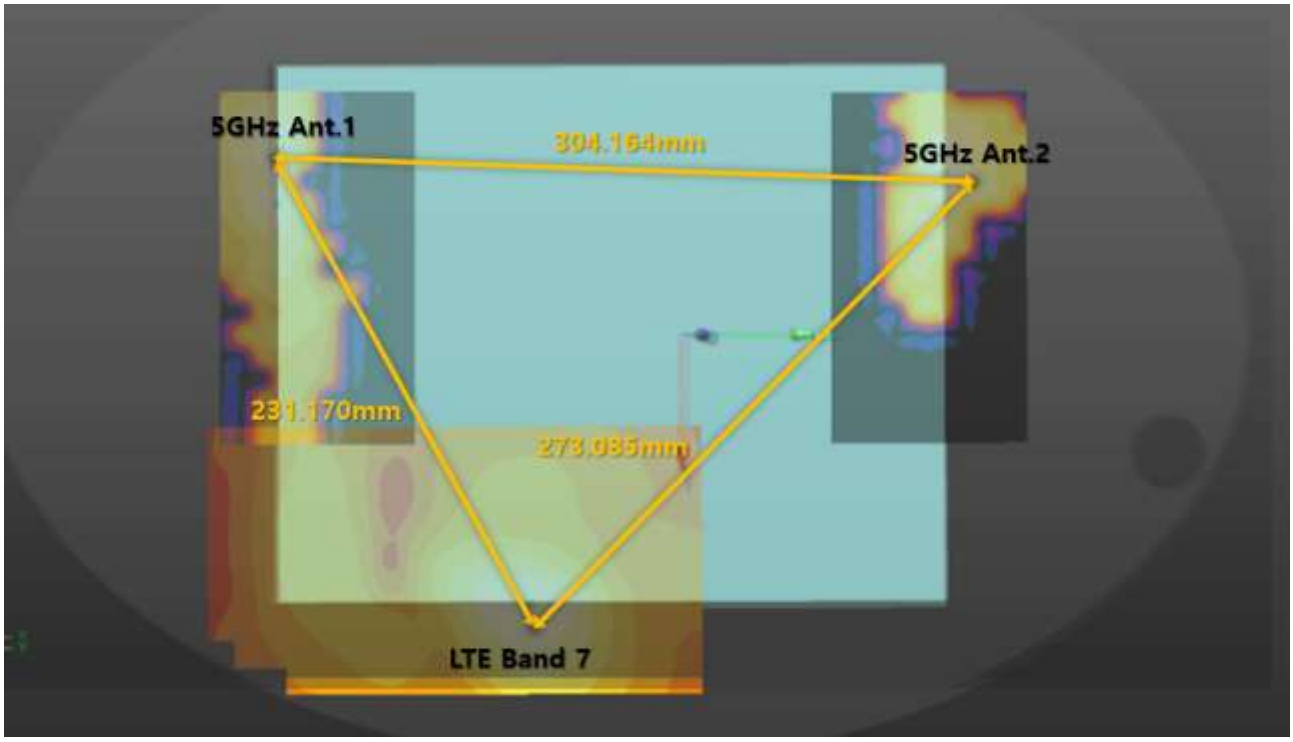
#2 Rear : UMTS Band 4 + 5GHz Ant.1 + BT



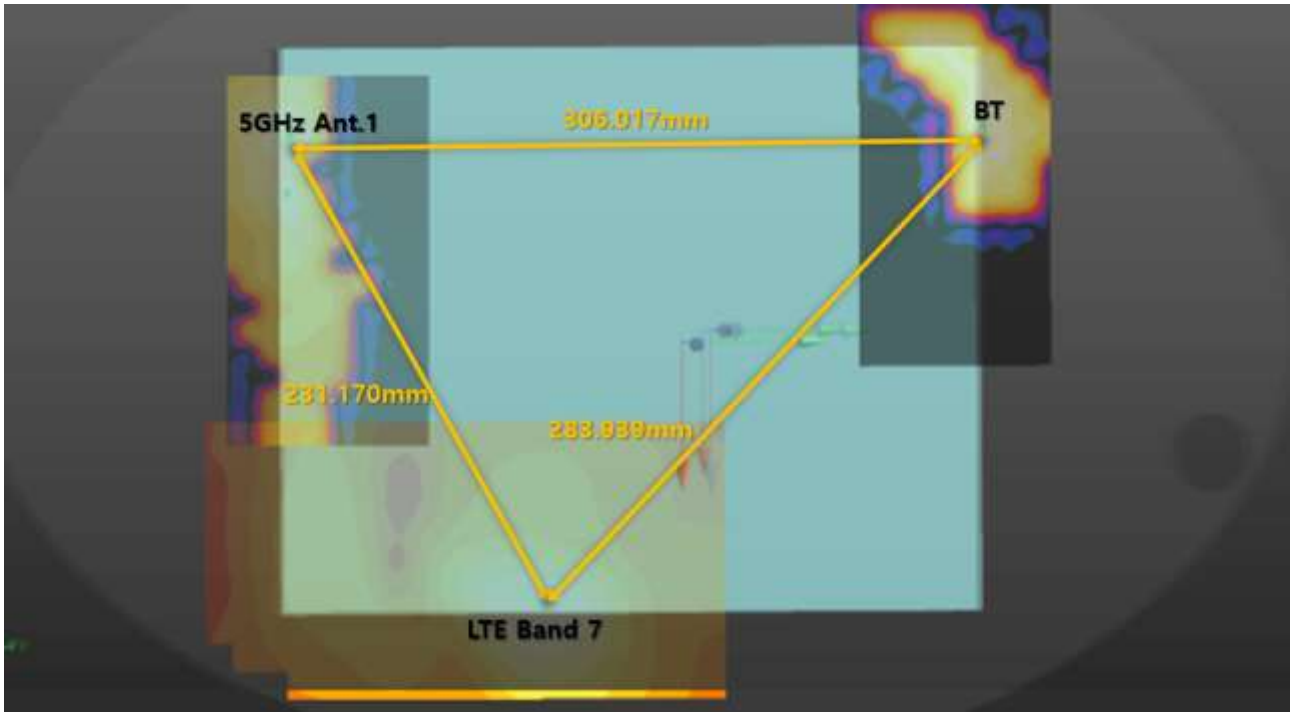
#3 Rear : LTE Band 7+ 2.4GHz Ant.1 + 2.4GHz Ant.2



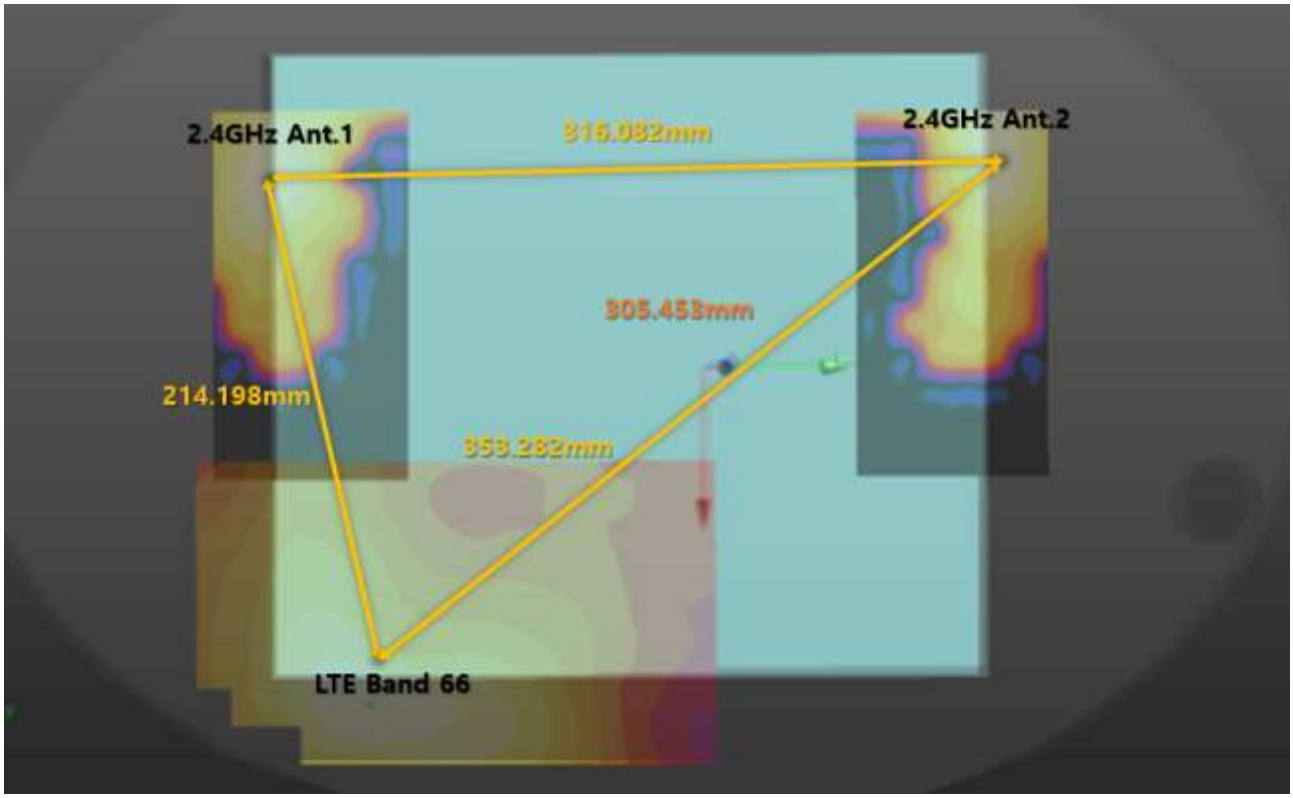
#4 Rear : LTE Band 7+ 5GHz Ant.1 + 5GHz Ant.2



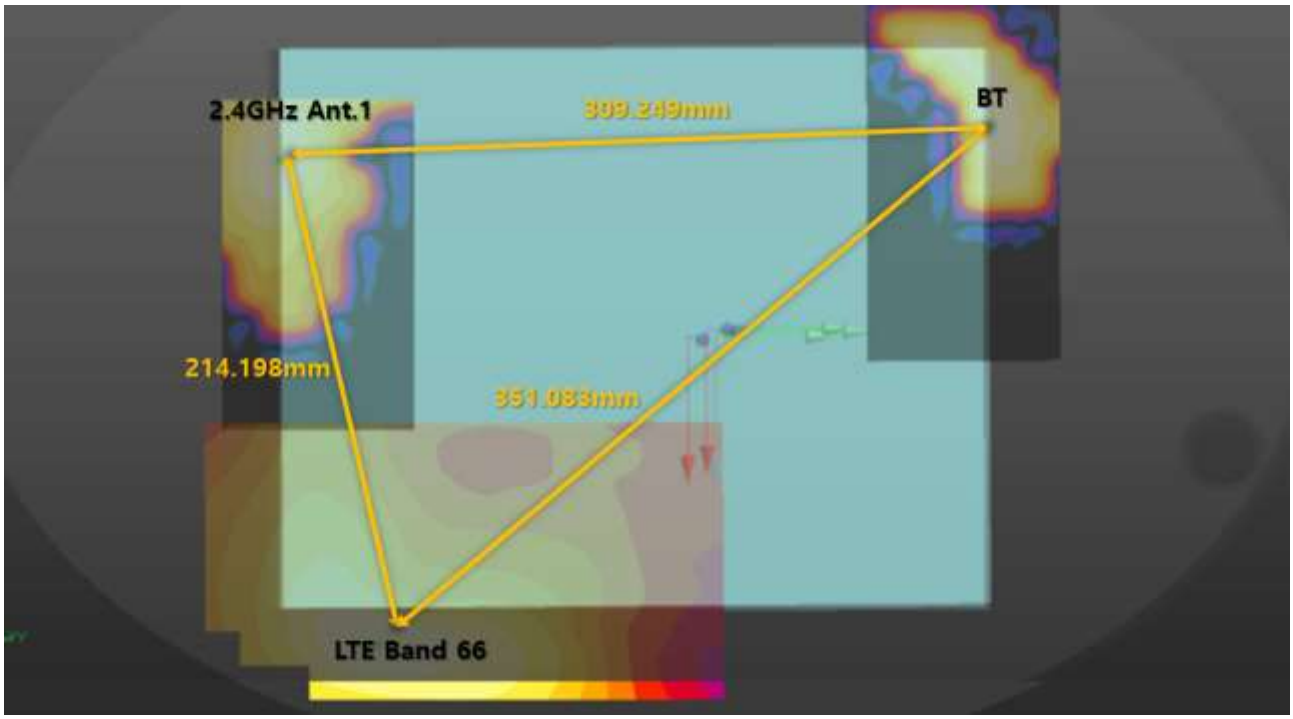
#5 Rear : LTE Band 7+ 5GHz Ant.1 + BT



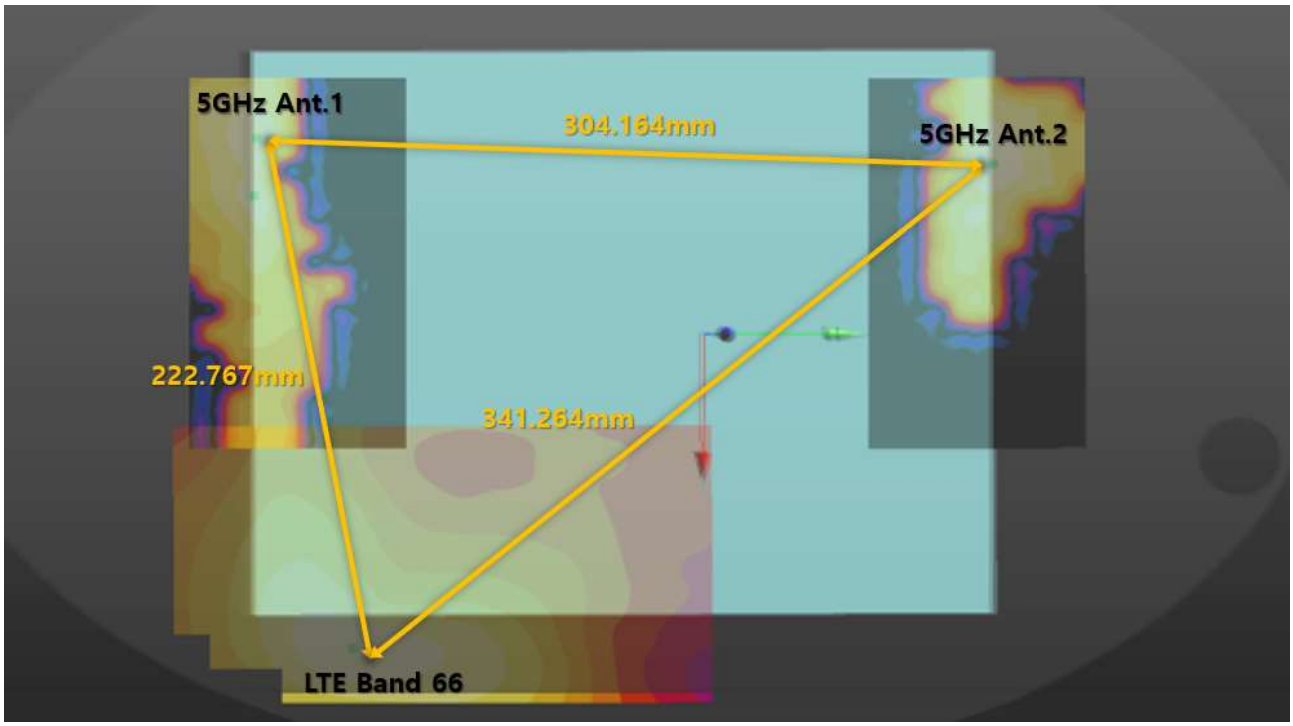
#6 Rear : LTE Band 66+ 2.4GHz Ant.1 + 2.4GHz Ant.2



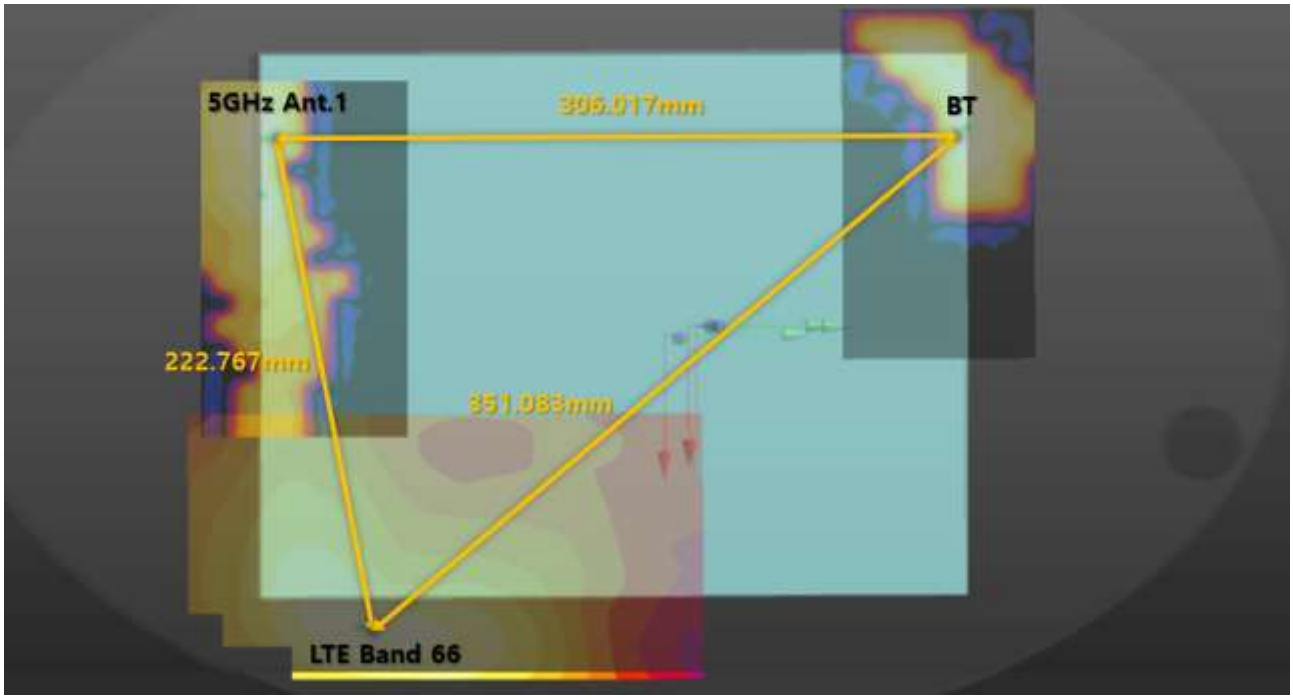
#7 Rear : LTE Band 66+ 2.4GHz Ant.1 + BT



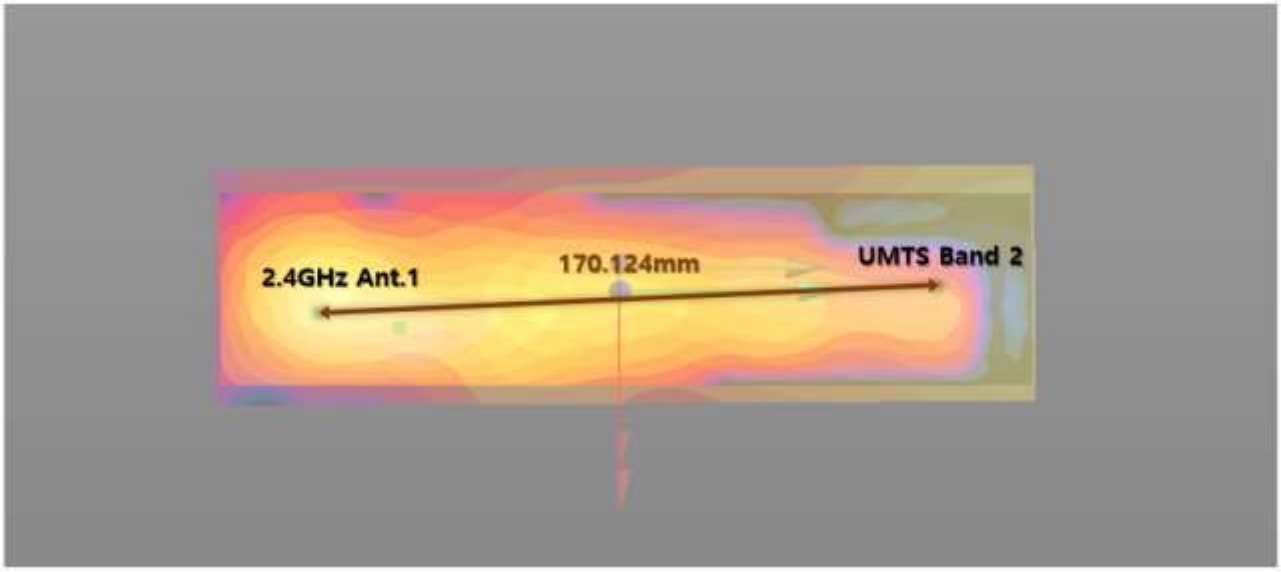
#8 Rear : LTE Band 66+ 5GHz Ant.1 + 5GHz Ant.2



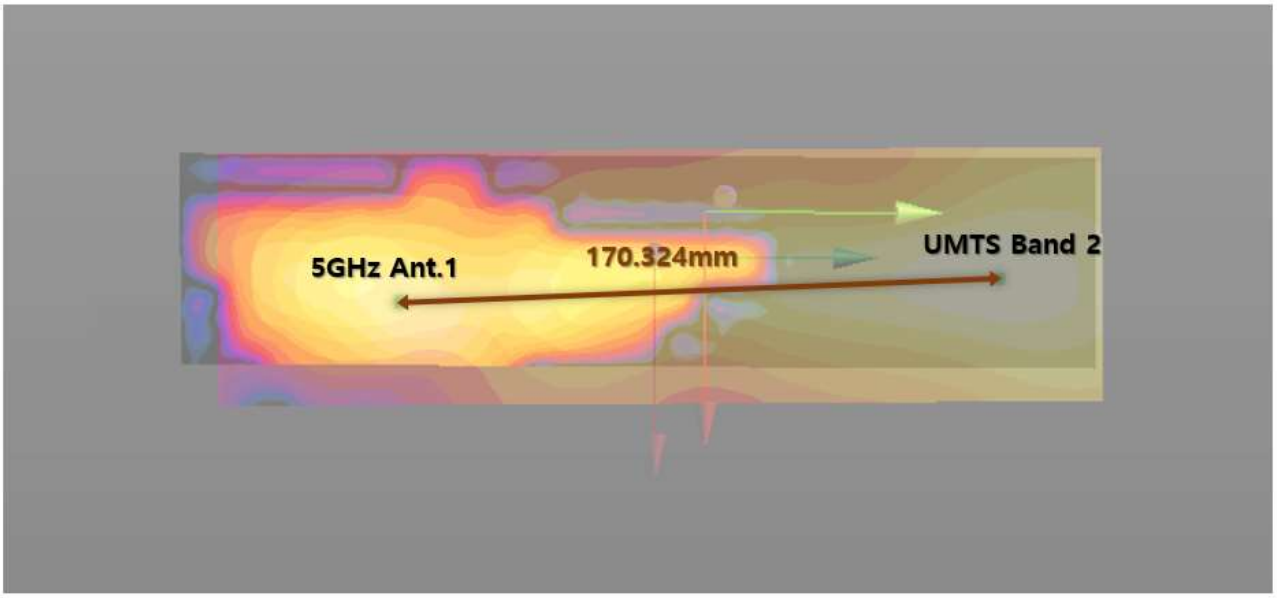
#9 Rear : LTE Band 66+ 5GHz Ant.1 + BT



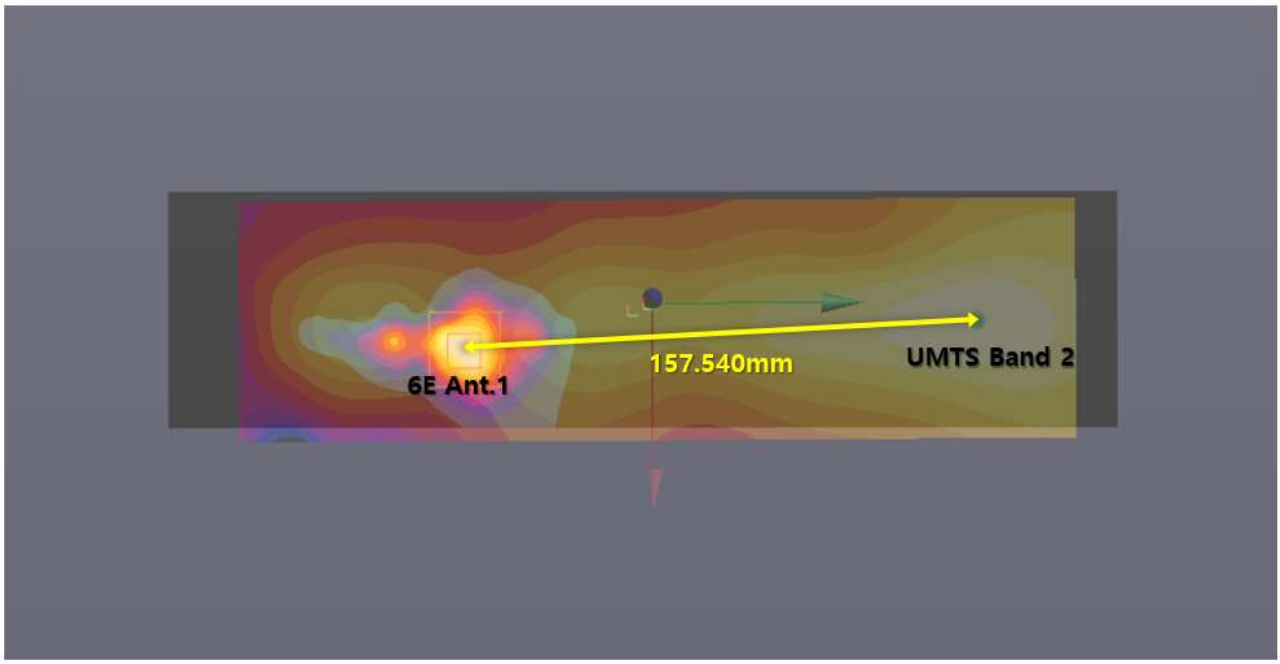
#10 Edge 4 : UMTS Band 2 + 2.4GHz Ant.1



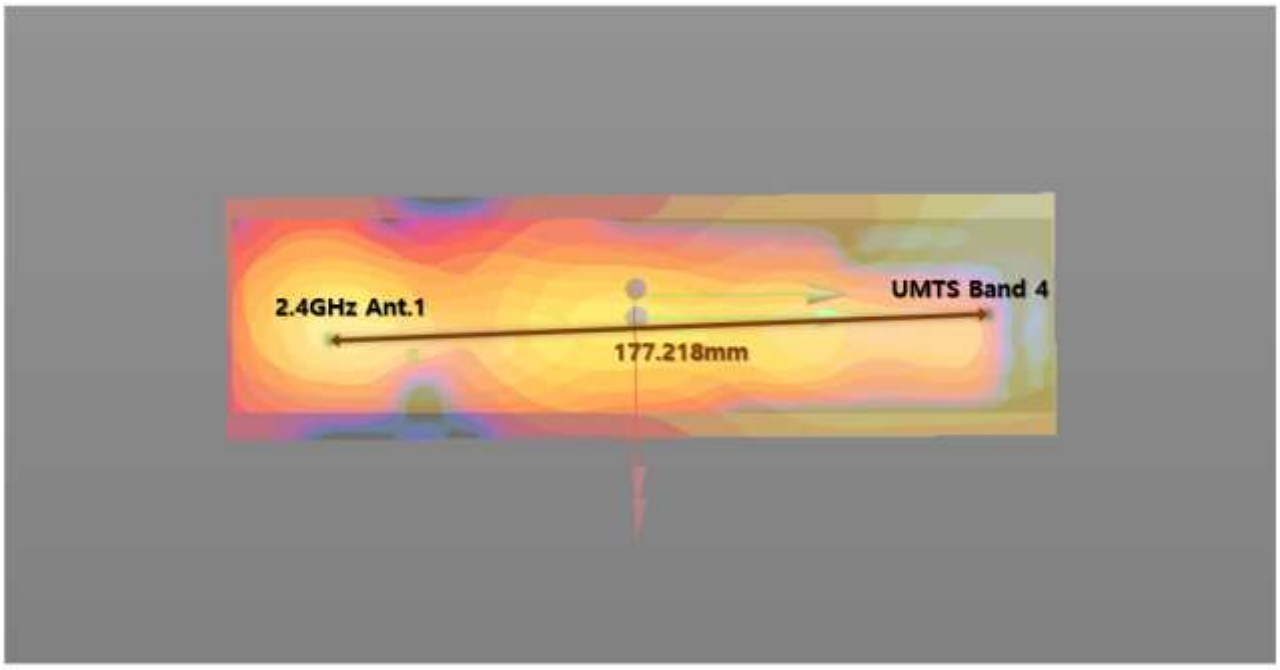
#11 Edge 4 : UMTS Band 2 + 5GHz Ant.1



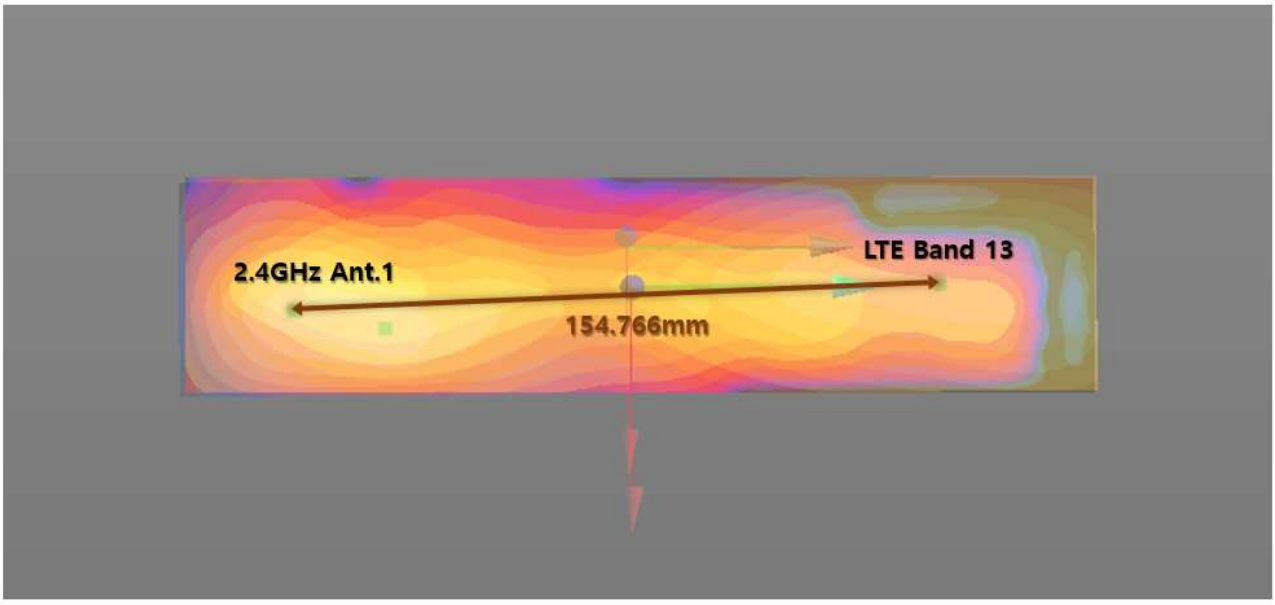
#12 Edge 4 : UMTS Band 2 + 6E Ant.1



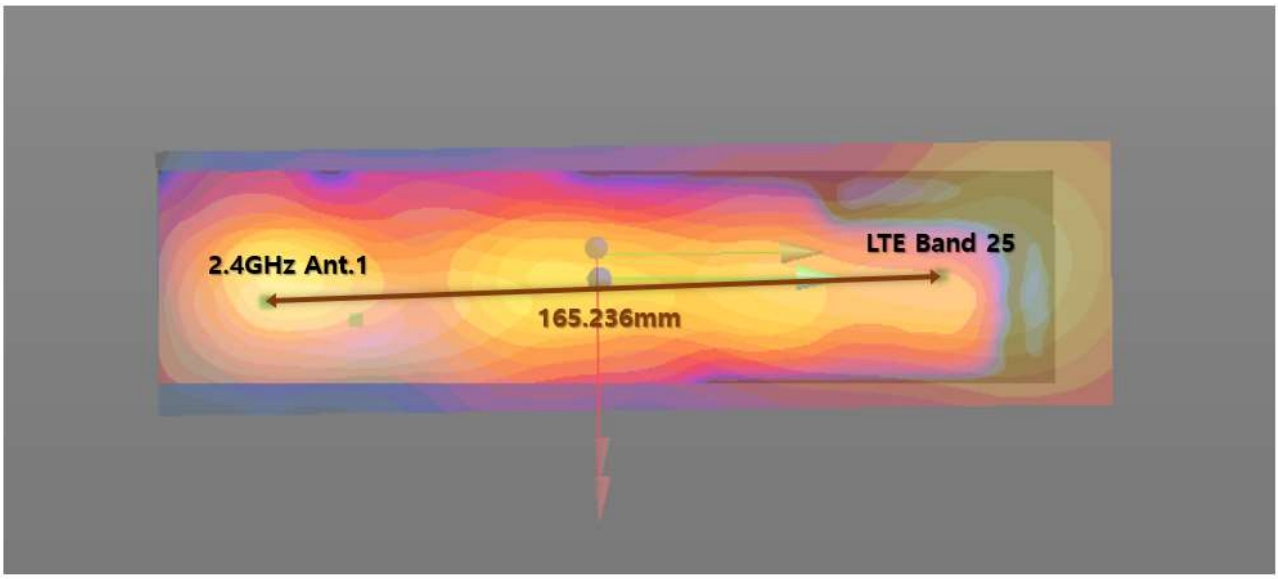
#13 Edge 4 : UMTS Band 4 + 2.4GHz Ant.1



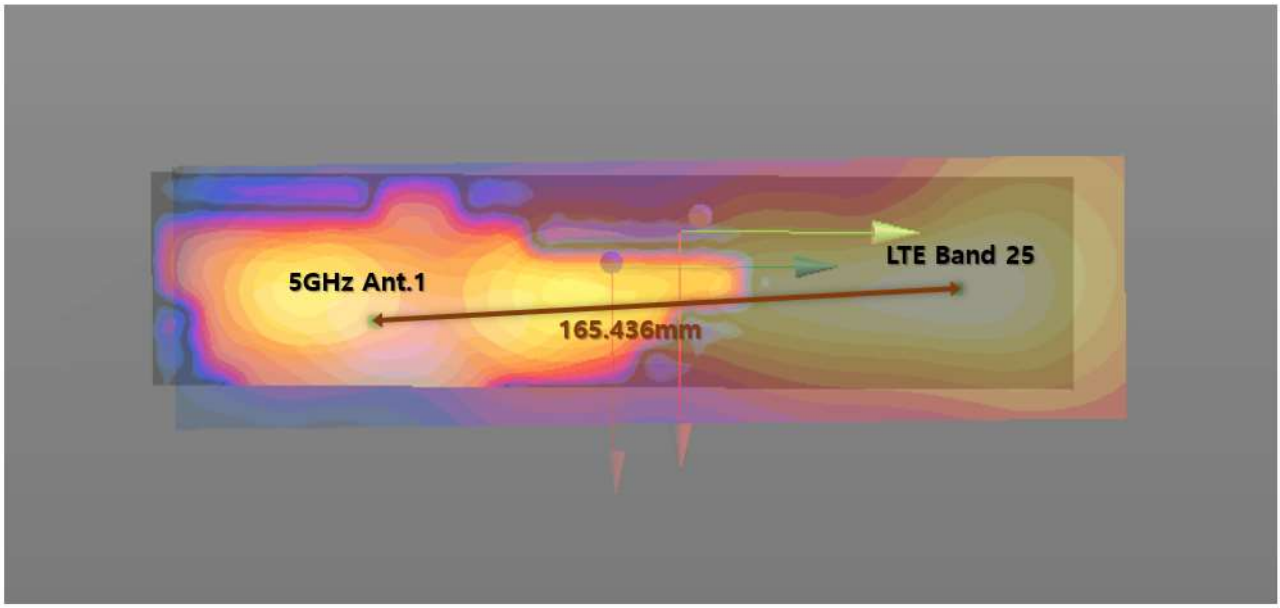
#14 Edge 4 : LTE Band 13 + 2.4GHz Ant.1



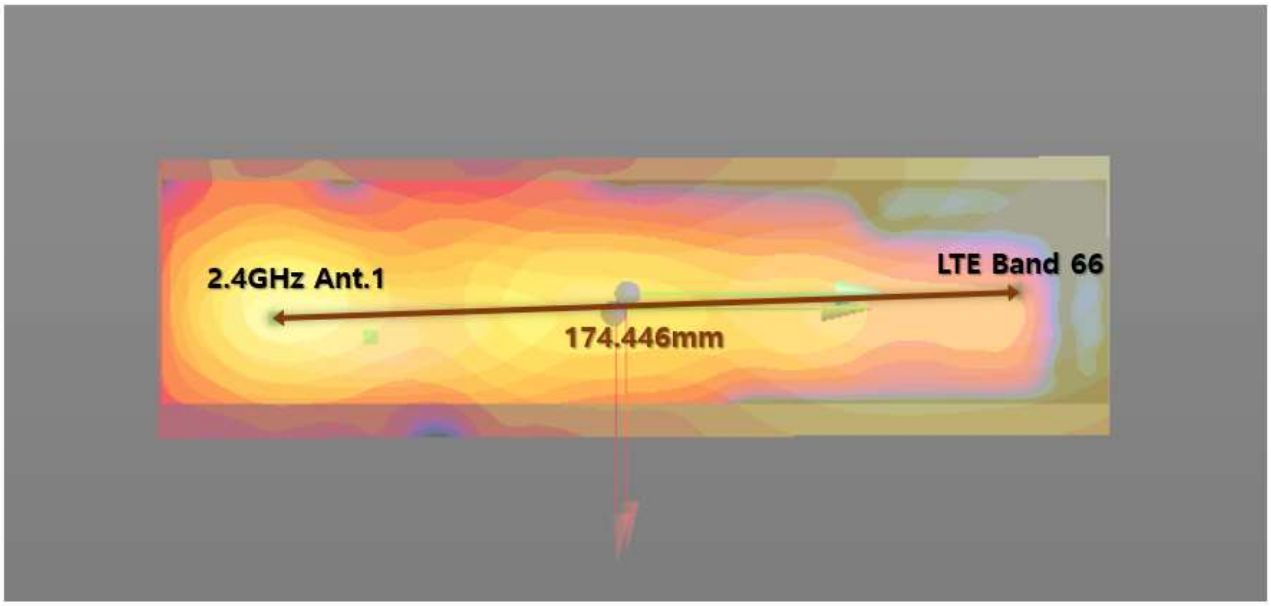
#15 Edge 4 : LTE Band 25 + 2.4GHz Ant.1



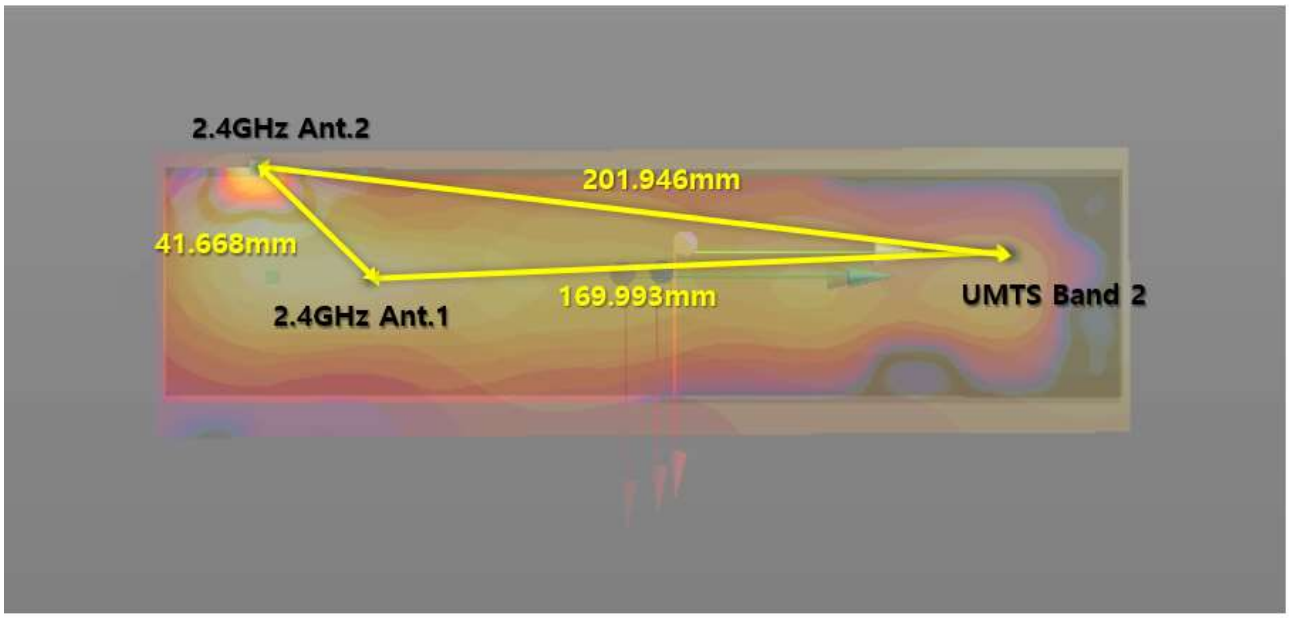
#16 Edge 4 : LTE Band 25 + 5GHz Ant.1



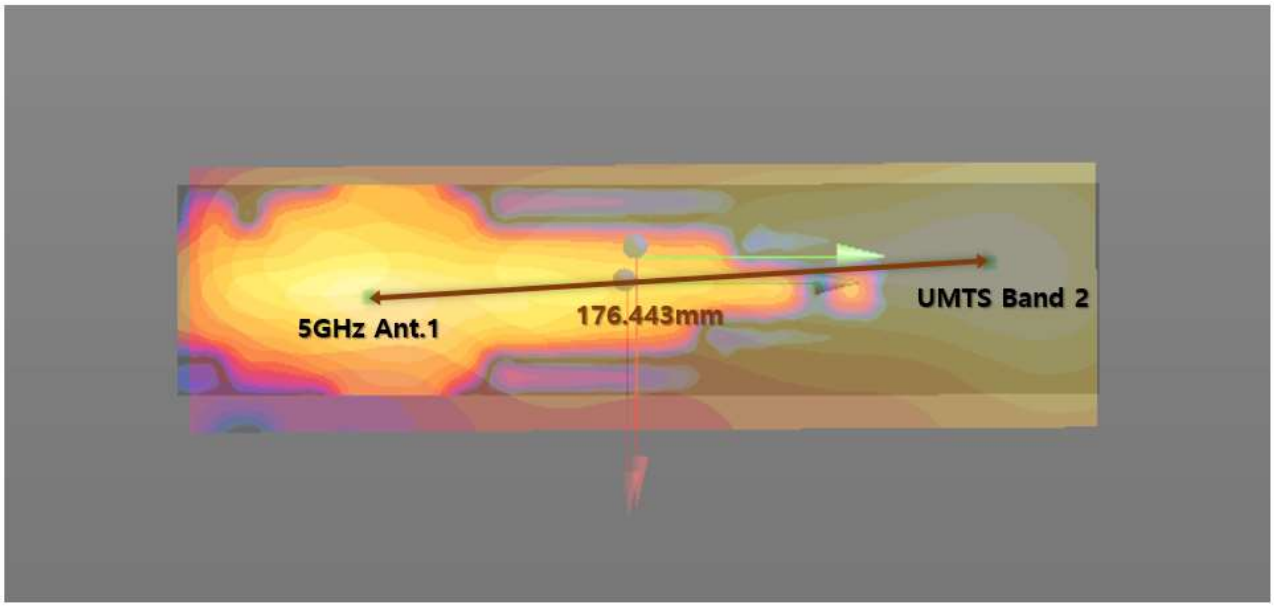
#17 Edge 4 : LTE Band 66 + 2.4GHz Ant.1



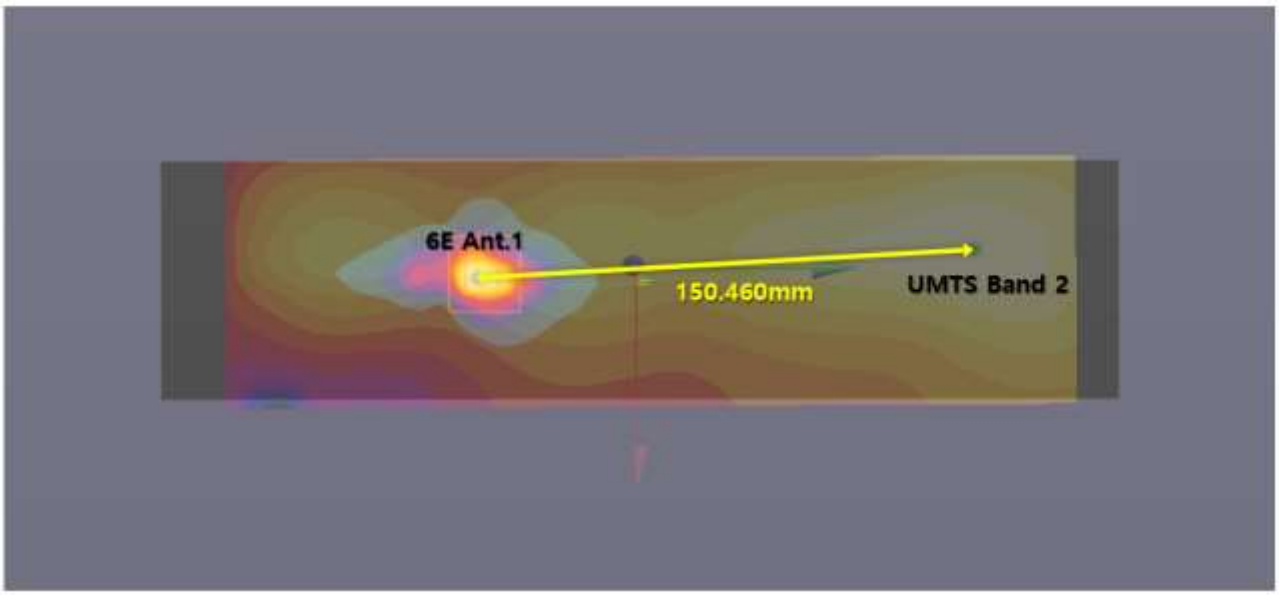
#18 Edge 4 Tilt : UMTS Band 2 + 2.4GHz Ant.1 + 2.4GHz Ant.2



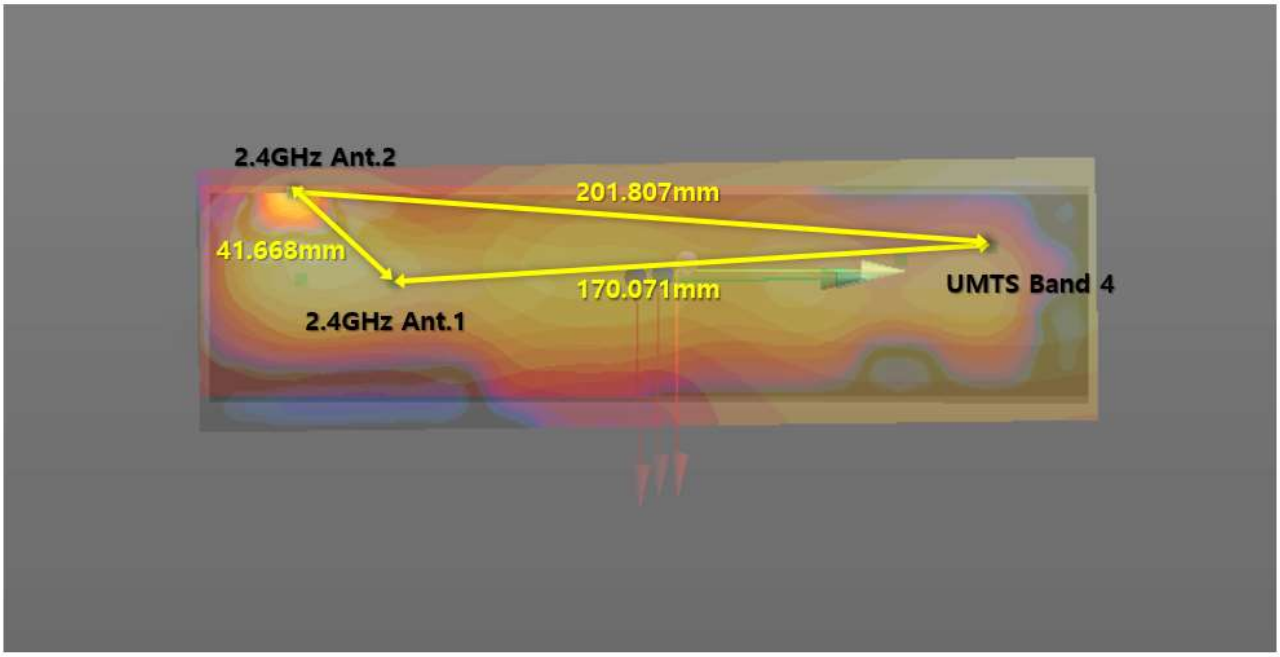
#19 Edge 4 Tilt : UMTS Band 2 + 5GHz Ant.1



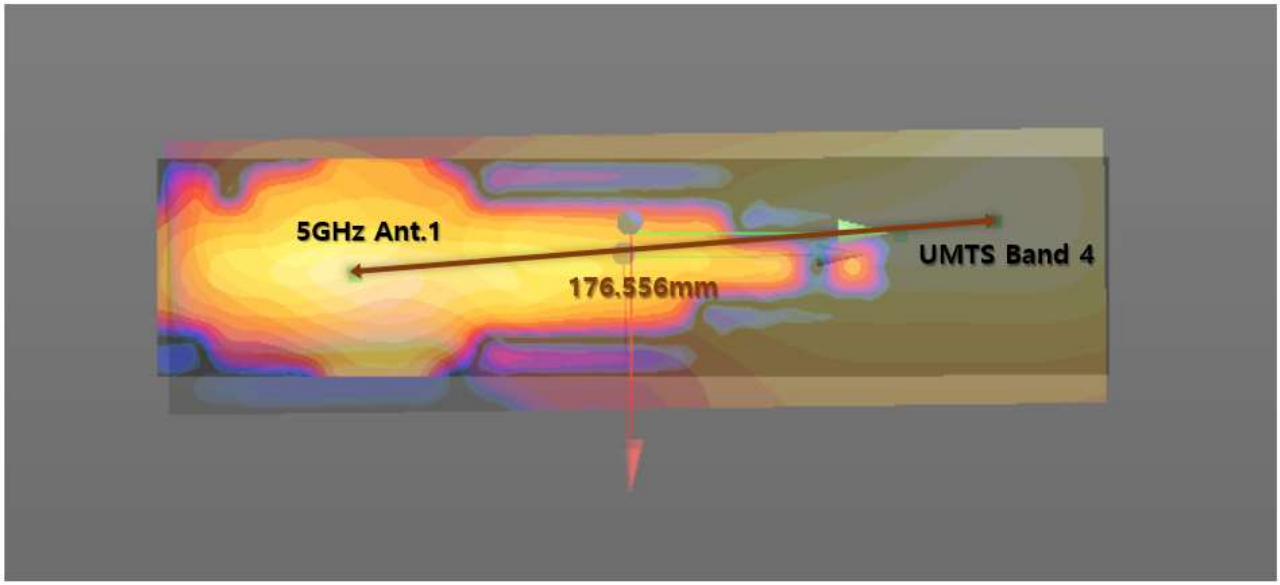
#20 Edge 4 Tilt : UMTS Band 2 + 6E Ant.1



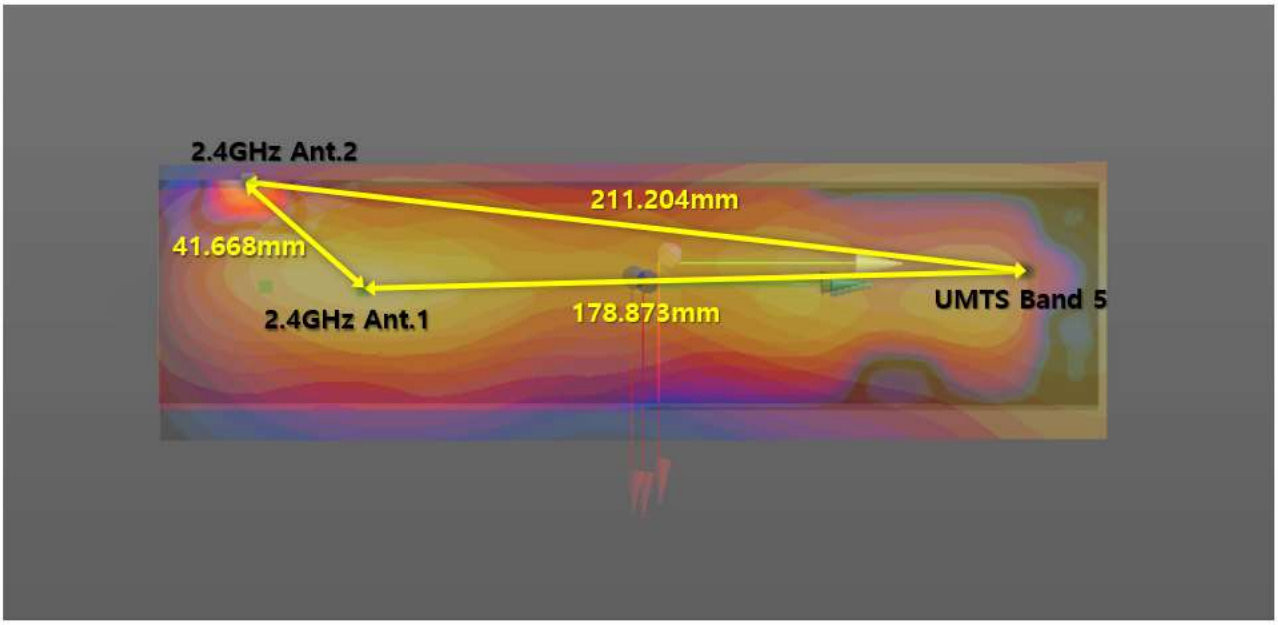
#21 Edge 4 Tilt : UMTS Band 4 + 2.4GHz Ant.1 + 2.4GHz Ant.2



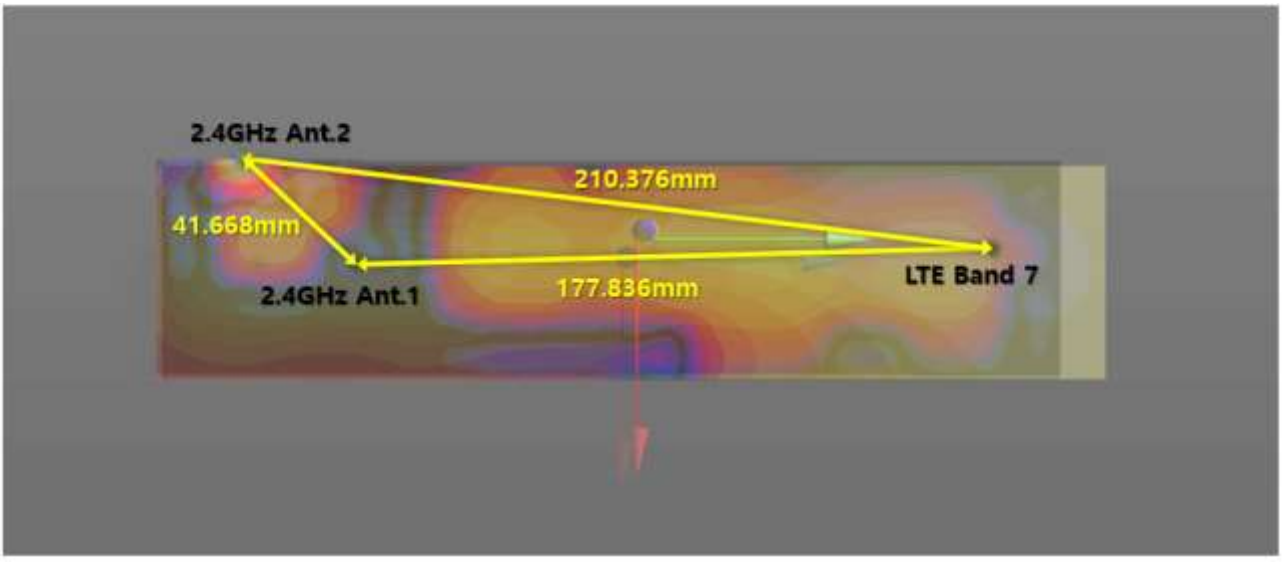
#22 Edge 4 Tilt : UMTS Band 4 + 5GHz Ant.1



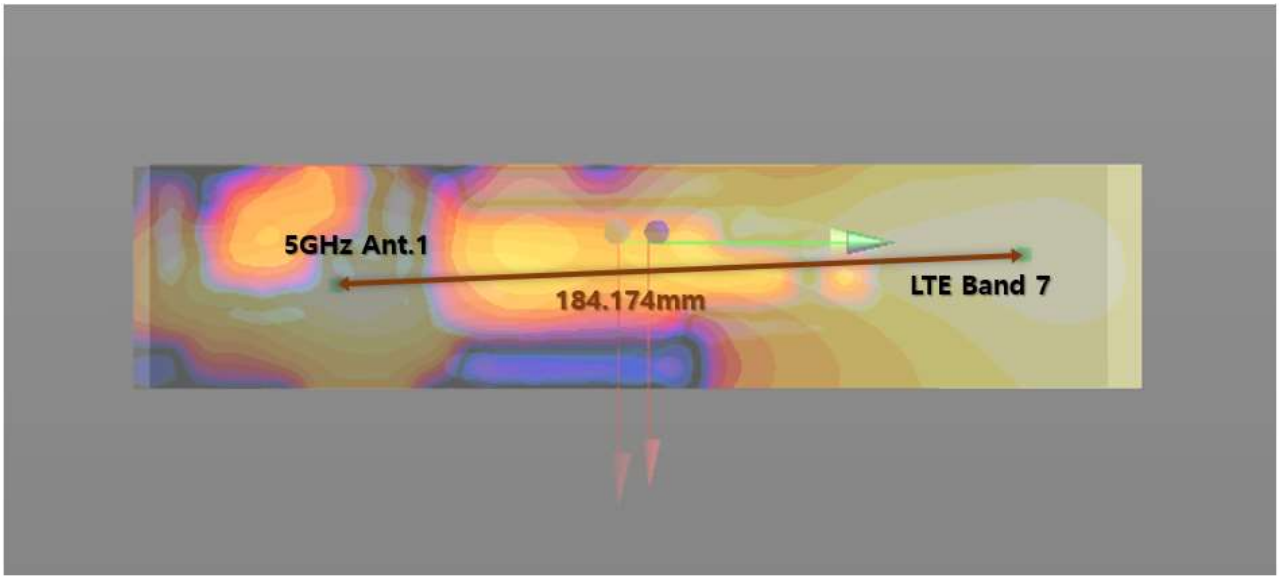
#23 Edge 4 Tilt : UMTS Band 5 + 2.4GHz Ant.1 + 2.4GHz Ant.2



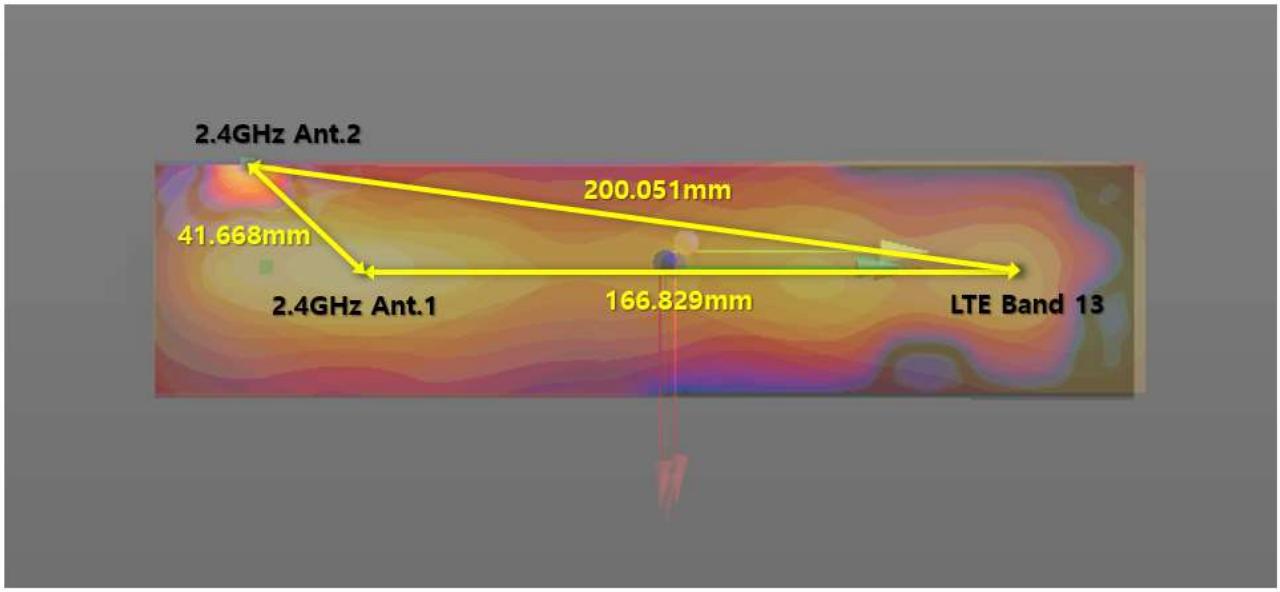
#24 Edge 4 Tilt : LTE Band 7 + 2.4GHz Ant.1 + 2.4GHz Ant.2



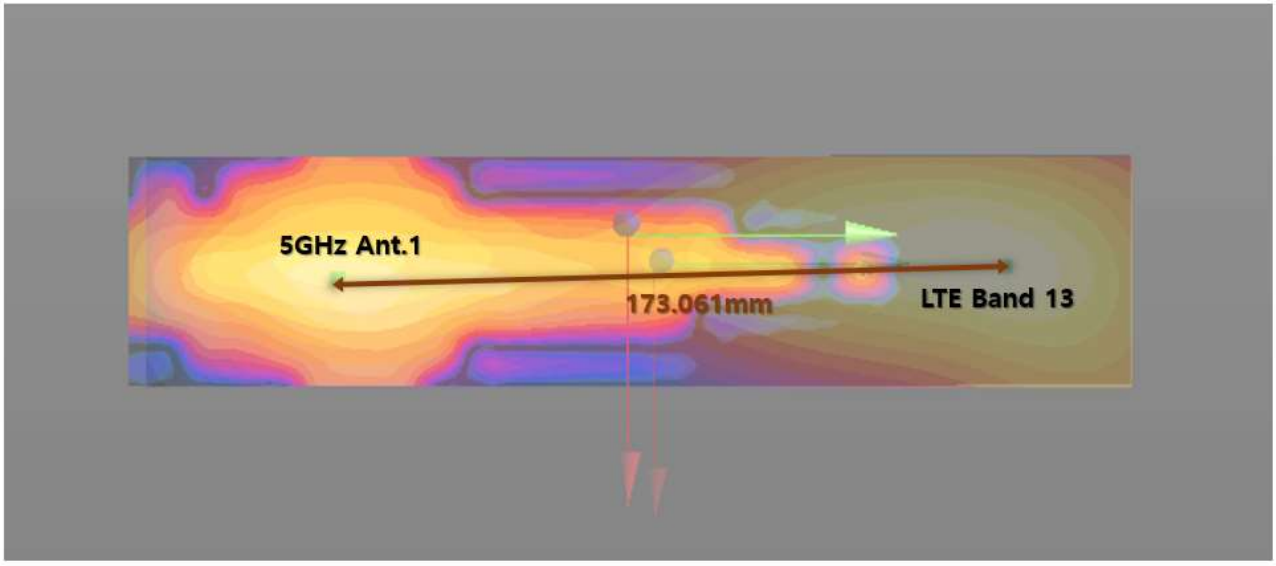
#25 Edge 4 Tilt : LTE Band 7 + 5GHz Ant.1



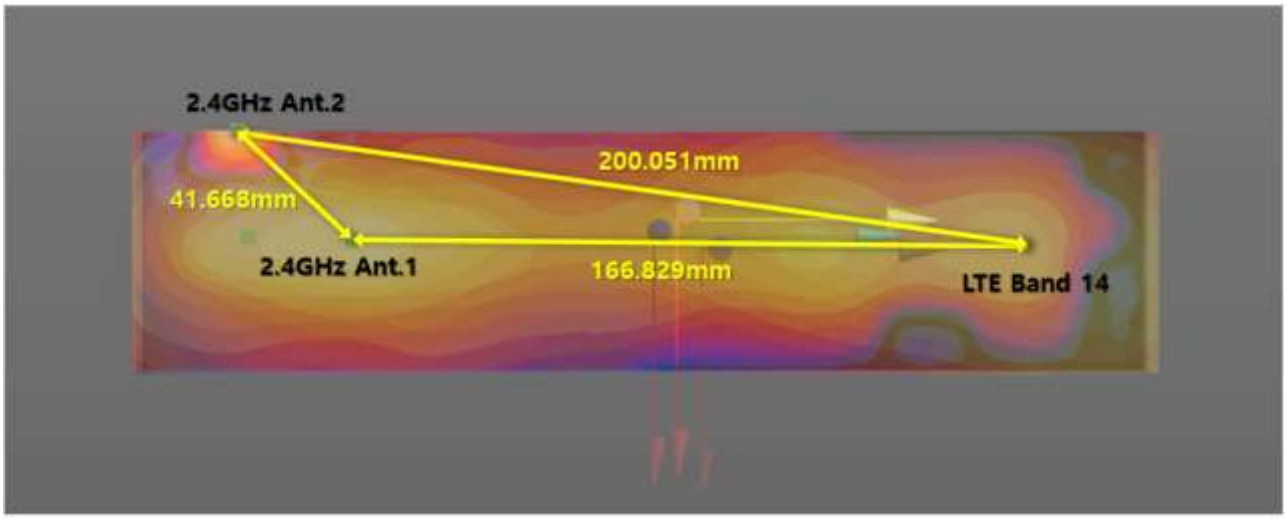
#26 Edge 4 Tilt : LTE Band 13 + 2.4GHz Ant.1 + 2.4GHz Ant.2



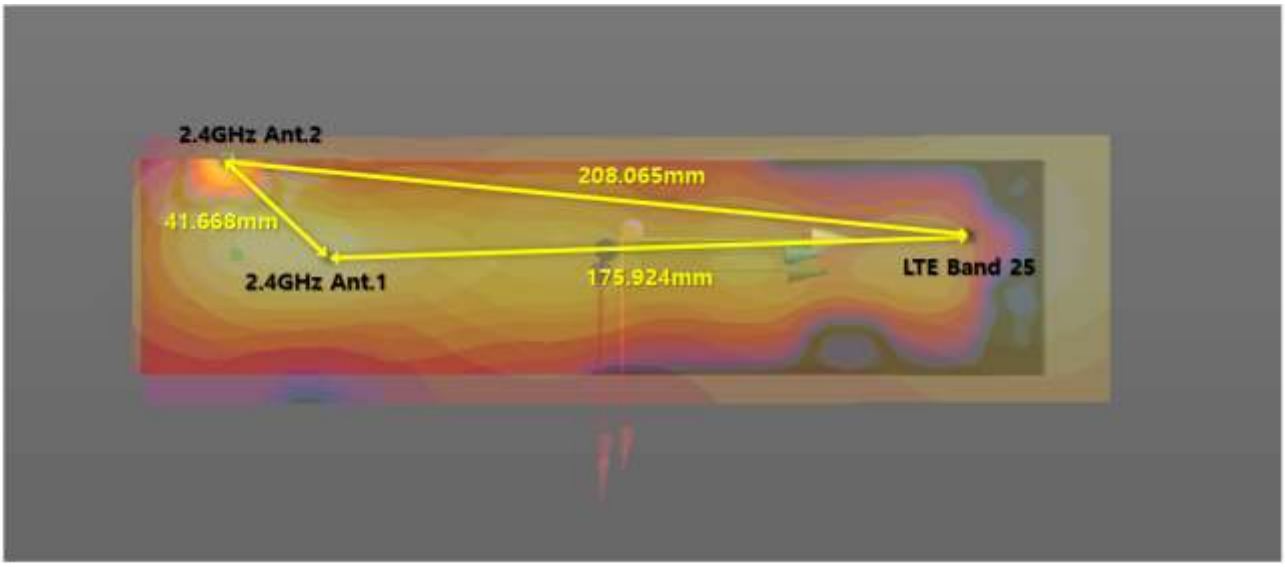
#27 Edge 4 Tilt : LTE Band 13 + 5GHz Ant.1



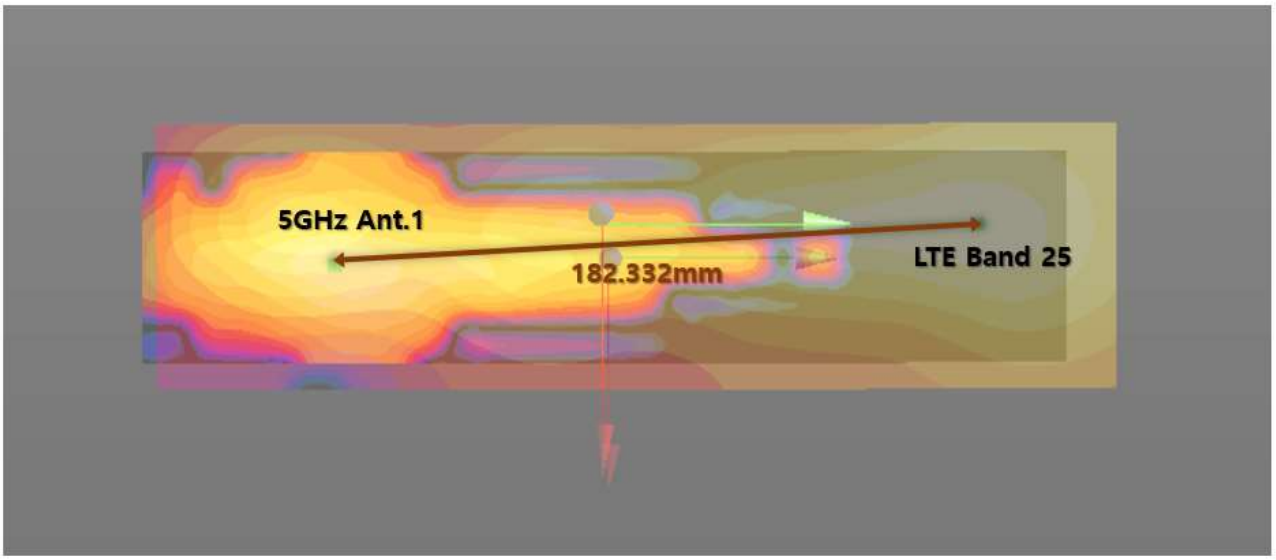
#28 Edge 4 Tilt : LTE Band 14 + 2.4GHz Ant.1 + 2.4GHz Ant.2



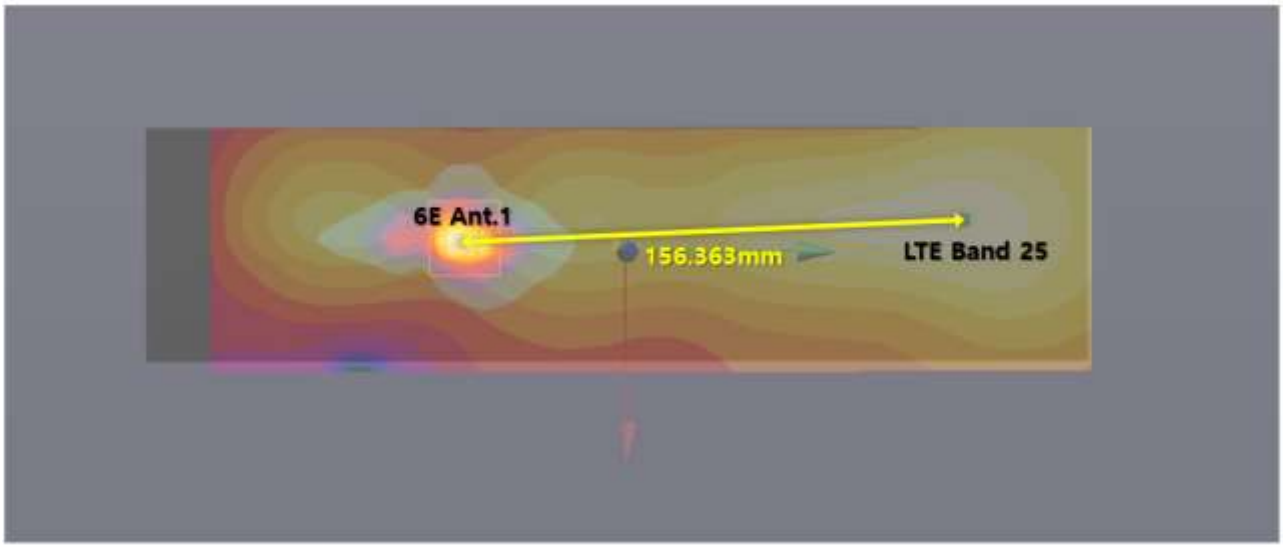
#29 Edge 4 Tilt : LTE Band 25 + 2.4GHz Ant.1 + 2.4GHz Ant.2



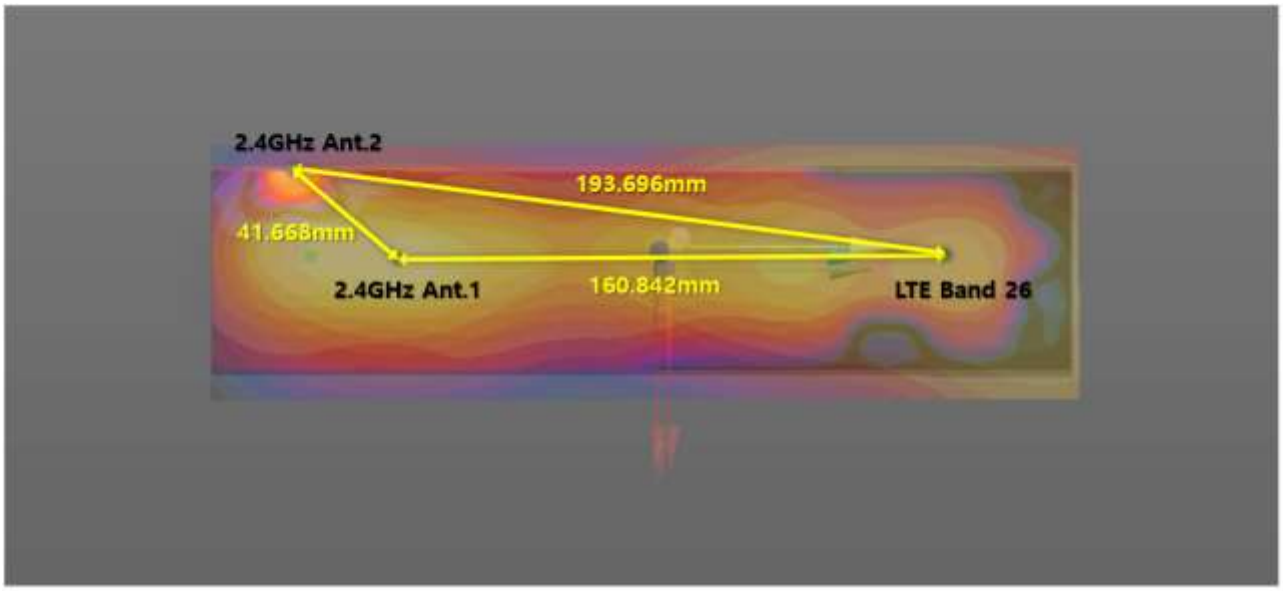
#30 Edge 4 Tilt : LTE Band 25 + 5GHz Ant.1



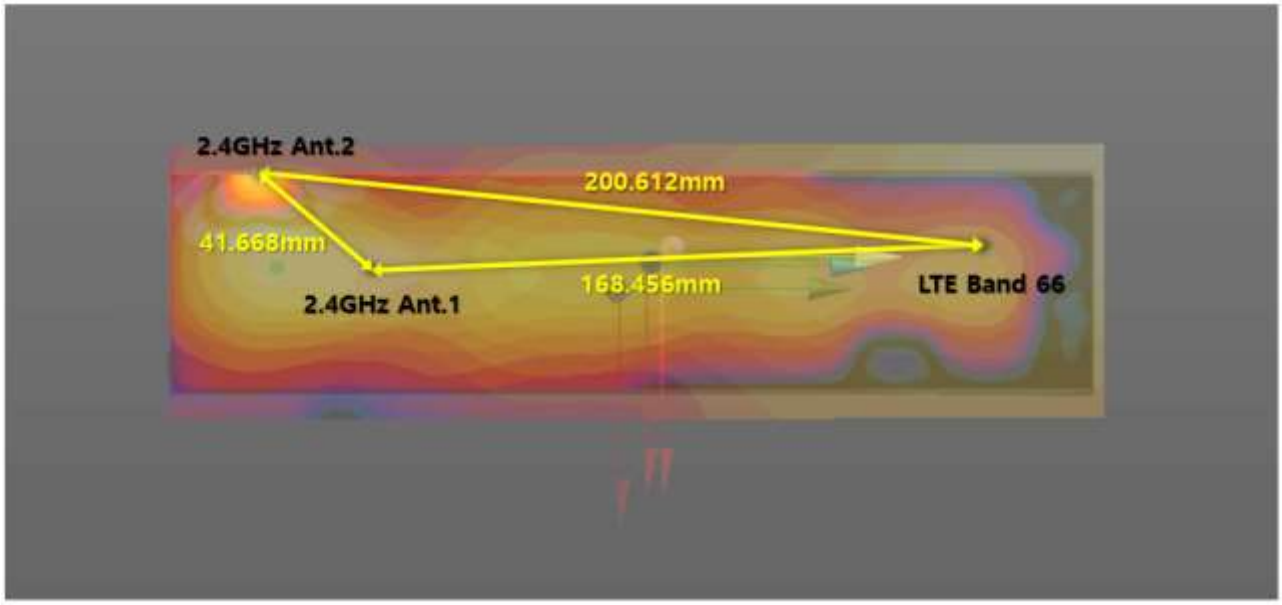
#31 Edge 4 Tilt : LTE Band 25 + 6E Ant.1



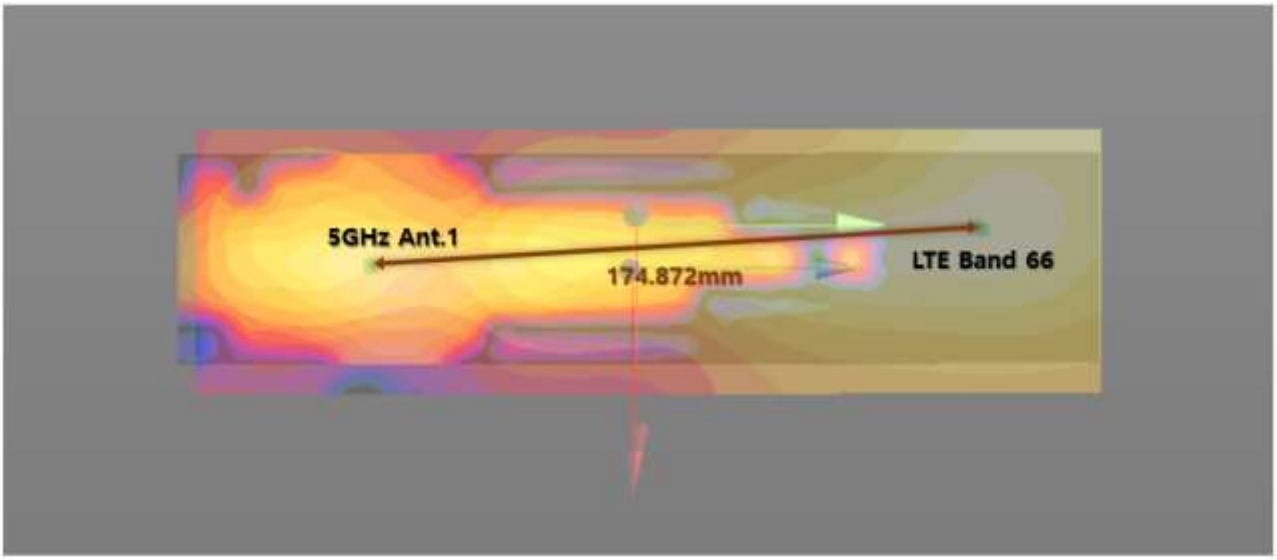
#32 Edge 4 Tilt : LTE Band 26 + 2.4GHz Ant.1 + 2.4GHz Ant.2



#33 Edge 4 Tilt : LTE Band 66 + 2.4GHz Ant.1 + 2.4GHz Ant.2



#34 Edge 4 Tilt : LTE Band 66 + 5GHz Ant.1



13.2 Simultaneous Transmission Conclusion

The above numerical summed SAR Results are sufficient to determine 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 the IEEE1528-2013..

14. 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.

Body SAR measurement variability Results

Frequency		Mode/Band	Configuration	Measured SAR (W/kg)	Repeated SAR (W/kg)	SAR Ratio
㎒	Channel					
846.6	4233	UMTS Band 5	Edge 1	0.855	0.856	1.00
1 860	26140	LTE Band 25	Edge 4 Tilt	0.865	0.867	1.00
1 907.6	9538	UMTS Band 2	Edge 4	1.050	1.030	1.02
1 732.4	1412	UMTS Band 4	Rear	1.020	0.966	1.06
2 560	21350	LTE Band 7	Rear	0.848	0.801	1.06
2 595	38000	LTE Band 38	Edge 1	0.961	0.943	1.02
2 506	39750	LTE Band 41	Edge 1	1.040	1.040	1.00
3 575	43340	LTE Band 42	Edge 1	1.170	1.130	1.04

15. Device Holder Perturbation Verification.

In accordance with published DUT Holder Perturbations in Oct.2016 TCB Workshop.
When Highest reported SAR is over 1.2 W/kg, Holder Perturbation Verification is required for each antenna, using the highest configuration among all applicable frequency bands.

Frequency		Mode/Band	Configuration	Highest Reported SAR		Deviation (%)
				(without Device Holder)	(with Device Holder)	
MHz	Channel			(W/kg)	(W/kg)	
1 860	26140	LTE Band 25	Edge 4 Tilt	1.000	1.001	+ 0.10
1 907.6	9538	UMTS Band 2	Edge 4	1.238	1.202	- 2.91
2 560	21350	LTE Band 7	Rear	1.192	1.132	- 5.03
2 506	39750	LTE Band 41	Edge 1	1.206	1.186	-1.66
3 575	43340	LTE Band 42	Edge 1	1.178	1.209	+ 2.63

16. MEASUREMENT UNCERTAINTY

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

17. SAR TEST EQUIPMENT

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
SPEAG	SAM Phantom	-	N/A	N/A	N/A
HP	SAR System Control PC	-	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F17/ 59RAA1/ C/ 01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F17/ 59RAA1/ A/ 01	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	011578	N/A	N/A	N/A
TESTO	175-H1/Thermometer	40331922309	01/04/2022	Annual	01/04/2023
SPEAG	DAE4	869	03/25/2022	Annual	03/25/2023
SPEAG	DAE4	466	04/23/2021	Annual	04/23/2022
SPEAG	DAE4	1720	05/09/2022	Annual	05/09/2023
SPEAG	E-Field Probe EX3DV4	7654	05/21/2021	Annual	05/21/2022
SPEAG	E-Field Probe EX3DV4	3968	09/29/2021	Annual	09/29/2022
SPEAG	E-Field Probe EX3DV4	7680	09/10/2021	Annual	09/10/2022
SPEAG	Dipole D750V3	1014	06/01/2021	Annual	06/01/2022
SPEAG	Dipole D835V2	4d165	08/03/2021	Annual	08/03/2022
SPEAG	Dipole D1800V2	2d015	07/30/2021	Annual	07/30/2022
SPEAG	Dipole D1900V2	5d032	01/28/2022	Annual	01/28/2023
SPEAG	Dipole D2600V2	1106	07/30/2021	Annual	07/30/2022
SPEAG	Dipole D3500V2	1132	01/24/2022	Annual	01/24/2023
SPEAG	Dipole D3700V2	1105	11/22/2021	Annual	11/22/2022
Agilent	Power Meter E4419B	MY41291386	10/06/2021	Annual	10/06/2022
Agilent	Power Meter N1911A	MY45101406	07/08/2021	Annual	07/08/2022
Agilent	Power Sensor 8481A	SG1091286	10/06/2021	Annual	10/06/2022
Agilent	Power Sensor 8481A	MY41090675	10/06/2021	Annual	10/06/2022
Agilent	Power Sensor N1921A	MY55220026	08/05/2021	Annual	08/05/2022
SPEAG	DAKS 3.5	1031	04/21/2021	Annual	04/21/2022
SPEAG	DAKS 3.5	1038	03/28/2022	Annual	03/28/2023
SPEAG	DAKS_VNA R140	0141013	04/07/2021	Annual	04/07/2022
SPEAG	DAKS_VNA R140	0141013	03/25/2022	Annual	03/25/2023
R&S	Wireless Communication Test Set CMW500	115733	04/15/2021	Annual	04/15/2022
R&S	Wireless Communication Test Set CMW500	115733	04/14/2022	Annual	04/14/2023
Agilent	11636B/Power Divider	58698	02/24/2022	Annual	02/24/2023
OSI	Power Divider	#1	06/24/2021	Annual	06/24/2022
OSI	Power Divider	#2	06/24/2021	Annual	06/24/2022
OSI	Power Divider	#3	06/24/2021	Annual	06/24/2022
OSI	Power Divider	#4	06/24/2021	Annual	06/24/2022
OSI	Power Divider	#5	06/24/2021	Annual	06/24/2022
Agilent	SIGNAL GENERATOR E4438C	MY49071736	01/03/2022	Annual	01/03/2023
Agilent	SIGNAL GENERATOR N5182A	MY47070230	05/10/2021	Annual	05/10/2022
Agilent	SIGNAL GENERATOR N5182A	MY47070230	04/28/2022	Annual	04/28/2023
EMPOWER	RF Power Amplifier	1084	06/25/2021	Annual	06/25/2022
EMPOWER	RF Power Amplifier	1011	10/06/2021	Annual	10/06/2022
MICRO LAB	LP Filter / LA-15N	10453	10/06/2021	Annual	10/06/2022
MICRO LAB	LP Filter / LA-30N	-	10/06/2021	Annual	10/06/2022
HP	Attenuator (3dB) 333340A	02427	09/06/2021	Annual	09/06/2022
HP	Attenuator (20dB) 8493C	09271	09/06/2021	Annual	09/17/2022
Aeroflex/Weinschel	Fixed Coaxial Attenuator (30 dB)	CE6106	11/11/2021	Annual	11/11/2022
Agilent	Directional Bridge 86205A	3140A03878	05/28/2021	Annual	05/28/2022
Anritsu	Radio Communication Tester MT8820C	6200695605	04/15/2021	Annual	04/15/2022
Anritsu	Radio Communication Tester MT8820C	6200695605	04/15/2022	Annual	04/15/2023
Anritsu	Radio Communication Tester MT8821C	6201502997	07/08/2021	Annual	07/08/2022

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
Anritsu	Radio Communication Tester MT8821C	6262044720	12/20/2021	Annual	12/20/2022
Anritsu	Radio Communication Tester MT8821C	6262287674	05/25/2021	Annual	05/25/2022
Agilent	WIRELESS COMMUNICATION E5515C	MY48360252	07/23/2021	Annual	07/23/2022

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

These measurements are taken to simulate the RF effects exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests

.

19. References

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

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[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 GHz), 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 MHz to 6 GHz) Mar. 2010.

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Appendix A. DUT Ant. Information & SETUP PHOTO

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

Report No.
HCT-SR-2206-FC009-P

Appendix B. – SAR Test Plots

Test Laboratory:	HCT CO., LTD
EUT Type:	Wireless module
Liquid Temperature:	21.5 ℃
Ambient Temperature:	21.6 ℃
Test Date:	04/02/2022
Plot No.:	1

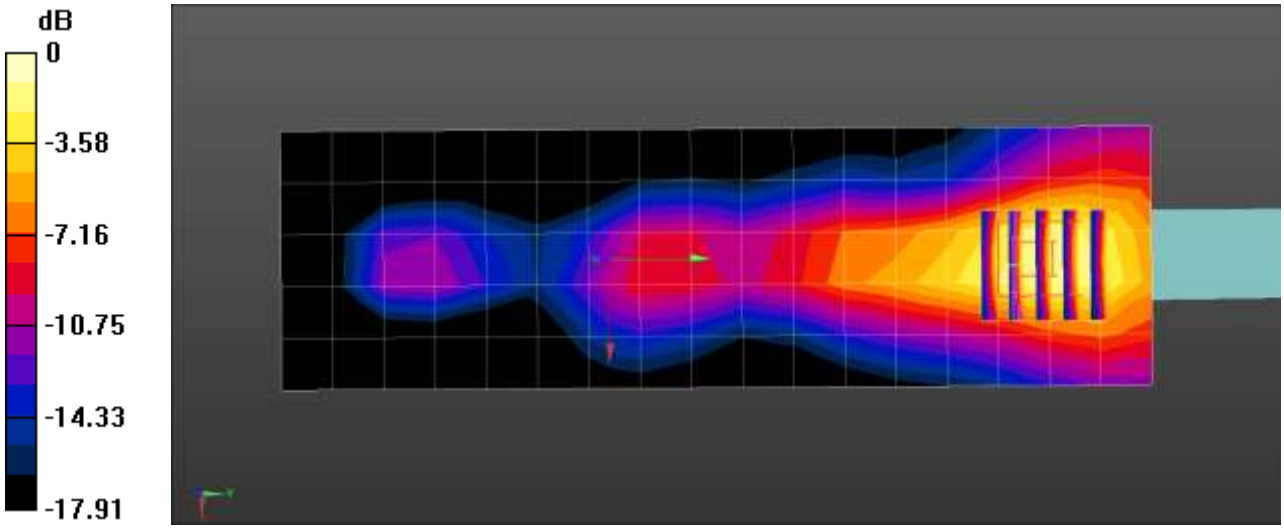
Communication System: UID 0, WCDMA Band 2 (0); Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1907.6 MHz; σ = 1.424 S/m; ε_r = 41.28; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(9.15, 9.15, 9.15) @ 1907.6 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2021-04-23
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

UMTS Band 2 Body Edge 4 9538ch Max 0mm/Area Scan (18x6x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.26 W/kg

UMTS Band 2 Body Edge 4 9538ch Max 0mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.28 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 2.03 W/kg
SAR(1 g) = 1.05 W/kg; SAR(10 g) = 0.558 W/kg
Maximum value of SAR (measured) = 1.58 W/kg



0 dB = 1.58 W/kg = 1.99 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Wireless module
Liquid Temperature:	21.5 ℃
Ambient Temperature:	21.7 ℃
Test Date:	04/03/2022
Plot No.:	2

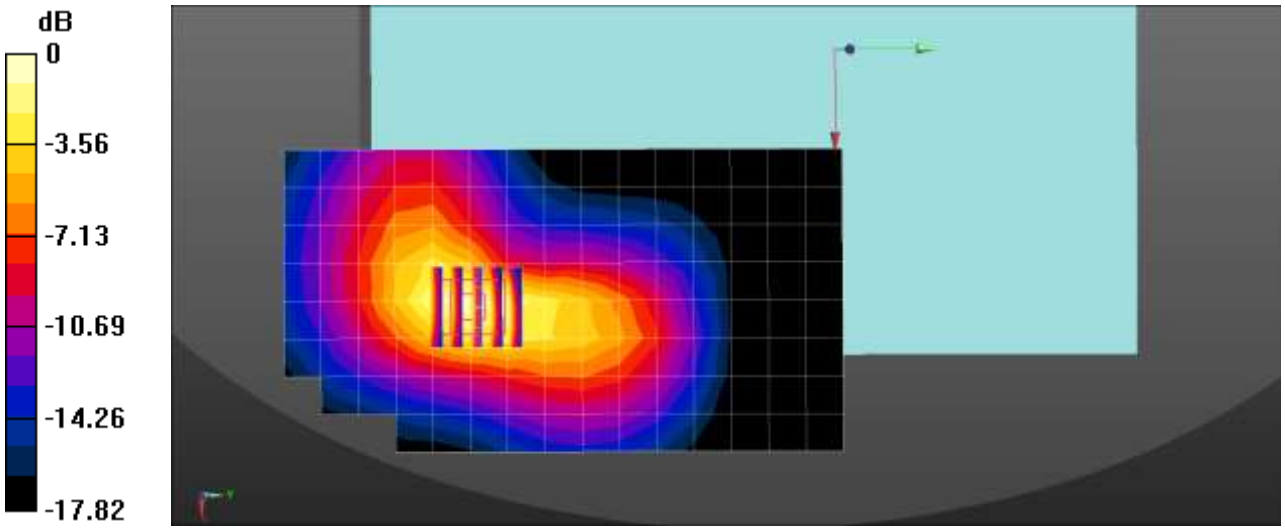
Communication System: UID 0, WCDMA1700 (0); Frequency: 1732.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.324 S/m; ε_r = 41.581; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(9.4, 9.4, 9.4) @ 1732.4 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2021-04-23
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

UMTS Band 4 Body Rear 1412ch Max 15mm/Area Scan (16x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.48 W/kg

UMTS Band 4 Body Rear 1412ch Max 15mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.491 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.81 W/kg
SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.582 W/kg
Maximum value of SAR (measured) = 1.52 W/kg



0 dB = 1.52 W/kg = 1.82 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Wireless module
Liquid Temperature:	21.5 ℃
Ambient Temperature:	21.7 ℃
Test Date:	04/05/2022
Plot No.:	3

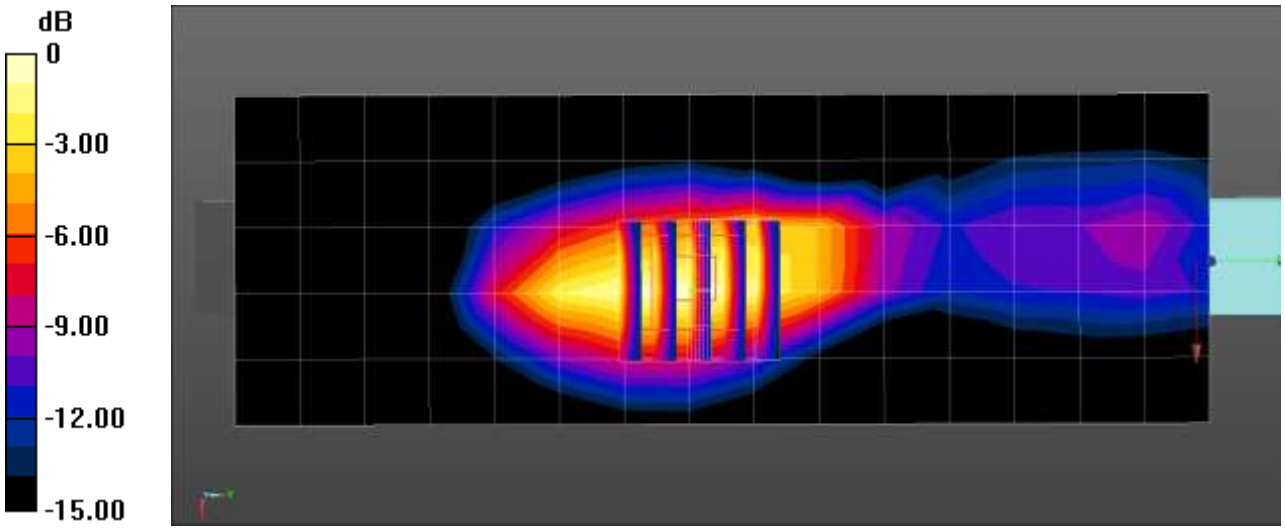
Communication System: UID 0, WCDMA850 (0); Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 846.6 MHz; σ = 0.937 S/m; ε_r = 41.644; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(10.54, 10.54, 10.54) @ 846.6 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2021-04-23
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

UMTS Band 5 Body Edge 1 4233ch Grip 0mm/Area Scan (16x6x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.22 W/kg

UMTS Band 5 Body Edge 1 4233ch Grip 0mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.51 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.70 W/kg
SAR(1 g) = 0.856 W/kg; SAR(10 g) = 0.459 W/kg
Maximum value of SAR (measured) = 1.26 W/kg



0 dB = 1.26 W/kg = 1.00 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Wireless module
Liquid Temperature:	20.5 ℃
Ambient Temperature:	20.6 ℃
Test Date:	04/07/2022
Plot No.:	4

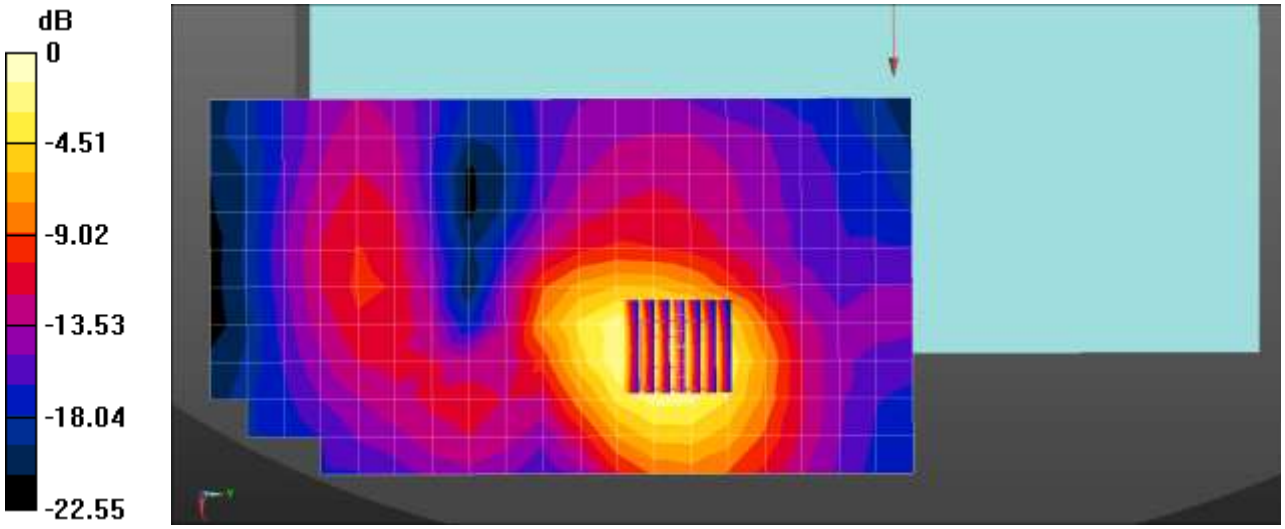
Communication System: UID 0, LTE Band 7 (0); Frequency: 2560 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2560 MHz; σ = 1.944 S/m; ε_r = 38.557; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(8.28, 8.28, 8.28) @ 2560 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2021-04-23
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

LTE Band 7 Body Rear QPSK 20MHz 1RB 0offset 21350ch Max 15mm/Area Scan (20x11x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 1.24 W/kg

LTE Band 7 Body Rear QPSK 20MHz 1RB 0offset 21350ch Max 15mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.492 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 1.61 W/kg
SAR(1 g) = 0.848 W/kg; SAR(10 g) = 0.457 W/kg
Maximum value of SAR (measured) = 1.30 W/kg



0 dB = 1.30 W/kg = 1.14 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Wireless module
Liquid Temperature:	20.0 ℃
Ambient Temperature:	20.1 ℃
Test Date:	04/08/2022
Plot No.:	5

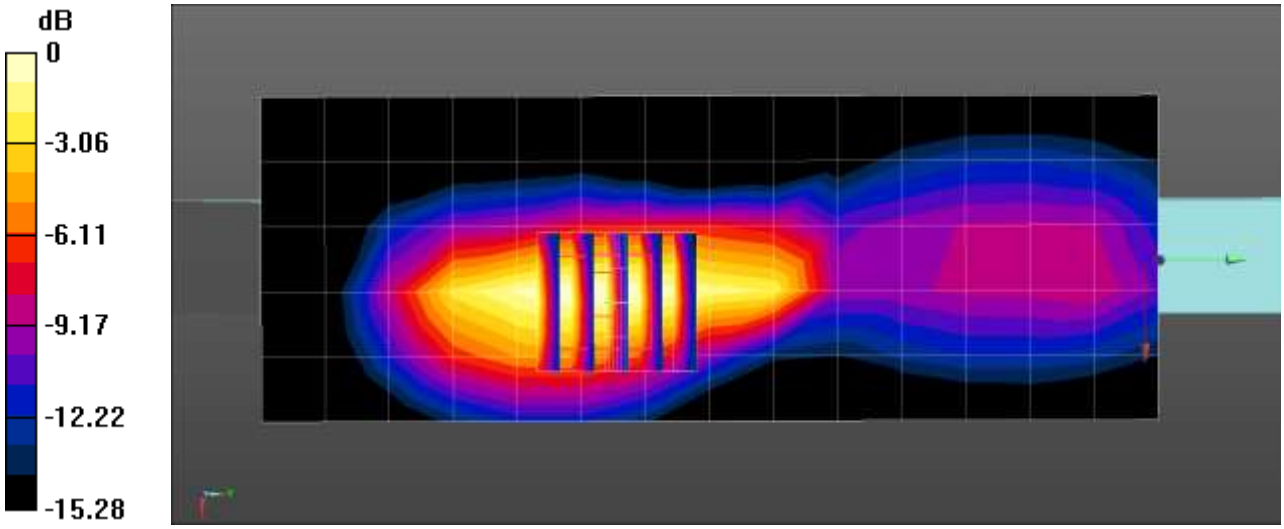
Communication System: UID 0, LTE 12 (0); Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 707.5 MHz; σ = 0.86 S/m; ε_r = 43.257; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(10.79, 10.79, 10.79) @ 707.5 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2021-04-23
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

LTE Band 12 Body Edge 1 QPSK 10MHz 25RB 0offset 23095ch Grip 0mm/Area Scan (15x6x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.927 W/kg

LTE Band 12 Body Edge 1 QPSK 10MHz 25RB 0offset 23095ch Grip 0mm/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.13 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.17 W/kg
SAR(1 g) = 0.600 W/kg; SAR(10 g) = 0.328 W/kg
Maximum value of SAR (measured) = 0.905 W/kg



0 dB = 0.905 W/kg = -0.43 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Wireless module
Liquid Temperature:	22.5 ℃
Ambient Temperature:	22.7 ℃
Test Date:	04/11/2022
Plot No.:	6

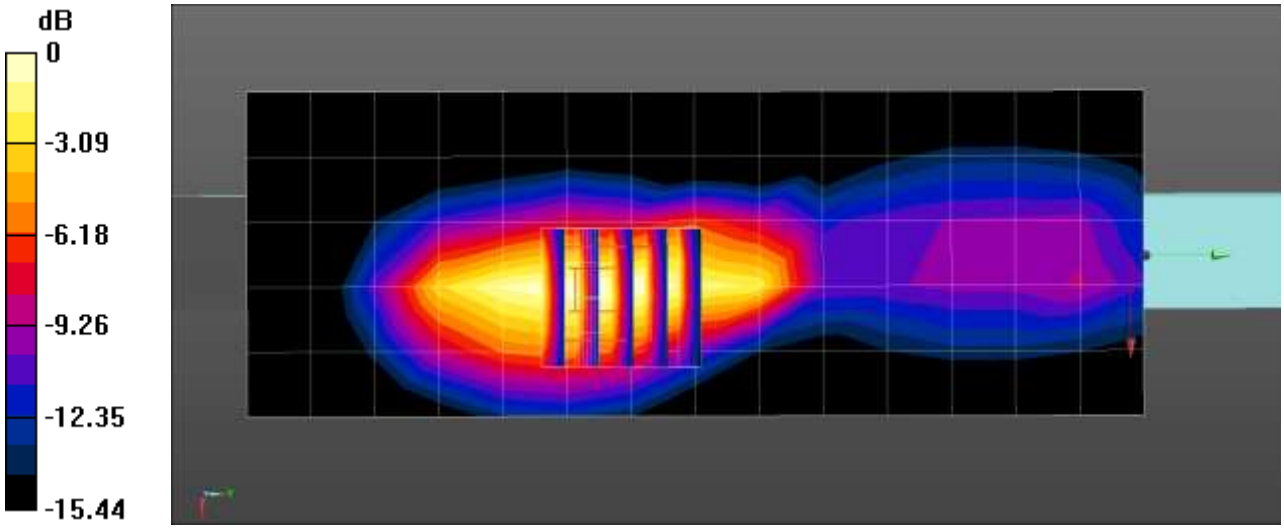
Communication System: UID 0, LTE 13 (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 782 MHz; σ = 0.937 S/m; ε_r = 42.163; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(10.79, 10.79, 10.79) @ 782 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2021-04-23
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

LTE Band 13 Body Edge 1 QPSK 10MHz 50RB 0offset 23230ch Grip 0mm/Area Scan (15x6x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.12 W/kg

LTE Band 13 Body Edge 1 QPSK 10MHz 50RB 0offset 23230ch Grip 0mm/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.24 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 1.44 W/kg
SAR(1 g) = 0.727 W/kg; SAR(10 g) = 0.392 W/kg
Maximum value of SAR (measured) = 1.10 W/kg



0 dB = 1.10 W/kg = 0.41 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Wireless module
Liquid Temperature:	22.4 ℃
Ambient Temperature:	22.6 ℃
Test Date:	04/12/2022
Plot No.:	7

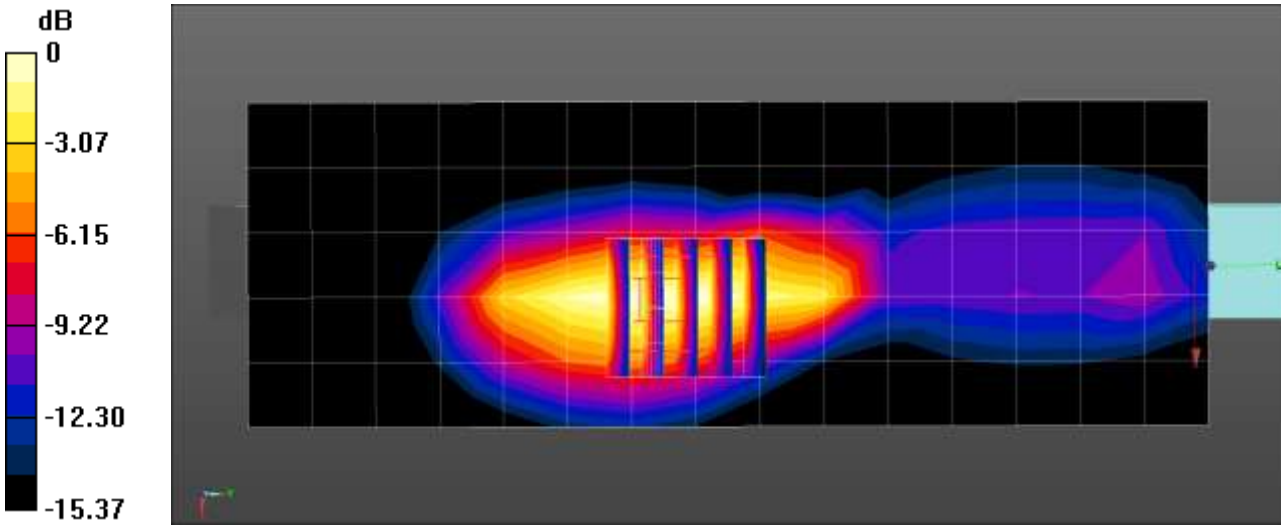
Communication System: UID 0, LTE 14 (0); Frequency: 793 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 793 MHz; σ = 0.944 S/m; ε_r = 42.017; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(10.79, 10.79, 10.79) @ 793 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2021-04-23
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

LTE Band 14 Body Edge 1 QPSK 10MHz 50RB 0offset 23330ch Grip 0mm/Area Scan (16x6x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.14 W/kg

LTE Band 14 Body Edge 1 QPSK 10MHz 50RB 0offset 23330ch Grip 0mm/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.79 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 1.47 W/kg
SAR(1 g) = 0.743 W/kg; SAR(10 g) = 0.400 W/kg
Maximum value of SAR (measured) = 1.12 W/kg



0 dB = 1.12 W/kg = 0.49 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Wireless module
Liquid Temperature:	21.7 ℃
Ambient Temperature:	21.8 ℃
Test Date:	04/04/2022
Plot No.:	8

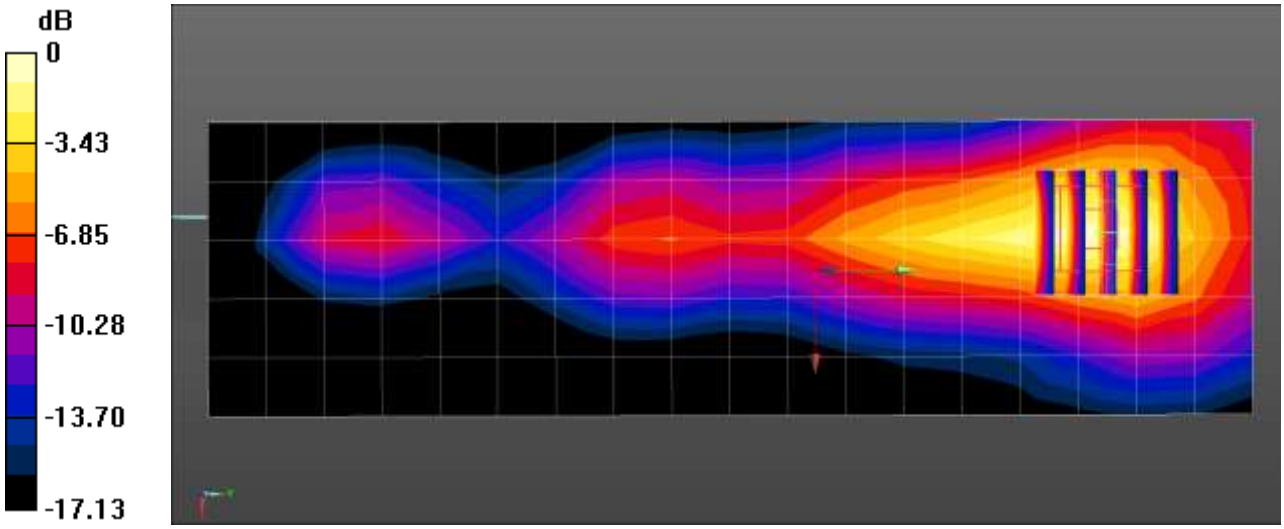
Communication System: UID 0, LTE Band 25 (0); Frequency: 1860 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1860 MHz; σ = 1.376 S/m; ε_r = 41.452; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(9.15, 9.15, 9.15) @ 1860 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2021-04-23
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

LTE Band 25 Body Edge 4 Tilt QPSK 20MHz 1RB 0offset 26140ch Max 0mm/Area Scan (19x6x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.32 W/kg

LTE Band 25 Body Edge 4 Tilt QPSK 20MHz 1RB 0offset 26140ch Max 0mm/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.88 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 1.70 W/kg
SAR(1 g) = 0.868 W/kg; SAR(10 g) = 0.470 W/kg
Maximum value of SAR (measured) = 1.38 W/kg



0 dB = 1.38 W/kg = 1.40 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Wireless module
Liquid Temperature:	20.4 ℃
Ambient Temperature:	20.5 ℃
Test Date:	04/06/2022
Plot No.:	9

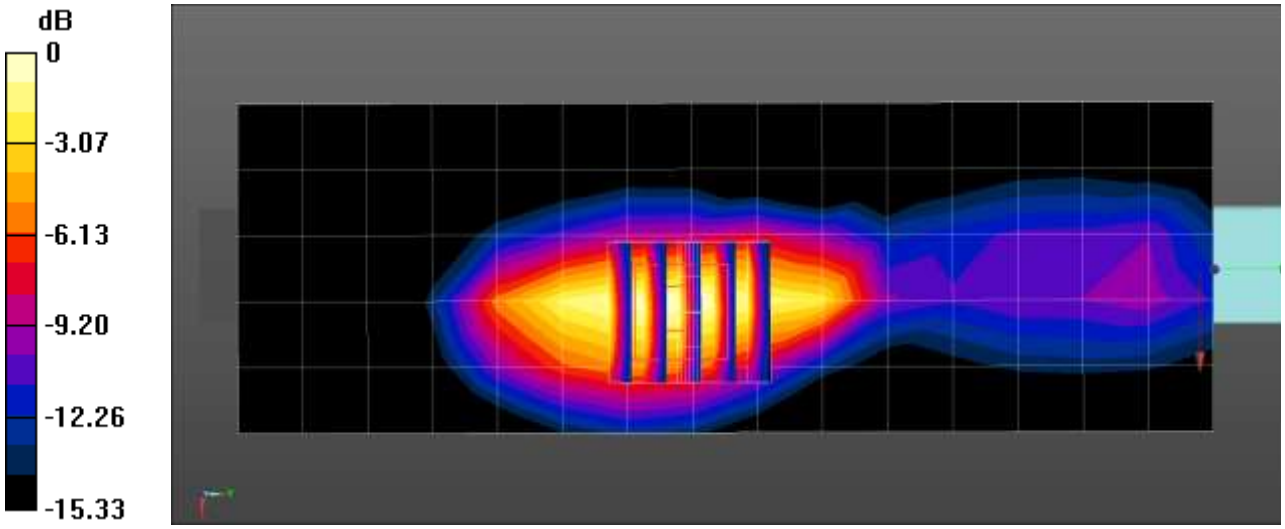
Communication System: UID 0, LTE 26 (0); Frequency: 831.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 831.5 MHz; σ = 0.922 S/m; ε_r = 40.616; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(10.54, 10.54, 10.54) @ 831.5 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2021-04-23
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

LTE Band 26 Body Edge 1 QPSK 15MHz 75RB 0offset 26865ch Grip 0mm/Area Scan (16x6x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.10 W/kg

LTE Band 26 Body Edge 1 QPSK 15MHz 75RB 0offset 26865ch Grip 0mm/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.58 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 1.38 W/kg
SAR(1 g) = 0.705 W/kg; SAR(10 g) = 0.380 W/kg
Maximum value of SAR (measured) = 1.12 W/kg



0 dB = 1.12 W/kg = 0.49 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Wireless module
Liquid Temperature:	20.7 ℃
Ambient Temperature:	20.8 ℃
Test Date:	04/09/2022
Plot No.:	10

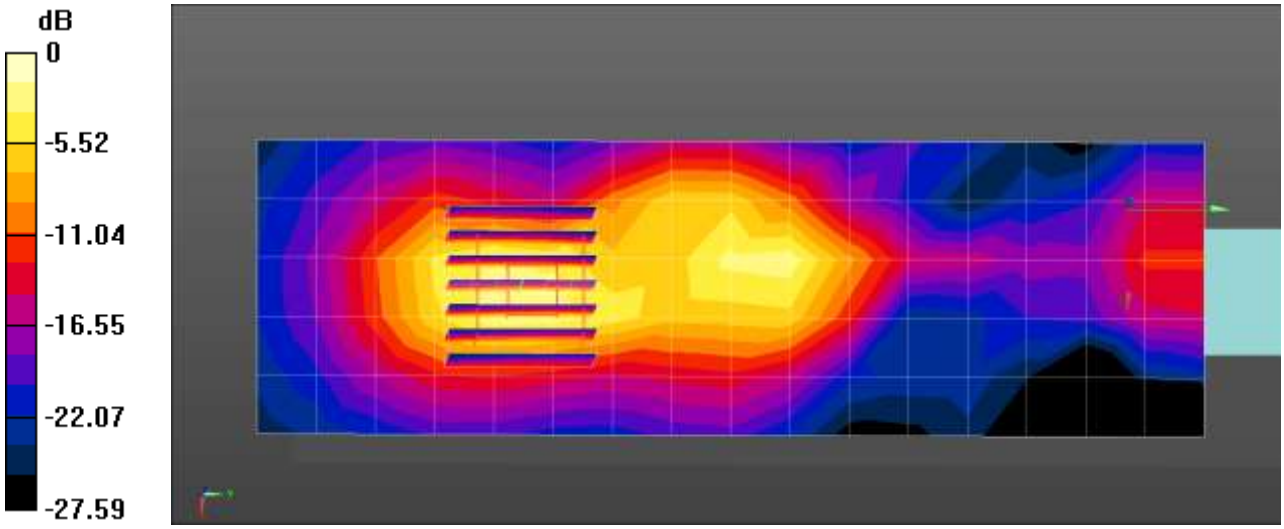
Communication System: UID 0, LTE Band 38 (0); Frequency: 2580 MHz;Duty Cycle: 1:1.58052
Medium parameters used: f = 2580 MHz; σ = 1.987 S/m; ε_r = 38.06; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(8.28, 8.28, 8.28) @ 2580 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2022-03-25
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

LTE Band 38 Body Edge 1 QPSK 20MHz 1RB 0offset 37850ch Grip 0mm/Area Scan (17x6x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 1.08 W/kg

LTE Band 38 Body Edge 1 QPSK 20MHz 1RB 0offset 37850ch Grip 0mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.588 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 2.49 W/kg
SAR(1 g) = 0.941 W/kg; SAR(10 g) = 0.369 W/kg
Maximum value of SAR (measured) = 1.82 W/kg



0 dB = 1.82 W/kg = 2.60 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Wireless module
Liquid Temperature:	20.7 ℃
Ambient Temperature:	20.8 ℃
Test Date:	04/09/2022
Plot No.:	11

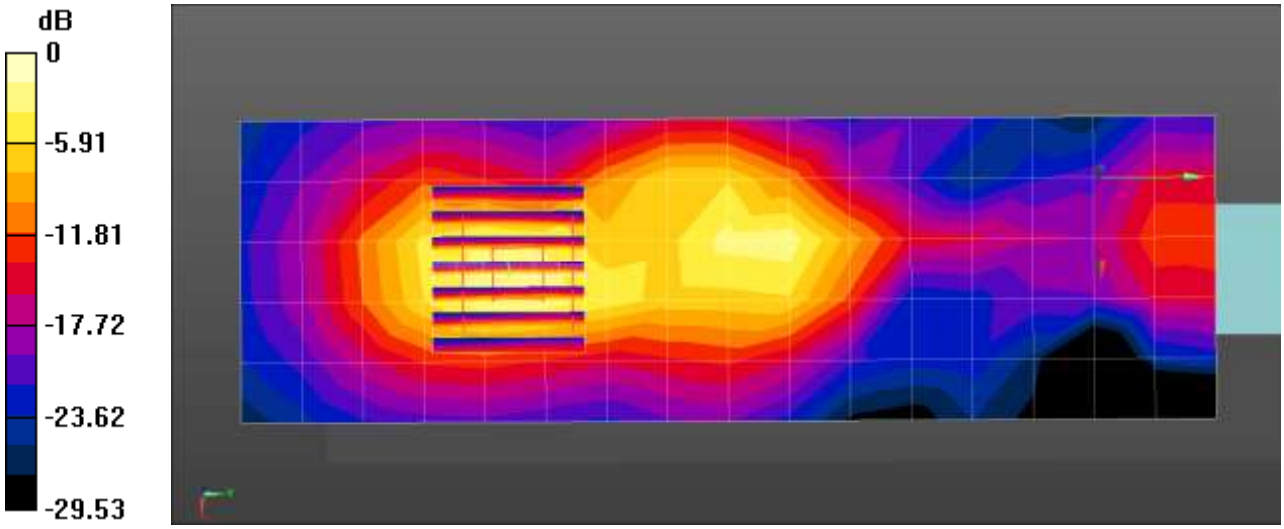
Communication System: UID 0, LTE Band 38 (0); Frequency: 2595 MHz;Duty Cycle: 1:1.58052
Medium parameters used (interpolated): f = 2595 MHz; σ = 2.001 S/m; ε_r = 37.988; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(8.28, 8.28, 8.28) @ 2595 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2022-03-25
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

LTE Band 38 Body Edge 1 QPSK 20MHz 1RB 0offset 38000ch Grip 0mm/Area Scan (17x6x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 1.06 W/kg

LTE Band 38 Body Edge 1 QPSK 20MHz 1RB 0offset 38000ch Grip 0mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.049 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 2.55 W/kg
SAR(1 g) = 0.961 W/kg; SAR(10 g) = 0.374 W/kg
Maximum value of SAR (measured) = 1.87 W/kg



0 dB = 1.87 W/kg = 2.72 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Wireless module
Liquid Temperature:	20.5 ℃
Ambient Temperature:	20.7 ℃
Test Date:	05/16/2022
Plot No.:	12

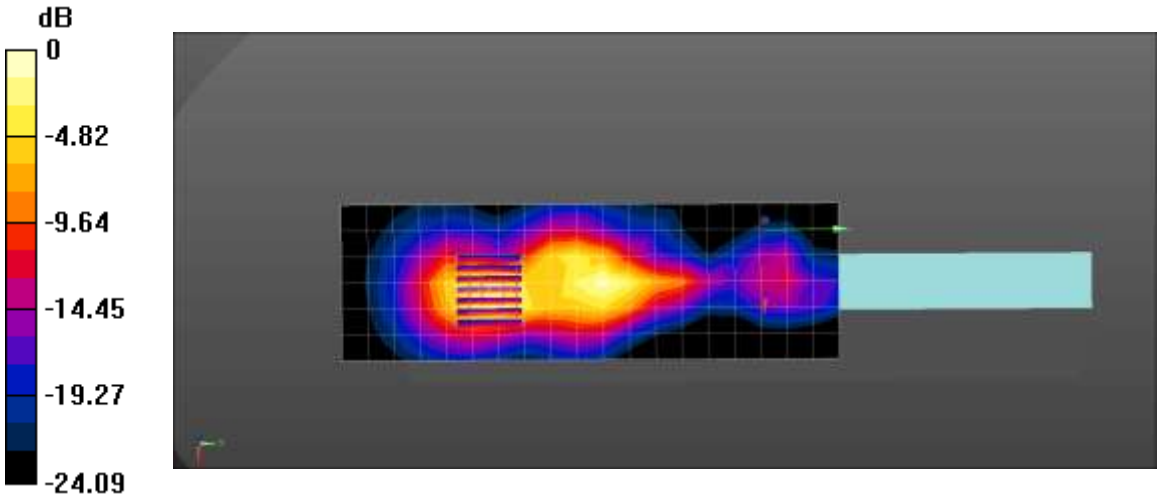
Communication System: UID 0, LTE Band41 (0); Frequency: 2549.5 MHz;Duty Cycle: 1:1.58052
Medium parameters used: f = 2550 MHz; σ = 1.856 S/m; ε_r = 37.783; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(7.51, 7.51, 7.51) @ 2549.5 MHz; Calibrated: 2021-09-29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2022-03-25
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

LTE Band 41 Body Edge 1 QPSK 20MHz 1RB 0offset 40185ch Grip 0mm/Area Scan (20x7x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 1.64 W/kg

LTE Band 41 Body Edge 1 QPSK 20MHz 1RB 0offset 40185ch Grip 0mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.509 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 2.57 W/kg
SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.449 W/kg
Smallest distance from peaks to all points 3 dB below = 7 mm
Ratio of SAR at M2 to SAR at M1 = 43.5%
Maximum value of SAR (measured) = 1.93 W/kg



0 dB = 1.93 W/kg = 2.86 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Wireless module
Liquid Temperature:	20.3 ℃
Ambient Temperature:	20.5 ℃
Test Date:	05/17/2022
Plot No.:	13

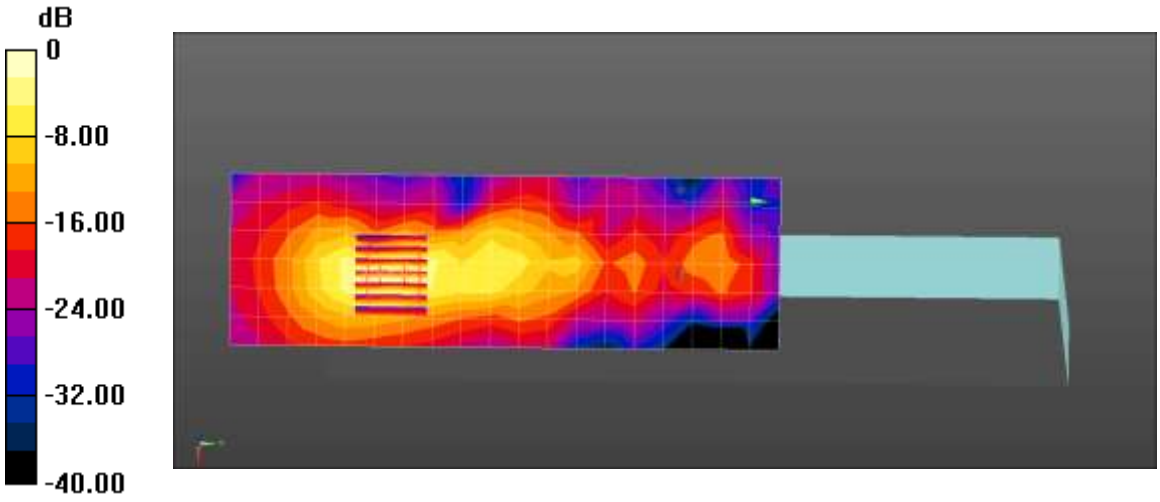
Communication System: UID 0, LTE Band 42 (0); Frequency: 3460 MHz;Duty Cycle: 1:1
Medium parameters used: f = 3460 MHz; σ = 2.814 S/m; ε_r = 36.641; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7680; ConvF(7.05, 7.05, 7.05) @ 3460 MHz; Calibrated: 2021-09-10
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1720; Calibrated: 2022-05-09
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

LTE Band 42 Body Edge 1 QPSK 20MHz 1RB 99offset 42190ch Grip 0mm/Area Scan (20x7x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 1.72 W/kg

LTE Band 42 Body Edge 1 QPSK 20MHz 1RB 99offset 42190ch Grip 0mm/Zoom Scan (7x7x8)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=4mm
Reference Value = 4.226 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 3.69 W/kg
SAR(1 g) = 1.37 W/kg; SAR(10 g) = 0.505 W/kg
Maximum value of SAR (measured) = 2.67 W/kg



0 dB = 2.67 W/kg = 4.27 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Wireless module
Liquid Temperature:	20.6 ℃
Ambient Temperature:	20.8 ℃
Test Date:	04/14/2022
Plot No.:	14

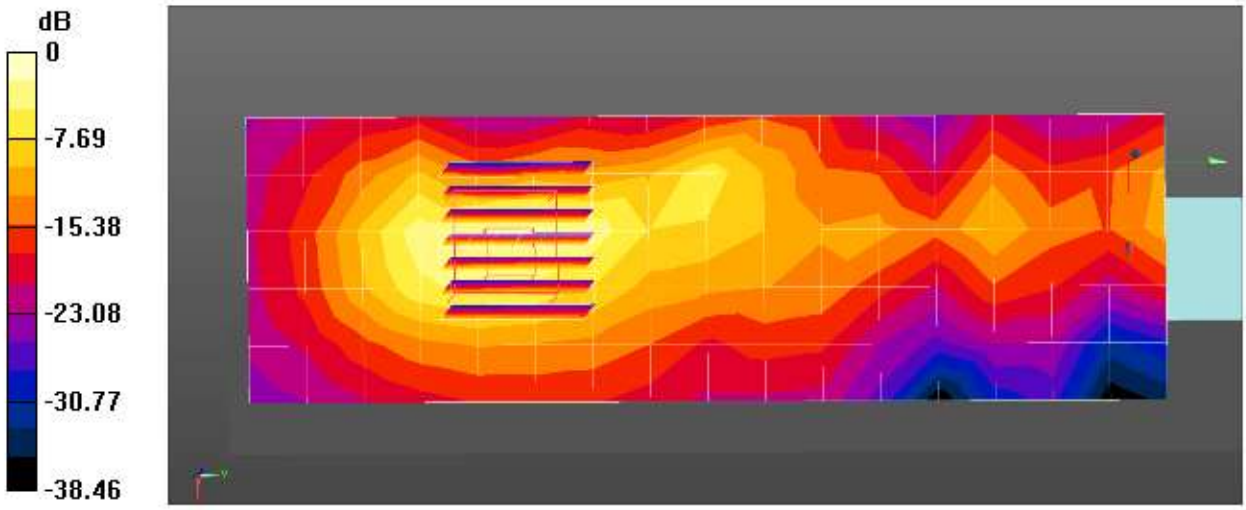
Communication System: UID 0, LTE 48 (0); Frequency: 3560 MHz;Duty Cycle: 1:1.58016
Medium parameters used: f = 3560 MHz; σ = 2.973 S/m; ε_r = 37.316; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(7.7, 7.7, 7.7) @ 3560 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2022-03-25
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

LTE Band 48 Body Edge 1 QPSK 20MHz 1RB 0offset 55340ch Grip 0mm/Area Scan (17x6x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 1.88 W/kg

LTE Band 48 Body Edge 1 QPSK 20MHz 1RB 0offset 55340ch Grip 0mm/Zoom Scan (7x7x8)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=4mm
Reference Value = 5.250 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 4.47 W/kg
SAR(1 g) = 1.37 W/kg; SAR(10 g) = 0.488 W/kg
Maximum value of SAR (measured) = 3.08 W/kg



0 dB = 3.08 W/kg = 4.89 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Wireless module
Liquid Temperature:	21.0 ℃
Ambient Temperature:	21.1 ℃
Test Date:	04/10/2022
Plot No.:	15

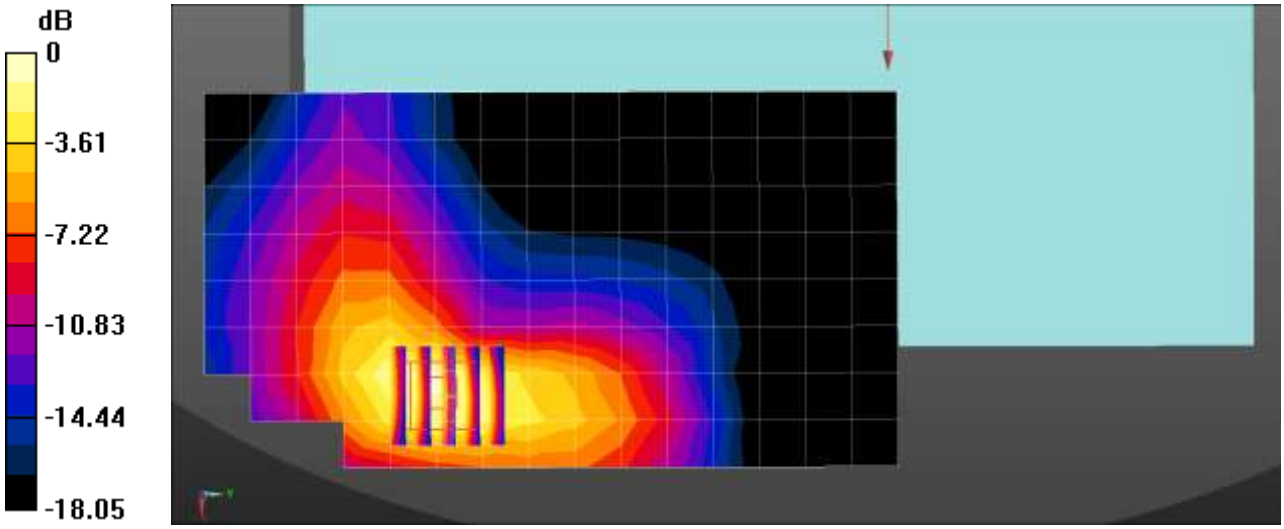
Communication System: UID 0, LTE Band 66 (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1745 MHz; σ = 1.332 S/m; ε_r = 40.409; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(9.4, 9.4, 9.4) @ 1745 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2021-04-23
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

LTE Band 66 Body Rear QPSK 20MHz 1RB 0offset 132322ch Max 15mm/Area Scan (16x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.23 W/kg

LTE Band 66 Body Rear QPSK 20MHz 1RB 0offset 132322ch Max 15mm/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.73 W/kg
SAR(1 g) = 0.993 W/kg; SAR(10 g) = 0.568 W/kg
Maximum value of SAR (measured) = 1.46 W/kg



0 dB = 1.46 W/kg = 1.64 dBW/kg

Appendix C. – Dipole Verification Plots

Verification Data (750 MHz Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	20.0 ℃
Test Date:	04/08/2022

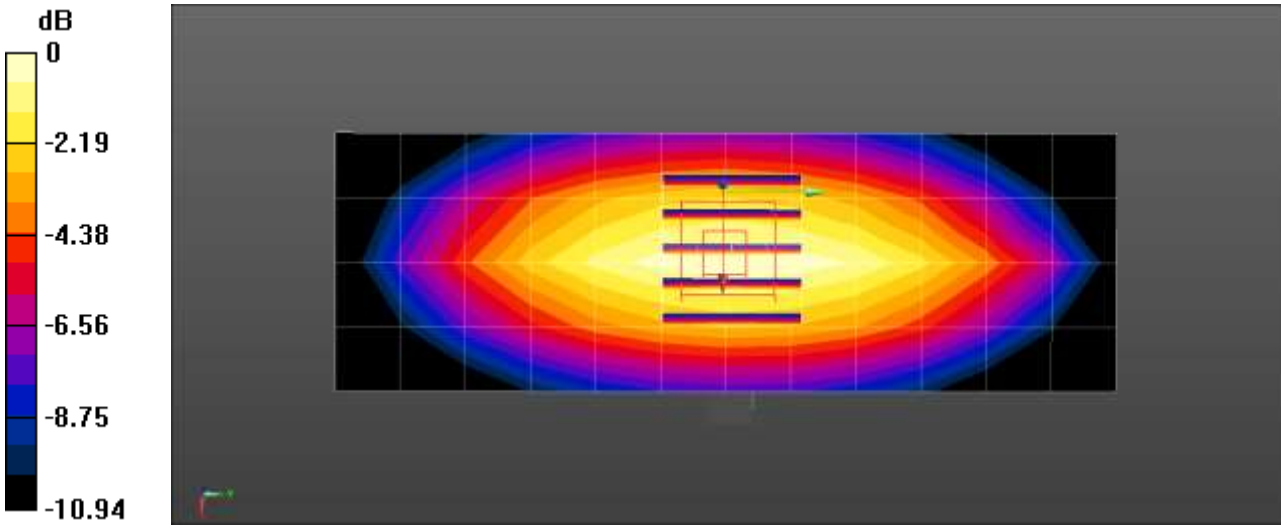
Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; σ = 0.902 S/m; ε_r = 42.606; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(10.79, 10.79, 10.79) @ 750 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2021-04-23
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/750MHz Head Verification/Area Scan (13x5x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.588 W/kg

Dipole/750MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.69 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.678 W/kg
SAR(1 g) = 0.433 W/kg; SAR(10 g) = 0.285 W/kg
Maximum value of SAR (measured) = 0.588 W/kg



0 dB = 0.588 W/kg = -2.31 dBW/kg

Verification Data (750 MHz Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	22.5 ℃
Test Date:	04/11/2022

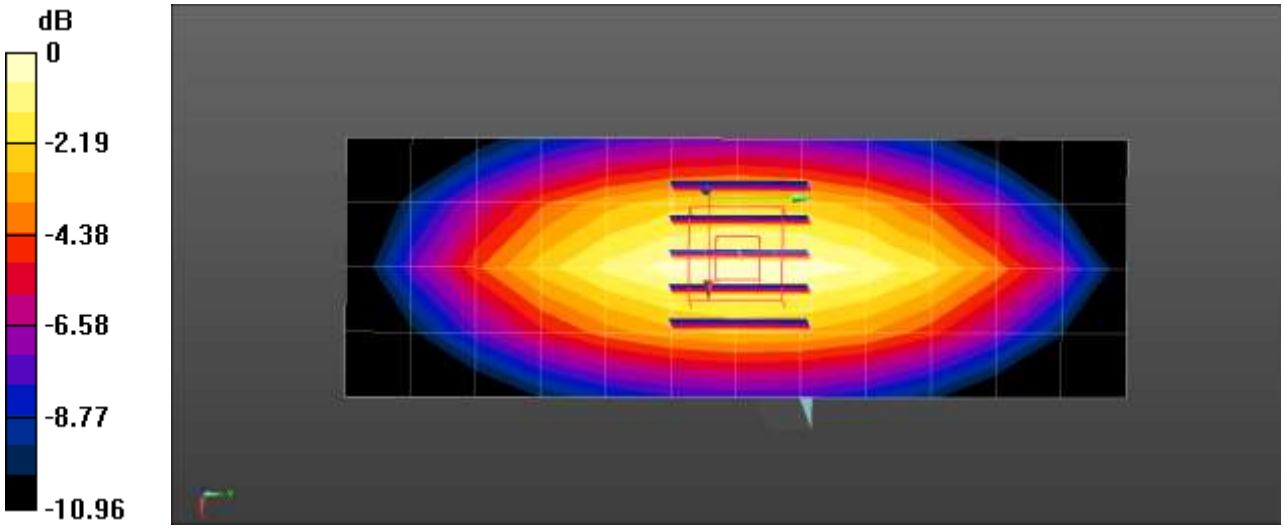
Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; σ = 0.906 S/m; ε_r = 42.639; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(10.79, 10.79, 10.79) @ 750 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2021-04-23
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/750MHz Head Verification/Area Scan (13x5x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.587 W/kg

Dipole/750MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.33 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.680 W/kg
SAR(1 g) = 0.434 W/kg; SAR(10 g) = 0.285 W/kg
Maximum value of SAR (measured) = 0.592 W/kg



0 dB = 0.592 W/kg = -2.28 dBW/kg

Verification Data (750 MHz Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	22.4 ℃
Test Date:	04/12/2022

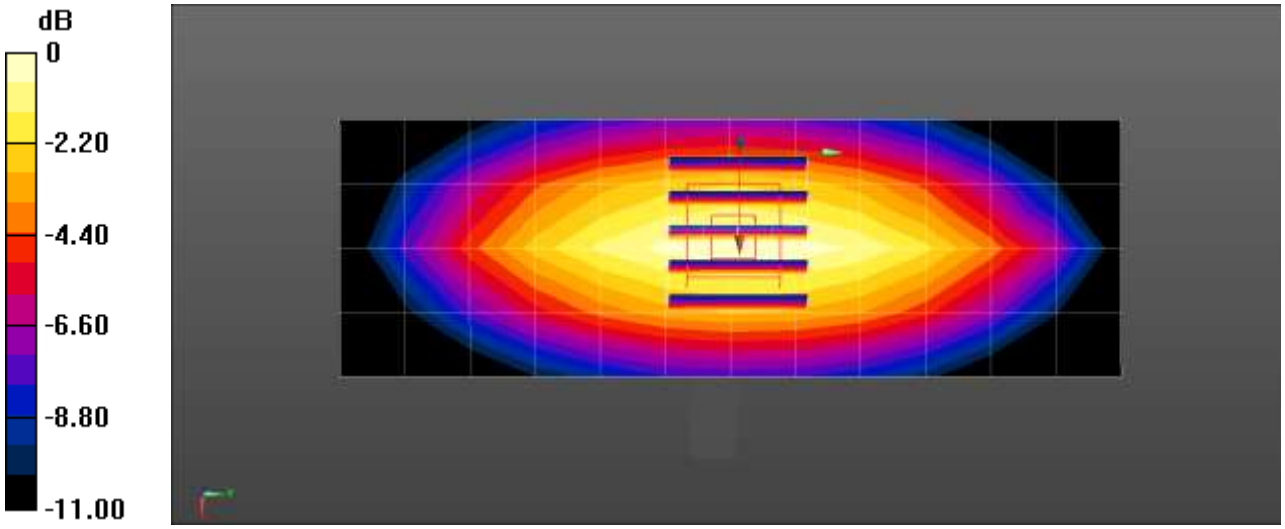
Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; σ = 0.902 S/m; ε_r = 42.625; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(10.79, 10.79, 10.79) @ 750 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2021-04-23
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/750MHz Head Verification/Area Scan (13x5x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.586 W/kg

Dipole/750MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.11 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.684 W/kg
SAR(1 g) = 0.436 W/kg; SAR(10 g) = 0.285 W/kg
Maximum value of SAR (measured) = 0.596 W/kg



0 dB = 0.596 W/kg = -2.25 dBW/kg

Verification Data (835 MHz Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	21.5 ℃
Test Date:	04/05/2022

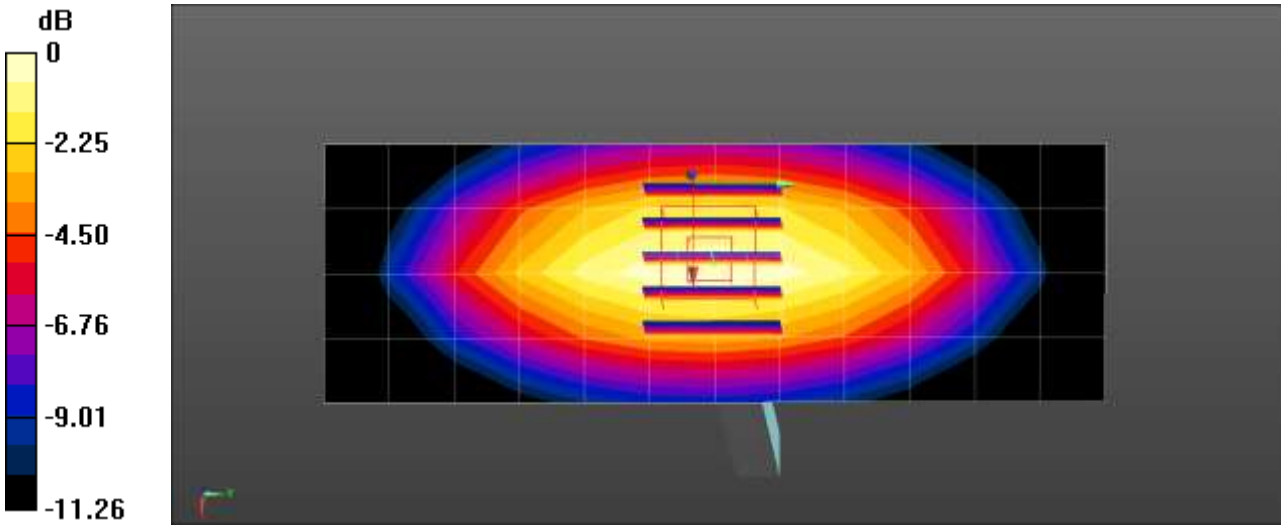
Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 835 MHz; σ = 0.924 S/m; ε_r = 41.822; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(10.54, 10.54, 10.54) @ 835 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2021-04-23
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/835MHz Head Verification/Area Scan (13x5x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.692 W/kg

Dipole/835MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.58 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.787 W/kg
SAR(1 g) = 0.495 W/kg; SAR(10 g) = 0.319 W/kg
Maximum value of SAR (measured) = 0.680 W/kg



0 dB = 0.680 W/kg = -1.67 dBW/kg

Verification Data (835 MHz Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 21.1 ℃
Test Date: 05/09/2022

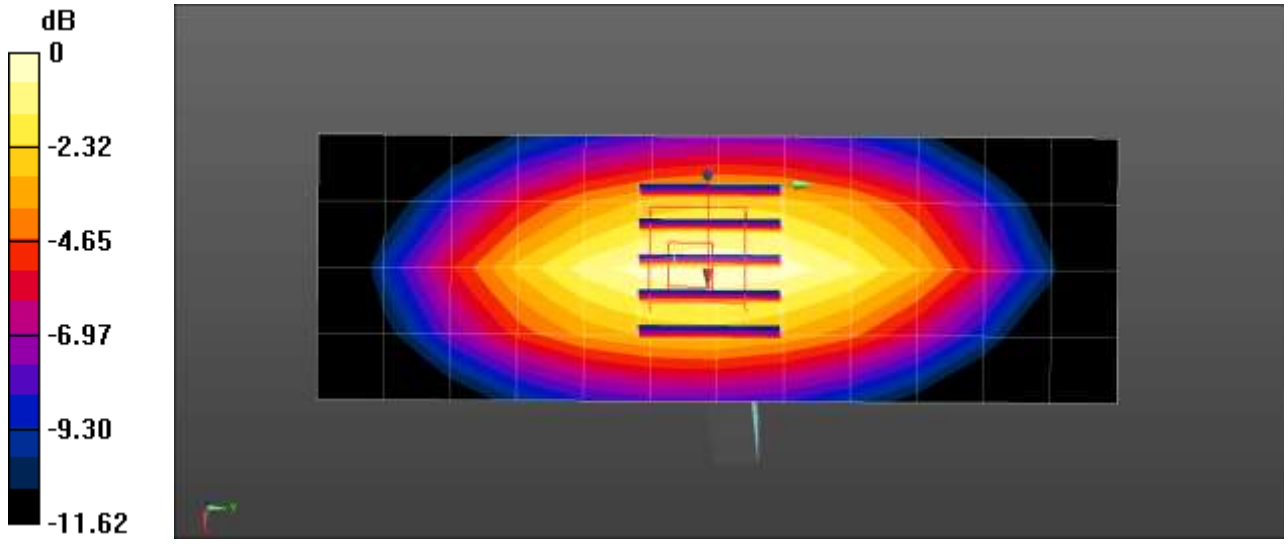
Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 835 MHz; σ = 0.926 S/m; ε_r = 40.534; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(10.54, 10.54, 10.54) @ 835 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2022-03-25
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

835MHz Head Verification/Area Scan (13x5x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.705 W/kg

835MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.24 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 0.812 W/kg
SAR(1 g) = 0.511 W/kg; SAR(10 g) = 0.328 W/kg
Maximum value of SAR (measured) = 0.700 W/kg



0 dB = 0.700 W/kg = -1.55 dBW/kg

Verification Data (835 MHz Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	20.4 ℃
Test Date:	04/06/2022

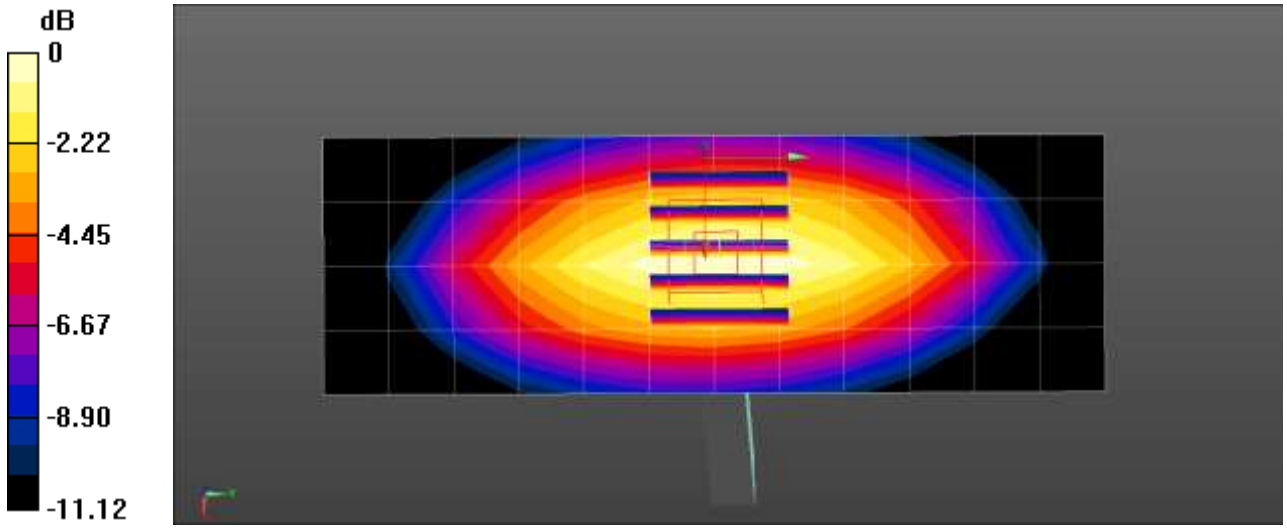
Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 835 MHz; σ = 0.926 S/m; ε_r = 40.563; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(10.54, 10.54, 10.54) @ 835 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2021-04-23
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/835MHz Head Verification/Area Scan (13x5x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.710 W/kg

Dipole/835MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.85 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.817 W/kg
SAR(1 g) = 0.521 W/kg; SAR(10 g) = 0.337 W/kg
Maximum value of SAR (measured) = 0.712 W/kg



0 dB = 0.712 W/kg = -1.48 dBW/kg

Verification Data (1 800 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	21.5 ℃
Test Date:	04/03/2022

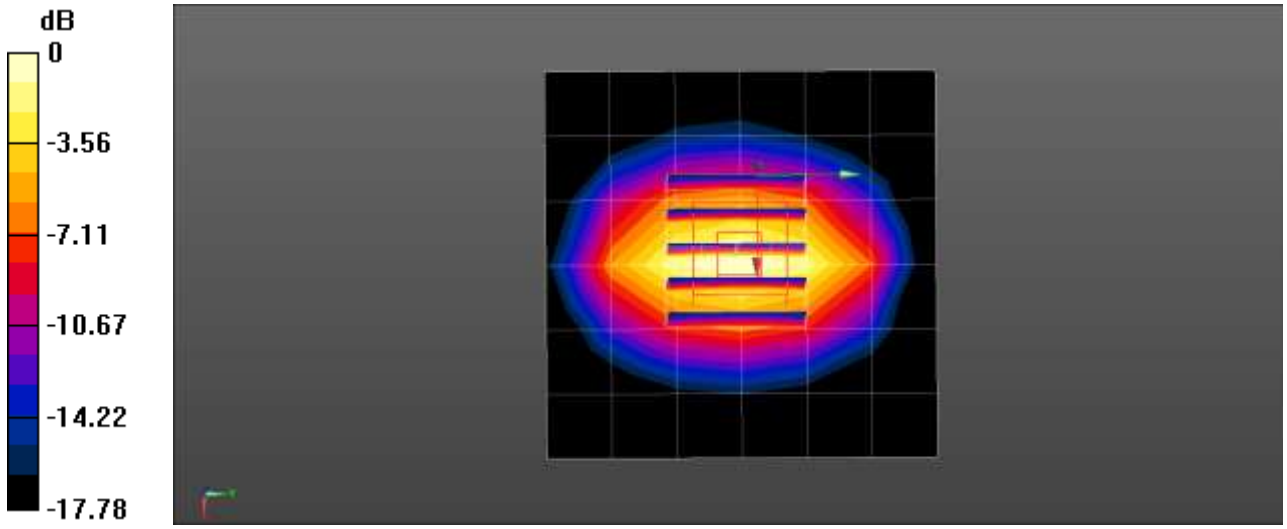
Communication System: UID 0, CW (0); Frequency: 1800 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1800 MHz; σ = 1.393 S/m; ε_r = 41.288; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(9.4, 9.4, 9.4) @ 1800 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2021-04-23
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/1800MHz Head Verification/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 3.04 W/kg

Dipole/1800MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 48.54 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 3.66 W/kg
SAR(1 g) = 1.88 W/kg; SAR(10 g) = 0.979 W/kg
Maximum value of SAR (measured) = 3.00 W/kg



0 dB = 3.00 W/kg = 4.77 dBW/kg

Verification Data (1 800 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	21.0 ℃
Test Date:	04/10/2022

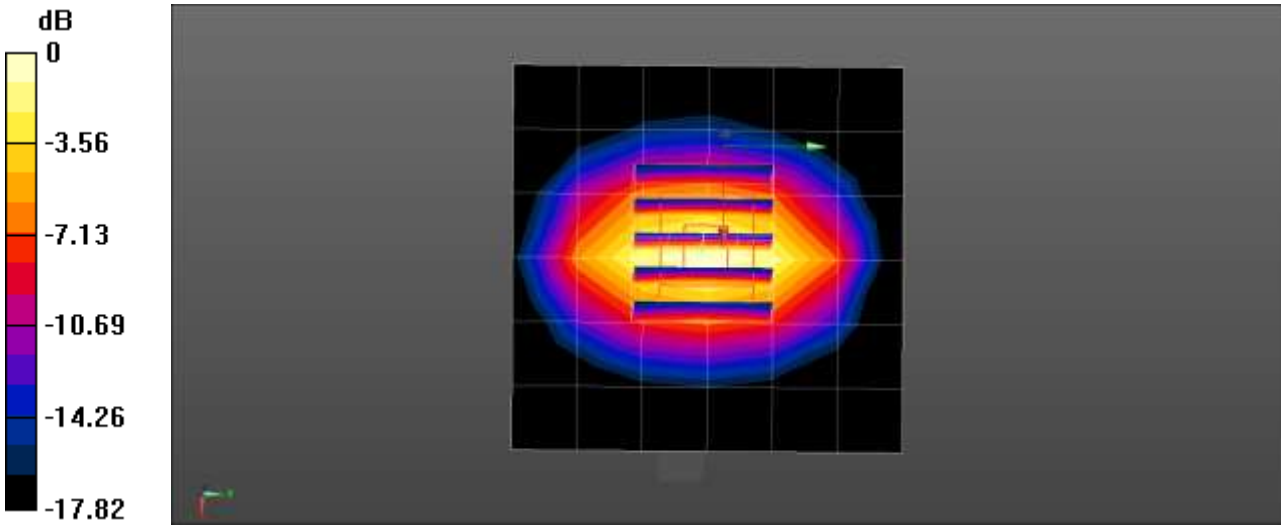
Communication System: UID 0, CW (0); Frequency: 1800 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1800 MHz; σ = 1.383 S/m; ε_r = 40.237; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(9.4, 9.4, 9.4) @ 1800 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2021-04-23
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/1800MHz Head Verification/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.99 W/kg

Dipole/1800MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 48.23 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 3.67 W/kg
SAR(1 g) = 1.87 W/kg; SAR(10 g) = 0.971 W/kg
Maximum value of SAR (measured) = 3.00 W/kg



0 dB = 3.00 W/kg = 4.77 dBW/kg

Verification Data (1 900 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	21.5 ℃
Test Date:	04/02/2022

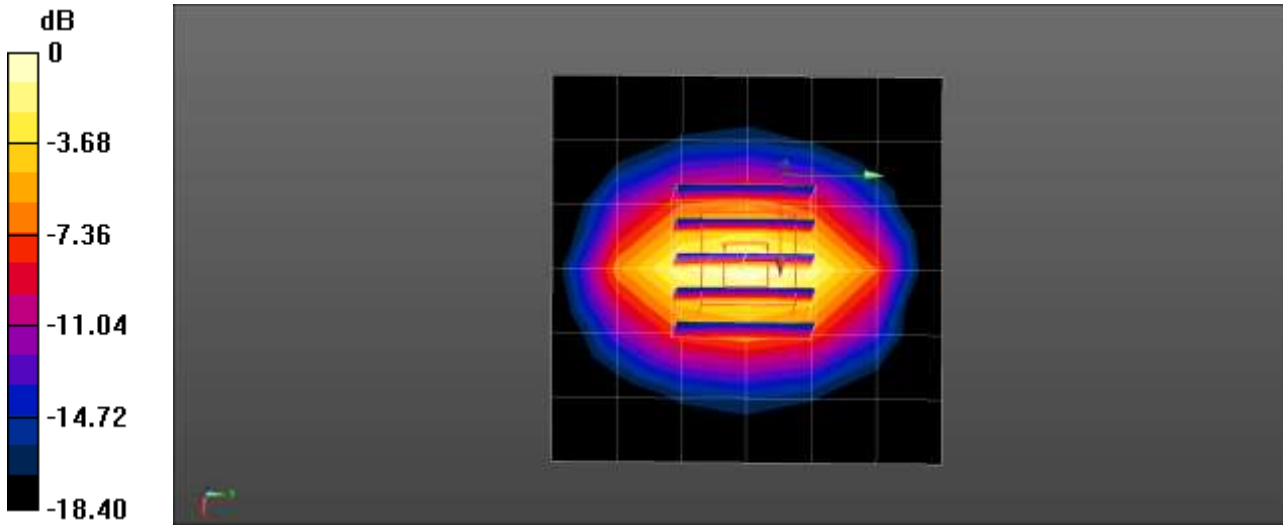
Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.417 S/m; ε_r = 41.303; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(9.15, 9.15, 9.15) @ 1900 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2021-04-23
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/1900MHz Head Verification/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 3.20 W/kg

Dipole/1900MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 49.40 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 3.88 W/kg
SAR(1 g) = 1.98 W/kg; SAR(10 g) = 1.02 W/kg
Maximum value of SAR (measured) = 3.18 W/kg



0 dB = 3.18 W/kg = 5.02 dBW/kg

Verification Data (1 900 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	21.7 ℃
Test Date:	04/04/2022

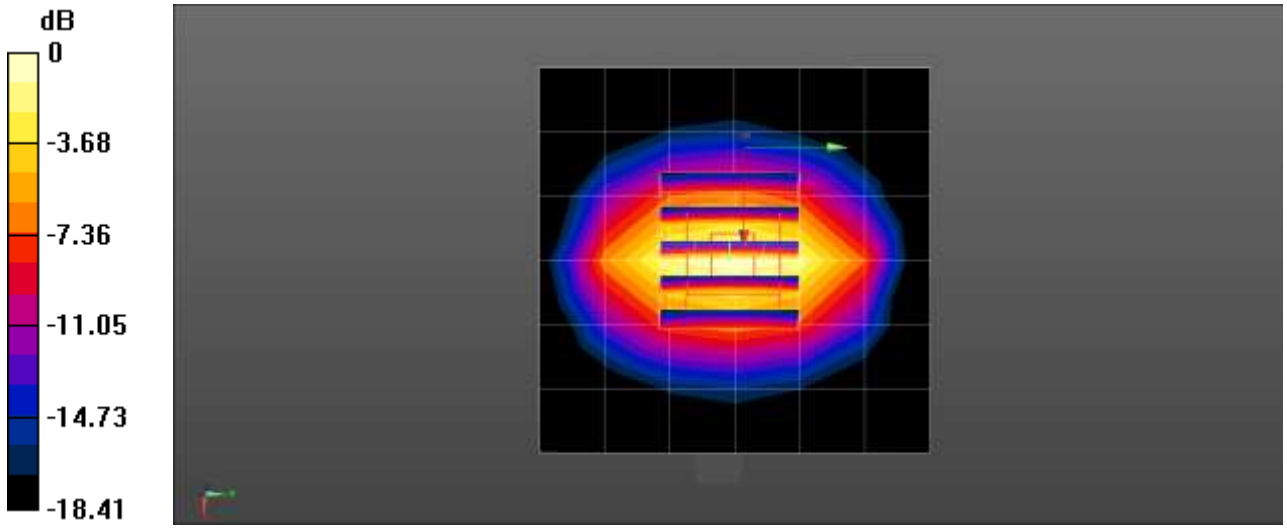
Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.416 S/m; ε_r = 41.307; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(9.15, 9.15, 9.15) @ 1900 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2021-04-23
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/1900MHz Head Verification/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 3.18 W/kg

Dipole/1900MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 49.36 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 3.88 W/kg
SAR(1 g) = 1.98 W/kg; SAR(10 g) = 1.02 W/kg
Maximum value of SAR (measured) = 3.17 W/kg



0 dB = 3.17 W/kg = 5.01 dBW/kg

Verification Data (2 600 MHz Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	20.5 ℃
Test Date:	04/07/2022

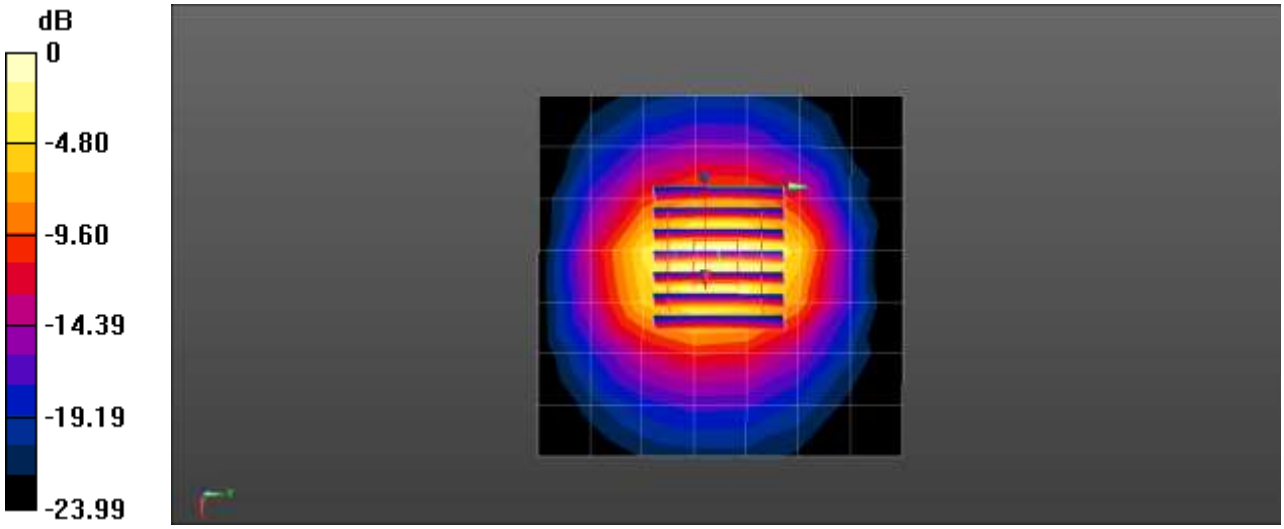
Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; σ = 1.984 S/m; ε_r = 38.368; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(8.28, 8.28, 8.28) @ 2600 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2021-04-23
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/2 600 MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 3.87 W/kg

Dipole/2 600 MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 51.28 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 6.03 W/kg
SAR(1 g) = 2.71 W/kg; SAR(10 g) = 1.21 W/kg
Maximum value of SAR (measured) = 4.73 W/kg



0 dB = 4.73 W/kg = 6.75 dBW/kg

Verification Data (2 600 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	20.7 ℃
Test Date:	04/09/2022

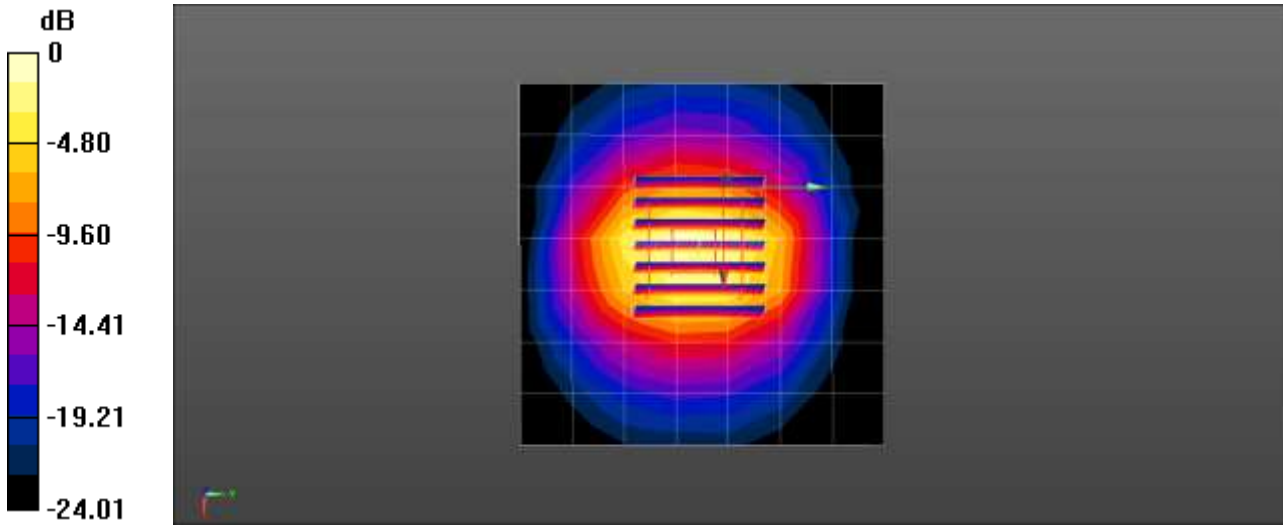
Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; σ = 2.006 S/m; ε_r = 37.963; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(8.28, 8.28, 8.28) @ 2600 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2022-03-25
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/2 600 MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 4.08 W/kg

Dipole/2 600 MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 50.89 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 6.13 W/kg
SAR(1 g) = 2.75 W/kg; SAR(10 g) = 1.22 W/kg
Maximum value of SAR (measured) = 4.81 W/kg



0 dB = 4.81 W/kg = 6.82 dBW/kg

Verification Data (2 600 MHz Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	22.7 ℃
Test Date:	04/13/2022

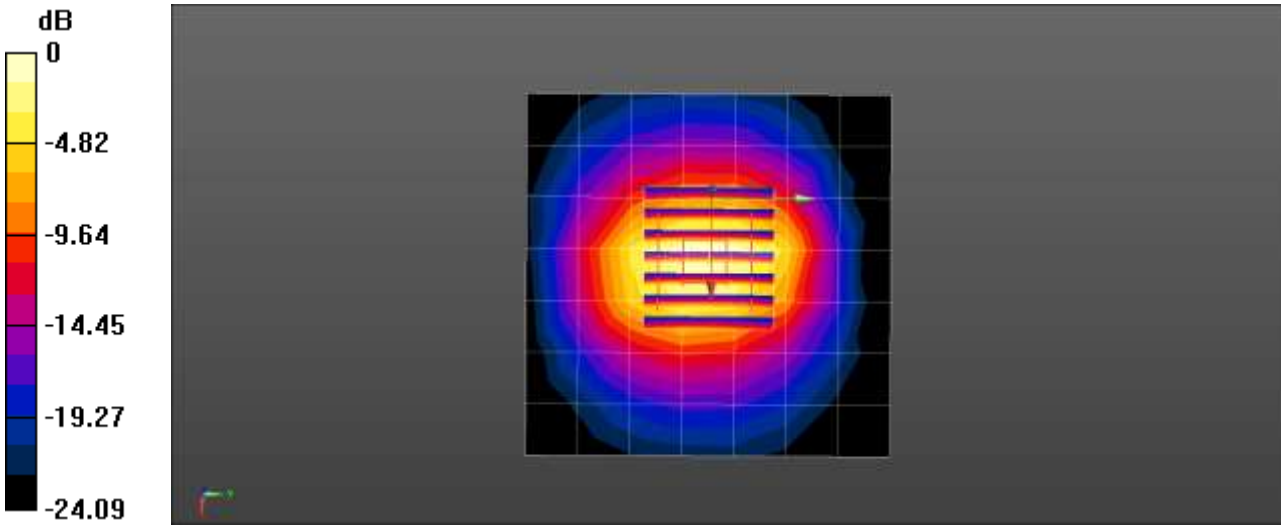
Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; σ = 1.981 S/m; ε_r = 38.445; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(8.28, 8.28, 8.28) @ 2600 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2021-04-23
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/2 600 MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 3.94 W/kg

Dipole/2 600 MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 51.87 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 5.97 W/kg
SAR(1 g) = 2.7 W/kg; SAR(10 g) = 1.21 W/kg
Maximum value of SAR (measured) = 4.69 W/kg



0 dB = 4.69 W/kg = 6.71 dBW/kg

Verification Data (2 600 MHz Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	21.1 ℃
Test Date:	05/09/2022

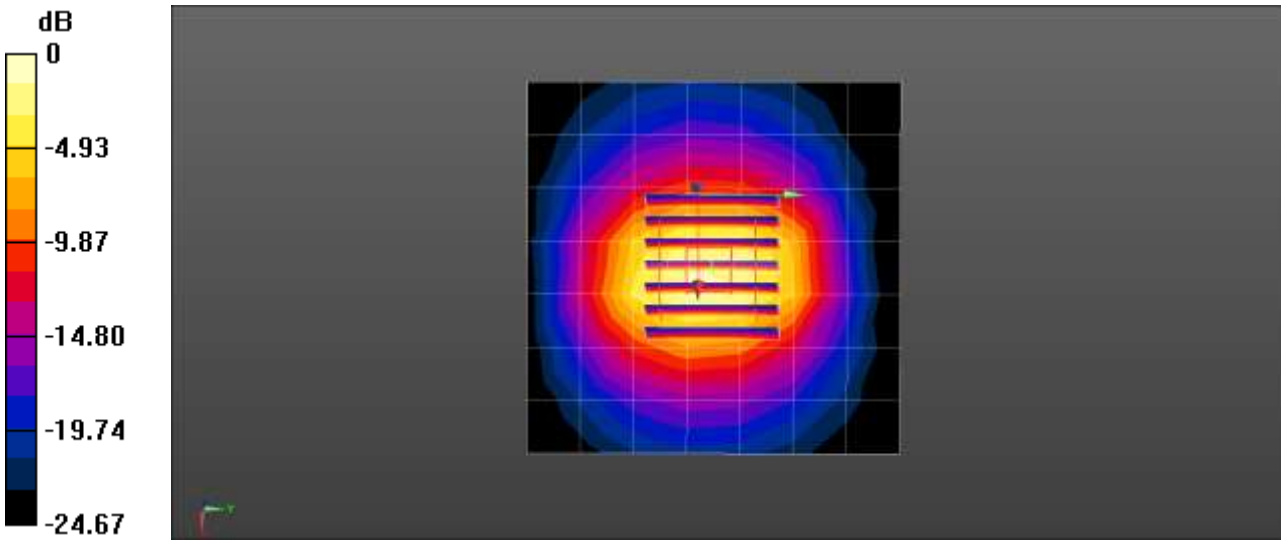
Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; σ = 1.963 S/m; ε_r = 38.005; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(8.28, 8.28, 8.28) @ 2600 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2022-03-25
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/2 600 MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 3.79 W/kg

Dipole/2 600 MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.19 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 6.23 W/kg
SAR(1 g) = 2.77 W/kg; SAR(10 g) = 1.22 W/kg
Maximum value of SAR (measured) = 4.85 W/kg



0 dB = 4.85 W/kg = 6.86 dBW/kg

Verification Data (2 600 MHz Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	20.5 ℃
Test Date:	05/16/2022

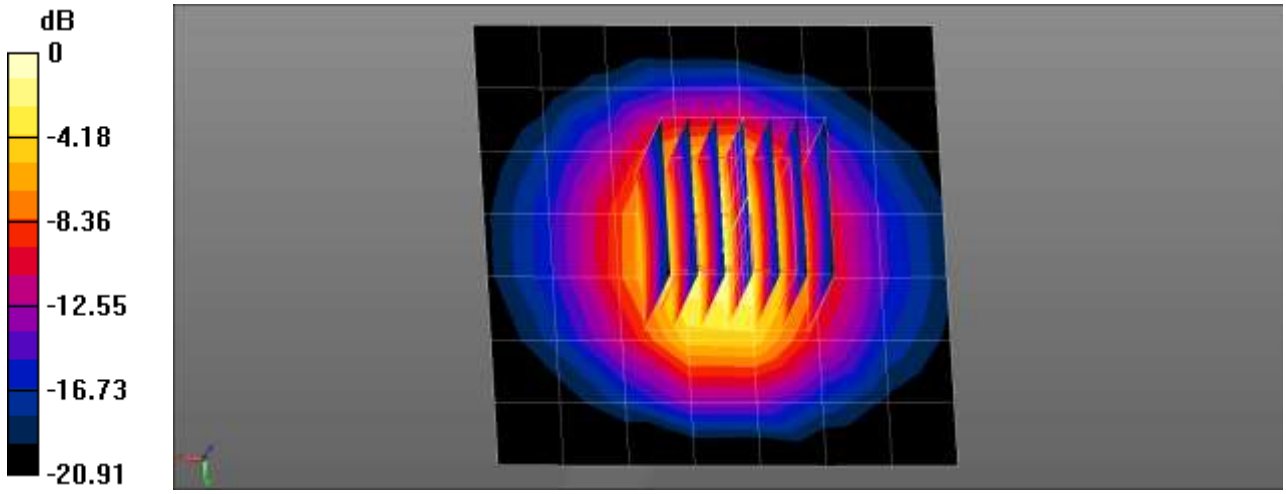
Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; σ = 1.901 S/m; ε_r = 37.544; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(7.51, 7.51, 7.51) @ 2600 MHz; Calibrated: 2021-09-29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2022-03-25
- Phantom: ELI V6.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (4)

2 600 MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 3.33 W/kg

2 600 MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 50.42 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 5.63 W/kg
SAR(1 g) = 2.68 W/kg; SAR(10 g) = 1.26 W/kg
Maximum value of SAR (measured) = 4.50 W/kg



0 dB = 4.50 W/kg = 6.53 dBW/kg

Verification Data (3 500 MHz Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	20.2 ℃
Test Date:	04/20/2022

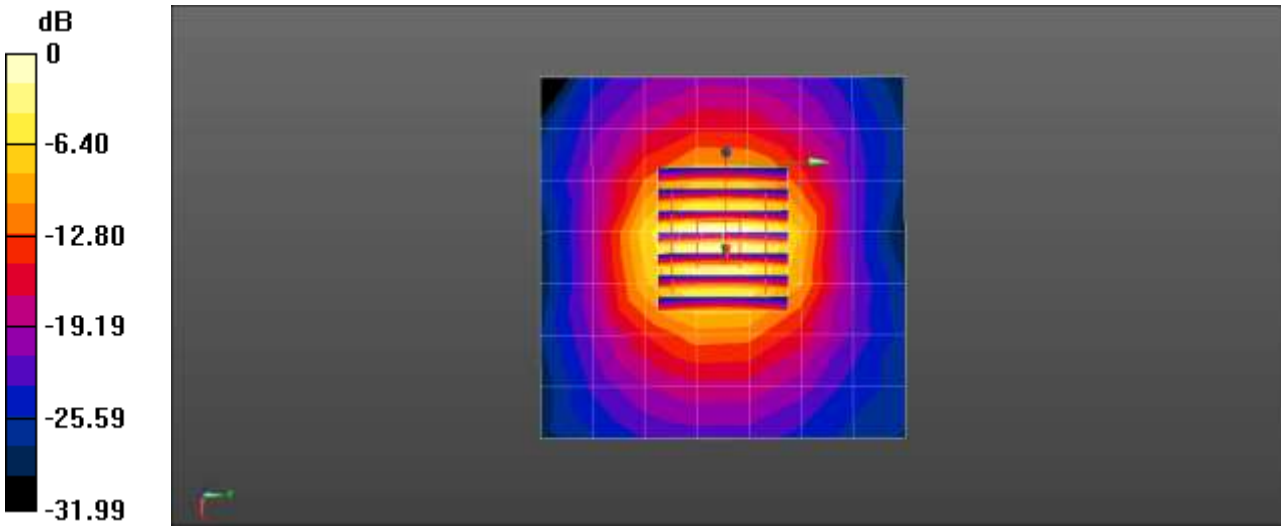
Communication System: UID 0, CW (0); Frequency: 3500 MHz;Duty Cycle: 1:1
Medium parameters used: f = 3500 MHz; σ = 2.914 S/m; ε_r = 37.246; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(7.7, 7.7, 7.7) @ 3500 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2022-03-25
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/3 500 MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 5.04 W/kg

Dipole/3 500 MHz Head Verification/Zoom Scan (7x7x8)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=4mm
Reference Value = 50.59 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 8.92 W/kg
SAR(1 g) = 3.37 W/kg; SAR(10 g) = 1.29 W/kg
Maximum value of SAR (measured) = 6.59 W/kg



0 dB = 6.59 W/kg = 8.19 dBW/kg

Verification Data (3 500 MHz Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 20.3 ℃
Test Date: 05/17/2022

Communication System: UID 0, CW (0); Frequency: 3500 MHz;Duty Cycle: 1:1

Medium parameters used: f = 3500 MHz; σ = 2.843 S/m; ε_r = 36.581; ρ = 1000 kg/m^3

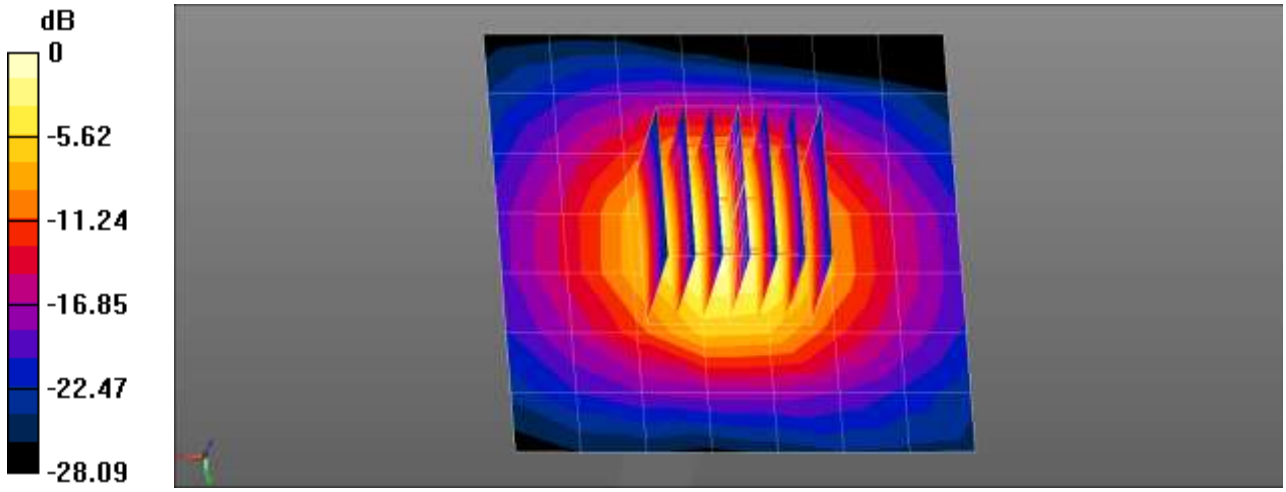
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7680; ConvF(7.05, 7.05, 7.05) @ 3500 MHz; Calibrated: 2021-09-10
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1720; Calibrated: 2022-05-09
- Phantom: ELI V6.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (4)

3 500 MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 4.12 W/kg

3 500 MHz Head Verification/Zoom Scan (7x7x8)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=4mm
Reference Value = 48.48 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 7.68 W/kg
SAR(1 g) = 3.18 W/kg; SAR(10 g) = 1.32 W/kg
Maximum value of SAR (measured) = 5.83 W/kg



0 dB = 5.83 W/kg = 7.66 dBW/kg

Verification Data (3 500 MHz Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	20.6 ℃
Test Date:	04/14/2022

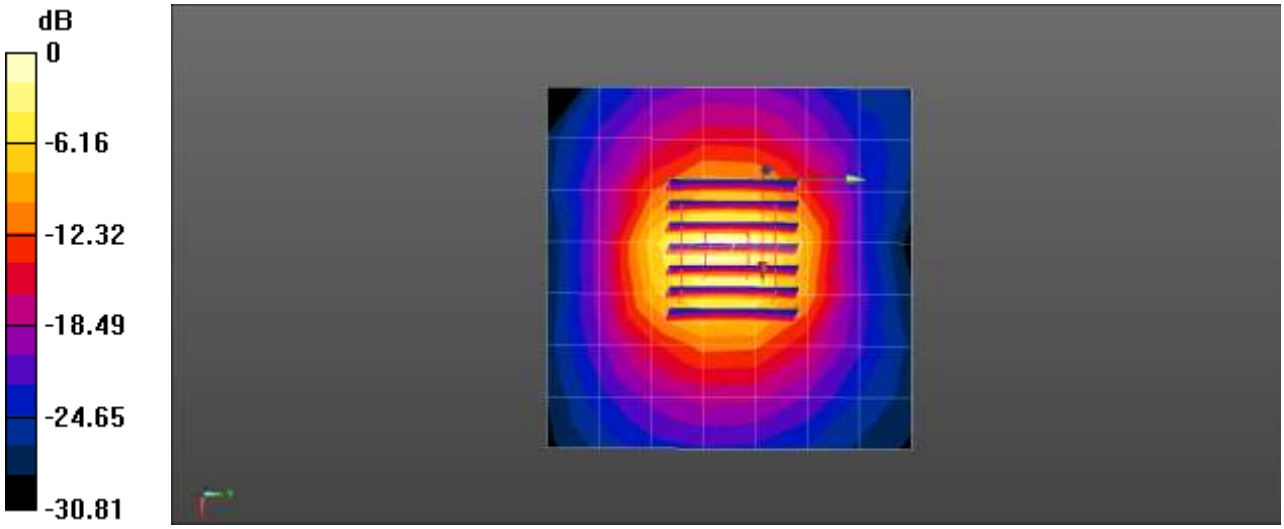
Communication System: UID 0, CW (0); Frequency: 3500 MHz;Duty Cycle: 1:1
Medium parameters used: f = 3500 MHz; σ = 2.924 S/m; ε_r = 37.347; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(7.7, 7.7, 7.7) @ 3500 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2022-03-25
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/3 500 MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 5.15 W/kg

Dipole/3 500 MHz Head Verification/Zoom Scan (7x7x8)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=4mm
Reference Value = 50.94 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 8.87 W/kg
SAR(1 g) = 3.38 W/kg; SAR(10 g) = 1.29 W/kg
Maximum value of SAR (measured) = 6.56 W/kg



0 dB = 6.56 W/kg = 8.17 dBW/kg

Verification Data (3 700 MHz Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	20.6 ℃
Test Date:	04/14/2022

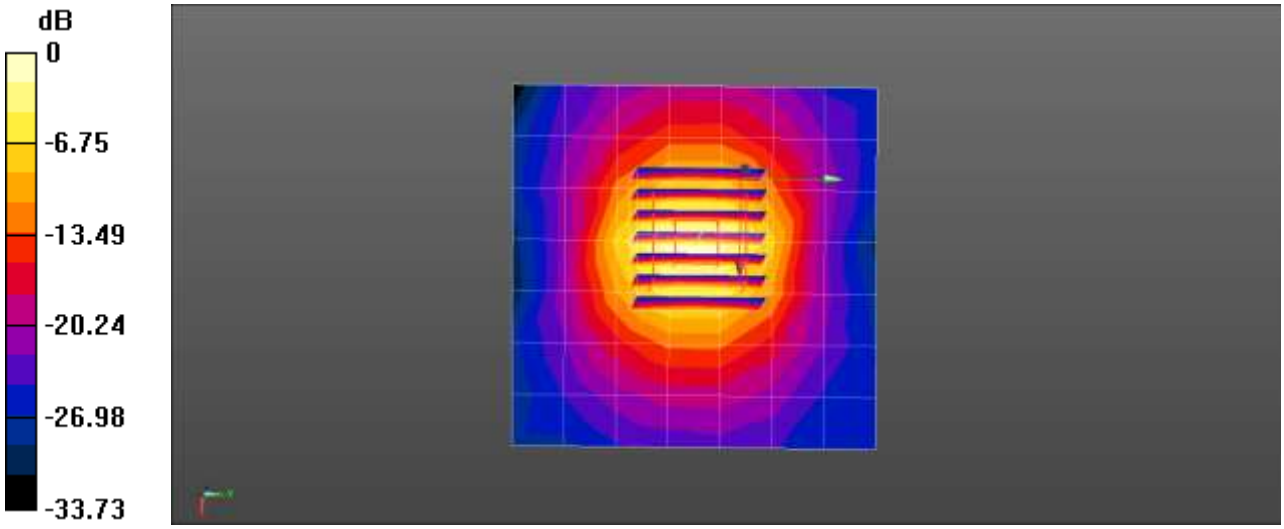
Communication System: UID 0, CW (0); Frequency: 3700 MHz;Duty Cycle: 1:1
Medium parameters used: f = 3700 MHz; σ = 3.074 S/m; ε_r = 37.175; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(7.57, 7.57, 7.57) @ 3700 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2022-03-25
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/3 700 MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 5.80 W/kg

Dipole/3 700 MHz Head Verification/Zoom Scan (7x7x8)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=4mm
Reference Value = 48.84 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 9.84 W/kg
SAR(1 g) = 3.55 W/kg; SAR(10 g) = 1.31 W/kg
Maximum value of SAR (measured) = 7.15 W/kg



0 dB = 7.15 W/kg = 8.54 dBW/kg

Appendix D. – SAR Tissue Characterization

The brain and muscle mixtures consist of a viscous gel using hydrox-ethyl cellulose (HEC) gelling agent and saline solution (see Table 3.1). Preservation with a bacteriacide is added and visual inspection is made to make sure air bubbles are not trapped during the mixing process. The mixture is calibrated to obtain proper dielectric constant (permittivity) and conductivity of the desired tissue. The mixture characterizations used for the brain and muscle tissue simulating liquids are according to the data by C. Gabriel and G. Harts grove.

Ingredients (% by weight)	Frequency (MHz)											
	750		835		1 750		1 900		2 450 – 2 700		3500 - 5 800	
Tissue Type	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	41.1	51.7	40.45	53.06	52.6	68.8	54.9	70.17	71.88	73.2	65.52	78.66
Salt (NaCl)	1.4	0.9	1.45	0.94	0.4	0.2	0.18	0.39	0.16	0.1	0.0	0.0
Sugar	57.0	47.2	57.0	44.9	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
HEC	0.2	0	1.0	1.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Bactericide	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Triton X-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.97	0.0	17.24	10.67
DGBE	0.0	0.0	0.0	0.0	47	31	44.92	29.44	7.99	26.7	0.0	0.0
Diethylene glycol hexyl ether	-	-	-	-	-	-	-	-	-	-	-	-

Salt:	99 % Pure Sodium Chloride	Sugar:	98 % Pure Sucrose
Water:	De-ionized, 16M resistivity	HEC:	Hydroxyethyl Cellulose
DGBE:	99 % Di(ethylene glycol) butyl ether,[2-(2-butoxyethoxy) ethanol]		
Triton X-100(ultra-pure):	Polyethylene glycol mono[4-(1,1,3,3-tetramethylbutyl)phenyl] ether		

Composition of the Tissue Equivalent Matter

Appendix E. – SAR system validation

Per FCC KCB 865664 D02v01r02, SAR system validation status should be document to confirm measurement accuracy. The SAR systems (including SAR probes, system components and software versions) used for this device were validated against its performance specifications prior to the SAR measurements. Reference dipoles were used with the required tissue- equivalent media for system validation, according to the procedures outlined in IEEE 1528-2013 and FCC KDB 865664 D01v01r04. Since SAR probe calibrations are frequency dependent, each probe calibration point was validated at a frequency within the valid frequency range of the probe calibration point, using the system that normally operates with the probe for routine SAR measurements and according to the required tissue-equivalent media.
A tabulated summary of the system validation status including the validation date(s), measurement frequencies, SAR probes and tissue dielectric parameters has been included.

SAR System No.	Probe	Probe Type	Probe Calibration Point		Dipole	Date	Dielectric Parameters		CW Validation			Modulation Validation		
							Measured Permittivity	Measured Conductivity	Sensitivity	Probe Linearity	Probe Isotropy	MOD. Type	Duty Factor	PAR
8	7654	EX3DV4	Head	750	1014	2021-06-01	41.8	0.89	PASS	PASS	PASS	N/A	N/A	N/A
8	7654	EX3DV4	Head	835	4d165	2021-08-03	41.5	0.89	PASS	PASS	PASS	N/A	N/A	N/A
8	7654	EX3DV4	Head	835	4d165	2021-08-03	41.5	0.89	PASS	PASS	PASS	GMSK	PASS	N/A
8	7654	EX3DV4	Head	1750	2d015	2021-07-30	40.1	1.41	PASS	PASS	PASS	N/A	N/A	N/A
8	7654	EX3DV4	Head	1900	5d032	2022-01-28	40.1	1.42	PASS	PASS	PASS	N/A	N/A	N/A
8	7654	EX3DV4	Head	1900	5d032	2022-01-28	40.1	1.42	PASS	PASS	PASS	GMSK	PASS	N/A
8	7654	EX3DV4	Head	2600	1106	2021-07-30	39.1	1.94	PASS	PASS	PASS	NA	N/A	NA
8	7654	EX3DV4	Head	2600	1106	2021-07-30	39.1	1.94	PASS	PASS	PASS	TDD	PASS	NA
8	7654	EX3DV4	Head	3500	1132	2022-01-24	37.9	2.92	PASS	PASS	PASS	TDD	PASS	NA
8	7654	EX3DV4	Head	3700	1105	2021-11-22	37.5	3.13	PASS	PASS	PASS	TDD	PASS	NA

SAR System Validation Summary 1g

Note;
All measurement were performed using probes calibrated for CW signal only. Modulations in the table above represent test configurations for which the measurement system has been validated per FCC KDB Publication 865664 D01v01r04. SAR system were validated for modulated signals with a periodic duty cycle, such as GMSK, or with a high peak to average ratio (>5 dB), such as OFDM according to KDB 865664 D01v01r04.