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SAR TEST REPORT

Applicant Name: **SAMSUNG Electronics Co., Ltd.** 129, Samsung-ro, Yeongtong-gu, Suwon-Si, Gyeonggi-do, 16677 Rep. of Korea	**Date of Issue: July 20, 2023** **Test Report No.: HCT-SR-2307-FC003-R1** **Test Site: HCT CO., LTD.**

FCC ID: **A3LSMX616B**

Equipment Type:	**Tablet**
Application Type	**Certification**
FCC Rule Part(s):	**CFR §2.1093**
Model Name:	**SM-X616B**
Date of Test:	**June 12, 2023 ~ July 10, 2023**

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

Youn Sik Park
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	July 18, 2023	Initial Release
1	July 20, 2023	Revised 14.1.

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. Test Regulations

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

- FCC KDB Publication 941225 D01 3G SAR Procedures v03r01
- FCC KDB Publication 941225 D05 SAR for LTE Devices v02r05
- FCC KDB Publication 941225 D05A LTE Rel.10 KDB Inquiry sheet v01r02
- FCC KDB Publication 248227 D01 802.11 WLAN SAR v02r02
- FCC KDB Publication 447498 D01 General SAR Guidance v06
- FCC KDB Publication 616217 D04 SAR Tablets v01r02
- FCC KDB Publication 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
- FCC KDB Publication 865664 D02 SAR Reporting v01r02
- FCC KDB Publication 690783 D01 SAR Listings on Grants v01r03
- FCC KDB Publication 971168 D01 Power Meas License Digital Systems v03r01

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

- October 2013 TCB Workshop Notes (GPRS testing criteria)
- October 2014 TCB Workshop Notes (Overlapping LTE Bands)
- April 2015 TCB Workshop Notes (Overlapping LTE Bands Test exclusion)
- April 2015 TCB Workshop Notes (Simultaneous transmission summation clarified)
- October 2016 TCB Workshop Notes (Bluetooth Duty Factor)
- November 2017 TCBC Workshop Notes (LTE Carrier Aggregation)
- April 2019 TCBC Workshop Notes (IEEE 802.11 ax)
- April 2018 TCBC Workshop Notes (LTE DL CA SAR Test Exclusion)
- November 2019 TCBC Workshop Notes (Hybrid SPLSR Combination)
- October 2020 TCBC Workshop Notes (Intra-band and Inter-Band NSA-EN-DC evlauation)
- April 2022 TCBC Workshop Notes (Sum-Peak Location Separation Ratio)

2. Test Location

2.1 Test Laboratory

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

2.2 Test Facilities

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

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

3. Information of the EUT

3.1 General Information of the EUT

Model Name	SM-X616B
Equipment Type	Tablet
FCC ID	A3LSMX616B
Application Type	Certification
Applicant	SAMSUNG Electronics Co., Ltd.

3.2 Attestation of test result of device under test

The Highest Reported SAR			
Band	Tx. Frequency	Equipment Class	SAR (W/kg) Reported 1g Body SAR
GSM/GPRS/EDGE 850	824.2 MHz ~ 848.8 MHz	PCB	0.78
GSM/GPRS/EDGE 1900	1 850.2 MHz ~ 1 909.8 MHz	PCB	0.65
UMTS Band 5	826.4 MHz ~ 846.6 MHz	PCB	0.73
UMTS Band 4	1 712.4 MHz ~ 1 752.6 MHz	PCB	0.78
UMTS Band 2	1 852.4 MHz ~ 1 907.6 MHz	PCB	0.77
LTE FDD Band 2 (PCS)	1 850.7 MHz ~ 1 909.3 MHz	PCB	**1.05**
LTE FDD Band 4 (AWS)	1 710.7 MHz ~ 1 754.3 MHz	PCB	N/A
LTE FDD Band 66 (AWS)	1 710.7 MHz ~ 1 779.3 MHz	PCB	0.64
LTE FDD Band 5 (Cell)	824.7 MHz ~ 848.3 MHz	PCB	N/A
LTE FDD Band 26 (Cell)	814.7 MHz ~ 848.3 MHz	PCB	0.62
LTE FDD Band 12	699.7 MHz ~ 715.3 MHz	PCB	0.35
LTE FDD Band 13	779.5 MHz ~ 784.5 MHz	PCB	0.63
LTE FDD Band 17	706.5 MHz ~ 713.5 MHz	PCB	N/A
LTE TDD Band 41	2 498.5 MHz ~ 2 687.5 MHz	PCB	0.74
5G NR FDD Band n5	826.5 MHz ~ 846.5 MHz	PCB	0.66
5G NR FDD Band n66	1 712.5 MHz ~ 1 777.5 MHz	PCB	0.66
2.4 GHz WLAN	2 412 MHz ~ 2 472 MHz	DTS	0.76
U-NII-1	5 180 MHz ~ 5 240 MHz	NII	N/A
U-NII-2A	5 260 MHz ~ 5 320 MHz	NII	0.97
U-NII-2C	5 500 MHz ~ 5 720 MHz	NII	0.78
U-NII-3	5 745 MHz ~ 5 825 MHz	NII	0.93
Bluetooth	2 402 MHz ~ 2 480 MHz	DSS/DTS	0.26
Simultaneous SAR per KDB 690783 D01v01r03			**1.58**
Date(s) of Tests:	June 12, 2023 ~ July 10, 2023		

4. Device Under Test Description

4.1 DUT specification

Device Wireless specification overview		
Band& Mode	**Operating Mode**	**Tx Frequency**
GSM/GPRS/EDGE 850	Data	824.2 ㎒ ~ 848.8 ㎒
GSM/GPRS/EDGE 1900	Data	1 850.2 ㎒ ~ 1 909.8 ㎒
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 FDD Band 2 (PCS)	Data	1 850.7 ㎒ ~ 1 909.3 ㎒
LTE FDD Band 4 (AWS)	Data	1 710.7 ㎒ ~ 1 754.3 ㎒
LTE FDD Band 5 (Cell)	Data	824.7 ㎒ ~ 848.3 ㎒
LTE FDD Band 12	Data	699.7 ㎒ ~ 715.3 ㎒
LTE FDD Band 13	Data	779.5 ㎒ ~ 784.5 ㎒
LTE FDD Band 17	Data	706.5 ㎒ ~ 713.5 ㎒
LTE FDD Band 26 (Cell)	Data	814.7 ㎒ ~ 848.3 ㎒
LTE TDD Band 41	Data	2 498.5 ㎒ ~ 2 687.5 ㎒
LTE FDD Band 66 (AWS)	Data	1 710.7 ㎒ ~ 1 779.3 ㎒
NR FDD Band n5	Data	826.5 ㎒ ~ 846.5 ㎒
NR FDD Band n66	Data	1 712.5 ㎒ ~ 1 777.5 ㎒
U-NII-1	Data	5 180 ㎒ ~ 5 240 ㎒
U-NII-2A	Data	5 260 ㎒ ~ 5 320 ㎒
U-NII-2C	Data	5 500 ㎒ ~ 5 720 ㎒
U-NII-3	Data	5 745 ㎒ ~ 5 825 ㎒
2.4 ㎓ WLAN	Data	2 412 ㎒ ~ 2 472 ㎒
Bluetooth / LE 5.3	Data	2 402 ㎒ ~ 2 480 ㎒

Device Description		
HW version	REV1.0	
SW version	X616B.001	
Battery	EB-BX818ABY (SDI)	
Device Serial Numbers	**Mode**	**Serial Number**
	GSM850, UMTS B5, LTE B12/B13/B26/B41, NR Band n5/n66	WF21606M
	GSM1900, UMTS B2/B4, LTE B2/B66, 5 ㎓ WLAN	WF21457M
	2.4 ㎓ WLAN, Bluetooth, 5 ㎓ WLAN	WF02340M
	The manufacturer has confirmed that the devices tested have the same physical, mechanical and thermal characteristics are within operational tolerances expected for production units.	

4.2 Power Reduction for SAR

This device uses an independent fixed level power reduction mechanism for WLAN/BT and some Main Bands are activating in close proximity to the user's Body.FCC KDB Publication 616217 D04v01r02 Sec.6 was used as a guideline for selection SAR test distances for device.

The reduced powers for the power reduction mechanisms were conformed via conducted power measurements at the RF Port.

4.3 Nominal and Maximum Output Power Specifications

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

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

A. GSM Modes

Maximum Output Power

Mode / Band		Voice	Burst Average GMSK (dBm)				Burst Average 8-PSK (dBm)			
		1 Tx Slot	1 Tx Slot	2 Tx Slot	3 Tx Slot	4 Tx Slot	1 Tx Slot	2 Tx Slot	3 Tx Slot	4 Tx Slot
GSM 850	Maximum	34.0	34.0	32.0	30.0	28.0	27.5	26.0	24.0	23.0
	Nominal	33.0	33.0	31.0	29.0	27.0	26.5	25.0	23.0	22.0
GSM 1900	Maximum	30.5	30.5	29.0	27.0	25.0	26.5	25.0	23.0	22.0
	Nominal	29.5	29.5	28.0	26.0	24.0	25.5	24.0	22.0	21.0

(Tolerance: Nominal +1 dB ~-1.5 dB)

Reduced Output Power (Proximity Sensor activated)

Mode / Band		Voice	Burst Average GMSK (dBm)				Burst Average 8-PSK (dBm)			
		1 Tx Slot	1 Tx Slot	2 Tx Slot	3 Tx Slot	4 Tx Slot	1 Tx Slot	2 Tx Slot	3 Tx Slot	4 Tx Slot
GSM 850	Maximum	24.5	24.5	22.5	20.5	18.5	19.0	17.5	14.5	13.5
	Nominal	23.5	23.5	21.5	19.5	17.5	18.0	16.5	13.5	12.5
GSM 1900	Maximum	21.0	21.0	19.5	17.5	15.5	17.5	16.0	14.0	13.0
	Nominal	20.0	20.0	18.5	16.5	14.5	16.5	15.0	13.0	12.0

(Tolerance: Nominal +1 dB ~-1.5 dB)

B. UMTS Modes

Maximum Output Power

Mode/Band		Modulated Average(dBm)			
		3GPP RMC Rel 99	3GPP Cat.5 HSDPA	3GPP Cat.6 HSUPA	3GPP Cat.24 DC-HSDPA
UMTS Band 5 (850 ㎒)	Maximum	24.5	24.0	24.0	24.0
	Nominal	23.5	23.0	23.0	23.0
UMTS Band 4 (1 700 ㎒)	Maximum	24.5	24.0	24.0	24.0
	Nominal	23.5	23.0	23.0	23.0
UMTS Band 2 (1 900 ㎒)	Maximum	24.5	24.0	24.0	24.0
	Nominal	23.5	23.0	23.0	23.0

(Tolerance: Nominal +1 dB ~-1.5 dB)

Reduced Output Power (Proximity Sensor activated)

Mode/Band		Modulated Average(dBm)			
		3GPP RMC Rel 99	3GPP Cat.5 HSDPA	3GPP Cat.6 HSUPA	3GPP Cat.24 DC-HSDPA
UMTS Band 5 (850 ㎒)	Maximum	15.0	15.0	15.0	15.0
	Nominal	14.0	14.0	14.0	14.0
UMTS Band 4 (1 700 ㎒)	Maximum	15.0	14.5	14.5	14.5
	Nominal	14.0	13.5	13.5	13.5
UMTS Band 2 (1 900 ㎒)	Maximum	14.0	14.0	14.0	14.0
	Nominal	13.0	13.0	13.0	13.0

(Tolerance: Nominal +1 dB ~-1.5 dB)

C. LTE Modes

Maximum Output Power

Mode / Band		Modulated Average (dBm)
LTE FDD Band 2 (Main1 Ant.)	Maximum	24.0
	Nominal	23.0
LTE FDD Band 4 (Main1 Ant.)	Maximum	24.5
	Nominal	23.5
LTE FDD Band 5 (Main1 Ant.)	Maximum	24.5
	Nominal	23.5
LTE FDD Band 12 (Main1 Ant.)	Maximum	24.5
	Nominal	23.5
LTE FDD Band 13 (Main1 Ant.)	Maximum	22.5
	Nominal	21.5
LTE FDD Band 17 (Main1 Ant.)	Maximum	24.5
	Nominal	23.5
LTE FDD Band 26 (Main1 Ant.)	Maximum	24.5
	Nominal	23.5
LTE TDD Band 41 (Main1 Ant.)	Maximum	24.5
	Nominal	23.5
LTE FDD Band 66 (Main1 Ant.)	Maximum	24.5
	Nominal	23.5
LTE FDD Band 2 (Sub2 Ant.)	Maximum	24.5
	Nominal	23.5

(Tolerance: Nominal +1 dB ~-1.5 dB)

Reduced Output Power (Proximity Sensor activated)

Mode / Band		Modulated Average (dBm)
LTE FDD Band 2 (Main1 Ant.)	Maximum	13.5
	Nominal	12.5
LTE FDD Band 4(Main1 Ant.)	Maximum	14.5
	Nominal	13.5
LTE FDD Band 5 (Main1 Ant.)	Maximum	15.0
	Nominal	14.0
LTE FDD Band 12 (Main1 Ant.)	Maximum	17.0
	Nominal	16.0
LTE FDD Band 13 (Main1 Ant.)	Maximum	16.0
	Nominal	15.0
LTE FDD Band 17 (Main1 Ant.)	Maximum	17.0
	Nominal	16.0
LTE FDD Band 26 (Main1 Ant.)	Maximum	15.0
	Nominal	14.0
LTE TDD Band 41 (Main1 Ant.)	Maximum	14.5
	Nominal	13.5
LTE FDD Band 66 (Main1 Ant.)	Maximum	14.5
	Nominal	13.5
LTE FDD Band 2 (Sub2 Ant.)	Maximum	14.0
	Nominal	13.0

(Tolerance: Nominal +1 dB ~-1.5 dB)

D. NR Modes

Maximum Output Power

Mode / Band		Modulated Average (dBm)
NR FDD Band n5	Maximum	24.5
	Nominal	23.5
NR FDD Band n66	Maximum	24.5
	Nominal	23.5

(Tolerance: Nominal +1 dB ~-1.5 dB)

Reduced Output Power (Proximity Sensor activated)

Mode / Band		Modulated Average (dBm)
NR FDD Band n5	Maximum	15.0
	Nominal	14.0
NR FDD Band n66	Maximum	13.5
	Nominal	12.5

(Tolerance: Nominal +1 dB ~-1.5 dB)

4.3.2 Maximum output power

2.4 GHz, 5 GHz WIFI Power Tables

IEEE 802.11(in dBm)														
Mode	Protocol	Sensor State	a	b	g	n	ac	ax	a	b	g	n	ac	ax
ANT			SISO						MIMO					
2.4 GHz Wi-Fi		Active		10	10	10		10		13	13	13		13
Ch1		Inactive		17	13	13		13		20	16	16		16
2.4 GHz Wi-Fi		Active		10	10	10		10		13	13	13		13
Ch2~10		Inactive		17	16	16		16		20	19	19		19
2.4 GHz Wi-Fi		Active		10	10	10		10		13	13	13		13
Ch11		Inactive		17	13	13		13		20	16	16		16
2.4 GHz Wi-Fi		Active		3	3	3		3		6	6	6		6
Ch12		Inactive		3	3	3		3		6	6	6		6
2.4 GHz Wi-Fi		Active		1	-2	-2		-2		4	1	1		1
Ch13		Inactive		1	-2	-2		-2		4	1	1		1
5 GHz Wi-Fi (20 MHz BW)	UNII-1	Active	8			8	8	8	11			11	11	11
		Inactive	15			15	15	15	18			18	18	18
	UNII-2A	Active	8			8	8	8	11			11	11	11
		Inactive	15			15	15	15	18			18	18	18
	UNII-2C 100ch	Active	8			8	8	8	11			11	11	11
		Inactive	13			13	13	13	16			16	16	16
	UNII-2C 104~144ch	Active	8			8	8	8	11			11	11	11
		Inactive	15			15	15	15	18			18	18	18
	UNII-3	Active	8			8	8	8	11			11	11	11
		Inactive	15			15	15	15	18			18	18	18
5 GHz Wi-Fi (40 MHz BW)	UNII-1 38ch	Active				8	8	8				11	11	11
		Inactive				12	12	12				15	15	15
	UNII-1 46ch	Active				8	8	8				11	11	11
		Inactive				13	13	13				16	16	16
	UNII-2A 54ch	Active				8	8	8				11	11	11
		Inactive				13	13	13				16	16	16
	UNII-2A 62ch	Active				8	8	8				11	11	11
		Inactive				11	11	10				14	14	13
	UNII-2C 102ch	Active				8	8	8				11	11	11
		Inactive				11	11	11				14	14	14
	UNII-2C 110~158ch	Active				8	8	8				11	11	11
		Inactive				13	13	13				16	16	16
	UNII-3	Active				8	8	8				11	11	11
		Inactive				13	13	13				16	16	16
5 GHz Wi-Fi (80 MHz BW)	UNII-1	Active					8	8					11	11
		Inactive					11	11					14	14
	UNII-2A	Active					8	8					11	11
		Inactive					10	10					13	13
	UNII-2C 106ch	Active					8	8					11	11
		Inactive					11	10					14	13
	UNII-2C 122,138ch	Active					8	8					11	11
		Inactive					12	12					15	15
	UNII-3	Active					8	8					11	11
		Inactive					12	12					15	15

(Upper Tolerance: target +1.0 dB)

802.11ax RU Tx power Tables

IEEE 802.11ax RU (in dBm) Max												
SISO Antenna 1 & Antenna 2							MIMO					
	2.4G 1~11ch	2.4G 12ch	2.4G 13ch	5G 20 MHz	5G 40 MHz	5G 80 MHz	2.4G 1~11ch	2.4G 12ch	2.4G 13ch	5G 20 MHz	5G 40 MHz	5G 80 MHz
26T	10	3	-8	9	9	9	13	6	-5	12	12	12
52T	10	3	-8	9	9	9	13	6	-5	12	12	12
106T	10	3	-8	9	9	9	13	6	-5	12	12	12
242T	10	3	-8	9	9	9	13	6	-5	12	12	12
484T					9	9					12	12
996T						9						12

(Upper Tolerance: target +1.0 dB)

IEEE 802.11ax RU (in dBm) Reduced												
SISO Antenna 1 & Antenna 2							MIMO					
	2.4G 1~11ch	2.4G 12ch	2.4G 13ch	5G 20 MHz	5G 40 MHz	5G 80 MHz	2.4G 1~11ch	2.4G 12ch	2.4G 13ch	5G 20 MHz	5G 40 MHz	5G 80 MHz
26T	10	3	-8	8	8	8	13	6	-5	11	11	11
52T	10	3	-8	8	8	8	13	6	-5	11	11	11
106T	10	3	-8	8	8	8	13	6	-5	11	11	11
242T	10	3	-8	8	8	8	13	6	-5	11	11	11
484T					8	8					11	11
996T						8						11

(Upper Tolerance: target +1.0 dB)

4.3.3 Maximum Bluetooth Power

Mode	MAX (in dBm)	Reduced (in dBm)
Bluetooth-BR	13.0	9.0
Bluetooth-EDR	9.0	9.0
Bluetooth LE	9.0	9.0

(Upper Tolerance: target +1.0 dB)

4.4 4G/5G Mode Information

Item.		Description
Frequency Range	LTE FDD Band 2 (PCS)	1 850.7 MHz ~ 1 909.3 MHz
	LTE FDD Band 4 (AWS)	1 710.7 MHz ~ 1 754.3 MHz
	LTE FDD Band 5 (Cell)	824.7 MHz ~ 848.3 MHz
	LTE FDD Band 12	699.7 MHz ~ 715.3 MHz
	LTE FDD Band 13	779.5 MHz ~ 784.5 MHz
	LTE FDD Band 17	706.5 MHz ~ 713.5 MHz
	LTE FDD Band 26 (Cell)	814.7 MHz ~ 848.3 MHz
	LTE TDD Band 41	2 498.5 MHz ~ 2 687.5 MHz
	LTE FDD Band 66 (AWS)	1 710.7 MHz ~ 1 779.3 MHz
	NR FDD Band n5 (Cell)	826.5 MHz ~ 846.5 MHz
	NR FDD Band n66 (AWS)	1 712.5 MHz ~ 1 777.5 MHz
Channel Bandwidths	LTE FDD Band 2 (PCS)	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE FDD Band 4 (AWS)	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE FDD Band 5 (Cell)	1.4 MHz, 3 MHz, 5 MHz, 10 MHz
	LTE FDD Band 12	1.4 MHz, 3 MHz, 5 MHz, 10 MHz
	LTE FDD Band 13	5 MHz, 10 MHz
	LTE FDD Band 17	5 MHz, 10 MHz
	LTE FDD Band 26 (Cell)	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz
	LTE TDD Band 41	5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE FDD Band 66 (AWS)	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz
	NR FDD Band n5 (Cell)	5 MHz, 10 MHz, 15 MHz, 20 MHz
	NR FDD Band n66 (AWS)	5 MHz, 10 MHz, 15 MHz, 20 MHz

Mode		Low	Mid	High
		Freq. (MHz) (Ch. No.)	Freq. (MHz) (Ch. No.)	Freq. (MHz) (Ch. No.)
LTE FDD Band 2 (PCS)	1.4 MHz	1 850.7 (18607)	1 880.0 (18900)	1 909.3 (19193)
	3 MHz	1 851.5 (18615)	1 880.0 (18900)	1 908.5 (19185)
	5 MHz	1 852.5 (18625)	1 880.0 (18900)	1 907.5 (19175)
	10 MHz	1 855.0 (18650)	1 880.0 (18900)	1 905.0 (19150)
	15 MHz	1 857.5 (18675)	1 880.0 (18900)	1 902.5 (19125)
	20 MHz	1 860.0 (18700)	1 880.0 (18900)	1 900.0 (19100)
LTE FDD Band 4 (AWS)	1.4 MHz	1 710.7 (19957)	1 732.5 (20175)	1 754.3 (20393)
	3 MHz	1 711.5 (19965)	1 732.5 (20175)	1 753.5 (20385)
	5 MHz	1 712.5 (19975)	1 732.5 (20175)	1 752.5 (20375)
	10 MHz	1 715.0 (20000)	1 732.5 (20175)	1 750.0 (20350)
	15 MHz	1 717.5 (20025)	1 732.5 (20175)	1 747.5 (20325)
	20 MHz	1 720.0 (20050)	1 732.5 (20175)	1 745.0 (20300)
LTE FDD Band 5 (Cell)	1.4 MHz	824.7 (20407)	836.5 (20525)	848.3 (20643)
	3 MHz	825.5 (20415)	836.5 (20525)	847.5 (20635)
	5 MHz	826.5 (20425)	836.5 (20525)	846.5 (20625)
	10 MHz	829 (2450)	836.5 (20525)	844 (2600)
LTE FDD Band 12	1.4 MHz	699.7 (23017)	707.5 (23095)	715.3 (23173)
	3 MHz	700.5 (23025)	707.5 (23095)	714.5 (23165)
	5 MHz	701.5 (23035)	707.5 (23095)	713.5 (23155)
	10 MHz	704 (23060)	707.5 (23095)	711(23130)
LTE FDD Band 13	5 MHz	779.5 (23205)	782 (23230)	784.5 (23255)
	10 MHz		782 (23230)	

Mode		Low	Mid	High
		Freq. (㎒) (Ch. No.)	Freq. (㎒) (Ch. No.)	Freq. (㎒) (Ch. No.)
LTE FDD Band 17	5 ㎒	706.5(23755)	710 (23790)	713.5 (23825)
	10 ㎒	709 (23780)	710 (23790)	711 (23800)
LTE FDD Band 26 (Cell)	1.4 ㎒	814.7 (26697)	831.5 (26865)	848.3 (27033)
	3 ㎒	815.5 (26705)	831.5 (26865)	847.5 (27025)
	5 ㎒	816.5 (26715)	831.5 (26865)	846.5 (27015)
	10 ㎒	819.0 (26740)	831.5 (26865)	844.0 (26990)
	15 ㎒	821.5 (26765)	831.5 (26865)	842.5 (26975)
LTE FDD Band 66 (AWS)	1.4 ㎒	1 710.7 (131979)	1 745 (132322)	1 779.3 (132665)
	3 ㎒	1 711.5 (131987)	1 745 (132322)	1 778.5 (132657)
	5 ㎒	1 712.5 (131997)	1 745 (132322)	1 777.5 (132647)
	10 ㎒	1 715.0 (132022)	1 745 (132322)	1 775.0 (132622)
	15 ㎒	1 717.5 (132047)	1 745 (132322)	1 772.5 (132597)
	20 ㎒	1 720.0 (132072)	1 745 (132322)	1 770.0 (132572)

LTE TDD Band 41	5 ㎒	2506.0(39750)	2549.5(40185)	2593.0(40620)	2636.5(41055)	2680.0(41490)
	10 ㎒	2506.0(39750)	2549.5(40185)	2593.0(40620)	2636.5(41055)	2680.0(41490)
	15 ㎒	2506.0(39750)	2549.5(40185)	2593.0(40620)	2636.5(41055)	2680.0(41490)
	20 ㎒	2506.0(39750)	2549.5(40185)	2593.0(40620)	2636.5(41055)	2680.0(41490)

Item.	Description	
UE Category	LTE Rel. 16, DL Category: Cat18 / UL Category: Cat18	
Modulations Supported in UL	QPSK, 16QAM, 64QAM, 256QAM	
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3	Yes	
A-MPR disabled for SAR Testing.	Yes	
LTE Carrier Aggregation	Down-Link CA	This device supports Down-Link Carrier aggregations. informations of Down-Link CA are included in the Appendix.I and Technical Description document
LTE Release information	This device does not support full CA features on 3GPP Release 15. It supports carrier aggregation, downlink MIMO. All other uplink communications are identical to te release 8 specifications. The following LTE Release 15 Features are not supported: Relay, Hetnet, Enhanced elCl, MDH, cross-carrier Scheduling, Enhanced SC-FDMA.	

Mode		Low	Mid	High
		Freq. (㎒) (Ch. No.)	Freq. (㎒) (Ch. No.)	Freq. (㎒) (Ch. No.)
NR FDD Band n5 (Cell)	5 ㎒	826.5 (165300)	836.5 (167300)	846.5 (169300)
	10 ㎒	829 (165800)		844 (168800)
	15 ㎒	831.5 (166300)	836.5 (167300)	841.5 (168300)
	20 ㎒	834 (166800)	836.5 (167300)	839 (167800)
NR FDD Band n66 (AWS)	5 ㎒	1 712.5 (342500)	1 745 (349000)	1 777.5 (355500)
	10 ㎒	1 715 (343000)	1 745 (349000)	1 775 (355000)
	15 ㎒	1 717.5 (343500)	1 745 (349000)	1 772.5 (354500)
	20 ㎒	1 720 (344000)	1 745 (349000)	1 770 (354000)

Item.	Description
NR Band n5/n66 SCS	15 ㎑
3GPP Rel.	Rel.16
A-MPR disabled for SAR Testing.	Yes
5G NR UL/DL FR1	CP-OFDM: QPSK, 16QAM, 64QAM, 256QAM DFT-s-OFDM: π/2-BPSK(UL Only), QPSK, 16QAM, 64QAM, 256QAM
Non-Standalone & Standalone are supported. More detailed specifications of the 5G NR bands are contained in the technical description document.	
EN-DC Carrier Aggregation Possible Combinations	The technical description includes all the possible carrier aggregation combinations

4.5 DUT Antenna Locations

Antenna	Band	Device Conifigurations for SAR Testing				
		Rear	Top	Left	Right	Bottom
Main1	GSM/GPRS/EDGE 850	Yes	Yes	Yes	Yes	No
Main1	GSM/GPRS/EDGE 1900	Yes	Yes	Yes	Yes	No
Main1	UMTS Band 5	Yes	Yes	Yes	Yes	No
Main1	UMTS Band 4	Yes	Yes	Yes	Yes	No
Main1	UMTS Band 2	Yes	Yes	Yes	Yes	No
Main1	LTE FDD Band 2	Yes	Yes	Yes	Yes	No
Main1	LTE FDD Band 4	Yes	Yes	Yes	Yes	No
Main1	LTE FDD Band 5	Yes	Yes	Yes	Yes	No
Main1	LTE FDD Band 12	Yes	Yes	Yes	Yes	No
Main1	LTE FDD Band 13	Yes	Yes	Yes	Yes	No
Main1	LTE FDD Band 17	Yes	Yes	Yes	Yes	No
Main1	LTE FDD Band 26	Yes	Yes	Yes	Yes	No
Main1	LTE TDD Band 41	Yes	Yes	Yes	Yes	No
Main1	LTE FDD Band 66	Yes	Yes	Yes	Yes	No
Main1	NR FDD Band n5	Yes	Yes	Yes	Yes	No
Main1	NR FDD Band n66	Yes	Yes	Yes	Yes	No
Sub2	LTE FDD With FR1 ENDC (LTE Band 2)	Yes	No	Yes	Yes	Yes
WiFi1	2.4 GHz WLAN	Yes	Yes	Yes	No	No
WiFi2	2.4 GHz WLAN	Yes	Yes	No	Yes	No
WiFi1	5 GHz WLAN	Yes	Yes	Yes	No	No
WiFi2	5 GHz WLAN	Yes	Yes	No	Yes	No
WiFi1	Bluetooth	Yes	Yes	Yes	No	No

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.

This device was tested considering the Rear/left/right/top/bottom side for simultaneous transmission analysis of multiple transmitter conditions. The bottom side of the upper antenna and the top surface of the lower antenna excluded according to FCC KDB 616217 D04v01r02.

4.6 SAR Summation Scenario

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

Simultaneous Transmission Scenarios	
Applicable Combination	Body
GSM + 2.4 GHz WI-FI Ant.1	Yes
GSM + 2.4 GHz WI-FI MIMO	Yes
GSM + 5 GHz WI-FI Ant.2	Yes
GSM + 5 GHz WI-FI MIMO	Yes
GSM + 2.4GHz Bluetooth	Yes
GSM + 5 GHz WI-FI Ant.2 + 2.4GHz Bluetooth	Yes
UMTS + 2.4 GHz WI-FI Ant.1	Yes
UMTS + 2.4 GHz WI-FI MIMO	Yes
UMTS + 5 GHz WI-FI Ant.2	Yes
UMTS + 5 GHz WI-FI MIMO	Yes
UMTS + 2.4 GHz Bluetooth	Yes
UMTS + 5 GHz WI-FI Ant.2 + 2.4GHz Bluetooth	Yes
LTE + 2.4 GHz WI-FI Ant.1	Yes
LTE + 2.4 GHz WI-FI MIMO	Yes
LTE + 5 GHz WI-FI Ant.2	Yes
LTE + 5 GHz WI-FI MIMO	Yes
LTE + 2.4 GHz Bluetooth	Yes
LTE + 5 GHz WI-FI Ant.2 + 2.4 GHz Bluetooth	Yes
5G NR + 2.4 GHz WI-FI Ant.1	Yes
5G NR + 2.4 GHz WI-FI MIMO	Yes
5G NR + 5 GHz WI-FI Ant.2	Yes
5G NR + 5 GHz WI-FI MIMO	Yes
5G NR + 2.4 GHz Bluetooth	Yes
5G NR + 5 GHz WI-FI Ant.2 + 2.4 GHz Bluetooth	Yes
LTE + 5G NR + 2.4 GHz WI-FI Ant.1	Yes
LTE + 5G NR + 2.4 GHz WI-FI MIMO	Yes
LTE + 5G NR + 5 GHz WI-FI Ant.2	Yes
LTE + 5G NR + 5 GHz WI-FI MIMO	Yes
LTE + 5G NR + 2.4 GHz Bluetooth	Yes
LTE + 5G NR + 5 GHz WI-FI Ant.2 + 2.4 GHz Bluetooth	Yes

Note:
1. BT for WIFI Ant 1 and 2.4GHz WLAN for WIFI Ant 2 can transmit simultaneously.
2. 2.4GHz WLAN and 5GHz WLAN cannot transmit simultaneously.
2. The highest reported SAR for each exposure condition is used for SAR summation purpose.
3. This device supports Bluetooth tethering.
4. This device supports 2x2 MIMO Tx for WLAN 802.11a/g/n/ac/ax. 802.11a/g supports CDD and STBC and 802.11n/ac/ax additionally supports SDM. Each WLAN antenna can transmit independently or together when operating with MIMO.

4.8 SAR Test Considerations

4.8.1 WiFi

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

This device supports IEEE 802.11ax with the following features:

a) Up to 80 MHz Bandwidth only for 5 GHz
b) Up to 20 MHz Bandwidth only for 2.4 GHz
c) No aggregate channel configurations
d) 2 Tx antenna output
e) Up to 1024 QAM is supported
f) TDWR and Band gap channels are supported for 5 GHz
g) MU-MIMO UL Operations are not supported

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

4.8.2 Licensed Transmitter(s)

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

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

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

This device supports LTE capabilities with overlapping transmission frequency ranges. When the supported frequency range of LTE Band falls completely within an LTE Band with a larger transmission frequency range, both LTE bands have the same target power or the band with the larger transmission frequency range has a higher target power and both LTE bands share the same transmission path and signal characteristics, SAR was only tested for the band with the larger transmission frequency range.
LTE Band 4 (1 710.7 MHz ~ 1 754.3 MHz) is covered by LTE Band 66 (1 710.7 MHz ~ 1 779.3 MHz),
LTE Band 5 (824.7 MHz ~ 848.3 MHz) is covered by LTE Band 26 (814.7 MHz ~ 848.3 MHz),
LTE Band 17 (706.5 MHz ~ 713.5 MHz) is covered by LTE Band 12 (699.7 MHz~ 715.3 MHz) only for max power condition.

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

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

Per FCC KDB 690783 1 D01 SAR Listings on Grants v01r03 and KDB 447498 D01v06.The SAR numbers listed must be consistent with the highest reported test results required by the published RF exposure KDB procedures. When the measured SAR is not at the maximum tune-up tolerance limit or maximum output power allowed for production units, the measured results are scaled to the maximum conditions to determine compliance; the scaled results are referred to as the reported SAR.

The Reported SAR = The Measured SAR *-$\frac{Maximum\ tune-up\ (mW)}{Measured\ Conducted\ Power(mW)}$

FCC KDB 447498 D01v06.General RF Exposure Guidance introduces a new formula for calculating the SAR a Peak Location Separation Ratio(SPLSR) between pairs of simultaneously transmitting antennas:
$SPLSR_i$=$(SAR_1 + SAR_2)^{1.5}/R_i$
Where:
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

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

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

In order for a pair of simultaneous transmitting antennas with the sum 1-g of SAR> 1.6 W/kg and with the sum 10-g of SAR >4W/Kg to qualify for exemption from Simultaneous Transmission SAR measurements, it has to satisfy the condition of:
$(SAR_1 + SAR_2)^{1.5}/R_i \leq 0.04$ for 1g SAR and $(SAR_1 + SAR_2)^{1.5}/R_i \leq 0.1$ for 10g SAR.

5. Introduction

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

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

SAR Definition

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

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

Figure 1. SAR Mathematical Equation
SAR is expressed in units of Watts per Kilogram (W/kg)

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

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

6. Description of test equipment

6.1 SAR MEASUREMENT SETUP

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

A cell controller system contains the power supply, robot controller, teach pendant (Joystick), and remote control, is used to drive the robot motors. The PC with Windows XP or Windows 7 is working with SAR Measurement system DASY4 & 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.

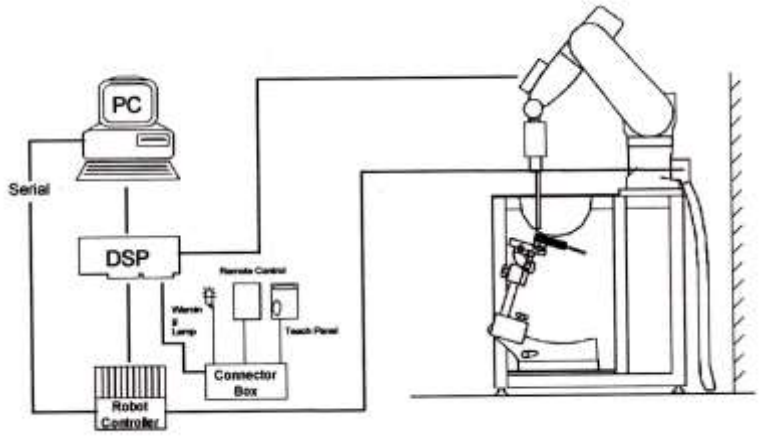


Figure 2. HCT SAR Lab. Test Measurement Set-up

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.

7. SAR Measurement Procedure

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

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

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

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

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

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

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

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

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

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

8. Description of Test Position

8.1 Device Holder

The device holder is made out of low-loss POM material having the following dielectric parameters: relative permittivity ε and loss tangent δ=0.02.

8.2 SAR Testing for Tablet Per KDB Publication 616217 D04v01r02

Per FCC KDB Publication 616217 D04v01r02, the back surface and edges of the 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 configuration. The closest 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.

8.3 Proximity Sensor Considerations.

This device uses a sensor to reduce output powers in certain use conditions when the device is used close the user's body.

When the sensor detects a user is touching the device on or near to the antenna the device reduces the maximum allowed output power However, the proximity sensor is not active when the device is moved beyond the sensor triggering distance and the maximum output power is no longer limited. Therefore, an additional exposure condition is needed in the vicinity of the triggering distance to ensure SAR is compliant when the device is allowed to operate at a non-reduced output power level.

FCC KDB 616217 D04 Section 8 and additional FCC guidance were used as a guideline for selecting SAR test distances for this device at these additional exposure conditions. The smallest separation distance determined by the sensor triggering and sensor coverage for each applicable edge, minus 1 ㎜. was used as the test separation distance for SAR testing. Sensor triggering distance evaluation is provided in a separate document.

The required separation distance to evaluate SAR at full powers were:

Wireless technologies	Position	§6.2 Triggering Distance [㎜]	§6.3 Coverage	§6.4 Tilt Angle	Worst case distance for Body SAR [㎜]
Main1 Ant.	Rear	21	N/A	N/A	20
	Right	11	N/A	N/A	10
	Top	27	N/A	N/A	26
WLAN /BT WiFi1	Rear	18	N/A	N/A	17
	Left	10	N/A	N/A	9
	Top	25	N/A	N/A	24
WLAN Ant WiFi2	Rear	18	N/A	N/A	17
	Right	11	N/A	N/A	10
	Top	25	N/A	N/A	24
Sub2 Ant.	Rear	22	N/A	N/A	21
	Right	10	N/A	N/A	9
	Bottom	28	N/A	N/A	27

9. RF Exposure Limits

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

NOTES:

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

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

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

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

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

10. FCC SAR General Measurement Procedures

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

10.1 Measured and Reported SAR

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

10.2 3G SAR Test Reduction Procedure

10.2.1 GSM, GPRS AND EDGE

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

10.2.2 SAR Test Reduction

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

10.2.3 Procedures Used to Establish RF Signal for SAR

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

10.3 SAR Measurement Conditions for UMTS

10.3.1 Output Power Verification

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

10.3.2 Body SAR measurements

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

10.3.3 SAR Measurements with Rel. 5 HSDPA

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

10.3.4 SAR Measurements with Rel. 6 HSUPA

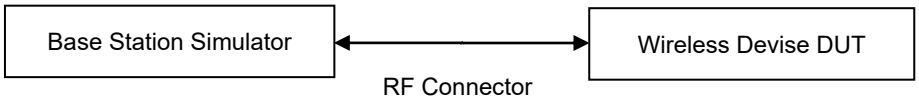
The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 and power control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

10.3.5 DC-HSDPA

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

DC-HSDPA Configurations

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



10.4 SAR Measurement Conditions for LTE

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

10.4.1 Spectrum Plots for RB Configurations

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

10.4.2 MPR

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

10.4.3 A-MPR

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

10.4.4 Required RB Size and RB offsets for SAR testing

According to FCC KDB 941225 D05v02r05

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

10.4.5 Downlink Carrier Aggregation

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

10.4.6 LTE(TDD) Considerations

According to KDB 941225 D05v02r05, for Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

SAR was tested with the highest transmission duty factor (63.33 %) using Uplink-downlink configuration 0 and Special subframe configuration 6. LTE TDD Band 41 supports 3GPP TS 36.211 section 4.2 for Type 2 Frame and Table 4.2-2 for uplink-downlink configurations and Table 4.2-1 for Special sub frame configurations.

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

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

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

Example for calculated Duty Cycle for Uplink-Downlink Configuration 0:

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

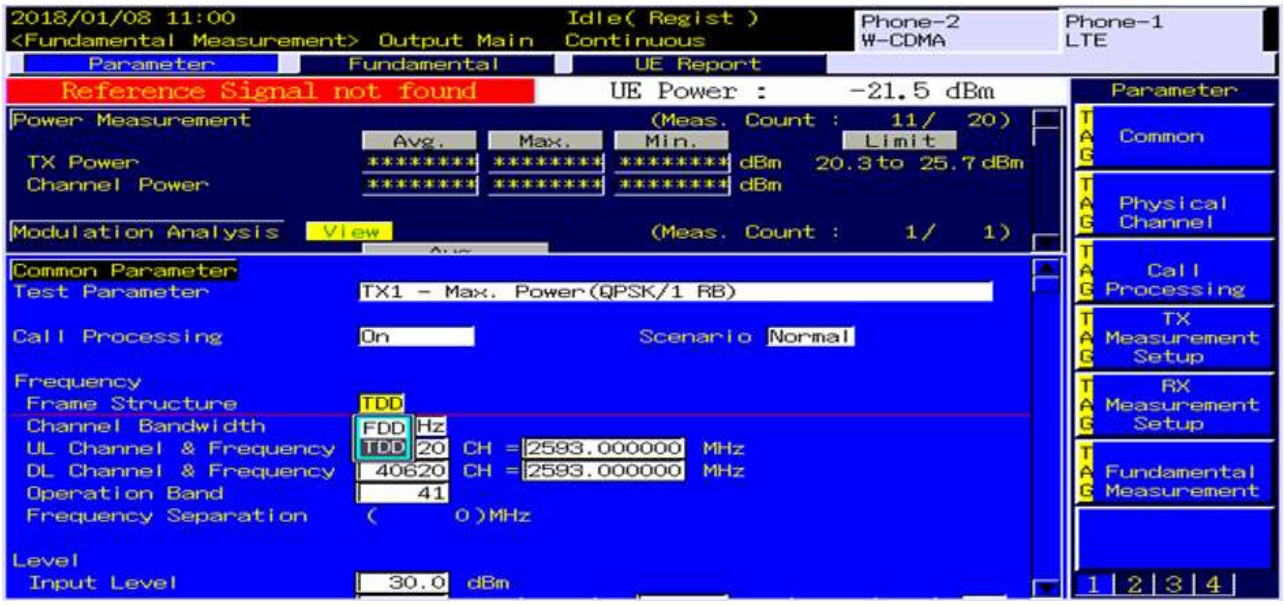
Calculated Duty Cycle = (5120 x (1/(15000 x 2048)) x 2 + 0.006)/0.01 = 63.33 %

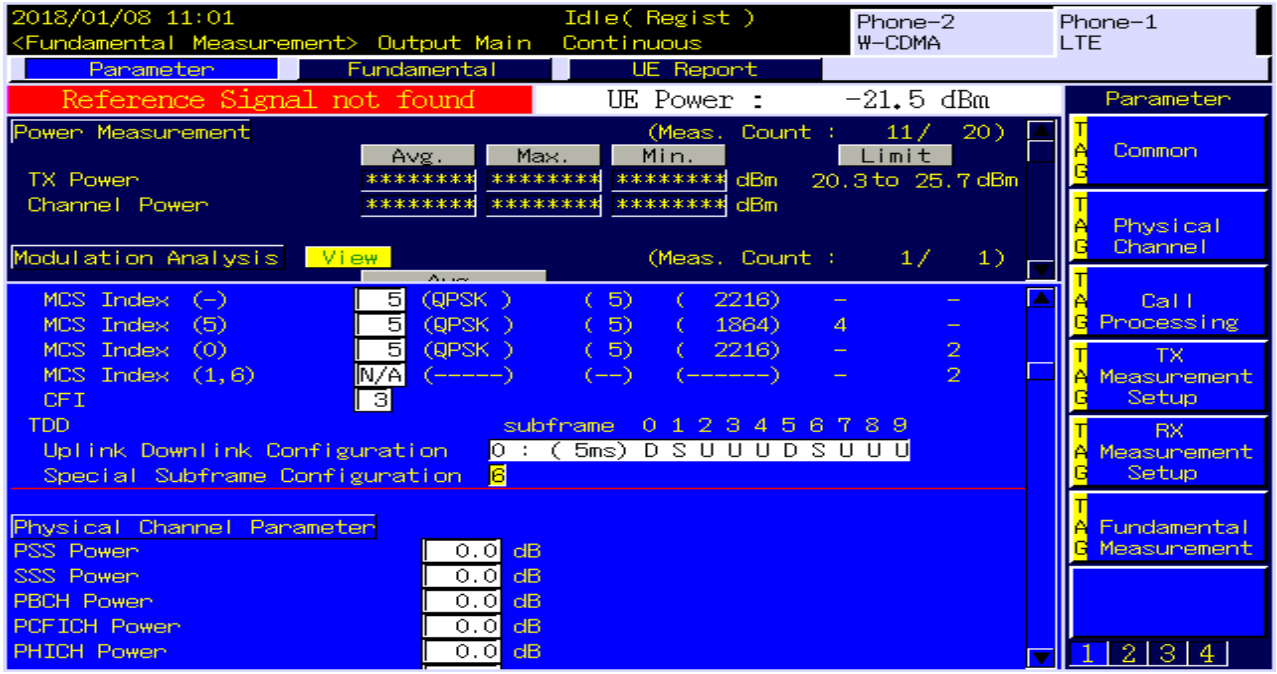
Where

T_s = 1/(15000 x 2048) seconds

10.4.7 The Call Box Setup for LTE(TDD)

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





10.5 SAR Testing with 802.11 Transmitters

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

10.5.1 General Device Setup

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

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

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

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

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

10.5.4 Initial Test Position Procedure

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

10.5.5 2.4 GHz SAR test Requirements

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

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

10.5.6 OFDM Transmission Mode and SAR Test Channel Selection

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

10.5.7 Initial Test Configuration Procedure

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

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

10.5.8 Subsequent Test Configuration Procedures

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

10.5.9 MIMO SAR Considerations

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

11. Output Power Specifications

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

Licensed bands

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

Test Overview

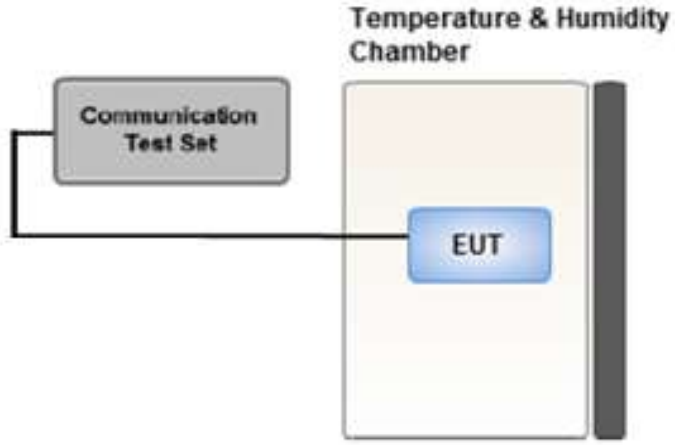
According to ANSI C63.26-2015 Section 5.2.1 when measuring the maximum RF output power from such devices, control over the EUT must be provided either through special test software (provided by manufacturer specifically for compliance testing, but not accessible by an end user) or through use of a base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

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

Test Procedure

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

Test setup



11.1 GSM

11.1.1 GSM Maximum Conducted Output Power

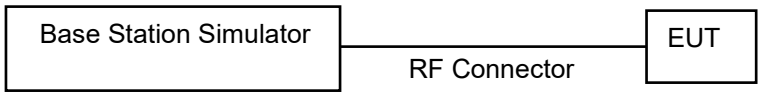
Mode / Band		GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)			
		GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Maximum		**34.00**	**32.00**	**30.00**	**28.00**	**27.50**	**26.00**	**24.00**	**23.00**
Nominal		**33.00**	**31.00**	**29.00**	**27.00**	**26.50**	**25.00**	**23.00**	**22.00**
GSM 850	128	33.57	31.41	28.76	26.48	27.44	25.95	23.44	21.88
	190	33.60	31.31	28.59	26.32	27.27	25.81	23.29	21.64
	251	33.86	31.42	28.96	26.50	27.48	25.94	23.44	22.07
Maximum		**30.50**	**29.00**	**27.00**	**25.00**	**26.50**	**25.00**	**23.00**	**22.00**
Nominal		**29.50**	**28.00**	**26.00**	**24.00**	**25.50**	**24.00**	**22.00**	**21.00**
GSM 1900	512	30.36	28.70	26.42	23.94	26.17	24.88	22.44	21.31
	661	30.05	28.43	26.12	23.63	25.93	24.62	22.21	21.07
	810	29.84	28.18	25.77	23.31	25.90	24.38	21.95	20.92

GSM Conducted output powers (Burst-Average)

Mode / Band		GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)			
		GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Maximum		**24.97**	**25.98**	**25.74**	**24.99**	**18.47**	**19.98**	**19.74**	**19.99**
Nominal		**23.97**	**24.98**	**24.74**	**23.99**	**17.47**	**18.98**	**18.74**	**18.99**
GSM 850	128	24.54	25.39	24.50	23.47	18.41	19.93	19.18	18.87
	190	24.57	25.29	24.33	23.31	18.24	19.79	19.03	18.63
	251	24.83	25.40	24.70	23.49	18.45	19.92	19.18	19.06
Maximum		**21.47**	**22.98**	**22.74**	**21.99**	**17.47**	**18.98**	**18.74**	**18.99**
Nominal		**20.47**	**21.98**	**21.74**	**20.99**	**16.47**	**17.98**	**17.74**	**17.99**
GSM 1900	512	21.33	22.68	22.16	20.93	17.14	18.86	18.18	18.30
	661	21.02	22.41	21.86	20.62	16.90	18.60	17.95	18.06
	810	20.81	22.16	21.51	20.30	16.87	18.36	17.69	17.91

GSM Conducted output powers (Frame-Average)

Note:
Time slot average factor is as follows:
1 Tx slot = 9.03 dB, Frame-Average output power = Burst-Average output power – 9.03 dB
2 Tx slot = 6.02 dB, Frame-Average output power = Burst-Average output power – 6.02 dB
3 Tx slot = 4.26 dB, Frame-Average output power = Burst-Average output power – 4.26 dB
4 Tx slot = 3.01 dB, Frame-Average output power = Burst-Average output power – 3.01 dB



11.1.2 GSM Reduced Conducted Output Power – Proximity Sensor activated

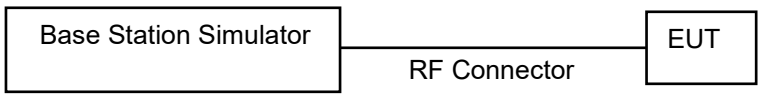
Mode / Band		GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)			
		GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Maximum		**24.50**	**22.50**	**20.50**	**18.50**	**19.00**	**17.50**	**14.50**	**13.50**
Nominal		**23.50**	**21.50**	**19.50**	**17.50**	**18.00**	**16.50**	**13.50**	**12.50**
GSM 850	128	23.93	22.11	19.62	18.16	18.48	16.66	14.01	12.50
	190	23.94	22.06	19.54	18.07	18.27	16.67	13.98	12.41
	251	24.34	22.33	19.81	18.12	18.47	16.87	14.18	12.69
Maximum		**21.00**	**19.50**	**17.50**	**15.50**	**17.50**	**16.00**	**14.00**	**13.00**
Nominal		**20.00**	**18.50**	**16.50**	**14.50**	**16.50**	**15.00**	**13.00**	**12.00**
GSM 1900	512	20.10	18.40	16.51	14.58	17.17	15.36	13.27	11.98
	661	20.08	18.51	16.62	14.68	16.89	15.16	13.06	12.05
	810	19.95	18.83	17.18	15.27	16.97	15.27	13.65	12.59

GSM Conducted output powers (Burst-Average)

Mode / Band		GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)			
		GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Maximum		**15.47**	**16.48**	**16.24**	**15.49**	**9.97**	**11.48**	**10.24**	**10.49**
Nominal		**14.47**	**15.48**	**15.24**	**14.49**	**8.97**	**10.48**	**9.24**	**9.49**
GSM 850	128	14.90	16.09	15.36	15.15	9.45	10.64	9.75	9.49
	190	14.91	16.04	15.28	15.06	9.24	10.65	9.72	9.40
	251	15.31	16.31	15.55	15.11	9.44	10.85	9.92	9.68
Maximum		**11.97**	**13.48**	**13.24**	**12.49**	**8.47**	**9.98**	**9.74**	**9.99**
Nominal		**10.97**	**12.48**	**12.24**	**11.49**	**7.47**	**8.98**	**8.74**	**8.99**
GSM 1900	512	11.07	12.38	12.25	11.57	8.14	9.34	9.01	8.97
	661	11.05	12.49	12.36	11.67	7.86	9.14	8.80	9.04
	810	10.92	12.81	12.92	12.26	7.94	9.25	9.39	9.58

GSM Conducted output powers (Frame-Average)

Note:
Time slot average factor is as follows:
1 Tx slot = 9.03 dB, Frame-Average output power = Burst-Average output power – 9.03 dB
2 Tx slot = 6.02 dB, Frame-Average output power = Burst-Average output power – 6.02 dB
3 Tx slot = 4.26 dB, Frame-Average output power = Burst-Average output power – 4.26 dB
4 Tx slot = 3.01 dB, Frame-Average output power = Burst-Average output power – 3.01 dB



11.2 UMTS

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

11.2.1 UMTS Maximum Conducted Output Power

UMTS Band 5 Maximum Conducted Output Power

3GPP Release Version	Mode	3GPP 34.121	UMTS Band 5 [dBm]			3GPP MPR
		Subtest	UL4132 DL4357	UL4183 DL4408	UL4233 DL4458	
99	UMTS	12.2 kbps RMC	24.05	23.89	24.16	-
2	HSDPA	Subtest 1	23.22	23.11	23.36	0
5		Subtest 2	22.76	22.64	22.91	0.5
5		Subtest 3	22.26	22.11	22.43	0.5
5		Subtest 4	22.74	22.60	22.86	0
6	HSUPA	Subtest 1	20.66	20.52	20.83	2
6		Subtest 2	21.63	21.49	21.84	1
6		Subtest 3	20.63	20.52	20.84	2
6		Subtest 4	23.64	23.52	23.82	0
6		Subtest 5	23.17	23.18	23.04	0
8	DC-HSDPA	Subtest1	23.12	23.29	23.17	0
8		Subtest2	21.46	21.60	21.50	0.5
8		Subtest3	21.84	21.84	21.69	0.5
8		Subtest4	24.05	23.89	24.16	-

UMTS Average Conducted output powers

UMTS Band 4 Maximum Conducted Output Power

3GPP Release Version	Mode	3GPP 34.121	UMTS Band 4 [dBm]			3GPP MPR
		Subtest	UL 1312 DL 1537	UL 1412 DL 1637	UL 1513 DL 1738	
99	UMTS	12.2 kbps RMC	24.16	24.07	24.45	-
5	HSDPA	Subtest 1	23.56	23.42	23.83	0
5		Subtest 2	23.09	22.95	23.31	0
5		Subtest 3	22.52	22.40	22.80	0.5
5		Subtest 4	22.54	22.39	22.79	0.5
6	HSUPA	Subtest 1	22.47	22.36	22.19	0
6		Subtest 2	20.00	19.87	20.21	2
6		Subtest 3	22.49	22.56	22.64	1
6		Subtest 4	20.27	20.15	19.81	2
6		Subtest 5	23.46	23.30	23.72	0
8	DC-HSDPA	Subtest 1	23.47	23.35	23.49	0
8		Subtest 2	23.27	23.11	23.48	0
8		Subtest 3	22.19	22.05	22.52	0.5
8		Subtest 4	22.61	22.36	22.89	0.5

UMTS Average Conducted output powers

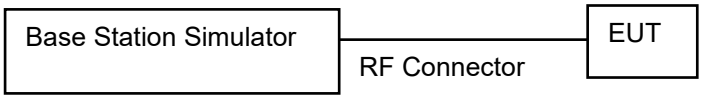
UMTS Band 2 Maximum Conducted Output Power

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	23.79	23.55	23.66	-
5	HSDPA	Subtest 1	23.49	23.29	23.41	0
5		Subtest 2	23.07	22.72	22.82	0
5		Subtest 3	22.56	22.24	22.32	0.5
5		Subtest 4	22.10	21.74	21.86	0.5
6	HSUPA	Subtest 1	22.55	22.20	22.25	0
6		Subtest 2	20.02	19.67	19.74	2
6		Subtest 3	22.54	22.21	22.28	1
6		Subtest 4	20.53	20.22	20.27	2
6		Subtest 5	23.54	23.22	23.30	0
8	DC-HSDPA	Subtest 1	23.14	23.30	23.33	0
8		Subtest 2	23.04	23.36	23.36	0
8		Subtest 3	22.06	21.88	22.14	0.5
8		Subtest 4	22.15	21.93	22.02	0.5

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.



11.3.2 UMTS Reduced Conducted Output Power – Proximity Sensor activated

UMTS Band 5 Reduced Conducted Output Power

3GPP Release Version	Mode	3GPP 34.121	UMTS Band 5 [dBm]			3GPP MPR
		Subtest	UL 4132 DL 4357	UL 4183 DL 4408	UL 4233 DL 4458	
99	UMTS	12.2 kbps RMC	14.45	14.31	14.60	-
5	HSDPA	Subtest 1	14.37	14.24	14.53	0
5		Subtest 2	14.40	14.22	14.51	0
5		Subtest 3	14.36	14.24	14.53	0
5		Subtest 4	14.37	14.25	14.54	0
6	HSUPA	Subtest 1	13.39	13.26	13.55	0
6		Subtest 2	13.38	13.23	13.54	0
6		Subtest 3	13.35	13.22	13.52	0
6		Subtest 4	13.39	13.23	13.52	0
6		Subtest 5	14.38	14.25	14.53	0
8	DC-HSDPA	Subtest 1	13.66	13.66	13.52	0
8		Subtest 2	13.57	13.81	13.71	0
8		Subtest 3	13.70	13.84	13.68	0
8		Subtest 4	13.71	13.84	13.70	0

UMTS Average Conducted output powers

UMTS Band 4 Reduced Conducted Output Power

3GPP Release Version	Mode	3GPP 34.121	UMTS Band 4 [dBm]			3GPP MPR
		Subtest	UL 1312 DL 1537	UL 1412 DL 1637	UL 1513 DL 1738	
99	UMTS	12.2 kbps RMC	14.09	13.96	14.36	-
5	HSDPA	Subtest 1	14.04	13.89	14.28	0
5		Subtest 2	14.02	13.86	14.28	0
5		Subtest 3	14.01	13.86	14.26	0
5		Subtest 4	13.99	13.88	14.25	0
6	HSUPA	Subtest 1	13.02	12.86	13.21	0
6		Subtest 2	13.00	12.89	13.24	0
6		Subtest 3	13.00	12.87	13.20	0
6		Subtest 4	12.99	12.87	13.20	0
6		Subtest 5	14.03	13.87	14.29	0
8	DC-HSDPA	Subtest 1	13.79	13.40	13.91	0
8		Subtest 2	13.77	13.55	14.00	0
8		Subtest 3	13.84	13.52	13.96	0
8		Subtest 4	13.77	13.56	13.97	0

UMTS Average Conducted output powers

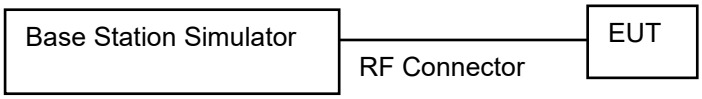
UMTS Band 2 Reduced Conducted Output Power

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	13.85	13.54	13.64	-
5	HSDPA	Subtest 1	13.79	13.48	13.54	0
5		Subtest 2	13.78	13.44	13.49	0
5		Subtest 3	13.78	13.39	13.51	0
5		Subtest 4	13.75	13.43	13.50	0
6	HSUPA	Subtest 1	12.71	12.39	12.45	0
6		Subtest 2	12.68	12.40	12.44	0
6		Subtest 3	12.69	12.40	12.45	0
6		Subtest 4	12.66	12.36	12.42	0
6		Subtest 5	13.77	13.46	13.52	0
8	DC-HSDPA	Subtest 1	13.49	13.11	13.34	0
8		Subtest 2	13.65	13.25	13.38	0
8		Subtest 3	13.59	13.21	13.39	0
8		Subtest 4	13.61	13.28	13.36	0

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.



11.3 LTE Maximum Output Power

LTE B4/B5/B12/B13/B17/B26 at 10 ㎒/15 ㎒/20 ㎒ Bandwidth does not support three non-overlapping channels. Per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the mid channel of the group of overlapping channels should be selected for testing.

11.3.1 LTE Maximum Conducted Power

[LTE Band 2 Conducted Power _ Main1 Ant.]

LTE Band 2 _ 1.4 ㎒ Bandwidth _ Maximum Conducted Power

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	22.56	22.33	22.06	0	0
		1	3	22.51	22.28	22.03	0	0
		1	5	22.61	22.42	22.19	0	0
		3	0	22.66	22.36	22.11	0	0
		3	1	22.55	22.24	22.14	0	0
		3	3	22.64	22.47	22.22	0	0
		6	0	21.73	21.40	21.20	0-1	1
	16QAM	1	0	21.83	21.60	21.35	0-1	1
		1	3	21.78	21.59	21.33	0-1	1
		1	5	21.92	21.67	21.40	0-1	1
		3	0	21.66	21.44	21.26	0-1	1
		3	1	21.68	21.40	21.22	0-1	1
		3	3	21.63	21.40	21.25	0-1	1
		6	0	20.67	20.44	20.22	0-2	2
	64QAM	1	0	21.70	20.53	20.21	0-2	2
		1	3	21.69	20.37	20.16	0-2	2
		1	5	21.75	20.49	20.30	0-2	2
		3	0	21.59	20.36	20.18	0-2	2
		3	1	21.54	20.40	20.11	0-2	2
		3	3	21.65	20.44	20.17	0-2	2
		6	0	20.65	19.41	19.16	0-3	3
	256QAM	1	0	17.63	17.50	17.09	0-5	5
		1	3	17.62	17.35	17.04	0-5	5
		1	5	17.73	17.41	17.08	0-5	5
		3	0	17.66	17.37	17.12	0-5	5
		3	1	17.50	17.31	17.06	0-5	5
		3	3	17.62	17.29	17.15	0-5	5
		6	0	16.55	16.54	16.51	0-5	5

LTE Band 2 _ 3 ㎒ Bandwidth_ Maximum Conducted Power

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	22.45	22.45	22.16	0	0
		1	7	22.59	22.53	22.28	0	0
		1	14	22.66	22.44	22.15	0	0
		8	0	21.74	21.48	21.25	0-1	1
		8	3	21.83	21.54	21.31	0-1	1
		8	7	21.75	21.52	21.29	0-1	1
		15	0	21.83	21.54	21.27	0-1	1
	16QAM	1	0	21.93	21.78	21.37	0-1	1
		1	7	21.78	21.48	21.31	0-1	1
		1	14	22.03	21.76	21.34	0-1	1
		8	0	20.80	20.51	20.25	0-2	2
		8	3	20.82	20.54	20.24	0-2	2
		8	7	20.80	20.50	20.20	0-2	2
		15	0	20.71	20.51	20.22	0-2	2
	64QAM	1	0	20.92	20.60	20.40	0-2	2
		1	7	20.91	20.66	20.27	0-2	2
		1	14	20.84	20.51	20.25	0-2	2
		8	0	19.76	19.53	19.17	0-3	3
		8	3	19.80	19.44	19.20	0-3	3
		8	7	19.78	19.50	19.26	0-3	3
		15	0	19.76	19.51	19.22	0-3	3
	256QAM	1	0	17.67	17.51	17.29	0-5	5
		1	7	17.72	17.52	17.25	0-5	5
		1	14	17.81	17.50	17.20	0-5	5
		8	0	16.71	16.56	16.56	0-5	5
		8	3	16.75	16.57	16.54	0-5	5
		8	7	16.74	16.53	16.57	0-5	5
		15	0	16.67	16.58	16.59	0-5	5

LTE Band 2 _ 5 ㎒ Bandwidth _ Maximum Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18625 Ch. 1852.5 ㎒	18900 Ch. 1880 ㎒	19175 Ch. 1907.5 ㎒		
5 ㎒	QPSK	1	0	22.45	22.42	22.14	0	0
		1	12	22.58	22.59	22.31	0	0
		1	24	22.67	22.51	22.24	0	0
		12	0	21.78	21.50	21.28	0-1	1
		12	6	21.77	21.53	21.32	0-1	1
		12	11	21.80	21.56	21.30	0-1	1
		25	0	21.93	21.64	21.35	0-1	1
	16QAM	1	0	21.95	21.56	21.53	0-1	1
		1	12	21.91	21.39	21.32	0-1	1
		1	24	21.93	21.66	21.39	0-1	1
		12	0	20.78	20.58	20.28	0-2	2
		12	6	20.82	20.50	20.27	0-2	2
		12	11	20.83	20.57	20.25	0-2	2
		25	0	20.82	20.57	20.30	0-2	2
	64QAM	1	0	20.89	20.64	20.49	0-2	2
		1	12	20.87	20.65	20.37	0-2	2
		1	24	20.90	20.63	20.28	0-2	2
		12	0	19.81	19.47	19.28	0-3	3
		12	6	19.76	19.54	19.26	0-3	3
		12	11	19.80	19.59	19.24	0-3	3
		25	0	19.81	19.53	19.20	0-3	3
	256QAM	1	0	17.82	17.48	17.17	0-5	5
		1	12	17.85	17.60	17.26	0-5	5
		1	24	17.80	17.56	17.23	0-5	5
		12	0	16.72	16.53	16.51	0-5	5
		12	6	16.68	16.52	16.58	0-5	5
		12	11	16.70	16.59	16.52	0-5	5
		25	0	16.76	16.57	16.58	0-5	5

LTE Band 2 _ 10 ㎒ Bandwidth _ Maximum Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18650 Ch. 1855 ㎒	18900 Ch. 1880 ㎒	19150 Ch. 1905 ㎒		
10 ㎒	QPSK	1	0	22.63	22.42	22.24	0	0
		1	24	22.66	22.44	22.26	0	0
		1	49	22.66	22.39	22.19	0	0
		25	0	21.82	21.58	21.33	0-1	1
		25	12	21.78	21.53	21.34	0-1	1
		25	24	21.81	21.55	21.35	0-1	1
		50	0	21.86	21.58	21.39	0-1	1
	16QAM	1	0	21.93	21.52	21.41	0-1	1
		1	24	21.76	21.44	21.39	0-1	1
		1	49	21.72	21.62	21.48	0-1	1
		25	0	20.77	20.51	20.33	0-2	2
		25	12	20.78	20.53	20.31	0-2	2
		25	24	20.79	20.49	20.26	0-2	2
		50	0	20.78	20.56	20.34	0-2	2
	64QAM	1	0	20.79	20.56	20.44	0-2	2
		1	24	20.78	20.53	20.39	0-2	2
		1	49	20.77	20.45	20.32	0-2	2
		25	0	19.67	19.47	19.31	0-3	3
		25	12	19.72	19.43	19.26	0-3	3
		25	24	19.71	19.45	19.19	0-3	3
		50	0	19.75	19.50	19.29	0-3	3
	256QAM	1	0	17.72	17.37	17.33	0-5	5
		1	24	17.68	17.38	17.23	0-5	5
		1	49	17.75	17.37	17.14	0-5	5
		25	0	16.64	16.65	16.54	0-5	5
		25	12	16.69	16.52	16.59	0-5	5
		25	24	16.68	16.59	16.54	0-5	5
		50	0	16.62	16.62	16.55	0-5	5

LTE Band 2 _ 15 ㎒ Bandwidth _ Maximum Conducted Power

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	22.51	22.41	22.27	0	0
		1	36	22.61	22.55	22.35	0	0
		1	74	22.61	22.52	22.28	0	0
		36	0	21.80	21.63	21.42	0-1	1
		36	18	21.88	21.63	21.41	0-1	1
		36	39	21.87	21.59	21.42	0-1	1
		75	0	21.93	21.64	21.43	0-1	1
	16QAM	1	0	21.94	21.75	21.61	0-1	1
		1	36	21.79	21.30	21.38	0-1	1
		1	74	22.00	21.62	21.38	0-1	1
		36	0	20.85	20.56	20.41	0-2	2
		36	18	20.86	20.54	20.40	0-2	2
		36	39	20.83	20.53	20.33	0-2	2
		75	0	20.86	20.57	20.35	0-2	2
	64QAM	1	0	20.93	20.65	20.52	0-2	2
		1	36	20.91	20.77	20.48	0-2	2
		1	74	20.93	20.65	20.40	0-2	2
		36	0	19.84	19.53	19.38	0-3	3
		36	18	19.84	19.55	19.37	0-3	3
		36	39	19.82	19.51	19.30	0-3	3
		75	0	19.79	19.50	19.33	0-3	3
	256QAM	1	0	17.92	17.54	17.44	0-5	5
		1	36	17.86	17.50	17.27	0-5	5
		1	74	17.85	17.57	17.25	0-5	5
		36	0	16.82	16.56	16.53	0-5	5
		36	18	16.76	16.55	16.56	0-5	5
		36	39	16.70	16.58	16.52	0-5	5
		75	0	16.72	16.51	16.55	0-5	5

LTE Band 2 _ 20 ㎒ Bandwidth _ Maximum Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 ㎒	18900 Ch. 1880 ㎒	19100 Ch. 1900 ㎒		
20 ㎒	QPSK	1	0	22.55	22.50	22.37	0	0
		1	49	22.52	22.51	22.37	0	0
		1	99	22.51	22.48	22.25	0	0
		50	0	21.88	21.68	21.54	0-1	1
		50	25	21.93	21.67	21.53	0-1	1
		50	49	21.92	21.69	21.48	0-1	1
		100	0	21.90	21.64	21.50	0-1	1
	16QAM	1	0	21.96	21.64	21.53	0-1	1
		1	49	21.87	21.67	21.48	0-1	1
		1	99	21.80	21.76	21.46	0-1	1
		50	0	20.93	20.63	20.53	0-2	2
		50	25	20.88	20.62	20.49	0-2	2
		50	49	20.85	20.61	20.45	0-2	2
		100	0	20.85	20.59	20.43	0-2	2
	64QAM	1	0	20.92	20.68	20.50	0-2	2
		1	49	20.91	20.70	20.49	0-2	2
		1	99	20.89	20.67	20.31	0-2	2
		50	0	19.90	19.63	19.51	0-3	3
		50	25	19.89	19.62	19.44	0-3	3
		50	49	19.83	19.61	19.45	0-3	3
		100	0	19.82	19.52	19.38	0-3	3
	256QAM	1	0	17.92	17.65	17.41	0-5	5
		1	49	17.75	17.59	17.44	0-5	5
		1	99	17.78	17.54	17.27	0-5	5
		50	0	16.82	16.51	16.58	0-5	5
		50	25	16.72	16.50	16.54	0-5	5
		50	49	16.74	16.69	16.60	0-5	5
		100	0	16.74	16.69	16.63	0-5	5

[LTE Band 4 Conducted Power _ Main1 Ant.]

LTE Band 4 _ 1.4 ㎒ Bandwidth _ Maximum Conducted Power

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	22.83	23.43	23.32	0	0
		1	3	22.77	23.34	23.29	0	0
		1	5	22.73	23.50	23.36	0	0
		3	0	22.63	23.48	23.35	0	0
		3	1	22.64	23.44	23.45	0	0
		3	3	22.64	23.46	23.45	0	0
		6	0	22.20	22.51	22.41	0-1	1
	16QAM	1	0	22.47	22.62	22.53	0-1	1
		1	3	22.46	22.56	22.53	0-1	1
		1	5	22.38	22.60	22.54	0-1	1
		3	0	22.28	22.52	22.40	0-1	1
		3	1	22.33	22.52	22.38	0-1	1
		3	3	22.37	22.52	22.46	0-1	1
		6	0	21.50	21.48	21.37	0-2	2
	64QAM	1	0	21.47	21.59	21.49	0-2	2
		1	3	21.35	21.45	21.40	0-2	2
		1	5	21.49	21.54	21.47	0-2	2
		3	0	21.41	21.44	21.38	0-2	2
		3	1	21.43	21.41	21.32	0-2	2
		3	3	21.43	21.38	21.34	0-2	2
		6	0	20.37	20.41	20.31	0-3	3
	256QAM	1	0	18.51	18.46	18.40	0-5	5
		1	3	18.40	18.36	18.34	0-5	5
		1	5	18.40	18.41	18.37	0-5	5
		3	0	18.41	18.38	18.35	0-5	5
		3	1	18.34	18.36	18.26	0-5	5
		3	3	18.38	18.38	18.33	0-5	5
		6	0	18.33	18.35	18.28	0-5	5

LTE Band 4 _ 3 ㎒ Bandwidth _ Maximum Conducted Power

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	22.76	23.45	23.40	0	0
		1	7	22.84	23.52	23.45	0	0
		1	14	22.83	23.44	23.39	0	0
		8	0	22.28	22.51	22.44	0-1	1
		8	3	22.37	22.52	22.44	0-1	1
		8	7	22.44	22.49	22.47	0-1	1
		15	0	22.38	22.54	22.48	0-1	1
	16QAM	1	0	22.40	22.65	22.51	0-1	1
		1	7	22.26	22.38	22.43	0-1	1
		1	14	22.44	22.54	22.58	0-1	1
		8	0	21.44	21.48	21.46	0-2	2
		8	3	21.39	21.47	21.46	0-2	2
		8	7	21.44	21.46	21.44	0-2	2
		15	0	21.45	21.48	21.42	0-2	2
	64QAM	1	0	21.33	21.53	21.49	0-2	2
		1	7	21.47	21.52	21.38	0-2	2
		1	14	21.54	21.54	21.52	0-2	2
		8	0	20.35	20.39	20.39	0-3	3
		8	3	20.36	20.40	20.37	0-3	3
		8	7	20.38	20.39	20.37	0-3	3
		15	0	20.42	20.41	20.38	0-3	3
	256QAM	1	0	18.47	18.50	18.51	0-5	5
		1	7	18.46	18.36	18.41	0-5	5
		1	14	18.43	18.37	18.39	0-5	5
		8	0	18.36	18.39	18.34	0-5	5
		8	3	18.36	18.41	18.39	0-5	5
		8	7	18.31	18.36	18.34	0-5	5
		15	0	18.29	18.34	18.31	0-5	5

LTE Band 4 _ 5 ㎒ Bandwidth _ Maximum Conducted Power

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	22.73	23.51	23.46	0	0
		1	12	22.87	23.53	23.53	0	0
		1	24	22.87	23.50	23.49	0	0
		12	0	22.29	22.57	22.56	0-1	1
		12	6	22.42	22.56	22.50	0-1	1
		12	11	22.47	22.54	22.53	0-1	1
		25	0	22.41	22.62	22.59	0-1	1
	16QAM	1	0	22.32	22.66	22.76	0-1	1
		1	12	22.57	22.61	22.41	0-1	1
		1	24	22.56	22.67	22.72	0-1	1
		12	0	21.48	21.55	21.49	0-2	2
		12	6	21.45	21.51	21.51	0-2	2
		12	11	21.47	21.46	21.49	0-2	2
		25	0	21.49	21.55	21.51	0-2	2
	64QAM	1	0	21.53	21.57	21.56	0-2	2
		1	12	21.56	21.59	21.54	0-2	2
		1	24	21.51	21.58	21.48	0-2	2
		12	0	20.44	20.50	20.45	0-3	3
		12	6	20.39	20.45	20.43	0-3	3
		12	11	20.39	20.46	20.51	0-3	3
		25	0	20.46	20.48	20.44	0-3	3
	256QAM	1	0	18.46	18.52	18.50	0-5	5
		1	12	18.42	18.49	18.52	0-5	5
		1	24	18.40	18.42	18.45	0-5	5
		12	0	18.36	18.46	18.38	0-5	5
		12	6	18.37	18.37	18.41	0-5	5
		12	11	18.35	18.41	18.40	0-5	5
		25	0	18.42	18.46	18.40	0-5	5

LTE Band 4 _ 10 ㎒ Bandwidth _ Maximum Conducted Power

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	22.57	23.36	23.58	0	0
		1	24	22.87	23.52	23.54	0	0
		1	49	22.94	23.54	23.51	0	0
		25	0	22.22	22.72	22.71	0-1	1
		25	12	22.45	22.72	22.63	0-1	1
		25	24	22.57	22.70	22.65	0-1	1
		50	0	22.42	22.76	22.71	0-1	1
	16QAM	1	0	22.18	22.69	22.71	0-1	1
		1	24	22.47	22.65	22.56	0-1	1
		1	49	22.60	22.67	22.70	0-1	1
		25	0	21.53	21.66	21.62	0-2	2
		25	12	21.56	21.61	21.62	0-2	2
		25	24	21.52	21.62	21.59	0-2	2
		50	0	21.61	21.68	21.68	0-2	2
	64QAM	1	0	21.54	21.78	21.64	0-2	2
		1	24	21.53	21.57	21.68	0-2	2
		1	49	21.63	21.51	21.65	0-2	2
		25	0	20.52	20.59	20.56	0-3	3
		25	12	20.51	20.55	20.56	0-3	3
		25	24	20.50	20.57	20.54	0-3	3
		50	0	20.60	20.60	20.59	0-3	3
	256QAM	1	0	18.65	18.68	18.51	0-5	5
		1	24	18.48	18.46	18.58	0-5	5
		1	49	18.52	18.49	18.38	0-5	5
		25	0	18.45	18.56	18.54	0-5	5
		25	12	18.47	18.55	18.53	0-5	5
		25	24	18.47	18.53	18.50	0-5	5
		50	0	18.46	18.57	18.53	0-5	5

LTE Band 4 _ 15 ㎒ Bandwidth _ Maximum Conducted Power

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	22.48	23.02	23.64	0	0
		1	36	23.16	23.61	23.65	0	0
		1	74	23.05	23.60	23.66	0	0
		36	0	22.34	22.78	22.82	0-1	1
		36	18	22.68	22.70	22.75	0-1	1
		36	39	22.70	22.72	22.72	0-1	1
		75	0	22.59	22.73	22.79	0-1	1
	16QAM	1	0	22.18	22.60	22.77	0-1	1
		1	36	22.46	22.62	22.61	0-1	1
		1	74	22.79	22.74	22.81	0-1	1
		36	0	21.64	21.67	21.75	0-2	2
		36	18	21.62	21.64	21.67	0-2	2
		36	39	21.65	21.61	21.66	0-2	2
		75	0	21.61	21.64	21.69	0-2	2
	64QAM	1	0	21.46	21.81	21.67	0-2	2
		1	36	21.58	21.59	21.67	0-2	2
		1	74	21.68	21.58	21.69	0-2	2
		36	0	20.64	20.71	20.69	0-3	3
		36	18	20.60	20.63	20.63	0-3	3
		36	39	20.61	20.59	20.67	0-3	3
		75	0	20.59	20.60	20.68	0-3	3
	256QAM	1	0	18.71	18.73	18.80	0-5	5
		1	36	18.54	18.75	18.65	0-5	5
		1	74	18.57	18.62	18.68	0-5	5
		36	0	18.62	18.63	18.68	0-5	5
		36	18	18.58	18.56	18.62	0-5	5
		36	39	18.52	18.55	18.62	0-5	5
		75	0	18.53	18.57	18.61	0-5	5

LTE Band 4 _ 20 ㎒ Bandwidth _ Maximum Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20050 Ch. 1720 ㎒	20175 Ch. 1732.5 ㎒	20300 Ch. 1745.0 ㎒		
20 ㎒	QPSK	1	0	23.01	23.04	23.25	0	0
		1	49	23.13	23.65	23.34	0	0
		1	99	23.47	23.58	23.40	0	0
		50	0	22.08	22.86	22.48	0-1	1
		50	25	22.59	22.81	22.50	0-1	1
		50	49	22.59	22.83	22.55	0-1	1
		100	0	22.57	22.77	22.51	0-1	1
	16QAM	1	0	22.36	22.88	22.53	0-1	1
		1	49	22.58	22.71	22.43	0-1	1
		1	99	22.69	22.78	22.58	0-1	1
		50	0	21.49	21.80	21.48	0-2	2
		50	25	21.43	21.77	21.50	0-2	2
		50	49	21.49	21.71	21.49	0-2	2
		100	0	21.42	21.65	21.42	0-2	2
	64QAM	1	0	21.30	21.82	21.30	0-2	2
		1	49	21.48	21.71	21.36	0-2	2
		1	99	21.53	21.66	21.50	0-2	2
		50	0	20.42	20.74	20.37	0-3	3
		50	25	20.39	20.69	20.37	0-3	3
		50	49	20.38	20.65	20.39	0-3	3
		100	0	20.31	20.69	20.36	0-3	3
	256QAM	1	0	18.36	18.72	18.32	0-5	5
		1	49	18.44	18.69	18.38	0-5	5
		1	99	18.35	18.63	18.47	0-5	5
		50	0	18.27	18.68	18.28	0-5	5
		50	25	18.26	18.63	18.28	0-5	5
		50	49	18.26	18.60	18.32	0-5	5
		100	0	18.24	18.64	18.30	0-5	5

[LTE Band 5 Conducted Power _ Main1 Ant.]

LTE Band 5 _ 1.4 ㎒ Bandwidth _ Maximum Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20407 Ch. 824.7 ㎒	20525 Ch. 836.5 ㎒	20643 Ch. 848.3 ㎒		
1.4 ㎒	QPSK	1	0	24.01	23.95	24.14	0	0
		1	3	23.97	23.86	24.06	0	0
		1	5	24.05	23.93	24.13	0	0
		3	0	24.04	23.96	24.17	0	0
		3	1	23.92	23.84	24.05	0	0
		3	3	23.96	23.90	24.09	0	0
		6	0	23.03	23.01	23.19	0-1	1
	16QAM	1	0	23.25	23.21	23.43	0-1	1
		1	3	23.15	23.07	23.37	0-1	1
		1	5	23.19	23.07	23.41	0-1	1
		3	0	23.14	23.11	23.25	0-1	1
		3	1	23.16	22.97	23.27	0-1	1
		3	3	23.12	23.12	23.32	0-1	1
		6	0	22.11	22.00	22.27	0-2	2
	64QAM	1	0	22.17	22.12	22.39	0-2	2
		1	3	22.16	22.10	22.29	0-2	2
		1	5	22.30	22.13	22.31	0-2	2
		3	0	22.03	22.05	22.33	0-2	2
		3	1	22.09	21.99	22.24	0-2	2
		3	3	22.05	21.99	22.23	0-2	2
		6	0	21.02	21.03	21.24	0-3	3
	256QAM	1	0	19.10	19.06	19.26	0-5	5
		1	3	19.02	18.89	19.03	0-5	5
		1	5	19.12	19.12	19.30	0-5	5
		3	0	19.06	18.96	19.12	0-5	5
		3	1	19.02	18.93	19.14	0-5	5
		3	3	19.02	19.02	19.22	0-5	5
		6	0	18.95	18.96	19.09	0-5	5

LTE Band 5 _ 3 ㎒ Bandwidth _ Maximum Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20415 Ch. 825.5 ㎒	20525 Ch. 836.5 ㎒	20635 Ch. 847.5 ㎒		
3 ㎒	QPSK	1	0	24.02	24.02	24.13	0	0
		1	7	24.03	24.01	24.22	0	0
		1	14	23.97	23.92	24.10	0	0
		8	0	23.06	23.03	23.24	0-1	1
		8	3	23.09	23.07	23.24	0-1	1
		8	7	23.01	23.04	23.21	0-1	1
		15	0	23.09	23.04	23.26	0-1	1
	16QAM	1	0	23.20	23.20	23.35	0-1	1
		1	7	23.12	23.13	23.35	0-1	1
		1	14	23.35	23.13	23.29	0-1	1
		8	0	22.06	22.10	22.30	0-2	2
		8	3	22.13	22.11	22.36	0-2	2
		8	7	22.04	22.05	22.37	0-2	2
		15	0	22.04	22.05	22.26	0-2	2
	64QAM	1	0	22.16	22.05	22.39	0-2	2
		1	7	22.13	22.09	22.38	0-2	2
		1	14	22.15	22.17	22.33	0-2	2
		8	0	21.07	21.01	21.29	0-3	3
		8	3	21.01	20.97	21.23	0-3	3
		8	7	21.07	20.97	21.25	0-3	3
		15	0	21.02	20.99	21.24	0-3	3
	256QAM	1	0	19.22	19.15	19.17	0-5	5
		1	7	18.99	19.22	19.31	0-5	5
		1	14	18.91	19.01	19.27	0-5	5
		8	0	19.01	18.99	19.20	0-5	5
		8	3	19.00	18.98	19.17	0-5	5
		8	7	18.97	18.95	19.20	0-5	5
		15	0	18.98	18.93	19.15	0-5	5

LTE Band 5 _ 5 ㎒ Bandwidth _ Maximum Conducted Power

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	23.97	23.99	24.18	0	0
		1	12	24.02	24.00	24.28	0	0
		1	24	23.98	24.00	24.15	0	0
		12	0	23.08	23.01	23.28	0-1	1
		12	6	23.00	23.04	23.23	0-1	1
		12	11	23.02	23.06	23.24	0-1	1
		25	0	23.04	23.05	23.24	0-1	1
	16QAM	1	0	23.36	23.23	23.40	0-1	1
		1	12	23.16	23.02	23.27	0-1	1
		1	24	23.16	23.21	23.46	0-1	1
		12	0	22.09	22.10	22.33	0-2	2
		12	6	22.08	22.07	22.27	0-2	2
		12	11	22.06	22.07	22.28	0-2	2
		25	0	22.03	22.03	22.27	0-2	2
	64QAM	1	0	22.22	22.18	22.37	0-2	2
		1	12	22.11	22.05	22.42	0-2	2
		1	24	22.10	22.19	22.39	0-2	2
		12	0	21.04	21.09	21.27	0-3	3
		12	6	21.03	21.00	21.23	0-3	3
		12	11	21.03	21.05	21.24	0-3	3
		25	0	21.02	21.01	21.22	0-3	3
	256QAM	1	0	19.14	19.11	19.27	0-5	5
		1	12	19.07	19.10	19.24	0-5	5
		1	24	19.05	19.12	19.28	0-5	5
		12	0	19.01	18.96	19.19	0-5	5
		12	6	18.96	18.97	19.23	0-5	5
		12	11	18.97	19.00	19.18	0-5	5
		25	0	18.97	19.01	19.24	0-5	5

LTE Band 5 _ 10 ㎒ Bandwidth _ Maximum Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 20525 Ch. 836.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	24.07	0	0
		1	24	23.95	0	0
		1	49	23.95	0	0
		25	0	23.10	0-1	1
		25	12	23.07	0-1	1
		25	24	23.04	0-1	1
		50	0	23.11	0-1	1
	16QAM	1	0	23.24	0-1	1
		1	24	23.16	0-1	1
		1	49	23.21	0-1	1
		25	0	22.14	0-2	2
		25	12	22.07	0-2	2
		25	24	22.05	0-2	2
		50	0	22.08	0-2	2
	64QAM	1	0	22.18	0-2	2
		1	24	22.18	0-2	2
		1	49	22.05	0-2	2
		25	0	21.05	0-3	3
		25	12	21.01	0-3	3
		25	24	21.00	0-3	3
		50	0	21.07	0-3	3
	256QAM	1	0	19.13	0-5	5
		1	24	18.99	0-5	5
		1	49	19.01	0-5	5
		25	0	19.02	0-5	5
		25	12	19.01	0-5	5
		25	24	18.98	0-5	5
		50	0	18.99	0-5	5

[LTE Band 12 Conducted Power _ Main1 Ant.]

LTE Band 12 _ 1.4 ㎒ Bandwidth _ Maximum Conducted Power

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	23.34	23.60	23.56	0	0
		1	3	23.31	23.54	23.52	0	0
		1	5	23.39	23.64	23.64	0	0
		3	0	23.39	23.60	23.63	0	0
		3	1	23.34	23.69	23.53	0	0
		3	3	23.37	23.64	23.58	0	0
		6	0	22.39	22.66	22.62	0-1	1
	16QAM	1	0	22.53	22.89	22.76	0-1	1
		1	3	22.52	22.88	22.75	0-1	1
		1	5	22.53	22.93	22.72	0-1	1
		3	0	22.54	22.74	22.69	0-1	1
		3	1	22.43	22.69	22.72	0-1	1
		3	3	22.49	22.67	22.63	0-1	1
		6	0	21.46	21.69	21.67	0-2	2
	64QAM	1	0	21.66	21.75	21.73	0-2	2
		1	3	21.57	21.67	21.67	0-2	2
		1	5	21.55	21.80	21.79	0-2	2
		3	0	21.42	21.70	21.70	0-2	2
		3	1	21.52	21.67	21.72	0-2	2
		3	3	21.41	21.72	21.70	0-2	2
		6	0	20.40	20.63	20.60	0-3	3
	256QAM	1	0	18.54	18.72	18.72	0-5	5
		1	3	18.55	18.70	18.56	0-5	5
		1	5	18.53	18.60	18.64	0-5	5
		3	0	18.47	18.58	18.68	0-5	5
		3	1	18.40	18.50	18.56	0-5	5
		3	3	18.45	18.61	18.66	0-5	5
		6	0	18.38	18.57	18.61	0-5	5

LTE Band 12 _ 3 ㎒ Bandwidth _ Maximum Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23025 Ch. 700.5 ㎒	23095 Ch. 707.5 ㎒	23165 Ch. 714.5 ㎒		
3 ㎒	QPSK	1	0	23.44	23.66	23.62	0	0
		1	7	23.47	23.63	23.62	0	0
		1	14	23.36	23.57	23.55	0	0
		8	0	22.48	22.68	22.66	0-1	1
		8	3	22.51	22.70	22.66	0-1	1
		8	7	22.46	22.68	22.66	0-1	1
		15	0	22.52	22.69	22.68	0-1	1
	16QAM	1	0	22.65	22.92	22.75	0-1	1
		1	7	22.50	22.74	22.67	0-1	1
		1	14	22.70	22.87	22.78	0-1	1
		8	0	21.55	21.73	21.68	0-2	2
		8	3	21.54	21.76	21.72	0-2	2
		8	7	21.53	21.71	21.70	0-2	2
		15	0	21.48	21.71	21.66	0-2	2
	64QAM	1	0	21.55	21.82	21.73	0-2	2
		1	7	21.51	21.76	21.55	0-2	2
		1	14	21.66	21.74	21.74	0-2	2
		8	0	20.40	20.67	20.65	0-3	3
		8	3	20.45	20.62	20.63	0-3	3
		8	7	20.49	20.62	20.69	0-3	3
		15	0	20.45	20.68	20.64	0-3	3
	256QAM	1	0	18.56	18.82	18.80	0-5	5
		1	7	18.48	18.73	18.62	0-5	5
		1	14	18.47	18.80	18.64	0-5	5
		8	0	18.45	18.65	18.65	0-5	5
		8	3	18.49	18.71	18.59	0-5	5
		8	7	18.43	18.62	18.61	0-5	5
		15	0	18.43	18.60	18.57	0-5	5

LTE Band 12 _ 5 ㎒ Bandwidth _ Maximum Conducted Power

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	23.47	23.59	23.65	0	0
		1	12	23.51	23.66	23.66	0	0
		1	24	23.50	23.63	23.63	0	0
		12	0	22.54	22.70	22.70	0-1	1
		12	6	22.52	22.70	22.68	0-1	1
		12	11	22.51	22.70	22.67	0-1	1
		25	0	22.58	22.70	22.74	0-1	1
	16QAM	1	0	22.66	22.91	22.94	0-1	1
		1	12	22.58	22.61	22.74	0-1	1
		1	24	22.74	22.92	22.82	0-1	1
		12	0	21.57	21.71	21.74	0-2	2
		12	6	21.55	21.67	21.71	0-2	2
		12	11	21.53	21.74	21.68	0-2	2
		25	0	21.53	21.67	21.69	0-2	2
	64QAM	1	0	21.65	21.77	21.83	0-2	2
		1	12	21.55	21.83	21.73	0-2	2
		1	24	21.71	21.86	21.77	0-2	2
		12	0	20.53	20.72	20.76	0-3	3
		12	6	20.49	20.70	20.72	0-3	3
		12	11	20.54	20.70	20.68	0-3	3
		25	0	20.47	20.64	20.69	0-3	3
	256QAM	1	0	18.62	18.83	18.78	0-5	5
		1	12	18.55	18.87	18.73	0-5	5
		1	24	18.45	18.74	18.77	0-5	5
		12	0	18.54	18.65	18.64	0-5	5
		12	6	18.50	18.65	18.67	0-5	5
		12	11	18.53	18.60	18.62	0-5	5
		25	0	18.46	18.63	18.63	0-5	5

LTE Band 12 _ 10 ㎒ Bandwidth _ Maximum Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 23095 Ch. 707.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	23.72	0	0
		1	24	23.63	0	0
		1	49	23.57	0	0
		25	0	22.70	0-1	1
		25	12	22.67	0-1	1
		25	24	22.64	0-1	1
		50	0	22.69	0-1	1
	16QAM	1	0	22.79	0-1	1
		1	24	22.72	0-1	1
		1	49	22.84	0-1	1
		25	0	21.75	0-2	2
		25	12	21.69	0-2	2
		25	24	21.68	0-2	2
		50	0	21.71	0-2	2
	64QAM	1	0	21.96	0-2	2
		1	24	21.69	0-2	2
		1	49	21.83	0-2	2
		25	0	20.69	0-3	3
		25	12	20.64	0-3	3
		25	24	20.63	0-3	3
		50	0	20.71	0-3	3
	256QAM	1	0	18.85	0-5	5
		1	24	18.72	0-5	5
		1	49	18.68	0-5	5
		25	0	18.67	0-5	5
		25	12	18.63	0-5	5
		25	24	18.63	0-5	5
		50	0	18.65	0-5	5

[LTE Band 13 Conducted Power_ Main1 Ant.]

LTE Band 13 _ 5 ㎒ Bandwidth _ Maximum Conducted Power

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	21.88	21.80	21.79	0	0
		1	12	21.90	21.77	21.89	0	0
		1	24	21.87	21.77	21.83	0	0
		12	0	21.17	21.17	21.19	0-1	0
		12	6	21.17	21.17	21.23	0-1	0
		12	11	21.22	21.18	21.22	0-1	0
		25	0	21.19	21.11	21.18	0-1	0
	16QAM	1	0	21.48	21.55	21.61	0-1	0
		1	12	21.55	21.62	21.63	0-1	0
		1	24	21.53	21.55	21.58	0-1	0
		12	0	21.58	21.63	21.64	0-2	0
		12	6	21.52	21.58	21.67	0-2	0
		12	11	21.57	21.63	21.66	0-2	0
		25	0	21.61	21.62	21.66	0-2	0
	64QAM	1	0	21.74	21.34	21.44	0-2	0
		1	12	21.76	21.22	21.30	0-2	0
		1	24	21.76	21.25	21.24	0-2	0
		12	0	21.16	20.18	20.20	0-3	1
		12	6	21.19	20.11	20.10	0-3	1
		12	11	21.15	20.17	20.17	0-3	1
		25	0	21.12	20.11	20.15	0-3	1
	256QAM	1	0	18.33	18.24	18.25	0-5	3
		1	12	18.30	18.39	18.28	0-5	3
		1	24	18.29	18.16	18.11	0-5	3
		12	0	18.13	18.07	18.14	0-5	3
		12	6	18.11	18.07	18.12	0-5	3
		12	11	18.11	18.10	18.13	0-5	3
		25	0	18.12	18.07	18.12	0-5	3

LTE Band 13 _ 10 ㎒ Bandwidth _ Maximum Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 23230 Ch. 782 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	21.91	0	0
		1	24	21.71	0	0
		1	49	21.70	0	0
		25	0	21.17	0-1	0
		25	12	21.14	0-1	0
		25	24	21.10	0-1	0
		50	0	21.12	0-1	0
	16QAM	1	0	21.55	0-1	0
		1	24	21.46	0-1	0
		1	49	21.43	0-1	0
		25	0	21.59	0-2	0
		25	12	21.54	0-2	0
		25	24	21.56	0-2	0
		50	0	21.63	0-2	0
	64QAM	1	0	21.28	0-2	0
		1	24	21.10	0-2	0
		1	49	21.17	0-2	0
		25	0	20.14	0-3	1
		25	12	20.11	0-3	1
		25	24	20.05	0-3	1
		50	0	20.12	0-3	1
	256QAM	1	0	18.24	0-5	3
		1	24	18.27	0-5	3
		1	49	18.19	0-5	3
		25	0	18.12	0-5	3
		25	12	18.09	0-5	3
		25	24	18.09	0-5	3
		50	0	18.10	0-5	3

[LTE Band 17 Conducted Power_ Main1 Ant.]

LTE Band 17 _ 5 ㎒ Bandwidth _ Maximum Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23755 Ch. 706.5 ㎒	23790 Ch. 710 ㎒	23825 Ch. 713.5 ㎒		
5 ㎒	QPSK	1	0	23.60	23.68	23.65	0	0
		1	12	23.63	23.70	23.66	0	0
		1	24	23.63	23.62	23.64	0	0
		12	0	22.70	22.73	22.71	0-1	1
		12	6	22.65	22.71	22.69	0-1	1
		12	11	22.67	22.70	22.67	0-1	1
		25	0	22.66	22.70	22.76	0-1	1
	16QAM	1	0	22.90	22.98	22.91	0-1	1
		1	12	22.62	22.84	22.86	0-1	1
		1	24	22.73	22.94	22.83	0-1	1
		12	0	21.72	21.76	21.72	0-2	2
		12	6	21.66	21.74	21.68	0-2	2
		12	11	21.64	21.72	21.65	0-2	2
		25	0	21.63	21.72	21.70	0-2	2
	64QAM	1	0	21.84	21.93	21.80	0-2	2
		1	12	21.74	21.90	21.76	0-2	2
		1	24	21.82	21.87	21.72	0-2	2
		12	0	20.67	20.75	20.74	0-3	3
		12	6	20.64	20.69	20.70	0-3	3
		12	11	20.68	20.68	20.71	0-3	3
		25	0	20.64	20.68	20.66	0-3	3
	256QAM	1	0	18.75	18.86	18.83	0-5	5
		1	12	18.67	18.75	18.76	0-5	5
		1	24	18.68	18.73	18.76	0-5	5
		12	0	18.61	18.72	18.72	0-5	5
		12	6	18.61	18.73	18.64	0-5	5
		12	11	18.61	18.66	18.68	0-5	5
		25	0	18.59	18.66	18.65	0-5	5

LTE Band 17 _ 10 ㎒ Bandwidth _ Maximum Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 23790 Ch. 710 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	23.76	0	0
		1	24	23.66	0	0
		1	49	23.58	0	0
		25	0	22.74	1	1
		25	12	22.73	1	1
		25	24	22.73	1	1
		50	0	22.75	1	1
	16QAM	1	0	22.85	1	1
		1	24	22.83	1	1
		1	49	22.73	1	1
		25	0	21.76	2	2
		25	12	21.74	2	2
		25	24	21.68	2	2
		50	0	21.74	2	2
	64QAM	1	0	21.98	2	2
		1	24	21.78	2	2
		1	49	21.80	2	2
		25	0	20.75	3	3
		25	12	20.70	3	3
		25	24	20.66	3	3
		50	0	20.75	3	3
	256QAM	1	0	18.78	5	5
		1	24	18.73	5	5
		1	49	18.62	5	5
		25	0	18.64	5	5
		25	12	18.64	5	5
		25	24	18.62	0-5	5
		50	0	18.68	0-5	5

[LTE Band 26 Conducted Power _ Main1 Ant.]

LTE Band 26 _ 1.4 ㎒ Bandwidth _ Maximum Conducted Power

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	24.12	23.89	24.07	0	0
		1	3	24.01	23.82	24.00	0	0
		1	5	24.11	23.88	24.10	0	0
		3	0	24.20	23.89	24.10	0	0
		3	1	23.99	23.74	23.99	0	0
		3	3	24.09	23.86	24.03	0	0
		6	0	23.19	22.94	23.14	0-1	1
	16QAM	1	0	23.35	23.13	23.42	0-1	1
		1	3	23.24	23.02	23.34	0-1	1
		1	5	23.25	23.07	23.29	0-1	1
		3	0	23.35	22.95	23.21	0-1	1
		3	1	23.20	22.96	23.28	0-1	1
		3	3	23.22	22.96	23.21	0-1	1
		6	0	22.17	21.97	22.17	0-2	2
	64QAM	1	0	22.34	22.05	22.32	0-2	2
		1	3	22.19	21.86	22.25	0-2	2
		1	5	22.20	22.01	22.25	0-2	2
		3	0	22.23	21.94	22.17	0-2	2
		3	1	22.19	21.95	22.21	0-2	2
		3	3	22.27	21.91	22.24	0-2	2
		6	0	21.20	20.96	21.15	0-3	3
	256QAM	1	0	19.27	19.03	19.17	0-5	5
		1	3	19.16	18.93	19.10	0-5	5
		1	5	19.24	19.03	19.15	0-5	5
		3	0	19.19	18.90	19.13	0-5	5
		3	1	19.12	18.88	19.06	0-5	5
		3	3	19.20	18.94	19.17	0-5	5
		6	0	19.18	18.83	19.07	0-5	5

LTE Band 26 _ 3 ㎒ Bandwidth _ Maximum Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26705 Ch. 815.5 ㎒	26865 Ch. 831.5 ㎒	27025 Ch. 847.5 ㎒		
3 ㎒	QPSK	1	0	24.15	23.94	24.15	0	0
		1	7	24.18	23.99	24.19	0	0
		1	14	24.08	23.83	24.09	0	0
		8	0	23.19	22.94	23.21	0-1	1
		8	3	23.19	23.00	23.22	0-1	1
		8	7	23.17	22.97	23.19	0-1	1
		15	0	23.22	23.01	23.23	0-1	1
	16QAM	1	0	23.46	23.25	23.49	0-1	1
		1	7	23.24	23.05	23.26	0-1	1
		1	14	23.34	23.20	23.42	0-1	1
		8	0	22.24	22.01	22.30	0-2	2
		8	3	22.22	22.01	22.31	0-2	2
		8	7	22.17	21.97	22.26	0-2	2
		15	0	22.20	21.96	22.23	0-2	2
	64QAM	1	0	22.23	22.00	22.35	0-2	2
		1	7	22.23	21.89	22.34	0-2	2
		1	14	22.29	22.09	22.43	0-2	2
		8	0	21.15	20.95	21.22	0-3	3
		8	3	21.14	20.95	21.22	0-3	3
		8	7	21.16	20.92	21.20	0-3	3
		15	0	21.18	21.01	21.22	0-3	3
	256QAM	1	0	19.12	19.05	19.10	0-5	5
		1	7	19.17	19.03	19.32	0-5	5
		1	14	19.12	18.99	19.21	0-5	5
		8	0	19.14	18.93	19.18	0-5	5
		8	3	19.15	18.93	19.16	0-5	5
		8	7	19.14	18.93	19.15	0-5	5
		15	0	19.09	18.89	19.13	0-5	5

LTE Band 26 _ 5 ㎒ Bandwidth _ Maximum Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26715 Ch. 816.5 ㎒	26865 Ch. 831.5 ㎒	27015 Ch. 846.5 ㎒		
5 ㎒	QPSK	1	0	24.12	23.90	24.15	0	0
		1	12	24.12	23.96	24.18	0	0
		1	24	24.12	23.86	24.15	0	0
		12	0	23.18	22.98	23.22	0-1	1
		12	6	23.15	22.98	23.21	0-1	1
		12	11	23.19	22.97	23.23	0-1	1
		25	0	23.25	23.00	23.18	0-1	1
	16QAM	1	0	23.35	23.19	23.40	0-1	1
		1	12	23.15	23.05	23.30	0-1	1
		1	24	23.27	23.07	23.42	0-1	1
		12	0	22.21	22.00	22.25	0-2	2
		12	6	22.18	22.01	22.26	0-2	2
		12	11	22.18	21.95	22.24	0-2	2
		25	0	22.19	21.98	22.22	0-2	2
	64QAM	1	0	22.32	22.11	22.32	0-2	2
		1	12	22.27	22.05	22.28	0-2	2
		1	24	22.22	22.10	22.29	0-2	2
		12	0	21.20	20.99	21.23	0-3	3
		12	6	21.17	20.93	21.24	0-3	3
		12	11	21.17	20.98	21.24	0-3	3
		25	0	21.14	20.90	21.18	0-3	3
	256QAM	1	0	19.32	19.01	19.29	0-5	5
		1	12	19.19	18.92	19.26	0-5	5
		1	24	19.24	18.93	19.18	0-5	5
		12	0	19.09	18.92	19.14	0-5	5
		12	6	19.13	18.91	19.12	0-5	5
		12	11	19.13	18.96	19.19	0-5	5
		25	0	19.13	18.91	19.13	0-5	5

LTE Band 26 _ 10 ㎒ Bandwidth _ Maximum Conducted Power

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	24.15	24.07	24.23	0	0
		1	24	24.04	23.90	24.10	0	0
		1	49	24.02	23.83	24.06	0	0
		25	0	23.27	23.04	23.22	0-1	1
		25	12	23.19	22.96	23.19	0-1	1
		25	24	23.18	22.97	23.18	0-1	1
		50	0	23.23	23.07	23.25	0-1	1
	16QAM	1	0	23.32	23.30	23.41	0-1	1
		1	24	23.29	23.16	23.38	0-1	1
		1	49	23.30	23.05	23.40	0-1	1
		25	0	22.17	22.03	22.24	0-2	2
		25	12	22.20	21.97	22.20	0-2	2
		25	24	22.14	21.96	22.19	0-2	2
		50	0	22.19	22.04	22.27	0-2	2
	64QAM	1	0	22.27	22.21	22.40	0-2	2
		1	24	22.29	22.07	22.33	0-2	2
		1	49	22.28	22.03	22.29	0-2	2
		25	0	21.20	21.00	21.24	0-3	3
		25	12	21.16	20.99	21.17	0-3	3
		25	24	21.12	20.94	21.16	0-3	3
		50	0	21.19	21.00	21.21	0-3	3
	256QAM	1	0	19.30	19.06	19.37	0-5	5
		1	24	19.16	18.93	19.13	0-5	5
		1	49	19.19	19.01	19.24	0-5	5
		25	0	19.15	18.95	19.22	0-5	5
		25	12	19.13	18.91	19.16	0-5	5
		25	24	19.10	18.92	19.14	0-5	5
		50	0	19.11	18.92	19.20	0-5	5

LTE Band 26 _ 15 ㎒ Bandwidth _ Maximum Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 26865 Ch. 831.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
15 ㎒	QPSK	1	0	24.00	0	0
		1	36	23.93	0	0
		1	74	23.89	0	0
		36	0	23.06	0-1	1
		36	18	23.02	0-1	1
		36	39	22.94	0-1	1
		75	0	23.04	0-1	1
	16QAM	1	0	23.24	0-1	1
		1	36	22.80	0-1	1
		1	74	22.95	0-1	1
		36	0	22.04	0-2	2
		36	18	22.00	0-2	2
		36	39	21.95	0-2	2
		75	0	21.98	0-2	2
	64QAM	1	0	22.23	0-2	2
		1	36	21.98	0-2	2
		1	74	22.04	0-2	2
		36	0	21.03	0-3	3
		36	18	20.99	0-3	3
		36	39	20.92	0-3	3
		75	0	20.96	0-3	3
	256QAM	1	0	19.07	0-5	5
		1	36	18.94	0-5	5
		1	74	18.91	0-5	5
		36	0	19.00	0-5	5
		36	18	18.98	0-5	5
		36	39	18.94	0-5	5
		75	0	18.94	0-5	5

[LTE TDD Band 41 Conducted Power (Power Class 3) _ Main1 Ant.]

LTE TDD Band 41 (Power Class 3) _5 ㎒ Bandwidth _ Maximum Conducted Power

Bandwidth	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 ㎒		
5 ㎒	QPSK	1	0	23.53	23.60	24.00	23.99	23.83	0	0
		1	12	23.61	23.65	24.08	24.03	23.85	0	0
		1	24	23.60	23.62	24.05	24.00	23.83	0	0
		12	0	22.62	22.69	23.10	23.08	22.90	0-1	1
		12	6	22.63	22.68	23.08	23.07	22.89	0-1	1
		12	11	22.64	22.67	23.09	23.06	22.88	0-1	1
		25	0	22.73	22.76	23.15	23.13	22.98	0-1	1
	16QAM	1	0	22.37	22.52	22.89	23.06	22.78	0-1	1
		1	12	22.27	22.38	22.76	22.95	22.65	0-1	1
		1	24	22.40	22.49	22.92	22.98	22.75	0-1	1
		12	0	21.55	21.62	22.01	21.99	21.81	0-2	2
		12	6	21.55	21.59	22.01	21.95	21.80	0-2	2
		12	11	21.54	21.60	21.99	21.93	21.81	0-2	2
		25	0	21.62	21.66	22.07	22.04	21.90	0-2	2
	64QAM	1	0	21.53	21.63	22.00	22.05	21.81	0-2	2
		1	12	21.46	21.57	21.87	21.90	21.75	0-2	2
		1	24	21.49	21.63	21.90	21.91	21.77	0-2	2
		12	0	20.47	20.57	20.99	20.98	20.78	0-3	3
		12	6	20.47	20.54	20.96	20.97	20.76	0-3	3
		12	11	20.48	20.55	20.98	20.92	20.74	0-3	3
		25	0	20.58	20.63	21.04	21.03	20.87	0-3	3
	256QAM	1	0	18.47	18.55	18.90	18.84	18.73	0-5	5
		1	12	18.45	18.48	18.96	18.81	18.66	0-5	5
		1	24	18.44	18.45	18.95	18.85	18.68	0-5	5
		12	0	18.47	18.56	19.00	18.97	18.78	0-5	5
		12	6	18.47	18.56	19.00	18.97	18.79	0-5	5
		12	11	18.50	18.57	19.02	18.98	18.79	0-5	5
		25	0	18.61	18.68	19.08	19.05	18.88	0-5	5

LTE TDD Band 41 (Power Class 3) _10 ㎒ Bandwidth _ Maximum Conducted Power

Bandwidth	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 ㎒		
10 ㎒	QPSK	1	0	23.60	23.71	24.11	24.11	23.93	0	0
		1	24	23.54	23.60	24.02	23.98	23.79	0	0
		1	49	23.55	23.57	24.00	23.95	23.77	0	0
		25	0	22.76	22.82	23.20	23.19	23.03	0-1	1
		25	12	22.75	22.78	23.17	23.15	22.99	0-1	1
		25	24	22.75	22.76	23.17	23.13	22.97	0-1	1
		50	0	22.82	22.84	23.22	23.20	23.05	0-1	1
	16QAM	1	0	22.49	22.61	22.97	23.16	22.87	0-1	1
		1	24	22.41	22.49	22.90	23.03	22.70	0-1	1
		1	49	22.47	22.52	22.94	23.01	22.74	0-1	1
		25	0	21.65	21.72	22.09	22.10	21.93	0-2	2
		25	12	21.64	21.69	22.06	22.07	21.90	0-2	2
		25	24	21.63	21.66	22.05	22.05	21.86	0-2	2
		50	0	21.70	21.76	22.16	22.14	21.97	0-2	2
	64QAM	1	0	21.48	21.64	22.04	22.07	21.96	0-2	2
		1	24	21.46	21.55	22.03	21.97	21.85	0-2	2
		1	49	21.51	21.61	22.04	21.98	21.83	0-2	2
		25	0	20.59	20.69	21.10	21.06	20.90	0-3	3
		25	12	20.60	20.67	21.07	21.04	20.86	0-3	3
		25	24	20.59	20.64	21.06	21.03	20.83	0-3	3
		50	0	20.70	20.76	21.15	21.12	20.96	0-3	3
	256QAM	1	0	18.33	18.54	18.92	19.01	18.71	0-5	5
		1	24	18.27	18.51	18.79	18.87	18.60	0-5	5
		1	49	18.31	18.49	18.78	18.84	18.57	0-5	5
		25	0	18.64	18.74	19.12	19.11	18.94	0-5	5
		25	12	18.63	18.69	19.09	19.07	18.90	0-5	5
		25	24	18.63	18.66	19.08	19.06	18.88	0-5	5
		50	0	18.71	18.77	19.17	19.14	18.97	0-5	5

LTE TDD Band 41 (Power Class 3) _15 ㎒ Bandwidth _ Maximum Conducted Power

Bandwidth	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	23.55	23.68	24.08	24.07	23.90	0	0
		1	36	23.60	23.65	24.06	24.01	23.83	0	0
		1	74	23.61	23.60	24.06	23.97	23.79	0	0
		36	0	22.73	22.81	23.19	23.16	23.01	0-1	1
		36	18	22.71	22.75	23.16	23.12	22.95	0-1	1
		36	39	22.70	22.70	23.14	23.08	22.92	0-1	1
		75	0	22.76	22.78	23.18	23.14	22.99	0-1	1
	16QAM	1	0	22.44	22.55	23.16	23.12	22.88	0-1	1
		1	36	22.38	22.35	22.95	22.91	22.70	0-1	1
		1	74	22.38	22.30	22.98	22.91	22.70	0-1	1
		36	0	21.61	21.70	22.11	22.08	21.92	0-2	2
		36	18	21.59	21.66	22.07	22.04	21.87	0-2	2
		36	39	21.59	21.61	22.05	21.99	21.82	0-2	2
		75	0	21.64	21.69	22.12	22.07	21.91	0-2	2
	64QAM	1	0	21.60	21.68	22.20	22.02	21.98	0-2	2
		1	36	21.55	21.57	22.05	21.94	21.85	0-2	2
		1	74	21.63	21.58	22.05	21.97	21.81	0-2	2
		36	0	20.60	20.70	21.11	21.08	20.90	0-3	3
		36	18	20.59	20.67	21.07	21.05	20.88	0-3	3
		36	39	20.57	20.62	21.05	20.99	20.83	0-3	3
		75	0	20.62	20.69	21.10	21.05	20.89	0-3	3
	256QAM	1	0	18.40	18.53	18.96	18.96	18.78	0-5	5
		1	36	18.28	18.42	18.88	18.85	18.58	0-5	5
		1	74	18.31	18.38	18.89	18.83	18.52	0-5	5
		36	0	18.59	18.71	19.11	19.09	18.90	0-5	5
		36	18	18.58	18.66	19.08	19.04	18.86	0-5	5
		36	39	18.59	18.64	19.06	19.00	18.82	0-5	5
		75	0	18.58	18.66	19.06	19.03	18.86	0-5	5

LTE TDD Band 41 (Power Class 3) _20 ㎒ Bandwidth _ Maximum Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	23.59	23.77	24.15	24.15	23.98	0	0
		1	49	23.55	23.62	24.03	23.97	23.80	0	0
		1	99	23.55	23.53	23.99	23.88	23.71	0	0
		50	0	22.86	22.94	23.28	23.26	23.12	0-1	1
		50	25	22.83	22.87	23.24	23.20	23.06	0-1	1
		50	49	22.79	22.80	23.21	23.14	23.00	0-1	1
		100	0	22.78	22.82	23.21	23.17	23.01	0-1	1
	16QAM	1	0	22.41	22.68	22.98	23.01	22.97	0-1	1
		1	49	22.35	22.49	22.84	22.85	22.80	0-1	1
		1	99	22.43	22.46	22.87	22.83	22.69	0-1	1
		50	0	21.76	21.85	22.20	22.19	22.04	0-2	2
		50	25	21.74	21.79	22.17	22.14	21.98	0-2	2
		50	49	21.70	21.71	22.12	22.08	21.93	0-2	2
		100	0	21.71	21.79	22.18	22.13	21.98	0-2	2
	64QAM	1	0	21.57	21.71	22.27	22.15	21.93	0-2	2
		1	49	21.54	21.56	22.13	22.00	21.76	0-2	2
		1	99	21.62	21.53	22.09	21.91	21.69	0-2	2
		50	0	20.75	20.84	21.21	21.21	21.05	0-3	3
		50	25	20.72	20.77	21.17	21.15	20.96	0-3	3
		50	49	20.70	20.71	21.13	21.08	20.90	0-3	3
		100	0	20.64	20.70	21.11	21.07	20.90	0-3	3
	256QAM	1	0	18.41	18.60	19.00	19.04	18.77	0-5	5
		1	49	18.42	18.48	18.85	18.82	18.59	0-5	5
		1	99	18.44	18.39	18.79	18.71	18.53	0-5	5
		50	0	18.75	18.86	19.23	19.21	19.04	0-5	5
		50	25	18.73	18.79	19.19	19.15	18.98	0-5	5
		50	49	18.70	18.72	19.16	19.09	18.92	0-5	5
		100	0	18.62	18.70	19.10	19.06	18.90	0-5	5

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

[LTE Band 66 Conducted Power _ Main1 Ant.]

LTE Band 66 _ 1.4 ㎒ Bandwidth _ Maximum Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131979Ch. 1710.7 ㎒	132322 Ch. 1745 ㎒	132665 Ch. 1779.3 ㎒		
1.4 ㎒	QPSK	1	0	22.55	23.40	23.32	0	0
		1	3	22.50	23.34	23.26	0	0
		1	5	22.48	23.47	23.34	0	0
		3	0	22.38	23.53	23.21	0	1
		3	1	22.39	23.43	23.22	0	1
		3	3	22.38	23.43	23.20	0	1
		6	0	21.96	22.51	22.43	0-1	1
	16QAM	1	0	22.22	22.57	22.47	0-1	1
		1	3	22.24	22.54	22.42	0-1	1
		1	5	22.15	22.49	22.49	0-1	1
		3	0	22.07	22.49	22.45	0-1	2
		3	1	22.10	22.47	22.40	0-1	2
		3	3	22.10	22.49	22.35	0-1	2
		6	0	21.21	21.43	21.35	0-2	2
	64QAM	1	0	21.31	21.53	21.46	0-2	2
		1	3	21.16	21.44	21.37	0-2	2
		1	5	21.26	21.54	21.39	0-2	2
		3	0	21.16	21.36	21.33	0-2	3
		3	1	21.19	21.33	21.24	0-2	3
		3	3	21.17	21.41	21.30	0-2	3
		6	0	20.19	20.42	20.33	0-3	3
	256QAM	1	0	18.16	18.50	18.37	0-5	5
		1	3	18.11	18.36	18.29	0-5	5
		1	5	18.21	18.42	18.35	0-5	5
		3	0	18.18	18.37	18.35	0-5	5
		3	1	18.10	18.37	18.23	0-5	5
		3	3	18.13	18.36	18.28	0-5	5
		6	0	18.12	18.32	18.21	0-5	5

LTE Band 66 _ 3 ㎒ Bandwidth _ Maximum Conducted Power

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	22.49	23.46	23.35	0	0
		1	7	22.56	23.55	23.36	0	0
		1	14	22.52	23.51	23.31	0	0
		8	0	22.01	22.52	22.41	0-1	1
		8	3	22.09	22.51	22.47	0-1	1
		8	7	22.14	22.51	22.45	0-1	1
		15	0	22.11	22.55	22.44	0-1	1
	16QAM	1	0	22.04	22.61	22.49	0-1	1
		1	7	22.15	22.45	22.31	0-1	1
		1	14	22.20	22.65	22.52	0-1	1
		8	0	21.23	21.43	21.36	0-2	2
		8	3	21.19	21.47	21.39	0-2	2
		8	7	21.19	21.44	21.40	0-2	2
		15	0	21.19	21.47	21.38	0-2	2
	64QAM	1	0	21.22	21.55	21.50	0-2	2
		1	7	21.30	21.55	21.55	0-2	2
		1	14	21.23	21.64	21.36	0-2	2
		8	0	20.15	20.38	20.35	0-3	3
		8	3	20.15	20.38	20.31	0-3	3
		8	7	20.14	20.39	20.33	0-3	3
		15	0	20.16	20.42	20.34	0-3	3
	256QAM	1	0	18.14	18.43	18.31	0-5	5
		1	7	18.28	18.37	18.43	0-5	5
		1	14	18.19	18.47	18.38	0-5	5
		8	0	18.16	18.36	18.27	0-5	5
		8	3	18.07	18.36	18.30	0-5	5
		8	7	18.07	18.37	18.24	0-5	5
		15	0	18.11	18.33	18.30	0-5	5

LTE Band 66 _ 5 ㎒ Bandwidth _ Maximum Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131997 Ch. 1712.5 ㎒	132322Ch. 1745 ㎒	132647 Ch. 1777.5 ㎒		
5 ㎒	QPSK	1	0	22.46	23.44	23.36	0	0
		1	12	22.56	23.55	23.30	0	0
		1	24	22.53	23.52	23.39	0	0
		12	0	21.99	22.56	22.48	0-1	1
		12	6	22.11	22.55	22.50	0-1	1
		12	11	22.15	22.56	22.44	0-1	1
		25	0	22.10	22.67	22.56	0-1	1
	16QAM	1	0	22.12	22.73	22.60	0-1	1
		1	12	22.21	22.67	22.41	0-1	1
		1	24	22.18	22.65	22.53	0-1	1
		12	0	21.22	21.48	21.44	0-2	2
		12	6	21.22	21.46	21.40	0-2	2
		12	11	21.18	21.47	21.41	0-2	2
		25	0	21.27	21.54	21.49	0-2	2
	64QAM	1	0	21.29	21.51	21.58	0-2	2
		1	12	21.25	21.53	21.58	0-2	2
		1	24	21.30	21.60	21.38	0-2	2
		12	0	20.18	20.47	20.42	0-3	3
		12	6	20.14	20.44	20.38	0-3	3
		12	11	20.16	20.44	20.37	0-3	3
		25	0	20.21	20.51	20.43	0-3	3
	256QAM	1	0	18.24	18.49	18.44	0-5	5
		1	12	18.29	18.50	18.39	0-5	5
		1	24	18.24	18.41	18.43	0-5	5
		12	0	18.10	18.39	18.33	0-5	5
		12	6	18.13	18.41	18.32	0-5	5
		12	11	18.08	18.37	18.30	0-5	5
		25	0	18.16	18.43	18.34	0-5	5

LTE Band 66 _ 10 ㎒ Bandwidth _ Maximum Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132022 Ch. 1715 ㎒	132322 Ch. 1745 ㎒	132622 Ch. 1775 ㎒		
10 ㎒	QPSK	1	0	22.29	23.54	23.41	0	0
		1	24	22.56	23.53	23.38	0	0
		1	49	22.57	23.45	23.36	0	0
		25	0	21.93	22.69	22.55	0-1	1
		25	12	22.13	22.63	22.53	0-1	1
		25	24	22.25	22.61	22.55	0-1	1
		50	0	22.12	22.72	22.61	0-1	1
	16QAM	1	0	21.95	22.52	22.42	0-1	1
		1	24	22.25	22.55	22.33	0-1	1
		1	49	22.39	22.53	22.44	0-1	1
		25	0	21.22	21.60	21.52	0-2	2
		25	12	21.30	21.56	21.47	0-2	2
		25	24	21.31	21.57	21.45	0-2	2
		50	0	21.32	21.60	21.50	0-2	2
	64QAM	1	0	21.25	21.48	21.47	0-2	2
		1	24	21.23	21.39	21.43	0-2	2
		1	49	21.32	21.49	21.40	0-2	2
		25	0	20.27	20.51	20.41	0-3	3
		25	12	20.24	20.48	20.37	0-3	3
		25	24	20.23	20.50	20.35	0-3	3
		50	0	20.26	20.55	20.46	0-3	3
	256QAM	1	0	18.25	18.47	18.42	0-5	5
		1	24	18.15	18.50	18.40	0-5	5
		1	49	18.18	18.46	18.42	0-5	5
		25	0	18.21	18.47	18.36	0-5	5
		25	12	18.19	18.48	18.35	0-5	5
		25	24	18.15	18.43	18.31	0-5	5
		50	0	18.22	18.50	18.33	0-5	5

LTE Band 66 _ 15 ㎒ Bandwidth _ Maximum Conducted Power

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	22.88	23.42	23.35	0	0
		1	36	22.49	23.57	23.47	0	0
		1	74	22.40	23.15	23.03	0	0
		36	0	21.71	22.66	22.54	0-1	1
		36	18	22.04	22.61	22.49	0-1	1
		36	39	22.14	22.60	22.46	0-1	1
		75	0	21.94	22.68	22.52	0-1	1
	16QAM	1	0	21.51	22.65	22.61	0-1	1
		1	36	22.21	22.37	22.39	0-1	1
		1	74	22.17	22.55	22.45	0-1	1
		36	0	21.00	21.58	21.48	0-2	2
		36	18	21.30	21.51	21.40	0-2	2
		36	39	21.30	21.53	21.40	0-2	2
		75	0	21.32	21.52	21.42	0-2	2
	64QAM	1	0	20.79	21.62	21.50	0-2	2
		1	36	21.37	21.52	21.54	0-2	2
		1	74	21.35	21.58	21.43	0-2	2
		36	0	20.29	20.52	20.42	0-3	3
		36	18	20.26	20.51	20.44	0-3	3
		36	39	20.28	20.50	20.40	0-3	3
		75	0	20.24	20.48	20.40	0-3	3
	256QAM	1	0	18.28	18.50	18.52	0-5	5
		1	36	18.20	18.50	18.49	0-5	5
		1	74	18.33	18.52	18.37	0-5	5
		36	0	18.23	18.48	18.38	0-5	5
		36	18	18.22	18.44	18.37	0-5	5
		36	39	18.23	18.43	18.34	0-5	5
		75	0	18.20	18.41	18.33	0-5	5

LTE Band 66 _ 20 ㎒ Bandwidth _ Maximum Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 ㎒	132322 Ch. 1745 ㎒	132572 Ch. 1770 ㎒		
20 ㎒	QPSK	1	0	22.33	23.74	23.47	0	0
		1	49	22.72	23.62	23.53	0	0
		1	99	23.31	23.54	23.43	0	0
		50	0	22.04	22.92	22.77	0-1	1
		50	25	22.36	22.85	22.74	0-1	1
		50	49	22.61	22.81	22.72	0-1	1
		100	0	22.38	22.80	22.72	0-1	1
	16QAM	1	0	21.92	22.82	22.75	0-1	1
		1	49	22.55	22.78	22.66	0-1	1
		1	99	22.53	22.82	22.65	0-1	1
		50	0	21.36	21.84	21.71	0-2	2
		50	25	21.56	21.79	21.66	0-2	2
		50	49	21.58	21.73	21.66	0-2	2
		100	0	21.52	21.74	21.60	0-2	2
	64QAM	1	0	21.31	21.82	21.61	0-2	2
		1	49	21.52	21.57	21.55	0-2	2
		1	99	21.62	21.63	21.54	0-2	2
		50	0	20.57	20.77	20.69	0-3	3
		50	25	20.54	20.72	20.62	0-3	3
		50	49	20.49	20.69	20.58	0-3	3
		100	0	20.42	20.66	20.52	0-3	3
	256QAM	1	0	18.51	18.75	18.56	0-5	5
		1	49	18.53	18.68	18.58	0-5	5
		1	99	18.42	18.65	18.37	0-5	5
		50	0	18.46	18.70	18.60	0-5	5
		50	25	18.41	18.69	18.53	0-5	5
		50	49	18.42	18.66	18.51	0-5	5
		100	0	18.41	18.66	18.49	0-5	5

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

11.3.2 LTE Reduced Conducted Power (Grip activated)

[LTE Band 2 Conducted Power Grip activated Main 1 Ant.]

LTE Band 2 _ 1.4 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff 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	12.78	12.53	12.45	0	0
		1	3	12.71	12.46	12.35	0	0
		1	5	12.86	12.54	12.47	0	0
		3	0	13.00	12.57	12.46	0	0
		3	1	12.91	12.62	12.31	0	0
		3	3	12.95	12.68	12.47	0	0
		6	0	13.00	12.74	12.48	0-1	0
	16QAM	1	0	13.24	12.80	12.60	0-1	0
		1	3	13.10	12.78	12.61	0-1	0
		1	5	13.22	12.81	12.64	0-1	0
		3	0	13.10	12.74	12.52	0-1	0
		3	1	13.16	12.83	12.59	0-1	0
		3	3	13.12	12.74	12.49	0-1	0
		6	0	13.01	12.75	12.46	0-2	0
	64QAM	1	0	13.15	12.83	12.54	0-2	0
		1	3	13.01	12.80	12.46	0-2	0
		1	5	13.12	12.88	12.58	0-2	0
		3	0	13.00	12.71	12.53	0-2	0
		3	1	12.97	12.84	12.51	0-2	0
		3	3	12.99	12.81	12.50	0-2	0
		6	0	13.08	12.70	12.45	0-3	0
	256QAM	1	0	13.20	12.80	12.61	0-5	0
		1	3	13.16	12.72	12.51	0-5	0
		1	5	13.12	12.74	12.48	0-5	0
		3	0	13.10	12.73	12.51	0-5	0
		3	1	13.05	12.78	12.42	0-5	0
		3	3	13.06	12.77	12.52	0-5	0
		6	0	13.07	12.73	12.45	0-5	0

LTE Band 2 _ 3 ㎒ Bandwidth_ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18615 Ch. 1851.5 ㎒	18900 Ch. 1880 ㎒	19185 Ch. 1908.5 ㎒		
3 ㎒	QPSK	1	0	12.83	12.79	12.49	0	0
		1	7	12.82	12.82	12.49	0	0
		1	14	12.79	12.70	12.42	0	0
		8	0	12.98	12.74	12.50	0-1	0
		8	3	13.04	12.86	12.55	0-1	0
		8	7	13.04	12.81	12.52	0-1	0
		15	0	13.04	12.88	12.52	0-1	0
	16QAM	1	0	13.16	12.89	12.63	0-1	0
		1	7	13.03	12.95	12.48	0-1	0
		1	14	13.10	12.92	12.66	0-1	0
		8	0	13.08	12.81	12.50	0-2	0
		8	3	13.10	12.89	12.60	0-2	0
		8	7	13.13	12.81	12.49	0-2	0
		15	0	13.06	12.80	12.50	0-2	0
	64QAM	1	0	13.14	12.81	12.60	0-2	0
		1	7	13.09	12.82	12.59	0-2	0
		1	14	13.10	12.90	12.63	0-2	0
		8	0	13.06	12.77	12.53	0-3	0
		8	3	13.07	12.77	12.50	0-3	0
		8	7	13.03	12.76	12.51	0-3	0
		15	0	13.08	12.78	12.50	0-3	0
	256QAM	1	0	13.09	12.86	12.66	0-5	0
		1	7	13.17	12.77	12.65	0-5	0
		1	14	13.14	12.89	12.53	0-5	0
		8	0	13.05	12.74	12.52	0-5	0
		8	3	13.05	12.74	12.46	0-5	0
		8	7	13.01	12.76	12.44	0-5	0
		15	0	13.03	12.79	12.45	0-5	0

LTE Band 2 _ 5 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18625 Ch. 1852.5 ㎒	18900 Ch. 1880 ㎒	19175 Ch. 1907.5 ㎒		
5 ㎒	QPSK	1	0	12.79	12.75	12.49	0	0
		1	12	12.85	12.85	12.54	0	0
		1	24	12.81	12.77	12.47	0	0
		12	0	12.84	12.81	12.54	0-1	0
		12	6	12.88	12.81	12.54	0-1	0
		12	11	12.91	12.82	12.55	0-1	0
		25	0	12.99	12.83	12.60	0-1	0
	16QAM	1	0	13.18	12.89	12.69	0-1	0
		1	12	13.18	12.79	12.51	0-1	0
		1	24	13.17	12.93	12.63	0-1	0
		12	0	13.05	12.79	12.54	0-2	0
		12	6	13.08	12.81	12.55	0-2	0
		12	11	13.09	12.81	12.52	0-2	0
		25	0	13.09	12.85	12.55	0-2	0
	64QAM	1	0	13.06	12.80	12.55	0-2	0
		1	12	13.10	12.93	12.61	0-2	0
		1	24	13.14	12.80	12.52	0-2	0
		12	0	13.03	12.77	12.50	0-3	0
		12	6	13.05	12.76	12.46	0-3	0
		12	11	13.05	12.77	12.51	0-3	0
		25	0	13.04	12.78	12.54	0-3	0
	256QAM	1	0	13.12	12.88	12.63	0-5	0
		1	12	13.25	12.82	12.66	0-5	0
		1	24	13.12	12.85	12.61	0-5	0
		12	0	13.02	12.72	12.50	0-5	0
		12	6	13.00	12.75	12.48	0-5	0
		12	11	13.03	12.80	12.52	0-5	0
		25	0	13.07	12.79	12.54	0-5	0

LTE Band 2 _ 10 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18650 Ch. 1855 ㎒	18900 Ch. 1880 ㎒	19150 Ch. 1905 ㎒		
10 ㎒	QPSK	1	0	12.87	12.80	12.59	0	0
		1	24	12.79	12.73	12.50	0	0
		1	49	12.81	12.73	12.46	0	0
		25	0	13.07	12.83	12.60	0-1	0
		25	12	13.07	12.80	12.57	0-1	0
		25	24	13.10	12.83	12.60	0-1	0
		50	0	13.14	12.85	12.60	0-1	0
	16QAM	1	0	13.21	12.99	12.77	0-1	0
		1	24	13.11	12.85	12.58	0-1	0
		1	49	13.26	12.85	12.68	0-1	0
		25	0	13.13	12.82	12.56	0-2	0
		25	12	13.09	12.81	12.55	0-2	0
		25	24	13.11	12.81	12.57	0-2	0
		50	0	13.10	12.83	12.60	0-2	0
	64QAM	1	0	13.20	12.89	12.72	0-2	0
		1	24	13.15	12.90	12.66	0-2	0
		1	49	13.11	12.84	12.58	0-2	0
		25	0	13.07	12.75	12.53	0-3	0
		25	12	13.07	12.79	12.54	0-3	0
		25	24	13.07	12.79	12.55	0-3	0
		50	0	13.11	12.83	12.57	0-3	0
	256QAM	1	0	13.13	12.82	12.68	0-5	0
		1	24	13.10	12.85	12.55	0-5	0
		1	49	13.15	12.86	12.59	0-5	0
		25	0	13.10	12.80	12.58	0-5	0
		25	12	13.09	12.76	12.54	0-5	0
		25	24	13.04	12.77	12.52	0-5	0
		50	0	13.09	12.81	12.58	0-5	0

LTE Band 2 _ 15 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18675 Ch. 1857.5 ㎒	18900 Ch. 1880 ㎒	19125 Ch. 1902.5 ㎒		
15 ㎒	QPSK	1	0	12.83	12.74	12.61	0	0
		1	36	12.84	12.77	12.63	0	0
		1	74	12.88	12.78	12.54	0	0
		36	0	13.08	12.84	12.66	0-1	0
		36	18	13.10	12.87	12.66	0-1	0
		36	39	13.12	12.87	12.61	0-1	0
		75	0	13.12	12.85	12.69	0-1	0
	16QAM	1	0	13.28	12.89	12.81	0-1	0
		1	36	13.16	12.87	12.60	0-1	0
		1	74	13.31	12.99	12.69	0-1	0
		36	0	13.13	12.83	12.63	0-2	0
		36	18	13.07	12.84	12.57	0-2	0
		36	39	13.08	12.83	12.57	0-2	0
		75	0	13.14	12.78	12.62	0-2	0
	64QAM	1	0	13.17	12.90	12.64	0-2	0
		1	36	13.21	12.67	12.65	0-2	0
		1	74	13.21	12.92	12.60	0-2	0
		36	0	13.12	12.79	12.63	0-3	0
		36	18	13.08	12.85	12.59	0-3	0
		36	39	13.09	12.84	12.58	0-3	0
		75	0	13.08	12.80	12.58	0-3	0
	256QAM	1	0	13.16	12.96	12.70	0-5	0
		1	36	13.12	12.93	12.63	0-5	0
		1	74	13.18	12.97	12.55	0-5	0
		36	0	13.12	12.80	12.67	0-5	0
		36	18	13.11	12.80	12.62	0-5	0
		36	39	13.09	12.83	12.58	0-5	0
		75	0	13.09	12.84	12.62	0-5	0

LTE Band 2 _ 20 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 ㎒	18900 Ch. 1880 ㎒	19100 Ch. 1900 ㎒		
20 ㎒	QPSK	1	0	13.02	12.68	12.59	0	0
		1	49	12.85	12.69	12.53	0	0
		1	99	12.86	12.64	12.46	0	0
		50	0	13.05	12.79	12.67	0-1	0
		50	25	13.00	12.78	12.65	0-1	0
		50	49	13.00	12.77	12.61	0-1	0
		100	0	13.03	12.76	12.64	0-1	0
	16QAM	1	0	13.11	12.91	12.68	0-1	0
		1	49	12.96	12.78	12.57	0-1	0
		1	99	13.16	12.89	12.71	0-1	0
		50	0	13.03	12.74	12.63	0-2	0
		50	25	12.99	12.78	12.63	0-2	0
		50	49	12.96	12.78	12.59	0-2	0
		100	0	12.98	12.74	12.59	0-2	0
	64QAM	1	0	13.04	12.82	12.68	0-2	0
		1	49	12.93	12.77	12.58	0-2	0
		1	99	12.93	12.88	12.64	0-2	0
		50	0	13.00	12.75	12.64	0-3	0
		50	25	12.97	12.76	12.62	0-3	0
		50	49	12.94	12.74	12.59	0-3	0
		100	0	12.95	12.71	12.57	0-3	0
	256QAM	1	0	13.06	12.71	12.59	0-5	0
		1	49	12.79	12.78	12.59	0-5	0
		1	99	12.96	12.75	12.58	0-5	0
		50	0	12.97	12.74	12.64	0-5	0
		50	25	12.96	12.72	12.58	0-5	0
		50	49	12.95	12.74	12.56	0-5	0
		100	0	12.98	12.75	12.60	0-5	0

[LTE Band 4 Conducted Power _ Main1 Ant.]

LTE Band 4 _ 1.4 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff 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	13.71	13.77	13.67	0	0
		1	3	13.60	13.69	13.60	0	0
		1	5	13.73	13.76	13.69	0	0
		3	0	13.71	13.82	13.69	0	0
		3	1	13.65	13.72	13.62	0	0
		3	3	13.66	13.75	13.71	0	0
		6	0	13.73	13.78	13.71	0-1	0
	16QAM	1	0	13.77	13.87	13.97	0-1	0
		1	3	13.73	13.77	13.86	0-1	0
		1	5	13.87	13.98	13.85	0-1	0
		3	0	13.73	13.83	13.76	0-1	0
		3	1	13.72	13.92	13.84	0-1	0
		3	3	13.75	13.80	13.77	0-1	0
		6	0	13.73	13.80	13.69	0-2	0
	64QAM	1	0	13.87	13.99	13.81	0-2	0
		1	3	13.81	13.94	13.69	0-2	0
		1	5	13.88	13.93	13.71	0-2	0
		3	0	13.77	13.81	13.73	0-2	0
		3	1	13.84	13.80	13.71	0-2	0
		3	3	13.74	13.84	13.81	0-2	0
		6	0	13.73	13.77	13.77	0-3	0
	256QAM	1	0	13.70	13.92	13.74	0-5	0
		1	3	13.71	13.67	13.68	0-5	0
		1	5	13.76	13.78	13.69	0-5	0
		3	0	13.77	13.79	13.73	0-5	0
		3	1	13.72	13.79	13.66	0-5	0
		3	3	13.77	13.79	13.77	0-5	0
		6	0	13.74	13.74	13.71	0-5	0

LTE Band 4 _ 3 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff 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	13.72	13.81	13.76	0	0
		1	7	13.72	13.82	13.78	0	0
		1	14	13.67	13.74	13.71	0	0
		8	0	13.75	13.78	13.76	0-1	0
		8	3	13.76	13.86	13.77	0-1	0
		8	7	13.77	13.77	13.76	0-1	0
		15	0	13.75	13.83	13.80	0-1	0
	16QAM	1	0	13.91	13.98	13.82	0-1	0
		1	7	13.74	13.81	13.92	0-1	0
		1	14	13.87	13.95	13.88	0-1	0
		8	0	13.73	13.79	13.80	0-2	0
		8	3	13.80	13.83	13.83	0-2	0
		8	7	13.77	13.82	13.79	0-2	0
		15	0	13.75	13.81	13.78	0-2	0
	64QAM	1	0	13.78	13.88	13.92	0-2	0
		1	7	13.80	13.81	13.84	0-2	0
		1	14	13.82	13.86	13.84	0-2	0
		8	0	13.70	13.78	13.75	0-3	0
		8	3	13.72	13.72	13.78	0-3	0
		8	7	13.72	13.76	13.74	0-3	0
		15	0	13.70	13.83	13.72	0-3	0
	256QAM	1	0	13.84	13.83	13.83	0-5	0
		1	7	13.75	13.87	13.79	0-5	0
		1	14	13.74	13.84	13.73	0-5	0
		8	0	13.74	13.77	13.72	0-5	0
		8	3	13.72	13.82	13.74	0-5	0
		8	7	13.73	13.79	13.76	0-5	0
		15	0	13.71	13.79	13.73	0-5	0

LTE Band 4 _ 5 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff 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	13.69	13.80	13.77	0	0
		1	12	13.78	13.81	13.81	0	0
		1	24	13.72	13.76	13.83	0	0
		12	0	13.78	13.84	13.85	0-1	0
		12	6	13.78	13.86	13.85	0-1	0
		12	11	13.79	13.84	13.87	0-1	0
		25	0	13.83	13.88	13.85	0-1	0
	16QAM	1	0	13.94	14.02	13.99	0-1	0
		1	12	13.87	13.88	13.85	0-1	0
		1	24	13.83	14.03	13.87	0-1	0
		12	0	13.74	13.84	13.79	0-2	0
		12	6	13.77	13.84	13.80	0-2	0
		12	11	13.77	13.84	13.82	0-2	0
		25	0	13.82	13.84	13.83	0-2	0
	64QAM	1	0	13.92	13.91	13.86	0-2	0
		1	12	13.83	13.92	13.74	0-2	0
		1	24	13.92	13.81	13.90	0-2	0
		12	0	13.75	13.80	13.81	0-3	0
		12	6	13.72	13.79	13.80	0-3	0
		12	11	13.73	13.80	13.81	0-3	0
		25	0	13.78	13.85	13.79	0-3	0
	256QAM	1	0	13.75	13.94	13.89	0-5	0
		1	12	13.82	13.92	13.86	0-5	0
		1	24	13.73	13.81	13.79	0-5	0
		12	0	13.68	13.78	13.81	0-5	0
		12	6	13.72	13.80	13.79	0-5	0
		12	11	13.75	13.85	13.78	0-5	0
		25	0	13.75	13.85	13.81	0-5	0

LTE Band 4 _ 10 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20000 Ch. 1715 ㎒	20175 Ch. 1732.5 ㎒	20350 Ch. 1750 ㎒		
10 ㎒	QPSK	1	0	13.78	13.88	13.86	0	0
		1	24	13.72	13.78	13.76	0	0
		1	49	13.71	13.74	13.76	0	0
		25	0	13.84	13.90	13.92	0-1	0
		25	12	13.80	13.87	13.90	0-1	0
		25	24	13.83	13.90	13.90	0-1	0
		50	0	13.85	13.93	13.94	0-1	0
	16QAM	1	0	14.01	14.04	14.03	0-1	0
		1	24	13.85	13.86	13.95	0-1	0
		1	49	13.98	14.00	14.11	0-1	0
		25	0	13.85	13.89	13.90	0-2	0
		25	12	13.80	13.85	13.91	0-2	0
		25	24	13.81	13.84	13.87	0-2	0
		50	0	13.82	13.87	13.90	0-2	0
	64QAM	1	0	13.94	13.93	14.01	0-2	0
		1	24	13.81	13.89	13.81	0-2	0
		1	49	13.81	13.80	13.89	0-2	0
		25	0	13.76	13.86	13.86	0-3	0
		25	12	13.81	13.85	13.89	0-3	0
		25	24	13.80	13.83	13.80	0-3	0
		50	0	13.86	13.89	13.90	0-3	0
	256QAM	1	0	13.88	14.00	13.92	0-5	0
		1	24	13.83	13.85	13.93	0-5	0
		1	49	13.89	13.92	13.91	0-5	0
		25	0	13.81	13.87	13.84	0-5	0
		25	12	13.78	13.81	13.87	0-5	0
		25	24	13.79	13.85	13.88	0-5	0
		50	0	13.79	13.86	13.87	0-5	0

LTE Band 4 _ 15 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff 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	13.76	13.82	13.88	0	0
		1	36	13.76	13.79	13.86	0	0
		1	74	13.74	13.81	13.85	0	0
		36	0	13.88	13.91	13.97	0-1	0
		36	18	13.83	13.86	13.89	0-1	0
		36	39	13.87	13.84	13.89	0-1	0
		75	0	13.86	13.86	13.90	0-1	0
	16QAM	1	0	14.04	14.24	14.12	0-1	0
		1	36	13.91	13.99	14.09	0-1	0
		1	74	14.05	14.05	14.10	0-1	0
		36	0	13.82	13.84	13.90	0-2	0
		36	18	13.77	13.82	13.89	0-2	0
		36	39	13.80	13.84	13.87	0-2	0
		75	0	13.81	13.87	13.90	0-2	0
	64QAM	1	0	13.94	13.94	14.03	0-2	0
		1	36	13.78	13.92	13.92	0-2	0
		1	74	13.97	13.91	13.97	0-2	0
		36	0	13.82	13.91	13.93	0-3	0
		36	18	13.86	13.88	13.89	0-3	0
		36	39	13.80	13.83	13.90	0-3	0
		75	0	13.85	13.83	13.90	0-3	0
	256QAM	1	0	13.95	13.95	14.01	0-5	0
		1	36	13.84	13.82	13.84	0-5	0
		1	74	13.80	13.91	13.94	0-5	0
		36	0	13.86	13.86	13.96	0-5	0
		36	18	13.82	13.83	13.91	0-5	0
		36	39	13.78	13.84	13.89	0-5	0
		75	0	13.80	13.83	13.90	0-5	0

LTE Band 4 _ 20 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20050 Ch. 1720 ㎒	20175 Ch. 1732.5 ㎒	20300 Ch. 1745.0 ㎒		
20 ㎒	QPSK	1	0	13.77	13.89	13.75	0	0
		1	49	13.72	13.78	13.77	0	0
		1	99	13.78	13.72	13.87	0	0
		50	0	13.84	13.94	13.84	0-1	0
		50	25	13.85	13.91	13.90	0-1	0
		50	49	13.84	13.89	13.94	0-1	0
		100	0	13.83	13.90	13.90	0-1	0
	16QAM	1	0	13.92	13.91	14.08	0-1	0
		1	49	13.90	13.95	13.86	0-1	0
		1	99	14.01	13.88	14.06	0-1	0
		50	0	13.84	13.92	13.86	0-2	0
		50	25	13.82	13.88	13.86	0-2	0
		50	49	13.82	13.86	13.95	0-2	0
		100	0	13.80	13.87	13.86	0-2	0
	64QAM	1	0	13.92	13.98	13.89	0-2	0
		1	49	13.80	13.85	13.95	0-2	0
		1	99	13.83	13.81	14.09	0-2	0
		50	0	13.83	13.92	13.83	0-3	0
		50	25	13.85	13.89	13.88	0-3	0
		50	49	13.81	13.87	13.91	0-3	0
		100	0	13.78	13.81	13.86	0-3	0
	256QAM	1	0	13.84	13.91	13.86	0-5	0
		1	49	13.81	13.77	13.86	0-5	0
		1	99	13.93	13.77	14.04	0-5	0
		50	0	13.82	13.91	13.86	0-5	0
		50	25	13.81	13.87	13.85	0-5	0
		50	49	13.81	13.84	13.90	0-5	0
		100	0	13.80	13.86	13.88	0-5	0

[LTE Band 5 Conducted Power _ Main1 Ant.]

LTE Band 5 _ 1.4 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20407 Ch. 824.7 ㎒	20525 Ch. 836.5 ㎒	20643 Ch. 848.3 ㎒		
1.4 ㎒	QPSK	1	0	14.08	14.01	14.24	0	0
		1	3	13.99	14.01	14.19	0	0
		1	5	14.08	14.09	14.22	0	0
		3	0	14.06	14.00	14.16	0	0
		3	1	14.01	13.99	14.17	0	0
		3	3	14.10	14.05	14.21	0	0
		6	0	14.06	14.08	14.27	0-1	0
	16QAM	1	0	14.35	14.27	14.48	0-1	0
		1	3	14.26	14.19	14.36	0-1	0
		1	5	14.22	14.29	14.50	0-1	0
		3	0	14.08	14.20	14.39	0-1	0
		3	1	14.20	14.22	14.33	0-1	0
		3	3	14.18	14.14	14.32	0-1	0
		6	0	14.11	14.10	14.25	0-2	0
	64QAM	1	0	14.19	14.10	14.40	0-2	0
		1	3	14.15	14.17	14.35	0-2	0
		1	5	14.27	14.22	14.38	0-2	0
		3	0	14.16	14.07	14.29	0-2	0
		3	1	14.05	14.10	14.26	0-2	0
		3	3	14.12	14.05	14.24	0-2	0
		6	0	14.08	14.04	14.19	0-3	0
	256QAM	1	0	14.19	14.18	14.29	0-5	0
		1	3	14.17	14.10	14.37	0-5	0
		1	5	14.16	14.04	14.27	0-5	0
		3	0	14.10	14.13	14.27	0-5	0
		3	1	14.09	14.11	14.28	0-5	0
		3	3	14.18	14.06	14.26	0-5	0
		6	0	14.10	14.09	14.29	0-5	0

LTE Band 5 _ 3 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20415 Ch. 825.5 ㎒	20525 Ch. 836.5 ㎒	20635 Ch. 847.5 ㎒		
3 ㎒	QPSK	1	0	14.10	14.13	14.29	0	0
		1	7	14.09	14.09	14.29	0	0
		1	14	14.00	14.00	14.20	0	0
		8	0	14.12	14.07	14.29	0-1	0
		8	3	14.14	14.08	14.33	0-1	0
		8	7	14.12	14.15	14.28	0-1	0
		15	0	14.14	14.12	14.31	0-1	0
	16QAM	1	0	14.37	14.39	14.58	0-1	0
		1	7	14.31	14.21	14.43	0-1	0
		1	14	14.22	14.25	14.55	0-1	0
		8	0	14.19	14.13	14.30	0-2	0
		8	3	14.15	14.12	14.33	0-2	0
		8	7	14.25	14.14	14.36	0-2	0
		15	0	14.10	14.16	14.35	0-2	0
	64QAM	1	0	14.23	14.19	14.41	0-2	0
		1	7	14.22	14.16	14.29	0-2	0
		1	14	14.31	14.27	14.44	0-2	0
		8	0	14.14	14.14	14.32	0-3	0
		8	3	14.09	14.05	14.36	0-3	0
		8	7	14.18	14.05	14.33	0-3	0
		15	0	14.16	14.15	14.32	0-3	0
	256QAM	1	0	14.25	14.17	14.43	0-5	0
		1	7	14.16	14.07	14.31	0-5	0
		1	14	14.11	14.28	14.26	0-5	0
		8	0	14.16	14.12	14.29	0-5	0
		8	3	14.16	14.12	14.33	0-5	0
		8	7	14.12	14.11	14.29	0-5	0
		15	0	14.10	14.10	14.27	0-5	0

LTE Band 5 _ 5 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff 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	14.05	14.06	14.25	0	0
		1	12	14.09	14.09	14.27	0	0
		1	24	14.08	14.06	14.27	0	0
		12	0	14.10	14.15	14.34	0-1	0
		12	6	14.10	14.14	14.29	0-1	0
		12	11	14.09	14.11	14.33	0-1	0
		25	0	14.11	14.15	14.32	0-1	0
	16QAM	1	0	14.32	14.38	14.45	0-1	0
		1	12	14.20	14.11	14.46	0-1	0
		1	24	14.23	14.32	14.50	0-1	0
		12	0	14.20	14.13	14.36	0-2	0
		12	6	14.14	14.09	14.35	0-2	0
		12	11	14.14	14.09	14.38	0-2	0
		25	0	14.09	14.19	14.33	0-2	0
	64QAM	1	0	14.24	14.25	14.55	0-2	0
		1	12	14.29	14.21	14.35	0-2	0
		1	24	14.27	14.35	14.43	0-2	0
		12	0	14.14	14.16	14.34	0-3	0
		12	6	14.14	14.17	14.32	0-3	0
		12	11	14.10	14.15	14.29	0-3	0
		25	0	14.06	14.08	14.30	0-3	0
	256QAM	1	0	14.20	14.21	14.41	0-5	0
		1	12	14.13	14.20	14.42	0-5	0
		1	24	14.11	14.15	14.33	0-5	0
		12	0	14.11	14.14	14.32	0-5	0
		12	6	14.11	14.12	14.33	0-5	0
		12	11	14.10	14.10	14.34	0-5	0
		25	0	14.09	14.15	14.32	0-5	0

LTE Band 5 _ 10 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm] 20525 Ch. 836.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	14.21	0	0
		1	24	14.07	0	0
		1	49	14.00	0	0
		25	0	14.16	0-1	0
		25	12	14.14	0-1	0
		25	24	14.11	0-1	0
		50	0	14.14	0-1	0
	16QAM	1	0	14.29	0-1	0
		1	24	14.13	0-1	0
		1	49	14.21	0-1	0
		25	0	14.16	0-2	0
		25	12	14.16	0-2	0
		25	24	14.08	0-2	0
		50	0	14.14	0-2	0
	64QAM	1	0	14.40	0-2	0
		1	24	14.23	0-2	0
		1	49	14.20	0-2	0
		25	0	14.14	0-3	0
		25	12	14.11	0-3	0
		25	24	14.08	0-3	0
		50	0	14.18	0-3	0
	256QAM	1	0	14.31	0-5	0
		1	24	14.19	0-5	0
		1	49	14.12	0-5	0
		25	0	14.16	0-5	0
		25	12	14.14	0-5	0
		25	24	14.10	0-5	0
		50	0	14.13	0-5	0

[LTE Band 12 Conducted Power _ Main1 Ant.]

LTE Band 12 _ 1.4 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff 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	15.99	16.21	16.15	0	0
		1	3	15.91	16.15	16.14	0	0
		1	5	16.06	16.21	16.22	0	0
		3	0	16.01	16.16	16.13	0	0
		3	1	15.98	16.14	16.13	0	0
		3	3	15.97	16.21	16.19	0	0
		6	0	16.04	16.19	16.27	0-1	0
	16QAM	1	0	16.16	16.50	16.50	0-1	0
		1	3	16.28	16.42	16.48	0-1	0
		1	5	16.28	16.49	16.43	0-1	0
		3	0	16.13	16.32	16.30	0-1	0
		3	1	16.08	16.30	16.32	0-1	0
		3	3	16.07	16.30	16.32	0-1	0
		6	0	16.13	16.29	16.27	0-2	0
	64QAM	1	0	16.26	16.36	16.35	0-2	0
		1	3	16.20	16.39	16.23	0-2	0
		1	5	16.23	16.38	16.33	0-2	0
		3	0	16.14	16.32	16.28	0-2	0
		3	1	16.06	16.38	16.33	0-2	0
		3	3	16.13	16.27	16.30	0-2	0
		6	0	16.07	16.26	16.26	0-3	0
	256QAM	1	0	16.06	16.40	16.27	0-5	0
		1	3	16.01	16.30	16.32	0-5	0
		1	5	16.16	16.33	16.33	0-5	0
		3	0	16.14	16.30	16.24	0-5	0
		3	1	16.14	16.28	16.28	0-5	0
		3	3	16.21	16.28	16.34	0-5	0
		6	0	16.00	16.28	16.23	0-5	0

LTE Band 12 _ 3 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23025 Ch. 700.5 ㎒	23095 Ch. 707.5 ㎒	23165 Ch. 714.5 ㎒		
3 ㎒	QPSK	1	0	16.11	16.26	16.33	0	0
		1	7	16.07	16.21	16.24	0	0
		1	14	15.98	16.14	16.17	0	0
		8	0	16.10	16.24	16.27	0-1	0
		8	3	16.08	16.25	16.30	0-1	0
		8	7	16.11	16.24	16.27	0-1	0
		15	0	16.11	16.27	16.26	0-1	0
	16QAM	1	0	16.36	16.43	16.47	0-1	0
		1	7	16.12	16.41	16.38	0-1	0
		1	14	16.26	16.46	16.45	0-1	0
		8	0	16.16	16.30	16.32	0-2	0
		8	3	16.17	16.35	16.32	0-2	0
		8	7	16.19	16.28	16.28	0-2	0
		15	0	16.18	16.33	16.32	0-2	0
	64QAM	1	0	16.28	16.38	16.53	0-2	0
		1	7	16.11	16.22	16.40	0-2	0
		1	14	16.26	16.41	16.44	0-2	0
		8	0	16.13	16.28	16.30	0-3	0
		8	3	16.10	16.32	16.29	0-3	0
		8	7	16.18	16.33	16.31	0-3	0
		15	0	16.13	16.32	16.29	0-3	0
	256QAM	1	0	16.22	16.44	16.33	0-5	0
		1	7	16.12	16.41	16.36	0-5	0
		1	14	16.14	16.42	16.39	0-5	0
		8	0	16.13	16.33	16.30	0-5	0
		8	3	16.14	16.32	16.28	0-5	0
		8	7	16.10	16.30	16.26	0-5	0
		15	0	16.10	16.26	16.24	0-5	0

LTE Band 12 _ 5 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff 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	16.05	16.22	16.29	0	0
		1	12	16.13	16.26	16.34	0	0
		1	24	16.09	16.22	16.20	0	0
		12	0	16.16	16.29	16.28	0-1	0
		12	6	16.09	16.27	16.29	0-1	0
		12	11	16.10	16.31	16.27	0-1	0
		25	0	16.11	16.19	16.24	0-1	0
	16QAM	1	0	16.43	16.53	16.51	0-1	0
		1	12	16.22	16.29	16.38	0-1	0
		1	24	16.27	16.50	16.40	0-1	0
		12	0	16.17	16.35	16.37	0-2	0
		12	6	16.12	16.31	16.32	0-2	0
		12	11	16.15	16.35	16.29	0-2	0
		25	0	16.09	16.23	16.24	0-2	0
	64QAM	1	0	16.30	16.42	16.55	0-2	0
		1	12	16.23	16.33	16.43	0-2	0
		1	24	16.17	16.48	16.41	0-2	0
		12	0	16.18	16.32	16.33	0-3	0
		12	6	16.17	16.22	16.29	0-3	0
		12	11	16.14	16.28	16.29	0-3	0
		25	0	16.05	16.23	16.28	0-3	0
	256QAM	1	0	16.24	16.37	16.34	0-5	0
		1	12	16.28	16.28	16.41	0-5	0
		1	24	16.14	16.33	16.27	0-5	0
		12	0	16.17	16.26	16.29	0-5	0
		12	6	16.15	16.26	16.31	0-5	0
		12	11	16.13	16.33	16.31	0-5	0
		25	0	16.12	16.21	16.30	0-5	0

LTE Band 12 _ 10 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm] 23095 Ch. 707.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	16.34	0	0
		1	24	16.13	0	0
		1	49	16.16	0	0
		25	0	16.29	0-1	0
		25	12	16.22	0-1	0
		25	24	16.22	0-1	0
		50	0	16.21	0-1	0
	16QAM	1	0	16.55	0-1	0
		1	24	16.32	0-1	0
		1	49	16.40	0-1	0
		25	0	16.30	0-2	0
		25	12	16.26	0-2	0
		25	24	16.25	0-2	0
		50	0	16.27	0-2	0
	64QAM	1	0	16.53	0-2	0
		1	24	16.34	0-2	0
		1	49	16.41	0-2	0
		25	0	16.27	0-3	0
		25	12	16.22	0-3	0
		25	24	16.25	0-3	0
		50	0	16.24	0-3	0
	256QAM	1	0	16.36	0-5	0
		1	24	16.25	0-5	0
		1	49	16.30	0-5	0
		25	0	16.30	0-5	0
		25	12	16.29	0-5	0
		25	24	16.23	0-5	0
		50	0	16.25	0-5	0

[LTE Band 13 Conducted Power_ Main1 Ant.]

LTE Band 13 _ 5 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23205 Ch. 779.5 ㎒	23230 Ch. 782 ㎒	23205 Ch. 784.5 ㎒		
5 ㎒	QPSK	1	0	15.08	15.15	15.19	0	0
		1	12	15.07	15.17	15.19	0	0
		1	24	15.05	15.17	15.19	0	0
		12	0	15.13	15.24	15.29	0-1	0
		12	6	15.12	15.20	15.26	0-1	0
		12	11	15.14	15.25	15.27	0-1	0
		25	0	15.13	15.21	15.22	0-1	0
	16QAM	1	0	15.43	15.50	15.54	0-1	0
		1	12	15.31	15.41	15.45	0-1	0
		1	24	15.29	15.43	15.43	0-1	0
		12	0	15.17	15.29	15.33	0-2	0
		12	6	15.16	15.21	15.29	0-2	0
		12	11	15.18	15.26	15.26	0-2	0
		25	0	15.22	15.22	15.24	0-2	0
	64QAM	1	0	15.32	15.38	15.41	0-2	0
		1	12	15.11	15.29	15.21	0-2	0
		1	24	15.19	15.31	15.24	0-2	0
		12	0	15.15	15.31	15.27	0-3	0
		12	6	15.17	15.28	15.25	0-3	0
		12	11	15.14	15.26	15.33	0-3	0
		25	0	15.18	15.25	15.22	0-3	0
	256QAM	1	0	15.25	15.34	15.35	0-5	0
		1	12	15.15	15.28	15.25	0-5	0
		1	24	15.14	15.34	15.19	0-5	0
		12	0	15.19	15.23	15.29	0-5	0
		12	6	15.15	15.21	15.26	0-5	0
		12	11	15.17	15.26	15.26	0-5	0
		25	0	15.15	15.20	15.24	0-5	0

LTE Band 13 _ 10 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm] 23230 Ch. 782 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	15.25	0	0
		1	24	15.11	0	0
		1	49	15.11	0	0
		25	0	15.22	0-1	0
		25	12	15.21	0-1	0
		25	24	15.18	0-1	0
		50	0	15.22	0-1	0
	16QAM	1	0	15.36	0-1	0
		1	24	15.19	0-1	0
		1	49	15.29	0-1	0
		25	0	15.25	0-2	0
		25	12	15.24	0-2	0
		25	24	15.21	0-2	0
		50	0	15.23	0-2	0
	64QAM	1	0	15.42	0-2	0
		1	24	15.29	0-2	0
		1	49	15.30	0-2	0
		25	0	15.30	0-3	0
		25	12	15.20	0-3	0
		25	24	15.17	0-3	0
		50	0	15.17	0-3	0
	256QAM	1	0	15.26	0-5	0
		1	24	15.29	0-5	0
		1	49	15.21	0-5	0
		25	0	15.20	0-5	0
		25	12	15.21	0-5	0
		25	24	15.18	0-5	0
		50	0	15.20	0-5	0

[LTE Band 17 Conducted Power_ Main1 Ant.]

LTE Band 17 _ 5 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23755 Ch.	23790 Ch.	23825 Ch.		
				706.5 ㎒	710 ㎒	713.5 ㎒		
5 ㎒	QPSK	1	0	16.21	16.29	16.27	0	0
		1	12	16.23	16.28	16.30	0	0
		1	24	16.22	16.27	16.23	0	0
		12	0	16.24	16.29	16.29	0-1	0
		12	6	16.23	16.29	16.27	0-1	0
		12	11	16.20	16.30	16.28	0-1	0
		25	0	16.20	16.27	16.25	0-1	0
	16QAM	1	0	16.47	16.61	16.50	0-1	0
		1	12	16.37	16.33	16.37	0-1	0
		1	24	16.43	16.51	16.49	0-1	0
		12	0	16.32	16.41	16.41	0-2	0
		12	6	16.33	16.39	16.33	0-2	0
		12	11	16.36	16.36	16.33	0-2	0
		25	0	16.25	16.31	16.31	0-2	0
	64QAM	1	0	16.39	16.58	16.50	0-2	0
		1	12	16.42	16.44	16.50	0-2	0
		1	24	16.46	16.39	16.33	0-2	0
		12	0	16.31	16.32	16.36	0-3	0
		12	6	16.29	16.39	16.33	0-3	0
		12	11	16.30	16.35	16.35	0-3	0
		25	0	16.24	16.32	16.27	0-3	0
	256QAM	1	0	16.33	16.40	16.46	0-5	0
		1	12	16.28	16.41	16.43	0-5	0
		1	24	16.47	16.48	16.35	0-5	0
		12	0	16.23	16.35	16.33	0-5	0
		12	6	16.29	16.30	16.30	0-5	0
		12	11	16.29	16.38	16.27	0-5	0
		25	0	16.26	16.29	16.26	0-5	0

LTE Band 17 _ 10 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm] 23790 Ch. 710 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	16.38	0	0
		1	24	16.17	0	0
		1	49	16.17	0	0
		25	0	16.30	0-1	0
		25	12	16.25	0-1	0
		25	24	16.23	0-1	0
		50	0	16.30	0-1	0
	16QAM	1	0	16.55	0-1	0
		1	24	16.37	0-1	0
		1	49	16.46	0-1	0
		25	0	16.36	0-2	0
		25	12	16.29	0-2	0
		25	24	16.26	0-2	0
		50	0	16.34	0-2	0
	64QAM	1	0	16.46	0-2	0
		1	24	16.41	0-2	0
		1	49	16.42	0-2	0
		25	0	16.30	0-3	0
		25	12	16.26	0-3	0
		25	24	16.24	0-3	0
		50	0	16.34	0-3	0
	256QAM	1	0	16.47	0-5	0
		1	24	16.34	0-5	0
		1	49	16.26	0-5	0
		25	0	16.36	0-5	0
		25	12	16.30	0-5	0
		25	24	16.26	0-5	0
		50	0	16.31	0-5	0

[LTE Band 26 Conducted Power _ Main1 Ant.]

LTE Band 26 _ 1.4 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff 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	14.26	14.02	14.18	0	0
		1	3	14.22	13.93	14.17	0	0
		1	5	14.30	14.00	14.25	0	0
		3	0	14.25	14.02	14.22	0	0
		3	1	14.25	13.94	14.16	0	0
		3	3	14.23	13.95	14.14	0	0
		6	0	14.30	14.02	14.19	0-1	0
	16QAM	1	0	14.51	14.30	14.50	0-1	0
		1	3	14.48	14.15	14.41	0-1	0
		1	5	14.57	14.23	14.40	0-1	0
		3	0	14.30	14.09	14.24	0-1	0
		3	1	14.34	14.05	14.17	0-1	0
		3	3	14.33	14.05	14.34	0-1	0
		6	0	14.31	14.05	14.27	0-2	0
	64QAM	1	0	14.49	14.22	14.51	0-2	0
		1	3	14.47	14.19	14.45	0-2	0
		1	5	14.51	14.17	14.26	0-2	0
		3	0	14.36	14.00	14.26	0-2	0
		3	1	14.36	14.07	14.36	0-2	0
		3	3	14.41	14.04	14.30	0-2	0
		6	0	14.31	14.00	14.23	0-3	0
	256QAM	1	0	14.38	14.08	14.36	0-5	0
		1	3	14.27	14.08	14.40	0-5	0
		1	5	14.35	14.14	14.38	0-5	0
		3	0	14.30	14.11	14.24	0-5	0
		3	1	14.30	14.05	14.20	0-5	0
		3	3	14.37	14.09	14.24	0-5	0
		6	0	14.23	14.05	14.25	0-5	0

LTE Band 26 _ 3 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26705 Ch. 815.5 ㎒	26865 Ch. 831.5 ㎒	27025 Ch. 847.5 ㎒		
3 ㎒	QPSK	1	0	14.34	14.06	14.28	0	0
		1	7	14.24	14.02	14.22	0	0
		1	14	14.18	13.95	14.13	0	0
		8	0	14.26	14.04	14.24	0-1	0
		8	3	14.26	14.10	14.32	0-1	0
		8	7	14.30	14.05	14.27	0-1	0
		15	0	14.32	14.06	14.28	0-1	0
	16QAM	1	0	14.45	14.19	14.48	0-1	0
		1	7	14.39	14.26	14.44	0-1	0
		1	14	14.43	14.27	14.38	0-1	0
		8	0	14.35	14.16	14.37	0-2	0
		8	3	14.39	14.18	14.37	0-2	0
		8	7	14.33	14.11	14.31	0-2	0
		15	0	14.32	14.11	14.33	0-2	0
	64QAM	1	0	14.47	14.30	14.42	0-2	0
		1	7	14.34	14.23	14.33	0-2	0
		1	14	14.41	14.20	14.32	0-2	0
		8	0	14.35	14.05	14.27	0-3	0
		8	3	14.31	14.08	14.27	0-3	0
		8	7	14.32	14.06	14.29	0-3	0
		15	0	14.30	14.08	14.29	0-3	0
	256QAM	1	0	14.32	14.23	14.32	0-5	0
		1	7	14.35	14.10	14.25	0-5	0
		1	14	14.28	14.16	14.40	0-5	0
		8	0	14.29	14.08	14.30	0-5	0
		8	3	14.30	14.10	14.33	0-5	0
		8	7	14.31	14.08	14.33	0-5	0
		15	0	14.31	14.09	14.26	0-5	0

LTE Band 26 _ 5 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26715 Ch. 816.5 ㎒	26865 Ch. 831.5 ㎒	27015 Ch. 846.5 ㎒		
5 ㎒	QPSK	1	0	14.27	14.02	14.25	0	0
		1	12	14.26	14.01	14.30	0	0
		1	24	14.24	14.01	14.24	0	0
		12	0	14.29	14.10	14.31	0-1	0
		12	6	14.30	14.04	14.29	0-1	0
		12	11	14.26	14.04	14.27	0-1	0
		25	0	14.29	14.07	14.30	0-1	0
	16QAM	1	0	14.49	14.30	14.50	0-1	0
		1	12	14.49	14.18	14.43	0-1	0
		1	24	14.46	14.19	14.42	0-1	0
		12	0	14.34	14.12	14.29	0-2	0
		12	6	14.30	14.06	14.28	0-2	0
		12	11	14.28	14.05	14.26	0-2	0
		25	0	14.30	14.11	14.32	0-2	0
	64QAM	1	0	14.49	14.18	14.42	0-2	0
		1	12	14.31	14.13	14.43	0-2	0
		1	24	14.42	14.20	14.35	0-2	0
		12	0	14.34	14.10	14.31	0-3	0
		12	6	14.29	14.07	14.31	0-3	0
		12	11	14.32	14.08	14.30	0-3	0
		25	0	14.30	14.08	14.33	0-3	0
	256QAM	1	0	14.41	14.18	14.44	0-5	0
		1	12	14.11	14.12	14.25	0-5	0
		1	24	14.34	14.16	14.30	0-5	0
		12	0	14.30	14.08	14.29	0-5	0
		12	6	14.26	14.05	14.29	0-5	0
		12	11	14.27	14.07	14.27	0-5	0
		25	0	14.27	14.07	14.28	0-5	0

LTE Band 26 _ 10 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26740 Ch. 819 ㎒	26865 Ch. 831.5 ㎒	26990 Ch. 844 ㎒		
10 ㎒	QPSK	1	0	14.35	14.17	14.34	0	0
		1	24	14.16	13.97	14.17	0	0
		1	49	14.15	13.93	14.17	0	0
		25	0	14.31	14.12	14.33	0-1	0
		25	12	14.23	14.09	14.27	0-1	0
		25	24	14.22	14.06	14.29	0-1	0
		50	0	14.30	14.10	14.31	0-1	0
	16QAM	1	0	14.51	14.40	14.54	0-1	0
		1	24	14.41	14.18	14.44	0-1	0
		1	49	14.41	14.28	14.44	0-1	0
		25	0	14.30	14.15	14.36	0-2	0
		25	12	14.24	14.10	14.27	0-2	0
		25	24	14.27	14.04	14.24	0-2	0
		50	0	14.28	14.09	14.28	0-2	0
	64QAM	1	0	14.50	14.29	14.54	0-2	0
		1	24	14.31	14.13	14.34	0-2	0
		1	49	14.31	14.10	14.36	0-2	0
		25	0	14.25	14.09	14.28	0-3	0
		25	12	14.22	14.05	14.26	0-3	0
		25	24	14.25	14.07	14.26	0-3	0
		50	0	14.26	14.11	14.30	0-3	0
	256QAM	1	0	14.48	14.17	14.45	0-5	0
		1	24	14.30	14.13	14.40	0-5	0
		1	49	14.25	14.09	14.41	0-5	0
		25	0	14.29	14.14	14.33	0-5	0
		25	12	14.22	14.08	14.33	0-5	0
		25	24	14.22	14.07	14.23	0-5	0
		50	0	14.25	14.10	14.29	0-5	0

LTE Band 26 _ 15 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm] 26865 Ch. 831.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
15 ㎒	QPSK	1	0	14.11	0	0
		1	36	13.97	0	0
		1	74	13.94	0	0
		36	0	14.13	0-1	0
		36	18	14.08	0-1	0
		36	39	14.03	0-1	0
		75	0	14.10	0-1	0
	16QAM	1	0	14.28	0-1	0
		1	36	14.12	0-1	0
		1	74	14.12	0-1	0
		36	0	14.16	0-2	0
		36	18	14.08	0-2	0
		36	39	14.03	0-2	0
		75	0	14.10	0-2	0
	64QAM	1	0	14.31	0-2	0
		1	36	14.15	0-2	0
		1	74	14.28	0-2	0
		36	0	14.13	0-3	0
		36	18	14.08	0-3	0
		36	39	14.03	0-3	0
		75	0	14.08	0-3	0
	256QAM	1	0	14.24	0-5	0
		1	36	13.97	0-5	0
		1	74	14.05	0-5	0
		36	0	14.16	0-5	0
		36	18	14.09	0-5	0
		36	39	14.08	0-5	0
		75	0	14.12	0-5	0

[LTE TDD Band 41 Conducted Power (Power Class 3) _ Main1 Ant.]

LTE TDD Band 41 (Power Class 3) _5 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff 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 ㎒		
5 ㎒	QPSK	1	0	13.46	13.56	13.95	13.90	13.74	0	0
		1	12	13.55	13.64	14.03	13.97	13.79	0	0
		1	24	13.51	13.57	13.97	13.91	13.74	0	0
		12	0	13.53	13.62	14.00	13.96	13.78	0-1	0
		12	6	13.52	13.61	14.00	13.94	13.78	0-1	0
		12	11	13.53	13.59	13.99	13.93	13.77	0-1	0
		25	0	13.53	13.61	14.01	13.95	13.79	0-1	0
	16QAM	1	0	13.29	13.54	13.92	13.95	13.73	0-1	0
		1	12	13.20	13.47	13.84	13.81	13.50	0-1	0
		1	24	13.26	13.50	13.87	13.87	13.64	0-1	0
		12	0	13.50	13.55	13.95	13.91	13.75	0-2	0
		12	6	13.49	13.52	13.94	13.90	13.73	0-2	0
		12	11	13.50	13.52	13.93	13.88	13.71	0-2	0
		25	0	13.51	13.57	13.97	13.91	13.74	0-2	0
	64QAM	1	0	13.65	13.74	14.09	14.03	13.70	0-2	0
		1	12	13.61	13.67	14.01	13.98	13.66	0-2	0
		1	24	13.62	13.71	14.06	13.98	13.81	0-2	0
		12	0	13.52	13.61	13.99	13.97	13.80	0-3	0
		12	6	13.52	13.59	13.99	13.93	13.77	0-3	0
		12	11	13.54	13.58	13.99	13.90	13.76	0-3	0
		25	0	13.51	13.59	13.99	13.94	13.78	0-3	0
	256QAM	1	0	13.45	13.54	13.92	13.84	13.65	0-5	0
		1	12	13.42	13.53	13.85	13.77	13.61	0-5	0
		1	24	13.43	13.46	13.88	13.78	13.58	0-5	0
		12	0	13.55	13.61	14.03	13.96	13.78	0-5	0
		12	6	13.57	13.63	14.02	13.96	13.78	0-5	0
		12	11	13.59	13.64	14.02	13.96	13.77	0-5	0
		25	0	13.59	13.65	14.04	13.99	13.81	0-5	0

LTE TDD Band 41 (Power Class 3) _10 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff 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 ㎒		
10 ㎒	QPSK	1	0	13.55	13.66	14.05	14.01	13.85	0	0
		1	24	13.49	13.57	13.96	13.92	13.75	0	0
		1	49	13.45	13.50	13.92	13.84	13.67	0	0
		25	0	13.56	13.65	14.03	14.00	13.84	0-1	0
		25	12	13.54	13.62	14.00	13.97	13.80	0-1	0
		25	24	13.53	13.60	14.00	13.95	13.79	0-1	0
		50	0	13.57	13.64	14.02	13.99	13.83	0-1	0
	16QAM	1	0	13.29	13.57	13.89	13.82	13.77	0-1	0
		1	24	13.25	13.43	13.79	13.69	13.67	0-1	0
		1	49	13.41	13.45	13.83	13.77	13.67	0-1	0
		25	0	13.53	13.63	14.01	13.97	13.80	0-2	0
		25	12	13.51	13.60	13.99	13.93	13.76	0-2	0
		25	24	13.51	13.56	13.97	13.90	13.73	0-2	0
		50	0	13.57	13.62	14.01	13.96	13.80	0-2	0
	64QAM	1	0	13.59	13.71	14.07	14.07	13.86	0-2	0
		1	24	13.63	13.65	14.04	13.93	13.79	0-2	0
		1	49	13.64	13.63	13.99	13.91	13.73	0-2	0
		25	0	13.52	13.60	14.00	13.97	13.82	0-3	0
		25	12	13.53	13.58	13.99	13.94	13.77	0-3	0
		25	24	13.51	13.55	13.98	13.93	13.75	0-3	0
		50	0	13.59	13.66	14.04	13.99	13.83	0-3	0
	256QAM	1	0	13.47	13.58	13.82	13.95	13.72	0-5	0
		1	24	13.42	13.50	13.81	13.83	13.63	0-5	0
		1	49	13.42	13.42	13.83	13.75	13.60	0-5	0
		25	0	13.60	13.69	14.07	14.04	13.88	0-5	0
		25	12	13.59	13.66	14.06	14.01	13.86	0-5	0
		25	24	13.60	13.63	14.05	14.00	13.83	0-5	0
		50	0	13.65	13.71	14.10	14.05	13.89	0-5	0

LTE TDD Band 41 (Power Class 3) _15 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff 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	13.48	13.63	14.00	13.97	13.82	0	0
		1	36	13.53	13.58	13.99	13.95	13.76	0	0
		1	74	13.49	13.51	13.95	13.85	13.70	0	0
		36	0	13.55	13.66	14.04	14.01	13.85	0-1	0
		36	18	13.54	13.62	14.00	13.96	13.80	0-1	0
		36	39	13.52	13.57	13.98	13.92	13.76	0-1	0
		75	0	13.54	13.61	14.02	13.97	13.82	0-1	0
	16QAM	1	0	13.57	13.71	14.12	13.97	13.82	0-1	0
		1	36	13.46	13.53	13.92	13.63	13.55	0-1	0
		1	74	13.52	13.49	13.95	13.75	13.56	0-1	0
		36	0	13.52	13.61	14.01	13.97	13.80	0-2	0
		36	18	13.50	13.56	13.97	13.92	13.75	0-2	0
		36	39	13.49	13.53	13.95	13.88	13.72	0-2	0
		75	0	13.54	13.61	14.00	13.96	13.80	0-2	0
	64QAM	1	0	13.52	13.74	14.07	14.07	13.96	0-2	0
		1	36	13.47	13.63	13.88	13.90	13.75	0-2	0
		1	74	13.57	13.60	13.99	13.91	13.72	0-2	0
		36	0	13.53	13.64	14.02	13.99	13.84	0-3	0
		36	18	13.53	13.60	13.99	13.97	13.79	0-3	0
		36	39	13.51	13.55	13.96	13.91	13.74	0-3	0
		75	0	13.54	13.62	14.01	13.97	13.82	0-3	0
	256QAM	1	0	13.43	13.55	13.98	14.00	13.75	0-5	0
		1	36	13.35	13.47	13.95	13.93	13.69	0-5	0
		1	74	13.40	13.43	13.94	13.85	13.61	0-5	0
		36	0	13.59	13.71	14.07	14.05	13.87	0-5	0
		36	18	13.58	13.67	14.03	14.00	13.82	0-5	0
		36	39	13.58	13.63	14.02	13.97	13.77	0-5	0
		75	0	13.54	13.63	14.02	13.98	13.82	0-5	0

LTE TDD Band 41 (Power Class 3) _20 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	13.54	13.71	14.07	14.05	13.91	0	0
		1	49	13.48	13.56	13.97	13.91	13.75	0	0
		1	99	13.43	13.43	13.88	13.77	13.62	0	0
		50	0	13.59	13.70	14.06	14.04	13.90	0-1	0
		50	25	13.57	13.64	14.02	13.99	13.84	0-1	0
		50	49	13.54	13.57	13.99	13.93	13.77	0-1	0
		100	0	13.55	13.62	14.01	13.98	13.82	0-1	0
	16QAM	1	0	13.49	13.65	14.10	13.98	13.83	0-1	0
		1	49	13.52	13.46	13.98	13.76	13.58	0-1	0
		1	99	13.55	13.42	13.86	13.79	13.54	0-1	0
		50	0	13.60	13.68	14.04	14.02	13.87	0-2	0
		50	25	13.56	13.63	14.01	13.95	13.81	0-2	0
		50	49	13.53	13.56	13.97	13.89	13.74	0-2	0
		100	0	13.57	13.65	14.05	14.01	13.85	0-2	0
	64QAM	1	0	13.50	13.69	14.11	14.17	13.93	0-2	0
		1	49	13.44	13.57	14.01	14.02	13.74	0-2	0
		1	99	13.51	13.48	13.99	13.93	13.68	0-2	0
		50	0	13.61	13.71	14.07	14.06	13.90	0-3	0
		50	25	13.58	13.65	14.03	13.99	13.84	0-3	0
		50	49	13.56	13.58	14.00	13.93	13.77	0-3	0
		100	0	13.55	13.61	14.01	13.96	13.81	0-3	0
	256QAM	1	0	13.39	13.59	13.97	14.02	13.71	0-5	0
		1	49	13.33	13.42	13.87	13.87	13.57	0-5	0
		1	99	13.33	13.34	13.82	13.76	13.45	0-5	0
		50	0	13.66	13.76	14.12	14.10	13.95	0-5	0
		50	25	13.63	13.69	14.08	14.06	13.89	0-5	0
		50	49	13.61	13.64	14.06	13.99	13.82	0-5	0
		100	0	13.56	13.64	14.03	13.98	13.83	0-5	0

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

[LTE Band 66 Conducted Power _ Main1 Ant.]

LTE Band 66 _ 1.4 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131979Ch. 1710.7 ㎒	132322 Ch. 1745 ㎒	132665 Ch. 1779.3 ㎒		
1.4 ㎒	QPSK	1	0	13.67	13.96	13.89	0	0
		1	3	13.64	13.89	13.79	0	0
		1	5	13.73	14.00	13.92	0	0
		3	0	13.74	13.99	13.91	0	0
		3	1	13.70	14.00	13.79	0	0
		3	3	13.66	13.98	13.93	0	0
		6	0	13.72	14.01	13.97	0-1	0
	16QAM	1	0	13.89	14.09	14.04	0-1	0
		1	3	13.71	14.03	14.00	0-1	0
		1	5	13.88	14.21	14.03	0-1	0
		3	0	13.78	14.10	13.85	0-1	0
		3	1	13.77	14.10	13.96	0-1	0
		3	3	13.80	14.07	13.94	0-1	0
		6	0	13.73	13.98	13.94	0-2	0
	64QAM	1	0	13.88	14.05	14.08	0-2	0
		1	3	13.74	14.08	13.80	0-2	0
		1	5	13.85	14.12	14.01	0-2	0
		3	0	13.80	13.99	13.85	0-2	0
		3	1	13.80	14.01	13.92	0-2	0
		3	3	13.75	13.96	13.93	0-2	0
		6	0	13.76	14.00	13.86	0-3	0
	256QAM	1	0	13.75	14.13	13.97	0-5	0
		1	3	13.79	14.09	13.85	0-5	0
		1	5	13.77	14.11	13.92	0-5	0
		3	0	13.73	14.06	13.91	0-5	0
		3	1	13.72	13.95	13.86	0-5	0
		3	3	13.73	14.05	13.92	0-5	0
		6	0	13.73	14.01	13.88	0-5	0

LTE Band 66 _ 3 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131987 Ch. 1711.5 ㎒	132322 Ch. 1745 ㎒	132657 Ch. 1778.5 ㎒		
3 ㎒	QPSK	1	0	13.70	14.06	13.97	0	0
		1	7	13.76	14.04	13.95	0	0
		1	14	13.66	13.98	13.88	0	0
		8	0	13.77	14.00	13.92	0-1	0
		8	3	13.72	14.06	13.96	0-1	0
		8	7	13.73	14.03	13.98	0-1	0
		15	0	13.77	14.06	13.97	0-1	0
	16QAM	1	0	13.83	14.11	14.09	0-1	0
		1	7	13.89	14.15	14.03	0-1	0
		1	14	13.92	14.10	14.14	0-1	0
		8	0	13.75	14.00	13.96	0-2	0
		8	3	13.79	14.06	14.03	0-2	0
		8	7	13.76	14.03	13.94	0-2	0
		15	0	13.73	13.99	13.95	0-2	0
	64QAM	1	0	13.89	14.23	13.99	0-2	0
		1	7	13.84	14.09	13.97	0-2	0
		1	14	13.78	14.16	13.95	0-2	0
		8	0	13.75	13.99	13.96	0-3	0
		8	3	13.69	14.05	13.95	0-3	0
		8	7	13.75	14.02	13.92	0-3	0
		15	0	13.70	14.03	13.92	0-3	0
	256QAM	1	0	13.78	14.01	14.05	0-5	0
		1	7	13.75	14.12	14.01	0-5	0
		1	14	13.79	14.05	13.90	0-5	0
		8	0	13.74	13.99	13.92	0-5	0
		8	3	13.76	14.05	13.94	0-5	0
		8	7	13.70	14.03	13.95	0-5	0
		15	0	13.71	13.98	13.91	0-5	0

LTE Band 66 _ 5 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131997 Ch. 1712.5 ㎒	132322Ch. 1745 ㎒	132647 Ch. 1777.5 ㎒		
5 ㎒	QPSK	1	0	13.70	13.97	13.91	0	0
		1	12	13.73	14.05	13.97	0	0
		1	24	13.70	14.06	13.95	0	0
		12	0	13.75	14.04	14.01	0-1	0
		12	6	13.77	14.03	13.99	0-1	0
		12	11	13.79	14.06	14.02	0-1	0
		25	0	13.82	14.13	14.03	0-1	0
	16QAM	1	0	13.87	14.21	14.10	0-1	0
		1	12	13.76	14.21	13.98	0-1	0
		1	24	13.82	14.30	14.02	0-1	0
		12	0	13.74	14.03	13.97	0-2	0
		12	6	13.76	14.07	13.97	0-2	0
		12	11	13.70	14.07	13.98	0-2	0
		25	0	13.82	14.09	14.03	0-2	0
	64QAM	1	0	13.86	14.10	14.12	0-2	0
		1	12	13.82	14.06	14.05	0-2	0
		1	24	13.83	14.05	13.98	0-2	0
		12	0	13.74	14.01	13.99	0-3	0
		12	6	13.70	14.01	13.95	0-3	0
		12	11	13.78	14.04	13.95	0-3	0
		25	0	13.76	14.01	13.98	0-3	0
	256QAM	1	0	13.93	14.10	14.09	0-5	0
		1	12	13.80	14.15	14.18	0-5	0
		1	24	13.85	14.16	14.05	0-5	0
		12	0	13.72	14.03	13.96	0-5	0
		12	6	13.71	14.03	13.93	0-5	0
		12	11	13.76	14.04	13.98	0-5	0
		25	0	13.78	14.04	13.98	0-5	0

LTE Band 66 _ 10 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132022 Ch. 1715 ㎒	132322 Ch. 1745 ㎒	132622 Ch. 1775 ㎒		
10 ㎒	QPSK	1	0	13.78	14.08	13.97	0	0
		1	24	13.70	14.00	13.89	0	0
		1	49	13.73	14.01	13.87	0	0
		25	0	13.84	14.11	14.01	0-1	0
		25	12	13.80	14.11	14.01	0-1	0
		25	24	13.84	14.10	14.02	0-1	0
		50	0	13.86	14.14	14.02	0-1	0
	16QAM	1	0	13.87	14.22	14.12	0-1	0
		1	24	13.89	14.27	14.11	0-1	0
		1	49	13.91	14.16	14.09	0-1	0
		25	0	13.84	14.13	13.97	0-2	0
		25	12	13.79	14.07	13.97	0-2	0
		25	24	13.80	14.09	13.99	0-2	0
		50	0	13.84	14.13	13.99	0-2	0
	64QAM	1	0	13.95	14.13	14.07	0-2	0
		1	24	13.89	14.17	13.94	0-2	0
		1	49	13.91	14.15	13.97	0-2	0
		25	0	13.76	14.08	13.94	0-3	0
		25	12	13.81	14.05	13.94	0-3	0
		25	24	13.77	14.05	13.93	0-3	0
		50	0	13.85	14.12	13.99	0-3	0
	256QAM	1	0	13.90	14.07	14.07	0-5	0
		1	24	13.81	14.05	13.99	0-5	0
		1	49	13.77	14.06	13.91	0-5	0
		25	0	13.79	14.09	13.98	0-5	0
		25	12	13.79	14.06	13.95	0-5	0
		25	24	13.78	14.06	13.93	0-5	0
		50	0	13.78	14.09	13.96	0-5	0

LTE Band 66 _ 15 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132047 Ch. 1717.5 ㎒	132322 Ch. 1745 ㎒	132597 Ch. 1772.5 ㎒		
15 ㎒	QPSK	1	0	13.79	14.05	13.94	0	0
		1	36	13.79	14.05	13.89	0	0
		1	74	13.78	14.02	13.89	0	0
		36	0	13.87	14.11	14.01	0-1	0
		36	18	13.82	14.08	13.95	0-1	0
		36	39	13.82	14.09	13.97	0-1	0
		75	0	13.86	14.11	14.04	0-1	0
	16QAM	1	0	13.95	14.16	14.12	0-1	0
		1	36	13.76	14.17	13.99	0-1	0
		1	74	13.98	14.15	13.99	0-1	0
		36	0	13.79	14.09	13.97	0-2	0
		36	18	13.81	14.02	13.90	0-2	0
		36	39	13.79	14.05	13.92	0-2	0
		75	0	13.78	14.05	13.99	0-2	0
	64QAM	1	0	13.87	14.13	14.02	0-2	0
		1	36	13.87	14.02	14.07	0-2	0
		1	74	13.82	14.11	13.96	0-2	0
		36	0	13.83	14.14	13.92	0-3	0
		36	18	13.79	14.06	13.96	0-3	0
		36	39	13.80	14.05	13.89	0-3	0
		75	0	13.80	14.07	13.98	0-3	0
	256QAM	1	0	13.80	14.13	14.05	0-5	0
		1	36	13.94	14.13	14.02	0-5	0
		1	74	13.92	14.03	14.00	0-5	0
		36	0	13.82	14.12	13.98	0-5	0
		36	18	13.78	14.05	13.96	0-5	0
		36	39	13.77	14.05	13.93	0-5	0
		75	0	13.81	14.08	13.93	0-5	0

LTE Band 66 _ 20 ㎒ Bandwidth _ Grip Backoff Conducted Power

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 ㎒	132322 Ch. 1745 ㎒	132572 Ch. 1770 ㎒		
20 ㎒	QPSK	1	0	13.82	14.13	13.98	0	0
		1	49	13.76	14.00	13.89	0	0
		1	99	13.72	13.97	13.87	0	0
		50	0	13.92	14.16	14.09	0-1	0
		50	25	13.87	14.12	14.05	0-1	0
		50	49	13.88	14.11	14.02	0-1	0
		100	0	13.86	14.14	14.02	0-1	0
	16QAM	1	0	14.00	14.29	14.18	0-1	0
		1	49	13.90	14.15	14.09	0-1	0
		1	99	14.01	14.14	14.02	0-1	0
		50	0	13.90	14.15	14.05	0-2	0
		50	25	13.89	14.13	14.04	0-2	0
		50	49	13.85	14.08	13.98	0-2	0
		100	0	13.84	14.06	13.99	0-2	0
	64QAM	1	0	13.99	14.25	14.14	0-2	0
		1	49	13.86	14.09	14.08	0-2	0
		1	99	13.83	14.05	13.93	0-2	0
		50	0	13.90	14.16	14.04	0-3	0
		50	25	13.85	14.13	14.01	0-3	0
		50	49	13.84	14.08	13.98	0-3	0
		100	0	13.85	14.09	13.96	0-3	0
	256QAM	1	0	13.86	14.21	14.09	0-5	0
		1	49	13.84	14.07	13.86	0-5	0
		1	99	13.83	14.09	13.93	0-5	0
		50	0	13.90	14.14	14.04	0-5	0
		50	25	13.81	14.10	13.99	0-5	0
		50	49	13.83	14.08	13.97	0-5	0
		100	0	13.85	14.09	13.97	0-5	0

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

11.3.3 LTE Maximum Conducted Power (Sub 2 Ant.)

[LTE Band 2 Conducted Power _ Sub 2 Ant.]

LTE Band 2 _ 1.4 ㎒ Bandwidth _ Maximum Conducted Power _Sub 2 Ant.

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	23.35	22.94	23.42	0	0
		1	3	23.32	22.96	23.39	0	0
		1	5	23.21	22.88	23.22	0	0
		3	0	23.31	22.86	23.34	0	0
		3	1	23.32	22.90	23.32	0	0
		3	3	23.21	22.84	23.23	0	0
		6	0	22.37	22.03	22.44	0-1	1
	16QAM	1	0	22.39	22.12	22.51	0-1	1
		1	3	22.31	22.13	22.42	0-1	1
		1	5	22.27	21.96	22.28	0-1	1
		3	0	22.41	22.01	22.40	0-1	1
		3	1	22.43	22.15	22.42	0-1	1
		3	3	22.32	22.01	22.26	0-1	1
		6	0	21.41	21.07	21.36	0-2	2
	64QAM	1	0	21.35	21.05	21.43	0-2	2
		1	3	21.38	21.06	21.31	0-2	2
		1	5	21.17	20.96	21.28	0-2	2
		3	0	21.36	21.05	21.31	0-2	2
		3	1	21.33	21.03	21.33	0-2	2
		3	3	21.25	20.91	21.20	0-2	2
		6	0	20.34	20.00	20.44	0-3	3
	256QAM	1	0	18.42	18.05	18.34	0-5	5
		1	3	18.47	18.11	18.37	0-5	5
		1	5	18.25	18.01	18.19	0-5	5
		3	0	18.42	18.08	18.35	0-5	5
		3	1	18.45	18.06	18.40	0-5	5
		3	3	18.27	17.94	18.42	0-5	5
		6	0	18.33	18.02	18.39	0-5	5

LTE Band 2 _ 3 ㎒ Bandwidth_ Maximum Conducted Power_Sub 2 Ant.

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	23.21	22.97	23.06	0	0
		1	7	23.07	22.79	23.09	0	0
		1	14	23.02	22.90	22.60	0	0
		8	0	22.20	22.02	22.48	0-1	1
		8	3	22.15	22.01	22.62	0-1	1
		8	7	22.15	21.99	22.54	0-1	1
		15	0	22.23	22.07	22.53	0-1	1
	16QAM	1	0	22.38	22.21	22.39	0-1	1
		1	7	22.23	22.09	22.64	0-1	1
		1	14	22.15	22.19	22.31	0-1	1
		8	0	21.29	20.97	21.65	0-2	2
		8	3	21.12	20.99	21.60	0-2	2
		8	7	21.15	21.00	21.58	0-2	2
		15	0	21.16	20.98	21.58	0-2	2
	64QAM	1	0	21.28	21.09	21.56	0-2	2
		1	7	21.25	20.92	21.66	0-2	2
		1	14	21.19	20.97	21.55	0-2	2
		8	0	20.26	20.00	20.58	0-3	3
		8	3	20.17	19.90	20.61	0-3	3
		8	7	20.13	20.03	20.54	0-3	3
		15	0	20.22	19.98	20.68	0-3	3
	256QAM	1	0	18.38	18.05	18.61	0-5	5
		1	7	18.32	17.95	18.65	0-5	5
		1	14	18.19	18.03	18.49	0-5	5
		8	0	18.21	17.99	18.62	0-5	5
		8	3	18.12	18.00	18.65	0-5	5
		8	7	18.16	18.04	18.54	0-5	5
		15	0	18.21	17.99	18.66	0-5	5

LTE Band 2 _ 5 ㎒ Bandwidth _ Maximum Conducted Power_Sub 2 Ant.

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18625 Ch. 1852.5 ㎒	18900 Ch. 1880 ㎒	19175 Ch. 1907.5 ㎒		
5 ㎒	QPSK	1	0	23.22	23.06	23.25	0	0
		1	12	23.06	22.90	23.09	0	0
		1	24	22.93	22.98	22.77	0	0
		12	0	22.23	22.04	22.52	0-1	1
		12	6	22.16	22.00	22.62	0-1	1
		12	11	22.09	22.06	22.71	0-1	1
		25	0	22.21	22.11	22.63	0-1	1
	16QAM	1	0	22.40	22.22	22.51	0-1	1
		1	12	22.19	22.16	22.72	0-1	1
		1	24	22.25	22.12	22.37	0-1	1
		12	0	21.21	21.04	21.60	0-2	2
		12	6	21.12	20.96	21.66	0-2	2
		12	11	21.16	21.06	21.66	0-2	2
		25	0	21.12	21.04	21.69	0-2	2
	64QAM	1	0	21.35	21.22	21.61	0-2	2
		1	12	21.17	20.98	21.66	0-2	2
		1	24	21.13	21.16	21.55	0-2	2
		12	0	20.19	20.08	20.56	0-3	3
		12	6	20.09	20.01	20.66	0-3	3
		12	11	20.13	20.05	20.73	0-3	3
		25	0	20.15	20.06	20.69	0-3	3
	256QAM	1	0	18.32	18.09	18.54	0-5	5
		1	12	18.31	18.06	18.72	0-5	5
		1	24	18.24	18.16	18.56	0-5	5
		12	0	18.18	18.03	18.66	0-5	5
		12	6	18.13	17.94	18.67	0-5	5
		12	11	18.10	17.98	18.69	0-5	5
		25	0	18.17	18.02	18.69	0-5	5

LTE Band 2 _ 10 ㎒ Bandwidth _ Maximum Conducted Power_Sub 2 Ant.

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18650 Ch. 1855 ㎒	18900 Ch. 1880 ㎒	19150 Ch. 1905 ㎒		
10 ㎒	QPSK	1	0	23.31	22.92	22.31	0	0
		1	24	22.84	22.81	22.64	0	0
		1	49	22.78	23.07	22.59	0	0
		25	0	22.29	22.07	21.74	0-1	1
		25	12	22.18	22.05	22.24	0-1	1
		25	24	22.23	22.09	22.48	0-1	1
		50	0	22.30	22.17	22.18	0-1	1
	16QAM	1	0	22.34	22.43	21.73	0-1	1
		1	24	22.25	22.02	22.26	0-1	1
		1	49	22.44	22.23	22.36	0-1	1
		25	0	21.23	21.08	21.25	0-2	2
		25	12	21.13	21.02	21.59	0-2	2
		25	24	21.22	21.08	21.78	0-2	2
		50	0	21.28	21.13	21.60	0-2	2
	64QAM	1	0	21.33	21.33	21.06	0-2	2
		1	24	21.16	21.00	21.48	0-2	2
		1	49	21.43	21.31	21.69	0-2	2
		25	0	20.25	20.12	20.31	0-3	3
		25	12	20.17	20.01	20.56	0-3	3
		25	24	20.21	20.11	20.77	0-3	3
		50	0	20.22	20.06	20.62	0-3	3
	256QAM	1	0	18.47	18.34	18.22	0-5	5
		1	24	18.22	17.88	18.49	0-5	5
		1	49	18.42	18.22	18.66	0-5	5
		25	0	18.25	18.14	18.34	0-5	5
		25	12	18.20	18.03	18.63	0-5	5
		25	24	18.21	18.09	18.77	0-5	5
		50	0	18.24	18.15	18.56	0-5	5

LTE Band 2 _ 15 ㎒ Bandwidth _ Maximum Conducted Power_Sub 2 Ant.

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	23.22	23.39	22.79	0	0
		1	36	23.13	22.90	22.33	0	0
		1	74	22.81	22.37	22.35	0	0
		36	0	22.25	22.25	21.74	0-1	1
		36	18	22.28	22.04	21.83	0-1	1
		36	39	22.56	22.23	22.17	0-1	1
		75	0	22.42	22.24	21.97	0-1	1
	16QAM	1	0	22.39	22.40	22.16	0-1	1
		1	36	22.19	21.91	21.77	0-1	1
		1	74	22.71	22.01	21.97	0-1	1
		36	0	21.19	21.25	21.08	0-2	2
		36	18	21.27	21.06	21.14	0-2	2
		36	39	21.51	21.17	21.52	0-2	2
		75	0	21.33	21.24	21.31	0-2	2
	64QAM	1	0	21.32	21.66	21.43	0-2	2
		1	36	21.19	20.98	21.04	0-2	2
		1	74	21.66	21.42	21.55	0-2	2
		36	0	20.18	20.27	20.12	0-3	3
		36	18	20.32	20.11	20.19	0-3	3
		36	39	20.55	20.20	20.48	0-3	3
		75	0	19.32	20.17	20.31	0-3	3
	256QAM	1	0	18.26	18.71	18.38	0-5	5
		1	36	18.32	18.09	18.04	0-5	5
		1	74	18.72	18.45	18.56	0-5	5
		36	0	18.16	18.31	18.15	0-5	5
		36	18	18.29	18.11	18.20	0-5	5
		36	39	18.55	18.22	18.52	0-5	5
		75	0	18.38	18.23	18.37	0-5	5

LTE Band 2 _ 20 ㎒ Bandwidth _ Maximum Conducted Power_Sub 2 Ant.

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 ㎒	18900 Ch. 1880 ㎒	19100 Ch. 1900 ㎒		
20 ㎒	QPSK	1	0	23.17	23.53	23.26	0	0
		1	49	23.42	22.78	22.36	0	0
		1	99	22.82	23.37	22.43	0	0
		50	0	22.23	22.61	22.56	0-1	1
		50	25	22.54	22.07	21.78	0-1	1
		50	49	22.31	22.16	21.91	0-1	1
		100	0	22.43	22.30	22.08	0-1	1
	16QAM	1	0	22.46	22.74	22.42	0-1	1
		1	49	22.44	21.88	21.66	0-1	1
		1	99	22.75	22.51	22.25	0-1	1
		50	0	21.27	21.29	21.45	0-2	2
		50	25	21.47	21.02	21.25	0-2	2
		50	49	21.63	21.12	21.43	0-2	2
		100	0	21.42	21.19	21.44	0-2	2
	64QAM	1	0	21.39	21.78	21.61	0-2	2
		1	49	21.50	20.98	20.87	0-2	2
		1	99	21.61	21.56	21.56	0-2	2
		50	0	20.27	20.32	20.46	0-3	3
		50	25	20.46	20.05	20.22	0-3	3
		50	49	20.70	20.21	20.41	0-3	3
		100	0	20.44	20.28	20.41	0-3	3
	256QAM	1	0	18.41	18.76	18.75	0-5	5
		1	49	18.46	17.99	17.91	0-5	5
		1	99	18.72	18.56	18.64	0-5	5
		50	0	18.25	18.31	18.44	0-5	5
		50	25	18.45	18.20	18.18	0-5	5
		50	49	18.64	18.27	18.36	0-5	5
		100	0	18.45	18.28	18.42	0-5	5

11.3.4 LTE Reduced Conducted Power (Grip activated) (Sub2 Ant.)

[LTE Band 2 Conducted Power _ Sub2 Ant.]

LTE Band 2 _ 1.4 ㎒ Bandwidth _ Grip Backoff Conducted Power _Sub 2 Ant.

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff 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	13.21	12.89	13.67	0	0
		1	3	13.36	12.94	13.76	0	0
		1	5	13.27	12.91	13.81	0	0
		3	0	13.29	12.84	13.75	0	0
		3	1	13.34	12.91	13.77	0	0
		3	3	13.29	12.95	13.82	0	0
		6	0	13.32	12.98	13.84	0-1	0
	16QAM	1	0	13.41	12.99	13.81	0-1	0
		1	3	13.56	13.09	13.95	0-1	0
		1	5	13.47	13.14	13.98	0-1	0
		3	0	13.35	12.93	13.78	0-1	0
		3	1	13.39	13.06	13.86	0-1	0
		3	3	13.36	13.04	13.91	0-1	0
		6	0	13.40	12.95	13.81	0-2	0
	64QAM	1	0	13.38	12.92	13.81	0-2	0
		1	3	13.56	13.20	13.98	0-2	0
		1	5	13.43	13.05	13.86	0-2	0
		3	0	13.29	12.86	13.76	0-2	0
		3	1	13.42	12.95	13.82	0-2	0
		3	3	13.37	13.01	13.84	0-2	0
		6	0	13.34	12.91	13.85	0-3	0
	256QAM	1	0	13.29	12.91	13.76	0-5	0
		1	3	13.42	13.26	13.96	0-5	0
		1	5	13.45	13.15	13.90	0-5	0
		3	0	13.27	12.87	13.74	0-5	0
		3	1	13.34	12.87	13.82	0-5	0
		3	3	13.36	12.97	13.75	0-5	0
		6	0	13.31	12.90	13.84	0-5	0

LTE Band 2 _ 3 ㎒ Bandwidth_ Grip Backoff Conducted Power_Sub 2 Ant.

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18615 Ch. 1851.5 ㎒	18900 Ch. 1880 ㎒	19185 Ch. 1908.5 ㎒		
3 ㎒	QPSK	1	0	13.42	12.98	13.79	0	0
		1	7	13.34	12.85	13.78	0	0
		1	14	13.16	12.87	13.76	0	0
		8	0	13.33	12.89	13.80	0-1	0
		8	3	13.26	12.87	13.81	0-1	0
		8	7	13.23	12.89	13.84	0-1	0
		15	0	13.31	12.91	13.79	0-1	0
	16QAM	1	0	13.62	13.22	13.86	0-1	0
		1	7	13.43	13.04	13.99	0-1	0
		1	14	13.21	13.02	13.73	0-1	0
		8	0	13.37	12.94	13.83	0-2	0
		8	3	13.29	12.85	13.78	0-2	0
		8	7	13.26	12.95	13.81	0-2	0
		15	0	13.25	12.92	13.82	0-2	0
	64QAM	1	0	13.53	13.07	13.90	0-2	0
		1	7	13.38	13.10	13.89	0-2	0
		1	14	13.27	13.06	13.83	0-2	0
		8	0	13.32	12.92	13.75	0-3	0
		8	3	13.25	12.87	13.78	0-3	0
		8	7	13.21	12.90	13.75	0-3	0
		15	0	13.25	12.89	13.79	0-3	0
	256QAM	1	0	13.47	13.03	13.85	0-5	0
		1	7	13.39	13.06	13.87	0-5	0
		1	14	13.23	13.05	13.77	0-5	0
		8	0	13.28	12.92	13.68	0-5	0
		8	3	13.27	12.93	13.74	0-5	0
		8	7	13.27	13.02	13.71	0-5	0
		15	0	13.28	12.94	13.72	0-5	0

LTE Band 2 _ 5 ㎒ Bandwidth _ Grip Backoff Conducted Power_Sub 2 Ant.

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18625 Ch. 1852.5 ㎒	18900 Ch. 1880 ㎒	19175 Ch. 1907.5 ㎒		
5 ㎒	QPSK	1	0	13.39	13.18	13.52	0	0
		1	12	13.22	12.98	13.80	0	0
		1	24	13.09	13.07	13.74	0	0
		12	0	13.31	13.08	13.67	0-1	0
		12	6	13.17	13.06	13.75	0-1	0
		12	11	13.13	13.03	13.83	0-1	0
		25	0	13.21	13.10	13.76	0-1	0
	16QAM	1	0	13.47	13.37	13.60	0-1	0
		1	12	13.44	13.33	13.97	0-1	0
		1	24	13.25	13.25	13.91	0-1	0
		12	0	13.30	13.02	13.65	0-2	0
		12	6	13.20	12.99	13.80	0-2	0
		12	11	13.12	13.04	13.84	0-2	0
		25	0	13.17	13.06	13.72	0-2	0
	64QAM	1	0	13.52	13.20	13.62	0-2	0
		1	12	13.22	13.12	13.99	0-2	0
		1	24	13.19	13.16	13.86	0-2	0
		12	0	13.27	13.02	13.64	0-3	0
		12	6	13.14	12.98	13.79	0-3	0
		12	11	13.12	13.02	13.82	0-3	0
		25	0	13.17	13.00	13.71	0-3	0
	256QAM	1	0	13.46	13.16	13.68	0-5	0
		1	12	13.19	13.06	13.97	0-5	0
		1	24	13.23	13.12	13.86	0-5	0
		12	0	13.24	13.01	13.62	0-5	0
		12	6	13.09	12.96	13.69	0-5	0
		12	11	13.08	12.97	13.77	0-5	0
		25	0	13.19	13.00	13.72	0-5	0

LTE Band 2 _ 10 ㎒ Bandwidth _ Grip Backoff Conducted Power_Sub 2 Ant.

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18650 Ch. 1855 ㎒	18900 Ch. 1880 ㎒	19150 Ch. 1905 ㎒		
10 ㎒	QPSK	1	0	13.41	13.27	13.12	0	0
		1	24	13.10	12.88	13.41	0	0
		1	49	13.40	13.15	13.91	0	0
		25	0	13.26	13.11	13.23	0-1	0
		25	12	13.18	12.99	13.54	0-1	0
		25	24	13.21	13.01	13.82	0-1	0
		50	0	13.31	13.08	13.57	0-1	0
	16QAM	1	0	13.46	13.54	13.20	0-1	0
		1	24	13.08	13.10	13.56	0-1	0
		1	49	13.53	13.23	13.97	0-1	0
		25	0	13.29	13.08	13.22	0-2	0
		25	12	13.23	12.97	13.51	0-2	0
		25	24	13.26	13.00	13.81	0-2	0
		50	0	13.26	13.04	13.58	0-2	0
	64QAM	1	0	13.56	13.42	13.17	0-2	0
		1	24	13.21	13.02	13.59	0-2	0
		1	49	13.45	13.23	13.96	0-2	0
		25	0	13.21	13.07	13.19	0-3	0
		25	12	13.18	12.97	13.50	0-3	0
		25	24	13.25	12.99	13.77	0-3	0
		50	0	13.23	13.04	13.59	0-3	0
	256QAM	1	0	13.37	13.44	13.08	0-5	0
		1	24	13.07	12.96	13.47	0-5	0
		1	49	13.41	13.26	13.96	0-5	0
		25	0	13.29	13.08	13.21	0-5	0
		25	12	13.21	12.96	13.50	0-5	0
		25	24	13.27	12.98	13.77	0-5	0
		50	0	13.27	13.00	13.55	0-5	0

LTE Band 2 _ 15 ㎒ Bandwidth _ Grip Backoff Conducted Power_Sub 2 Ant.

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18675 Ch. 1857.5 ㎒	18900 Ch. 1880 ㎒	19125 Ch. 1902.5 ㎒		
15 ㎒	QPSK	1	0	13.46	13.63	13.55	0	0
		1	36	13.15	12.86	12.98	0	0
		1	74	13.69	13.31	13.75	0	0
		36	0	13.25	13.21	13.23	0-1	0
		36	18	13.28	13.04	13.22	0-1	0
		36	39	13.55	13.09	13.55	0-1	0
		75	0	13.39	13.15	13.39	0-1	0
	16QAM	1	0	13.46	13.78	13.78	0-1	0
		1	36	13.28	13.07	13.02	0-1	0
		1	74	13.95	13.48	13.86	0-1	0
		36	0	13.23	13.23	13.18	0-2	0
		36	18	13.31	13.02	13.17	0-2	0
		36	39	13.61	13.10	13.58	0-2	0
		75	0	13.36	13.14	13.37	0-2	0
	64QAM	1	0	13.51	13.68	13.74	0-2	0
		1	36	13.25	12.91	13.02	0-2	0
		1	74	13.82	13.39	13.84	0-2	0
		36	0	13.24	13.27	13.21	0-3	0
		36	18	13.34	13.05	13.19	0-3	0
		36	39	13.56	13.08	13.56	0-3	0
		75	0	13.36	13.13	13.38	0-3	0
	256QAM	1	0	13.64	13.65	13.63	0-5	0
		1	36	13.33	12.81	13.09	0-5	0
		1	74	13.76	13.36	13.77	0-5	0
		36	0	13.21	13.26	13.20	0-5	0
		36	18	13.32	13.02	13.19	0-5	0
		36	39	13.55	13.08	13.54	0-5	0
		75	0	13.35	13.13	13.37	0-5	0

LTE Band 2 _ 20 ㎒ Bandwidth _ Grip Backoff Conducted Power_Sub 2 Ant.

Bandwidth	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 ㎒	18900 Ch. 1880 ㎒	19100 Ch. 1900 ㎒		
20 ㎒	QPSK	1	0	13.17	13.63	13.61	0	0
		1	49	13.18	12.74	12.80	0	0
		1	99	13.55	13.45	13.60	0	0
		50	0	13.14	13.52	13.36	0-1	0
		50	25	13.29	12.94	13.06	0-1	0
		50	49	13.24	13.06	13.27	0-1	0
		100	0	13.33	13.18	13.34	0-1	0
	16QAM	1	0	13.55	13.98	13.91	0-1	0
		1	49	13.47	13.08	13.12	0-1	0
		1	99	13.64	13.72	13.89	0-1	0
		50	0	13.19	13.37	13.54	0-2	0
		50	25	13.38	13.10	13.22	0-2	0
		50	49	13.64	13.22	13.42	0-2	0
		100	0	13.42	13.30	13.44	0-2	0
	64QAM	1	0	13.39	13.95	13.93	0-2	0
		1	49	13.42	13.02	13.04	0-2	0
		1	99	13.69	13.67	13.84	0-2	0
		50	0	13.17	13.38	13.51	0-3	0
		50	25	13.37	13.11	13.27	0-3	0
		50	49	13.65	13.26	13.36	0-3	0
		100	0	13.37	13.28	13.45	0-3	0
	256QAM	1	0	13.40	13.94	13.93	0-5	0
		1	49	13.37	13.02	13.06	0-5	0
		1	99	13.84	13.65	13.77	0-5	0
		50	0	13.17	13.37	13.60	0-5	0
		50	25	13.35	13.09	13.22	0-5	0
		50	49	13.62	13.24	13.40	0-5	0
		100	0	13.42	13.29	13.49	0-5	0

11.4 NR Maximum Output Power

11.4.1 NR Band Maximum Conducted Power

[NR Band n5 Conducted Power_Main1 Ant.]

NR Band n5_ 5 ㎒ Bandwidth_ Maximum Conducted Power_NSA Mode

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
						165300	167300	169300	
						826.5 ㎒	836.5 ㎒	846.5 ㎒	
5 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	22.99	23.02	23.21	0
				1	13	22.90	22.96	23.22	0
				1	23	23.01	23.09	23.35	0
				12	0	22.55	22.57	22.79	0.5
				12	7	23.04	23.09	23.36	0
				12	13	22.55	22.61	22.89	0.5
				25	0	22.55	22.58	22.88	0.5
			QPSK	1	1	23.11	23.12	23.31	0
				1	13	22.99	23.04	23.27	0
				1	23	23.08	23.15	23.41	0
				12	0	22.07	22.10	22.32	1
				12	7	23.06	23.09	23.36	0
				12	13	22.08	22.11	22.38	1
				25	0	22.06	22.09	22.36	1
			16QAM	1	1	22.02	22.14	22.32	1
			64QAM	1	1	20.62	20.66	20.85	2.5
			256QAM	1	1	18.45	18.47	18.60	4.5
		CP	QPSK	1	1	21.55	21.54	21.74	1.5

NR Band n5_ 10 ㎒ Bandwidth_ Maximum Conducted Power_NSA Mode

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
							167300		
							836.5 ㎒		
10 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1		23.00		0
				1	26		23.24		0
				1	50		23.15		0
				25	0		22.57		0.5
				25	14		23.12		0
				25	27		22.63		0.5
				50	0		22.61		0.5
			QPSK	1	1		23.07		0
				1	26		23.16		0
				1	50		23.26		0
				25	0		22.10		1
				25	14		23.13		0
				25	27		22.14		1
				50	0		22.11		1
			16QAM	1	1		22.06		1
			64QAM	1	1		20.64		2.5
			256QAM	1	1		18.42		4.5
		CP	QPSK	1	1		21.47		1.5

NR Band n5_ 15 ㎒ Bandwidth_ Maximum Conducted Power_NSA Mode

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
							167300		
							836.5 ㎒		
15 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1		22.99		0
				1	40		22.99		0
				1	77		23.20		0
				36	0		22.55		0.5
				36	22		23.11		0
				36	43		22.68		0.5
				75	0		22.64		0.5
			QPSK	1	1		23.08		0
				1	40		23.05		0
				1	77		23.27		0
				36	0		22.08		1
				36	22		23.14		0
				36	43		22.19		1
				75	0		22.13		1
			16QAM	1	1		22.10		1
			64QAM	1	1		20.61		2.5
			256QAM	1	1		18.42		4.5
		CP	QPSK	1	1		21.51		1.5

NR Band n5_ 20 ㎒ Bandwidth_ Maximum Conducted Power_NSA Mode

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
							167300		
							836.5 ㎒		
20 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1		22.98		0
				1	53		23.24		0
				1	104		23.29		0
				50	0		22.55		0.5
				50	28		23.13		0
				50	56		22.73		0.5
				100	0		22.64		0.5
			QPSK	1	1		23.05		0
				1	53		23.23		0
				1	104		23.35		0
				50	0		22.09		1
				50	28		23.14		0
				50	56		22.25		1
				100	0		22.11		1
			16QAM	1	1		22.04		1
			64QAM	1	1		20.64		2.5
			256QAM	1	1		18.41		4.5
		CP	QPSK	1	1		21.47		1.5

[NR Band n66 Conducted Power_ Main1 Ant.]

NR Band n66 _5 ㎒ Bandwidth_ Maximum Conducted Power_NSA Mode

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
						342500	349000	355500	
						1712.5 ㎒	1745 ㎒	1777.5 ㎒	
5 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	23.73	24.15	23.64	0
				1	13	23.70	24.16	23.62	0
				1	23	23.85	24.26	23.74	0
				12	0	23.18	23.76	23.28	0.5
				12	7	23.63	24.28	23.64	0
				12	13	23.31	23.80	23.25	0.5
				25	0	23.14	23.83	23.19	0.5
			QPSK	1	1	23.18	24.15	23.43	0
				1	13	23.40	24.23	23.43	0
				1	23	23.54	24.26	23.48	0
				12	0	22.91	23.28	22.82	1
				12	7	23.48	24.30	23.54	0
				12	13	22.93	23.32	22.79	1
				25	0	22.94	23.32	22.79	1
			16QAM	1	1	22.83	23.25	22.80	1
			64QAM	1	1	21.35	21.77	21.32	2.5
			256QAM	1	1	19.16	19.58	19.04	4.5
		CP	QPSK	1	1	22.25	22.65	22.14	1.5

NR Band n66 _ 10 ㎒ Bandwidth_ Maximum Conducted Power_NSA Mode

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
						343000	349000	355000	
						1715 ㎒	1745 ㎒	1775 ㎒	
10 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	23.28	24.18	23.65	0
				1	26	23.66	24.36	23.71	0
				1	50	23.91	24.25	23.59	0
				25	0	22.87	23.81	23.08	0.5
				25	14	23.53	24.31	23.54	0
				25	27	23.34	23.86	23.14	0.5
				50	0	23.04	23.81	23.05	0.5
			QPSK	1	1	22.80	23.90	23.09	0
				1	26	23.39	24.17	23.38	0
				1	50	23.72	24.14	23.35	0
				25	0	22.85	23.33	22.89	1
				25	14	23.48	24.25	23.47	0
				25	27	23.13	23.34	22.87	1
				50	0	23.07	23.33	22.84	1
			16QAM	1	1	22.51	23.25	22.92	1
			64QAM	1	1	21.53	21.81	21.35	2.5
			256QAM	1	1	19.32	19.57	19.21	4.5
		CP	QPSK	1	1	22.33	22.66	22.27	1.5

NR Band n66 _ 15 ㎒ Bandwidth_ Maximum Conducted Power_NSA Mode

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
						343500	349000	354500	
						1717.5 ㎒	1745 ㎒	1772.5 ㎒	
15 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	22.75	23.80	23.24	0
				1	40	23.68	24.19	23.61	0
				1	77	23.76	23.83	23.18	0
				36	0	22.61	23.53	22.81	0.5
				36	22	23.51	24.17	23.43	0
				36	43	23.31	23.66	22.93	0.5
				75	0	22.90	23.55	22.82	0.5
			QPSK	1	1	22.68	23.36	22.71	0
				1	40	23.41	24.04	23.32	0
				1	77	23.57	23.65	22.96	0
				36	0	22.61	23.31	22.80	1
				36	22	23.46	24.10	23.35	0
				36	43	23.17	23.36	22.77	1
				75	0	23.07	23.33	22.82	1
			16QAM	1	1	22.27	23.21	22.71	1
			64QAM	1	1	21.03	21.82	21.50	2.5
			256QAM	1	1	19.28	19.54	19.24	4.5
		CP	QPSK	1	1	21.79	22.63	22.32	1.5

NR Band n66 _ 20 ㎒ Bandwidth_ Maximum Conducted Power_NSA Mode

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
						344000	349000	354000	
						1720 ㎒	1745 ㎒	1770 ㎒	
20 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	22.80	23.99	23.46	0
				1	53	23.62	24.29	23.63	0
				1	104	24.12	23.90	23.39	0
				50	0	22.62	23.60	22.94	0.5
				50	28	23.48	24.16	23.44	0
				50	56	23.46	23.69	23.01	0.5
				100	0	22.98	23.62	22.92	0.5
			QPSK	1	1	22.58	23.55	22.94	0
				1	53	23.37	24.04	23.32	0
				1	104	23.95	23.73	23.17	0
				50	0	22.64	23.31	22.94	1
				50	28	23.44	24.08	23.37	0
				50	56	23.17	23.34	22.83	1
				100	0	23.09	23.35	22.93	1
			16QAM	1	1	22.10	23.23	22.88	1
			64QAM	1	1	21.18	21.78	21.60	2.5
			256QAM	1	1	19.24	19.50	19.33	4.5
		CP	QPSK	1	1	21.89	22.60	22.44	1.5

11.4.2 NR Band Reduced Conducted Power (Grip activated)

[NR Band n5 Conducted Power _ Main1 Ant.]

NR Band n5_ 5 ㎒ Bandwidth_ Grip Backoff Conducted Power_NSA Mode

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR [dB]
						165300	167300	169300	
						826.5 ㎒	836.5 ㎒	846.5 ㎒	
5 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	14.92	14.83	14.00	0
				1	13	14.83	14.67	13.61	0
				1	23	14.91	14.68	13.41	0
				12	0	14.88	14.79	13.91	0
				12	7	14.86	14.74	13.67	0
				12	13	14.85	14.68	13.51	0
				25	0	14.90	14.77	13.70	0
			QPSK	1	1	14.91	14.79	14.08	0
				1	13	14.85	14.64	13.66	0
				1	23	14.94	14.68	13.46	0
				12	0	14.89	14.87	13.87	0
				12	7	14.90	14.82	13.67	0
				12	13	14.90	14.74	13.53	0
				25	0	14.87	14.83	13.69	0
			16QAM	1	1	14.93	14.42	14.55	0
			64QAM	1	1	14.95	14.96	14.04	0
			256QAM	1	1	14.85	14.76	13.98	0
		CP	QPSK	1	1	14.91	14.82	14.03	0

NR Band n5_ 10 ㎒ Bandwidth_ Grip Backoff Conducted Power_NSA Mode

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR [dB]
							167300		
							836.5 ㎒		
10 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1		14.87		0
				1	26		14.85		0
				1	50		14.46		0
				25	0		14.84		0
				25	14		14.79		0
				25	27		14.61		0
				50	0		14.79		0
			QPSK	1	1		14.93		0
				1	26		14.81		0
				1	50		14.46		0
				25	0		14.85		0
				25	14		14.75		0
				25	27		14.61		0
				50	0		14.79		0
			16QAM	1	1		14.70		0
			64QAM	1	1		14.93		0
			256QAM	1	1		14.79		0
		CP	QPSK	1	1		14.89		0

NR Band n5_ 15 ㎒ Bandwidth_ Grip Backoff Conducted Power_NSA Mode

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR [dB]
							167300		
							836.5 ㎒		
15 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1		14.91		0
				1	40		14.68		0
				1	77		14.20		0
				36	0		14.86		0
				36	22		14.80		0
				36	43		14.5		0
				75	0		14.78		0
			QPSK	1	1		14.90		0
				1	40		14.72		0
				1	77		14.21		0
				36	0		14.86		0
				36	22		14.82		0
				36	43		14.51		0
				75	0		14.81		0
			16QAM	1	1		14.98		0
			64QAM	1	1		14.94		0
			256QAM	1	1		14.80		0
		CP	QPSK	1	1		14.95		0

NR Band n5_ 20 ㎒ Bandwidth_ Grip Backoff Conducted Power_NSA Mode

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR [dB]
							167300		
							836.5 ㎒		
20 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1		14.91		0
				1	53		14.91		0
				1	104		13.85		0
				50	0		14.85		0
				50	28		14.77		0
				50	56		14.40		0
				100	0		14.77		0
			QPSK	1	1		14.83		0
				1	53		14.85		0
				1	104		13.75		0
				50	0		14.38		0
				50	28		14.81		0
				50	56		14.86		0
				100	0		14.77		0
			16QAM	1	1		14.90		0
			64QAM	1	1		14.96		0
			256QAM	1	1		14.79		0
		CP	QPSK	1	1		14.84		0

[NR Band n66 Conducted Power_ Main1 Ant.]

NR Band n66 _5 ㎒ Bandwidth_ Grip Backoff Conducted Power_NSA Mode

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR [dB]
						342500	349000	355500	
						1712.5 ㎒	1745 ㎒	1777.5 ㎒	
5 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	12.22	12.63	13.25	0
				1	13	12.13	12.61	13.26	0
				1	23	12.16	12.74	13.30	0
				12	0	12.30	12.68	13.32	0
				12	7	12.24	12.72	13.30	0
				12	13	12.21	12.71	13.28	0
				25	0	12.25	12.71	13.36	0
			QPSK	1	1	12.32	12.67	13.40	0
				1	13	12.13	12.65	13.26	0
				1	23	12.22	12.76	13.34	0
				12	0	12.29	12.68	13.39	0
				12	7	12.27	12.72	13.37	0
				12	13	12.22	12.75	13.41	0
				25	0	12.27	12.77	13.38	0
			16QAM	1	1	12.35	12.74	13.39	0
			64QAM	1	1	12.35	12.79	13.44	0
			256QAM	1	1	12.18	12.54	13.28	0
		CP	QPSK	1	1	12.31	12.65	13.32	0

NR Band n66 _ 10 ㎒ Bandwidth_ Grip Backoff Conducted Power_NSA Mode

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR [dB]
						343000	349000	355000	
						1715 ㎒	1745 ㎒	1775 ㎒	
10 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	12.37	12.56	13.27	0
				1	26	12.39	12.83	13.41	0
				1	50	12.17	12.81	13.29	0
				25	0	12.32	12.66	13.30	0
				25	14	12.29	12.79	13.33	0
				25	27	12.28	12.78	13.35	0
				50	0	12.35	12.75	13.33	0
			QPSK	1	1	12.45	12.62	13.34	0
				1	26	12.37	12.83	13.49	0
				1	50	12.18	12.87	13.35	0
				25	0	12.41	12.71	13.33	0
				25	14	12.32	12.78	13.29	0
				25	27	12.27	12.80	13.34	0
				50	0	12.30	12.80	13.32	0
			16QAM	1	1	12.45	12.64	13.28	0
			64QAM	1	1	12.49	12.67	13.32	0
			256QAM	1	1	12.35	12.49	13.20	0
		CP	QPSK	1	1	12.39	12.54	13.28	0

NR Band n66 _ 15 ㎒ Bandwidth_ Grip Backoff Conducted Power_NSA Mode

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR [dB]
						343500	349000	354500	
						1717.5 ㎒	1745 ㎒	1772.5 ㎒	
15 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	12.44	12.57	13.20	0
				1	40	12.22	12.63	13.15	0
				1	77	12.13	12.79	13.20	0
				36	0	12.40	12.61	13.26	0
				36	22	12.30	12.75	13.25	0
				36	43	12.20	12.82	13.32	0
				75	0	12.32	12.76	13.26	0
			QPSK	1	1	12.46	12.53	13.27	0
				1	40	12.22	12.65	13.21	0
				1	77	12.17	12.82	13.24	0
				36	0	12.43	12.61	13.28	0
				36	22	12.35	12.75	13.27	0
				36	43	12.23	12.83	13.30	0
				75	0	12.29	12.80	13.27	0
			16QAM	1	1	12.44	12.53	13.31	0
			64QAM	1	1	12.51	12.65	13.33	0
			256QAM	1	1	12.27	12.41	13.11	0
		CP	QPSK	1	1	12.51	12.56	13.30	0

NR Band n66 _ 20 ㎒ Bandwidth_ Grip Backoff Conducted Power_NSA Mode

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Grip Backoff Power [dBm]			MPR [dB]
						344000	349000	354000	
						1720 ㎒	1745 ㎒	1770 ㎒	
20 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	12.42	12.41	13.15	0
				1	53	12.30	12.83	13.37	0
				1	104	12.07	12.87	13.18	0
				50	0	12.34	12.58	13.24	0
				50	28	12.23	12.77	13.27	0
				50	56	12.18	12.87	13.32	0
				100	0	12.24	12.82	13.27	0
			QPSK	1	1	12.51	12.51	13.25	0
				1	53	12.34	12.79	13.40	0
				1	104	12.17	12.88	13.31	0
				50	0	12.38	12.59	13.27	0
				50	28	12.27	12.81	13.25	0
				50	56	12.18	12.88	13.29	0
				100	0	12.27	12.79	13.21	0
			16QAM	1	1	12.49	12.45	13.13	0
			64QAM	1	1	12.63	12.53	13.25	0
			256QAM	1	1	12.35	12.33	13.09	0
		CP	QPSK	1	1	12.45	12.48	13.13	0

11.5 WIFI Conducted Power measurement method

Un-Licensed Bands (DTS Band)

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

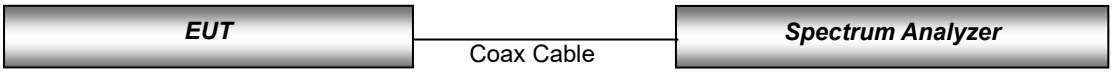
Test Procedure
1. Measure the duty cycle.
2. Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
3. Add 10 log (1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual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

Un-Licensed Bands (NII Band)

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

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

Test setup



11.5.1 IEEE 802.11 (2.4 ㎓) Maximum Conducted Power

Mode	Frequency [㎒]	Channel	IEEE 802.11 (2.4 ㎓) Average RF Conducted Power [dBm]		
			Ant.1	Ant.2	MIMO
802.11b	2 412	1	17.46	17.51	20.49
	2 437	6	17.42	17.07	20.26
	2 462	11	17.60	17.31	20.47
	2 467	12	3.38	2.89	6.15
	2 472	13	1.59	0.94	4.29
802.11g	2 412	1	13.10	13.62	16.37
	2 437	6	16.50	16.17	19.35
	2 462	11	13.57	13.18	16.39
	2 467	12	3.20	2.70	5.97
	2 472	13	-1.88	-2.30	0.92
802.11n (HT20)	2 412	1	13.28	13.30	16.30
	2 437	6	16.18	15.92	19.06
	2 462	11	13.28	13.27	16.29
	2 467	12	3.08	2.52	5.82
	2 472	13	-2.13	-2.46	0.72
802.11ax (HT20)	2 412	1	13.11	13.26	16.20
	2 437	6	15.87	15.80	18.85
	2 462	11	13.37	12.85	16.13
	2 467	12	2.27	2.36	5.32
	2 472	13	-2.06	-1.50	1.24

11.5.2 IEEE 802.11 (2.4 ㎓) Reduced Conducted Power (Grip Active)

Mode	Frequency [㎒]	Channel	IEEE 802.11 (2.4 ㎓) Average RF Conducted Power [dBm]		
			Ant.1	Ant.2	MIMO
802.11b	2 412	1	10.51	10.42	13.48
	2 437	6	10.03	10.37	13.21
	2 462	11	10.56	10.38	13.48
	2 467	12	3.38	2.89	6.15
	2 472	13	1.59	0.94	4.29
802.11g	2 412	1	10.39	10.06	13.24
	2 437	6	9.97	10.24	13.12
	2 462	11	10.41	10.13	13.28
	2 467	12	3.20	2.70	5.97
	2 472	13	-1.88	-2.30	0.92
802.11n (HT20)	2 412	1	10.34	10.04	13.20
	2 437	6	9.96	10.34	13.16
	2 462	11	10.36	9.96	13.17
	2 467	12	3.08	2.52	5.82
	2 472	13	-2.13	-2.46	0.72
802.11ax (HT20)	2 412	1	10.27	10.08	13.19
	2 437	6	9.86	10.28	13.09
	2 462	11	10.29	10.03	13.17
	2 467	12	2.27	2.36	5.32
	2 472	13	-2.06	-1.50	1.24

11.5.4 IEEE 802.11 (5 ㎓) Maximum Conducted Power

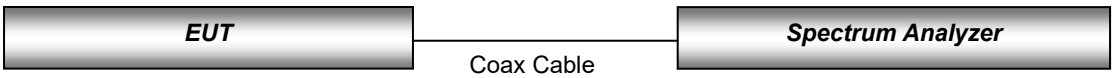
Frequency [㎒]	Channel	IEEE 802.11 a(20 ㎒ BW) Conducted Power [dBm]		
		Ant.1	Ant.2	MIMO
5 180	36	15.67	14.31	18.06
5 200	40	15.65	14.02	17.92
5 220	44	15.63	14.28	18.02
5 240	48	15.49	14.76	18.15
5 260	52	15.30	14.51	17.93
5 280	56	15.27	14.52	17.92
5 300	60	15.28	15.20	18.25
5 320	64	14.98	14.10	17.57
5 500	100	11.17	12.63	14.97
5 600	120	15.40	15.88	18.66
5 620	124	15.38	15.52	18.46
5 720	144	15.70	15.51	18.62
5 745	149	15.50	15.83	18.68
5 785	157	15.65	15.13	18.40
5 825	165	15.84	15.50	18.69

11.5.5 IEEE 802.11 (5 ㎓) Reduced Conducted Power (Grip Active)

Frequency [㎒]	Channel	IEEE 802.11 ac(80 ㎒ BW) Conducted Power [dBm]		
		Ant.1	Ant.2	MIMO
5 210	42	8.64	8.14	11.41
5 290	58	8.10	7.86	10.99
5 530	106	8.31	8.89	11.62
5 610	122	8.39	8.73	11.57
5 690	138	8.36	8.94	11.67
5 775	155	7.64	8.73	11.23

Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02:
▪ Power measurements were performed for the transmission mode configuration with the highest maximum output power specified for production units.
▪ For transmission mode with the same maximum output power specification, powers were measured for the largest channel Bandwidth, lowest order modulation and lowest data rate.
▪ For transmission modes with identical maximum specified output power, channel Bandwidth, modulation and data rates, power measurements were required for all identical configurations.
▪ For each transmission mode configuration, powers were measured for the highest and lowest channels; and at the mid-Band channel(s) when there were at least 3 channels supported. For configurations with multiple mid-Band channels, due to an even number of channels, both channels were measured.

Test Configuration



11.6 Bluetooth

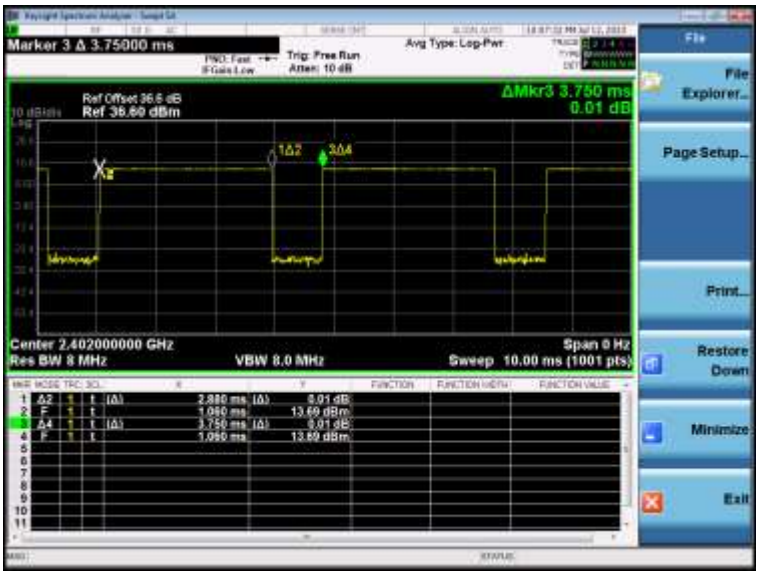
Maximum Conducted Power

The Burst averaged-conducted power

Mode	Channel	Bluetooth Power [dBm]	
		Maximum	Grip Active
DH5	0	13.19	9.30
	39	13.38	9.70
	78	13.33	9.90
2-DH5	0	9.03	9.03
	39	9.16	9.16
	78	9.21	9.21
3-DH5	0	9.05	9.05
	39	9.16	9.16
	78	9.22	9.22

Per October 2016 TCB Workshop Notes:
When call box and Bluetooth protocol are used for Bluetooth SAR measurement, time-domain plot is required to identify duty factor for supporting the test setup and result.
Bluetooth duty cycle was measured using Bluetooth tester equipment (CBT / R&S) with Bluetooth protocol. DH5, 2-DH5, 3-DH5 mode is the highest duty cycle and conducted power. SAR test were performed at DH5, 2-DH5, 3-DH5 mode.

Bluetooth DH 5 Mode



Bluetooth Duty Cycle [BDR]

Duty Cycle = (BT-On time /BT-Full time) = (2.880/3.750) = 0.768 (DH5)

BT DH5 Maximum Duty Factor:
The theoretical maximum duty cycle defined by chipset manufacturer is 77.57 % In the ideal theory Duty Cycle, the test error tolerance [1%] of the test equipment was considered and applied to the measurement results.The duty cycle of DH5 measured by DUT was 76.80 %, and the duty cycle was compensated by applying test error tolerance 1 %.

12. System Verification

12.1 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 (%)
06/13/2023	20.1	750H	705	0.846	43.503	0.889	42.174	-4.84	3.15
			710	0.851	43.428	0.890	42.148	-4.38	3.04
			750	0.894	42.828	0.893	41.940	0.11	2.12
06/14/2023	19.6	750H	750	0.894	42.841	0.893	41.940	0.11	2.15
			785	0.931	42.328	0.896	41.758	3.91	1.37
06/19/2023	19.1	835H	820	0.923	41.770	0.899	41.577	2.67	0.46
			835	0.940	41.562	0.900	41.500	4.44	0.15
			850	0.954	41.359	0.916	41.500	4.15	-0.34
06/20/2023	19.3	835H	820	0.923	41.765	0.899	41.577	2.67	0.45
			835	0.940	41.559	0.900	41.500	4.44	0.14
			850	0.954	41.358	0.916	41.500	4.15	-0.34
06/15/2023	19.5	835H	820	0.923	41.757	0.899	41.577	2.67	0.43
			835	0.940	41.550	0.900	41.500	4.44	0.12
			850	0.954	41.348	0.916	41.500	4.15	-0.37
06/27/2023	19.2	835H	820	0.923	41.754	0.899	41.577	2.67	0.43
			835	0.940	41.548	0.900	41.500	4.44	0.12
			850	0.954	41.346	0.916	41.500	4.15	-0.37
06/13/2023	23.3	1800H	1710	1.302	39.770	1.348	40.144	-3.41	-0.93
			1750	1.345	39.618	1.371	40.080	-1.90	-1.15
			1800	1.400	39.381	1.400	40.000	0.00	-1.55
06/16/2023	22.2	1800H	1710	1.302	39.761	1.348	40.144	-3.41	-0.95
			1750	1.345	39.615	1.371	40.080	-1.90	-1.16
			1800	1.400	39.382	1.400	40.000	0.00	-1.55
06/29/2023	21.9	1800H	1710	1.292	39.761	1.348	40.144	-4.15	-0.95
			1750	1.335	39.620	1.371	40.080	-2.63	-1.15
			1800	1.390	39.384	1.400	40.000	-0.71	-1.54
06/12/2023	23.9	1900H	1850	1.339	39.368	1.400	40.000	-4.36	-1.58
			1900	1.389	39.164	1.400	40.000	-0.79	-2.09
			1910	1.397	39.120	1.400	40.000	-0.21	-2.20
06/20/2023	23.4	1900H	1850	1.339	39.372	1.400	40.000	-4.36	-1.57
			1900	1.389	39.165	1.400	40.000	-0.79	-2.09
			1910	1.397	39.120	1.400	40.000	-0.21	-2.20
07/06/2023	22.7	1900H	1850	1.339	39.383	1.400	40.000	-4.36	-1.54
			1900	1.389	39.180	1.400	40.000	-0.79	-2.05
			1910	1.397	39.135	1.400	40.000	-0.21	-2.16
06/19/2023	22.3	1900H	1850	1.360	39.378	1.400	40.000	-2.86	-1.56
			1900	1.410	39.171	1.400	40.000	0.71	-2.07
			1910	1.418	39.125	1.400	40.000	1.29	-2.19
07/05/2023	19.0	2450H	2400	1.793	38.770	1.756	39.290	2.11	-1.32
			2450	1.853	38.573	1.800	39.200	2.94	-1.60
			2500	1.909	38.406	1.855	39.140	2.91	-1.88

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 (%)
07/03/2023	18.6	2450H	2400	1.813	39.774	1.756	39.290	3.25	1.23
			2450	1.828	39.736	1.800	39.200	1.56	1.37
			2500	1.803	39.557	1.855	39.140	-2.80	1.07
06/16/2023	19.8	2600H	2500	1.917	39.452	1.855	39.140	3.34	0.80
			2550	1.972	39.256	1.909	39.070	3.30	0.48
			2600	2.032	39.050	1.964	39.010	3.46	0.10
07/06/2023	19.0	5250H	5180	4.502	36.923	4.635	36.010	-2.87	2.54
			5250	4.640	36.715	4.706	35.930	-1.40	2.18
			5280	4.685	36.676	4.737	35.894	-1.10	2.18
			5320	4.742	36.711	4.778	35.846	-0.75	2.41
07/07/2023	18.9	5600H	5500	4.879	36.678	4.963	35.640	-1.69	2.91
			5600	4.942	36.444	5.065	35.530	-2.43	2.57
07/10/2023	18.7	5750H	5750	5.149	36.243	5.219	35.360	-1.34	2.50
			5800	5.109	36.240	5.270	35.300	-3.06	2.66
			5825	5.103	36.185	5.296	35.270	-3.64	2.59

12.2 System Verification

Input Power: 50 ㎽

Freq.	Date	Probe (S/N)	Dipole (S/N)	Liquid	Amb. Temp.	Liquid Temp.	1 W Target SAR_{1g} (SPEAG)	50 ㎽ Measured SAR_{1g}	1 W Normalized SAR_{1g}	Deviation	Limit
[㎒]					[°C]	[°C]	[W/kg]	[W/kg]	[W/kg]	[%]	[%]
750	06/13/2023	3797	1014	Head	20.2	20.1	8.59	0.425	8.50	- 1.05	± 10
750	06/14/2023	3797		Head	19.7	19.6	8.59	0.426	8.52	- 0.81	± 10
835	06/19/2023	3797	4d165	Head	19.2	19.1	9.74	0.488	9.76	+ 0.21	± 10
835	06/20/2023	3797		Head	19.3	19.3	9.74	0.502	10.04	+ 3.08	± 10
835	06/15/2023	3797		Head	19.6	19.5	9.74	0.502	10.04	+ 3.08	± 10
835	06/27/2023	3797		Head	19.3	19.2	9.74	0.501	10.02	+ 2.87	± 10
1 800	06/13/2023	7679	2d015	Head	23.4	23.3	37.8	1.88	37.6	- 0.53	± 10
1 800	06/16/2023	7679		Head	22.3	22.2	37.8	1.88	37.6	- 0.53	± 10
1 800	06/29/2023	7679		Head	22.0	21.9	37.8	1.87	37.4	- 1.06	± 10
1 900	06/12/2023	7679	5d061	Head	24.0	23.9	38.9	1.92	38.4	- 1.29	± 10
1 900	06/20/2023	7679		Head	23.5	23.4	38.9	1.92	38.4	- 1.29	± 10
1 900	07/06/2023	7679		Head	22.8	22.7	38.9	1.92	38.4	- 1.29	± 10
1 900	06/19/2023	7679		Head	22.4	22.3	38.9	1.93	38.6	- 0.77	± 10
2 450	07/05/2023	3797	1049	Head	19.1	19.0	52.7	2.68	53.6	+ 1.71	± 10
2 450	07/03/2023	3797		Head	18.7	18.6	52.7	2.64	52.8	+ 0.19	± 10
2 600	06/16/2023	3797	1106	Head	19.8	19.8	55.6	2.71	54.2	- 2.52	± 10
5 250	07/06/2023	3797	1317	Head	19.1	19.0	78.8	4.22	84.4	+ 7.11	± 10
5 600	07/07/2023	3797		Head	19.0	18.9	81.2	4.31	86.2	+ 6.16	± 10
5 750	07/10/2023	3797		Head	18.7	18.7	77.4	3.89	77.8	+ 0.52	± 10

12.3 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.

13. SAR Test Data Summary

13.1 SAR Measurement Results

GSM 850 Body SAR (Main1 Ant.)													
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	Duty Cycle	Distance	1 g Meas. SAR	Scaling Factor	1 g Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)				(mm)	(W/kg)		(W/kg)	
836.6	190	GPRS 2TX	22.5	22.06	0.15	Rear	Active	1:4.15	0	0.514	1.107	0.569	-
836.6	190	GPRS 2TX	22.5	22.06	-0.14	Top	Active	1:4.15	0	0.702	1.107	**0.777**	1
836.6	190	GPRS 2TX	22.5	22.06	0.09	Right	Active	1:4.15	0	0.044	1.107	0.049	-
836.6	190	GPRS 2TX	32.0	31.31	-0.14	Rear	Inactive	1:4.15	20	0.397	1.172	0.465	-
836.6	190	GPRS 2TX	32.0	31.31	0.00	Left	N/A	1:4.15	0	0.141	1.172	0.165	-
836.6	190	GPRS 2TX	32.0	31.31	0.08	Right	Inactive	1:4.15	10	0.073	1.172	0.086	-
836.6	190	GPRS 2TX	32.0	31.31	0.05	Top	Inactive	1:4.15	26	0.324	1.172	0.380	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population										Body 1.6 W/kg Averaged over 1 gram			

GSM 1900 Body SAR (Main1 Ant.)													
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	Duty Cycle	Distance	1 g Meas. SAR	Scaling Factor	1 g Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)				(mm)	(W/kg)		(W/kg)	
1 880	661	GPRS 2TX	19.5	18.51	-0.14	Rear	Active	1:4.15	0	0.516	1.256	**0.648**	2
1 880	661	GPRS 2TX	19.5	18.51	0.14	Top	Active	1:4.15	0	0.431	1.256	0.541	-
1 880	661	GPRS 2TX	19.5	18.51	0.14	Right	Active	1:4.15	0	0.056	1.256	0.071	-
1 880	661	GPRS 2TX	29.0	28.43	0.00	Rear	Inactive	1:4.15	20	0.157	1.140	0.179	-
1 880	661	GPRS 2TX	29.0	28.43	-0.18	Left	N/A	1:4.15	0	0.250	1.140	0.285	-
1 880	661	GPRS 2TX	29.0	28.43	0.05	Right	Inactive	1:4.15	10	0.096	1.140	0.109	-
1 880	661	GPRS 2TX	29.0	28.43	0.01	Top	Inactive	1:4.15	26	0.152	1.140	0.173	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population										Body 1.6 W/kg Averaged over 1 gram			

UMTS Band 5 Body SAR (Main1 Ant.)													
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	Duty Cycle	Distance	1 g Meas. SAR	Scaling Factor	1 g Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)				(mm)	(W/kg)		(W/kg)	
836.6	4183	RMC	15.0	14.31	-0.19	Rear	Active	1:1	0	0.242	1.172	0.284	-
836.6	4183	RMC	15.0	14.31	-0.02	Top	Active	1:1	0	0.620	1.172	**0.727**	3
836.6	4183	RMC	15.0	14.31	0.0	Right	Active	1:1	0	0.054	1.172	0.063	-
836.6	4183	RMC	24.5	23.89	0.02	Rear	Inactive	1:1	20	0.318	1.151	0.366	-
836.6	4183	RMC	24.5	23.89	-0.00	Left	N/A	1:1	0	0.107	1.151	0.123	-
836.6	4183	RMC	24.5	23.89	0.03	Right	Inactive	1:1	10	0.128	1.151	0.147	-
836.6	4183	RMC	24.5	23.89	0.14	Top	Inactive	1:1	26	0.227	1.151	0.261	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population										Body 1.6 W/kg Averaged over 1 gram			

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UMTS Band 4 Body SAR (Main1 Ant.)													
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	Duty Cycle	Distance	1 g Meas. SAR	Scaling Factor	1 g Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)				(mm)	(W/kg)		(W/kg)	
1 732.4	1412	RMC	15.0	13.96	-0.20	Rear	Active	1:1	0	0.488	1.271	0.620	-
1 732.4	1412	RMC	15.0	13.96	0.04	Top	Active	1:1	0	0.617	1.271	**0.784**	4
1 732.4	1412	RMC	15.0	13.96	0.10	Right	Active	1:1	0	0.057	1.271	0.073	-
1 732.4	1412	RMC	24.5	24.07	-0.05	Rear	Inactive	1:1	20	0.284	1.104	0.314	-
1 732.4	1412	RMC	24.5	24.07	0.02	Left	N/A	1:1	0	0.514	1.104	0.567	-
1 732.4	1412	RMC	24.5	24.07	-0.12	Right	Inactive	1:1	10	0.105	1.104	0.116	-
1 732.4	1412	RMC	24.5	24.07	-0.01	Top	Inactive	1:1	26	0.313	1.104	0.346	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population										Body 1.6 W/kg Averaged over 1 gram			

UMTS Band 2 Body SAR (Main1 Ant.)													
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	Duty Cycle	Distance	1 g Meas. SAR	Scaling Factor	1 g Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)				(mm)	(W/kg)		(W/kg)	
1 880.0	9400	RMC	14.0	13.54	0.07	Rear	Active	1:1	0	0.694	1.112	**0.772**	5
1 880.0	9400	RMC	14.0	13.54	0.04	Top	Active	1:1	0	0.672	1.112	0.747	-
1 880.0	9400	RMC	14.0	13.54	0.03	Right	Active	1:1	0	0.074	1.112	0.082	-
1 880.0	9400	RMC	24.5	23.55	0.07	Rear	Inactive	1:1	20	0.302	1.245	0.376	-
1 880.0	9400	RMC	24.5	23.55	-0.15	Left	N/A	1:1	0	0.527	1.245	0.656	-
1 880.0	9400	RMC	24.5	23.55	-0.11	Right	Inactive	1:1	10	0.163	1.245	0.203	-
1 880.0	9400	RMC	24.5	23.55	-0.04	Top	Inactive	1:1	26	0.288	1.245	0.359	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population										Body 1.6 W/kg Averaged over 1 gram			

LTE FDD Band 2 Body SAR (Main1 Ant.)																
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	MPR	RB Size	RB offset	Duty Cycle	Distance	1g Meas. SAR	Scaling Factor	1g Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)			(dB)				(mm)	(W/kg)		(W/kg)	
1 860	18700	QPSK	20	13.5	13.02	-0.03	Rear	Active	0	1	0	1:1	0	0.567	1.125	**0.633**	6
1 860	18700	QPSK	20	13.5	13.05	0.11	Rear	Active	0	50	0	1:1	0	0.556	1.109	0.617	-
1 860	18700	QPSK	20	13.5	13.02	0.13	Top	Active	0	1	0	1:1	0	0.431	1.125	0.481	-
1 860	18700	QPSK	20	13.5	13.05	0.18	Top	Active	0	50	0	1:1	0	0.426	1.109	0.472	-
1 860	18700	QPSK	20	13.5	13.02	-0.14	Right	Active	0	1	0	1:1	0	0.071	1.125	0.079	-
1 860	18700	QPSK	20	13.5	13.05	-0.13	Right	Active	0	50	0	1:1	0	0.070	1.109	0.078	-
1 860	18700	QPSK	20	24.0	22.55	-0.14	Rear	Inactive	0	1	0	1:1	20	0.232	1.396	0.324	-
1 860	18700	QPSK	20	23.0	21.93	0.08	Rear	Inactive	1	50	25	1:1	20	0.197	1.279	0.252	-
1 860	18700	QPSK	20	24.0	22.55	0.12	Left	N/A	0	1	0	1:1	0	0.337	1.396	0.470	-
1 860	18700	QPSK	20	23.0	21.93	-0.16	Left	N/A	1	50	25	1:1	0	0.271	1.279	0.347	-
1 860	18700	QPSK	20	24.0	22.55	-0.04	Right	Inactive	0	1	0	1:1	10	0.121	1.396	0.169	-
1 860	18700	QPSK	20	23.0	21.93	-0.14	Right	Inactive	1	50	25	1:1	10	0.087	1.279	0.111	-
1 860	18700	QPSK	20	24.0	22.55	0.06	Top	Inactive	0	1	0	1:1	26	0.214	1.396	0.299	-
1 860	18700	QPSK	20	23.0	21.93	-0.05	Top	Inactive	1	50	25	1:1	26	0.168	1.279	0.215	-
ANSI/ IEEE C95.1 – 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population														Body 1.6 W/kg Averaged over 1 gram			

LTE FDD Band 2 Body SAR (Sub2 Ant.)																	
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	MPR	RB Size	RB offset	Duty Cycle	Distance	1g Meas. SAR	Scaling Factor	1g Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)			(dB)				(mm)	(W/kg)		(W/kg)	
1 880	18900	QPSK	20	14	13.63	0.18	Rear	Active	0	1	0	1:01	0	0.810	1.089	0.882	-
1 860	18700	QPSK	20	14	13.55	0.14	Rear	Active	0	1	99	1:01	0	0.799	1.109	0.886	-
1 900	19100	QPSK	20	14	13.61	0.14	Rear	Active	0	1	0	1:01	0	0.885	1.094	0.968	-
1 880	18900	QPSK	20	14	13.52	0.05	Rear	Active	0	50	0	1:01	0	0.809	1.117	0.904	-
1 860	18700	QPSK	20	14	13.29	0.01	Rear	Active	0	50	25	1:01	0	0.848	1.178	0.999	-
1 900	19100	QPSK	20	14	13.36	0.1	Rear	Active	0	50	0	1:01	0	0.907	1.159	**1.051**	7
1 900	19100	QPSK	20	14	13.34	0.12	Rear	Active	0	100	0	1:01	0	0.842	1.164	0.980	-
1 880	18900	QPSK	20	14	13.63	-0.04	Bottom	Active	0	1	0	1:01	0	0.744	1.089	0.810	-
1 860	18700	QPSK	20	14	13.55	-0.03	Bottom	Active	0	1	99	1:01	0	0.751	1.109	0.833	-
1 900	19100	QPSK	20	14	13.61	-0.15	Bottom	Active	0	1	0	1:01	0	0.842	1.094	0.921	-
1 880	18900	QPSK	20	14	13.52	-0.12	Bottom	Active	0	50	0	1:01	0	0.725	1.117	0.810	-
1 860	18700	QPSK	20	14	13.29	-0.09	Bottom	Active	0	50	25	1:01	0	0.781	1.178	0.920	-
1 900	19100	QPSK	20	14	13.36	-0.03	Bottom	Active	0	50	0	1:01	0	0.839	1.159	0.972	-
1 900	19100	QPSK	20	14	13.34	-0.04	Bottom	Active	0	100	0	1:01	0	0.807	1.164	0.939	-
1 880	18900	QPSK	20	14	13.63	-0.13	Right	Active	0	1	0	1:01	0	0.500	1.089	0.545	-
1 880	18900	QPSK	20	14	13.52	0.14	Right	Active	0	50	0	1:01	0	0.460	1.117	0.514	-
1 880	18900	QPSK	20	24.5	23.53	0	Rear	Inactive	0	1	0	1:01	21	0.143	1.250	0.179	-
1 880	18900	QPSK	20	23.5	22.61	0.03	Rear	Inactive	1	50	0	1:01	21	0.114	1.227	0.140	-
1 880	18900	QPSK	20	24.5	23.53	-0.01	Left	N/A	0	1	0	1:01	0	0.100	1.250	0.125	-
1 880	18900	QPSK	20	23.5	22.61	0.12	Left	N/A	1	50	0	1:01	0	0.083	1.227	0.102	-
1 880	18900	QPSK	20	24.5	23.53	0.12	Right	Inactive	0	1	0	1:01	9	0.051	1.250	0.064	-
1 880	18900	QPSK	20	23.5	22.61	0.12	Right	Inactive	1	50	0	1:01	9	0.042	1.227	0.052	-
1 880	18900	QPSK	20	24.5	23.53	0.14	Bottom	Inactive	0	1	0	1:01	27	0.081	1.250	0.101	-
1 880	18900	QPSK	20	23.5	22.61	0.04	Bottom	Inactive	1	50	0	1:01	27	0.064	1.227	0.079	-
1 900	19100	QPSK	20	14	13.36	0.17	Rear	Active	0	50	0	1:01	0	0.866	1.159	1.004	*
ANSI/ IEEE C95.1 – 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population																Body 1.6 W/kg Averaged over 1 gram	

Note: * Data entry indicate Variability measurement.

LTE FDD Band 12 Body SAR (Main1 Ant.)

Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	MPR	RB Size	RB offset	Duty Cycle	Distance	1g Meas. SAR	Scaling Factor	1g Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)			(dB)				(mm)	(W/kg)		(W/kg)	
707.5	23095	QPSK	10	17.0	16.34	-0.11	Rear	Active	0	1	0	1:1	0	0.202	1.164	0.235	-
707.5	23095	QPSK	10	17.0	16.29	-0.11	Rear	Active	0	25	0	1:1	0	0.219	1.178	0.258	-
707.5	23095	QPSK	10	17.0	16.34	-0.15	Top	Active	0	1	0	1:1	0	0.285	1.164	0.332	-
707.5	23095	QPSK	10	17.0	16.29	-0.07	Top	Active	0	25	0	1:1	0	0.296	1.178	**0.349**	8
707.5	23095	QPSK	10	17.0	16.34	-0.04	Right	Active	0	1	0	1:1	0	0.023	1.164	0.027	-
707.5	23095	QPSK	10	17.0	16.29	-0.11	Right	Active	0	25	0	1:1	0	0.021	1.178	0.025	-
707.5	23095	QPSK	10	24.5	23.72	-0.00	Rear	Inactive	0	1	0	1:1	20	0.221	1.197	0.265	-
707.5	23095	QPSK	10	23.5	22.70	0.07	Rear	Inactive	1	25	0	1:1	20	0.175	1.202	0.210	-
707.5	23095	QPSK	10	24.5	23.72	0.03	Left	N/A	0	1	0	1:1	0	0.104	1.197	0.124	-
707.5	23095	QPSK	10	23.5	22.70	-0.09	Left	N/A	1	25	0	1:1	0	0.084	1.202	0.101	-
707.5	23095	QPSK	10	24.5	23.72	0.00	Right	Inactive	0	1	0	1:1	10	0.037	1.197	0.044	-
707.5	23095	QPSK	10	23.5	22.70	0.01	Right	Inactive	1	25	0	1:1	10	0.024	1.202	0.029	-
707.5	23095	QPSK	10	24.5	23.72	0.09	Top	Inactive	0	1	0	1:1	26	0.164	1.197	0.196	-
707.5	23095	QPSK	10	23.5	22.70	0.03	Top	Inactive	1	25	0	1:1	26	0.164	1.202	0.197	-
ANSI/ IEEE C95.1 – 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population														Body 1.6 W/kg Averaged over 1 gram			

LTE FDD Band 13 Body SAR (Main1 Ant.)

Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	MPR	RB Size	RB offset	Duty Cycle	Distance	1g Meas. SAR	Scaling Factor	1g Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)			(dB)				(mm)	(W/kg)		(W/kg)	
782	23230	QPSK	10	16.0	15.25	-0.02	Rear	Active	0	1	0	1:1	0	0.222	1.189	0.264	-
782	23230	QPSK	10	16.0	15.22	-0.03	Rear	Active	0	25	0	1:1	0	0.223	1.197	0.267	-
782	23230	QPSK	10	16.0	15.25	-0.04	Top	Active	0	1	0	1:1	0	0.530	1.189	0.630	-
782	23230	QPSK	10	16.0	15.22	0.08	Top	Active	0	25	0	1:1	0	0.527	1.197	**0.631**	9
782	23230	QPSK	10	16.0	15.25	0.06	Right	Active	0	1	0	1:1	0	0.020	1.189	0.024	-
782	23230	QPSK	10	16.0	15.22	0.05	Right	Active	0	25	0	1:1	0	0.019	1.197	0.023	-
782	23230	QPSK	10	22.5	21.91	-0.07	Rear	Inactive	0	1	0	1:1	20	0.208	1.146	0.238	-
782	23230	QPSK	10	22.5	21.17	0.11	Rear	Inactive	0	25	0	1:1	20	0.207	1.358	0.281	-
782	23230	QPSK	10	22.5	21.91	0.14	Left	N/A	0	1	0	1:1	0	0.048	1.146	0.055	-
782	23230	QPSK	10	22.5	21.17	0.18	Left	N/A	0	25	0	1:1	0	0.048	1.358	0.065	-
782	23230	QPSK	10	22.5	21.91	0.14	Right	Inactive	0	1	0	1:1	10	0.029	1.146	0.033	-
782	23230	QPSK	10	22.5	21.17	0.01	Right	Inactive	0	25	0	1:1	10	0.025	1.358	0.034	-
782	23230	QPSK	10	22.5	21.91	0.00	Top	Inactive	0	1	0	1:1	26	0.164	1.146	0.188	-
782	23230	QPSK	10	22.5	21.17	-0.06	Top	Inactive	0	25	0	1:1	26	0.153	1.358	0.208	-
ANSI/ IEEE C95.1 – 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population														Body 1.6 W/kg Averaged over 1 gram			

LTE FDD Band 26 Body SAR (Main1 Ant.)

Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	MPR	RB Size	RB offset	Duty Cycle	Distance	1g Meas. SAR	Scaling Factor	1g Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)			(dB)				(mm)	(W/kg)		(W/kg)	
831.5	26865	QPSK	15	15.0	14.11	-0.18	Rear	Active	0	1	0	1:1	0	0.335	1.227	0.411	-
831.5	26865	QPSK	15	15.0	14.13	-0.18	Rear	Active	0	36	0	1:1	0	0.348	1.222	0.425	-
831.5	26865	QPSK	15	15.0	14.11	-0.12	Top	Active	0	1	0	1:1	0	0.498	1.227	0.611	-
831.5	26865	QPSK	15	15.0	14.13	-0.05	Top	Active	0	36	0	1:1	0	0.503	1.222	**0.615**	10
831.5	26865	QPSK	15	15.0	14.11	-0.01	Right	Active	0	1	0	1:1	0	0.021	1.227	0.026	-
831.5	26865	QPSK	15	15.0	14.13	0.13	Right	Active	0	36	0	1:1	0	0.024	1.222	0.029	-
831.5	26865	QPSK	15	24.5	24.00	0.02	Rear	Inactive	0	1	0	1:1	20	0.296	1.122	0.332	-
831.5	26865	QPSK	15	23.5	23.06	0.05	Rear	Inactive	1	36	0	1:1	20	0.250	1.107	0.277	-
831.5	26865	QPSK	15	24.5	24.00	-0.11	Left	N/A	0	1	0	1:1	0	0.087	1.122	0.098	-
831.5	26865	QPSK	15	23.5	23.06	-0.06	Left	N/A	1	36	0	1:1	0	0.075	1.107	0.083	-
831.5	26865	QPSK	15	24.5	24.00	0.04	Right	Inactive	0	1	0	1:1	10	0.053	1.122	0.059	-
831.5	26865	QPSK	15	23.5	23.06	0.08	Right	Inactive	1	36	0	1:1	10	0.046	1.107	0.051	-
831.5	26865	QPSK	15	24.5	24.00	-0.01	Top	Inactive	0	1	0	1:1	26	0.278	1.122	0.312	-
831.5	26865	QPSK	15	23.5	23.06	0.03	Top	Inactive	1	36	0	1:1	26	0.229	1.107	0.254	-
ANSI/ IEEE C95.1 – 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population														Body 1.6 W/kg Averaged over 1 gram			

LTE TDD Band 41 Body SAR (Main1 Ant.)

Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	MPR	RB Size	RB offset	Duty Cycle	Distance	1g Meas. SAR	Scaling Factor	1g Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)			(dB)				(mm)	(W/kg)		(W/kg)	
2 593	40620	QPSK	20	14.5	14.07	0.08	Rear	Active	0	1	0	1:1.58	0	0.499	1.104	0.551	-
2 593	40620	QPSK	20	14.5	14.06	0.04	Rear	Active	0	50	0	1:1.58	0	0.438	1.107	0.485	-
2 593	40620	QPSK	20	14.5	14.07	-0.12	Top	Active	0	1	0	1:1.58	0	0.673	1.104	**0.743**	11
2 506	39750	QPSK	20	14.5	13.54	0.06	Top	Active	0	1	0	1:1.58	0	0.572	1.247	0.713	-
2 549.5	40185	QPSK	20	14.5	13.71	0.01	Top	Active	0	1	0	1:1.58	0	0.605	1.199	0.725	-
2 636.5	41055	QPSK	20	14.5	14.05	-0.01	Top	Active	0	1	0	1:1.58	0	0.512	1.109	0.568	-
2 680	41490	QPSK	20	14.5	13.91	0.02	Top	Active	0	1	0	1:1.58	0	0.494	1.146	0.566	-
2 593	40620	QPSK	20	14.5	14.06	-0.05	Top	Active	0	50	0	1:1.58	0	0.666	1.107	0.737	-
2 506	39750	QPSK	20	14.5	13.59	-0.02	Top	Active	0	50	0	1:1.58	0	0.574	1.233	0.708	-
2 549.5	40185	QPSK	20	14.5	13.70	0.03	Top	Active	0	50	0	1:1.58	0	0.608	1.202	0.731	-
2 636.5	41055	QPSK	20	14.5	14.04	0.07	Top	Active	0	50	0	1:1.58	0	0.536	1.112	0.596	-
2 680	41490	QPSK	20	14.5	13.90	0.18	Top	Active	0	50	0	1:1.58	0	0.515	1.148	0.591	-
2 593	40620	QPSK	20	14.5	14.01	-0.03	Top	Active	0	100	0	1:1.58	0	0.655	1.119	0.733	-
2 593	40620	QPSK	20	14.5	14.07	0.10	Right	Active	0	1	0	1:1.58	0	0.038	1.104	0.042	-
2 593	40620	QPSK	20	14.5	14.06	0.09	Right	Active	0	50	0	1:1.58	0	0.037	1.107	0.041	-
2 593	40620	QPSK	20	24.5	24.15	0.12	Rear	Inactive	0	1	0	1:1.58	20	0.096	1.084	0.104	-
2 593	40620	QPSK	20	23.5	23.28	-0.02	Rear	Inactive	1	50	0	1:1.58	20	0.097	1.052	0.102	-
2 593	40620	QPSK	20	24.5	24.15	-0.19	Left	N/A	0	1	0	1:1.58	0	0.106	1.084	0.115	-
2 593	40620	QPSK	20	23.5	23.28	-0.17	Left	N/A	1	50	0	1:1.58	0	0.075	1.052	0.079	-
2 593	40620	QPSK	20	24.5	24.15	-0.10	Right	Inactive	0	1	0	1:1.58	10	0.100	1.084	0.108	-
2 593	40620	QPSK	20	23.5	23.28	-0.06	Right	Inactive	1	50	0	1:1.58	10	0.074	1.052	0.078	-
2 593	40620	QPSK	20	24.5	24.15	0.08	Top	Inactive	0	1	0	1:1.58	26	0.173	1.084	0.188	-
2 593	40620	QPSK	20	23.5	23.28	-0.02	Top	Inactive	1	50	0	1:1.58	26	0.131	1.052	0.138	-
ANSI/ IEEE C95.1 – 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population														Body 1.6 W/kg Averaged over 1 gram			

LTE FDD Band 66 Body SAR (Main1 Ant.)

Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	MPR	RB Size	RB offset	Duty Cycle	Distance	1g Meas. SAR	Scaling Factor	1g Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)			(dB)				(mm)	(W/kg)		(W/kg)	
1 745	132322	QPSK	20	14.5	14.13	-0.14	Rear	Active	0	1	0	1:1	0	0.311	1.089	0.339	-
1 745	132322	QPSK	20	14.5	14.16	0.06	Rear	Active	0	50	0	1:1	0	0.318	1.081	0.344	-
1 745	132322	QPSK	20	14.5	14.13	0.12	Top	Active	0	1	0	1:1	0	0.577	1.089	0.628	-
1 745	132322	QPSK	20	14.5	14.16	0.14	Top	Active	0	50	0	1:1	0	0.588	1.081	**0.636**	12
1 745	132322	QPSK	20	14.5	14.13	0.06	Right	Active	0	1	0	1:1	0	0.047	1.089	0.051	-
1 745	132322	QPSK	20	14.5	14.16	0.03	Right	Active	0	50	0	1:1	0	0.056	1.081	0.061	-
1 745	132322	QPSK	20	24.5	23.74	-0.09	Rear	Inactive	0	1	0	1:1	20	0.252	1.191	0.300	-
1 745	132322	QPSK	20	23.5	22.92	0.00	Rear	Inactive	1	50	0	1:1	20	0.211	1.143	0.241	-
1 745	132322	QPSK	20	24.5	23.74	-0.16	Left	N/A	0	1	0	1:1	0	0.338	1.191	0.403	-
1 745	132322	QPSK	20	23.5	22.92	-0.10	Left	N/A	1	50	0	1:1	0	0.272	1.143	0.311	-
1 745	132322	QPSK	20	24.5	23.74	-0.16	Right	Inactive	0	1	0	1:1	10	0.089	1.191	0.106	-
1 745	132322	QPSK	20	23.5	22.92	0.00	Right	Inactive	1	50	0	1:1	10	0.084	1.143	0.096	-
1 745	132322	QPSK	20	24.5	23.74	-0.03	Top	Inactive	0	1	0	1:1	26	0.254	1.191	0.303	-
1 745	132322	QPSK	20	23.5	22.92	-0.02	Top	Inactive	1	50	0	1:1	26	0.216	1.143	0.247	-

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

NR FDD Band n5 Body SAR (Main1 Ant.)

Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	MPR	RB Size	RB offset	Duty Cycle	Distance	1g Meas. SAR	Scaling Factor	1g Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)			(dB)				(mm)	(W/kg)		(W/kg)	
836.5	167300	DFT-s OFDM QPSK	20	15.0	14.85	-0.04	Rear	Active	0	1	53	1:1	0	0.406	1.035	0.420	-
836.5	167300	DFT-s OFDM QPSK	20	15.0	14.86	-0.10	Rear	Active	0	50	0	1:1	0	0.404	1.033	0.417	-
836.5	167300	DFT-s OFDM QPSK	20	15.0	14.85	-0.06	Top	Active	0	1	53	1:1	0	0.633	1.035	0.655	-
836.5	167300	DFT-s OFDM QPSK	20	15.0	14.86	-0.13	Top	Active	0	50	0	1:1	0	0.637	1.033	**0.658**	13
836.5	167300	DFT-s OFDM QPSK	20	15.0	14.85	0.10	Right	Active	0	1	53	1:1	0	0.015	1.035	0.016	-
836.5	167300	DFT-s OFDM QPSK	20	15.0	14.86	0.10	Right	Active	0	50	0	1:1	0	0.014	1.033	0.014	-
836.5	167300	DFT-s OFDM QPSK	20	24.5	23.35	-0.05	Rear	Inactive	0	1	104	1:1	20	0.328	1.303	0.427	-
836.5	167300	DFT-s OFDM QPSK	20	24.5	23.14	-0.04	Rear	Inactive	0	50	28	1:1	20	0.280	1.368	0.383	-
836.5	167300	DFT-s OFDM QPSK	20	24.5	23.35	0.06	Left	N/A	0	1	104	1:1	0	0.097	1.303	0.126	-
836.5	167300	DFT-s OFDM QPSK	20	24.5	23.14	0.04	Left	N/A	0	50	28	1:1	0	0.087	1.368	0.119	-
836.5	167300	DFT-s OFDM QPSK	20	24.5	23.35	0.05	Right	Inactive	0	1	104	1:1	10	0.00529	1.303	0.007	-
836.5	167300	DFT-s OFDM QPSK	20	24.5	23.14	0.06	Right	Inactive	0	50	28	1:1	10	0.00478	1.368	0.007	-
836.5	167300	DFT-s OFDM QPSK	20	24.5	23.35	-0.00	Top	Inactive	0	1	104	1:1	26	0.258	1.303	0.336	-
836.5	167300	DFT-s OFDM QPSK	20	24.5	23.14	0.04	Top	Inactive	0	50	28	1:1	26	0.216	1.368	0.295	-
836.5	167300	CP OFDM QPSK	20	15.0	14.84	0.16	Top	Active	0	1	1	1:1	0	0.618	1.038	0.641	-

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

NR FDD Band n66 Body SAR (Main1 Ant.)																	
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	MPR	RB Size	RB offset	Duty Cycle	Distance	1g Meas. SAR	Scaling Factor	1g Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)			(dB)				(mm)	(W/kg)		(W/kg)	
1 770	354000	DFT-s OFDM QPSK	20	13.5	13.40	-0.18	Rear	Active	0	1	53	1:1	0	0.388	1.023	0.397	-
1 770	354000	DFT-s OFDM QPSK	20	13.5	13.29	-0.15	Rear	Active	0	50	56	1:1	0	0.355	1.050	0.373	-
1 770	354000	DFT-s OFDM QPSK	20	13.5	13.40	0.06	Top	Active	0	1	53	1:1	0	0.618	1.023	0.632	-
1 770	354000	DFT-s OFDM QPSK	20	13.5	13.29	-0.02	Top	Active	0	50	56	1:1	0	0.597	1.050	0.627	-
1 770	354000	DFT-s OFDM QPSK	20	13.5	13.40	-0.11	Right	Active	0	1	53	1:1	0	0.041	1.023	0.042	-
1 770	354000	DFT-s OFDM QPSK	20	13.5	13.29	-0.15	Right	Active	0	50	56	1:1	0	0.038	1.050	0.040	-
1 745	349000	DFT-s OFDM QPSK	20	24.5	24.04	-0.03	Rear	Inactive	0	1	53	1:1	20	0.291	1.112	0.324	-
1 745	349000	DFT-s OFDM QPSK	20	24.5	24.08	-0.11	Rear	Inactive	0	50	28	1:1	20	0.290	1.102	0.320	-
1 745	349000	DFT-s OFDM QPSK	20	24.5	24.04	-0.17	Left	N/A	0	1	53	1:1	0	0.385	1.112	0.428	-
1 745	349000	DFT-s OFDM QPSK	20	24.5	24.08	-0.18	Left	N/A	0	50	28	1:1	0	0.387	1.102	0.426	-
1 745	349000	DFT-s OFDM QPSK	20	24.5	24.04	0.02	Right	Inactive	0	1	53	1:1	10	0.125	1.112	0.139	-
1 745	349000	DFT-s OFDM QPSK	20	24.5	24.08	-0.06	Right	Inactive	0	50	28	1:1	10	0.114	1.102	0.126	-
1 745	349000	DFT-s OFDM QPSK	20	24.5	24.04	0.08	Top	Inactive	0	1	53	1:1	26	0.282	1.112	0.314	-
1 745	349000	DFT-s OFDM QPSK	20	24.5	24.08	0.01	Top	Inactive	0	50	28	1:1	26	0.288	1.102	0.317	-
1 770	354000	CP OFDM QPSK	20	13.5	13.13	-0.08	Top	Active	0	1	1	1:1	0	0.608	1.089	**0.662**	14
ANSI/ IEEE C95.1 – 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population														Body 1.6 W/kg Averaged over 1 gram			

Wi-Fi (DTS) Body SAR																	
Frequency		Mode	Band width	Data Rate	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Ant Config.	Duty Cycle	Distance	Area Scan Peak SAR	Meas. SAR	Scaling Factor	Scaling Factor (Duty)	Reported SAR	Plot No.
MHz	Ch.		(MHz)	(Mbps)	(dBm)	(dBm)	(dB)				(mm)	(W/kg)	(W/kg)			(W/kg)	
2 462	11	802.11b	20	1	11.0	10.56	0.04	Rear	WiFi1	98.8	0	0.649	0.312	1.107	1.012	0.350	-
2 462	11	802.11b	20	1	11.0	10.56	0.19	Left	WiFi1	98.8	0	0.693	0.282	1.107	1.012	0.316	-
2 462	11	802.11b	20	1	11.0	10.56	0.13	Top	WiFi1	98.8	0	0.481	0.197	1.107	1.012	0.221	-
2 462	11	802.11b	20	1	18.0	17.60	0.04	Rear	WiFi1	98.8	17	0.139	0.091	1.096	1.012	0.101	-
2 462	11	802.11b	20	1	18.0	17.60	0.19	Left	WiFi1	98.8	9	0.548	0.341	1.096	1.012	**0.378**	15
2 462	11	802.11b	20	1	18.0	17.60	-0.09	Top	WiFi1	98.8	24	0.0465	0.029	1.096	1.012	0.032	-
2 462	11	802.11b	20	1	14.0	13.48	0.12	Rear	MIMO	98.8	0	1.14	0.521	1.153	1.012	0.608	-
2 462	11	802.11b	20	1	14.0	13.48	-0.06	Left	MIMO	98.8	0	0.601	0.235	1.153	1.012	0.274	-
2 462	11	802.11b	20	1	14.0	13.48	0.16	Right	MIMO	98.8	0	1.45	0.655	1.153	1.012	**0.764**	16
2 462	11	802.11b	20	1	14.0	13.48	-0.16	Top	MIMO	98.8	0	0.462	0.215	1.153	1.012	0.251	-
2 412	1	802.11b	20	1	21.0	20.49	-0.17	Rear	MIMO	98.8	17	0.141	0.094	1.132	1.012	0.108	-
2 412	1	802.11b	20	1	21.0	20.49	0.05	Left	MIMO	98.8	9	0.537	0.314	1.132	1.012	0.360	-
2 412	1	802.11b	20	1	21.0	20.49	0.03	Right	MIMO	98.8	10	0.856	0.508	1.132	1.012	0.582	-
2 412	1	802.11b	20	1	21.0	20.49	-0.18	Top	MIMO	98.8	24	0.0886	0.056	1.132	1.012	0.064	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population														Body 1.6 W/kg Averaged over 1 gram			

Wi-Fi (NII) Body SAR

Frequency		Mode	Band width	Data Rate	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Ant Config.	Duty Cycle	Distance	Area Scan Peak SAR	Meas. SAR	Scaling Factor	Scaling Factor	Reported SAR	Plot No.
MHz	Ch.		(MHz)	(Mbps)	(dBm)	(dBm)	(dB)				(mm)	(W/kg)	(W/kg)		(Duty)	(W/kg)	
5 290	58	802.11ac	80	MCS0	9.0	7.86	0.12	Rear	WiFi2	92.7	0	0.992	0.326	1.300	1.079	0.457	-
5 290	58	802.11ac	80	MCS0	9.0	7.86	0.05	Right	WiFi2	92.7	0	1.74	0.693	1.300	1.079	**0.972**	17
5 290	58	802.11ac	80	MCS0	9.0	7.86	-0.11	Top	WiFi2	92.7	0	0.214	0.096	1.300	1.079	0.135	-
5 300	60	802.11a	20	6	16.0	15.20	0.19	Rear	WiFi2	93.4	17	0.177	0.082	1.202	1.070	0.105	-
5 300	60	802.11a	20	6	16.0	15.20	0.14	Right	WiFi2	93.4	10	0.9	0.395	1.202	1.070	0.508	-
5 300	60	802.11a	20	6	16.0	15.20	0.18	Top	WiFi2	93.4	24	0.096	0.046	1.202	1.070	0.059	-
5 690	138	802.11ac	80	MCS0	9.0	8.94	0.11	Rear	WiFi2	92.7	0	0.907	0.291	1.014	1.079	0.318	-
5 690	138	802.11ac	80	MCS0	9.0	8.94	-0.12	Right	WiFi2	92.7	0	1.63	0.666	1.014	1.079	0.729	-
5 690	138	802.11ac	80	MCS0	9.0	8.94	-0.04	Top	WiFi2	92.7	0	0.216	0.086	1.014	1.079	0.094	-
5 600	120	802.11a	20	6	16.0	15.88	0.13	Rear	WiFi2	93.4	17	0.124	0.057	1.028	1.070	0.063	-
5 600	120	802.11a	20	6	16.0	15.88	0.16	Right	WiFi2	93.4	10	0.969	0.411	1.028	1.070	0.452	-
5 600	120	802.11a	20	6	16.0	15.88	0.11	Top	WiFi2	93.4	24	0.116	0.053	1.028	1.070	0.058	-
5 775	155	802.11ac	80	MCS0	9.0	8.73	0.05	Rear	WiFi2	92.7	0	1.09	0.379	1.064	1.079	0.435	-
5 775	155	802.11ac	80	MCS0	9.0	8.73	0.01	Right	WiFi2	92.7	0	1.65	0.692	1.064	1.079	0.794	-
5 775	155	802.11ac	80	MCS0	9.0	8.73	0.07	Top	WiFi2	92.7	0	0.253	0.106	1.064	1.079	0.122	-
5 745	149	802.11a	20	6	16.0	15.83	0.06	Rear	WiFi2	93.4	17	0.205	0.092	1.040	1.070	0.102	-
5 745	149	802.11a	20	6	16.0	15.83	0.16	Right	WiFi2	93.4	10	1.35	0.591	1.040	1.070	0.658	-
5 745	149	802.11a	20	6	16.0	15.83	0.19	Top	WiFi2	93.4	24	0.177	0.081	1.040	1.070	0.090	-
5 290	58	802.11ac	80	MCS0	12.0	10.99	0.14	Rear	MIMO	92.7	0	1.28	0.517	1.300	1.079	0.725	-
5 290	58	802.11ac	80	MCS0	12.0	10.99	-0.10	Left	MIMO	92.7	0	1.41	0.537	1.300	1.079	0.753	-
5 290	58	802.11ac	80	MCS0	12.0	10.99	0.01	Right	MIMO	92.7	0	1.52	0.617	1.300	1.079	0.865	-
5 290	58	802.11ac	80	MCS0	12.0	10.99	0.19	Top	MIMO	92.7	0	0.279	0.129	1.300	1.079	0.181	-
5 300	60	802.11a	20	6	19.0	18.25	0.18	Rear	MIMO	93.4	17	0.178	0.084	1.202	1.070	0.108	-
5 300	60	802.11a	20	6	19.0	18.25	0.13	Left	MIMO	93.4	9	1.25	0.544	1.202	1.070	0.700	-
5 300	60	802.11a	20	6	19.0	18.25	0.06	Right	MIMO	93.4	10	0.833	0.366	1.202	1.070	0.471	-
5 300	60	802.11a	20	6	19.0	18.25	0.16	Top	MIMO	93.4	24	0.146	0.068	1.202	1.070	0.087	-
5 690	138	802.11ac	80	MCS0	12.0	11.67	-0.18	Rear	MIMO	92.7	0	0.737	0.459	1.159	1.079	0.574	-
5 690	138	802.11ac	80	MCS0	12.0	11.67	0.14	Left	MIMO	92.7	0	1.16	0.389	1.159	1.079	0.486	-
5 690	138	802.11ac	80	MCS0	12.0	11.67	0.04	Right	MIMO	92.7	0	1.43	0.620	1.159	1.079	0.775	-
5 690	138	802.11ac	80	MCS0	12.0	11.67	0.16	Top	MIMO	92.7	0	0.185	0.074	1.159	1.079	0.093	-
5 600	120	802.11a	20	6	19.0	18.66	0.13	Rear	MIMO	93.4	17	0.135	0.064	1.148	1.070	0.079	-
5 600	120	802.11a	20	6	19.0	18.66	0.18	Left	MIMO	93.4	9	0.343	0.147	1.148	1.070	0.181	-
5 600	120	802.11a	20	6	19.0	18.66	0.13	Right	MIMO	93.4	10	0.814	0.346	1.148	1.070	0.425	-
5 600	120	802.11a	20	6	19.0	18.66	0.17	Top	MIMO	93.4	24	0.107	0.047	1.148	1.070	0.058	-
5 775	155	802.11ac	80	MCS0	12.0	11.23	-0.11	Rear	MIMO	92.7	0	1.21	0.351	1.368	1.079	0.518	-
5 775	155	802.11ac	80	MCS0	12.0	11.23	0.11	Left	MIMO	92.7	0	0.917	0.372	1.368	1.079	0.549	-
5 775	155	802.11ac	80	MCS0	12.0	11.23	-0.13	Right	MIMO	92.7	0	1.54	0.628	1.368	1.079	**0.927**	18
5 775	155	802.11ac	80	MCS0	12.0	11.23	0.12	Top	MIMO	92.7	0	0.229	0.092	1.368	1.079	0.136	-
5 825	165	802.11a	20	6	19.0	18.69	0.17	Rear	MIMO	93.4	17	0.192	0.084	1.122	1.070	0.101	-
5 825	165	802.11a	20	6	19.0	18.69	0.13	Left	MIMO	93.4	9	0.287	0.121	1.122	1.070	0.145	-
5 825	165	802.11a	20	6	19.0	18.69	-0.06	Right	MIMO	93.4	10	1.18	0.492	1.122	1.070	0.591	-
5 825	165	802.11a	20	6	19.0	18.69	0.14	Top	MIMO	93.4	24	0.202	0.090	1.122	1.070	0.108	-

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

DSS Body SAR													
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Ant Config.	Distance	Meas. SAR	Scaling Factor	Scaling Factor	Reported SAR	Plot No.
MHz	Ch.		(dBm)	(dBm)	(dB)			(mm)	(W/kg)		(Duty)	(W/kg)	
2 480	78	Bluetooth DH5	10.0	9.90	0.13	Rear	Ant1	0	0.252	1.023	1.010	**0.260**	19
2 480	78	Bluetooth DH5	10.0	9.90	0.17	Left	Ant1	0	0.166	1.023	1.010	0.172	-
2 480	78	Bluetooth DH5	10.0	9.90	0.14	Top	Ant1	0	0.140	1.023	1.010	0.145	-
2 441	39	Bluetooth DH5	14.0	13.38	0.15	Rear	Ant1	17	0.032	1.153	1.010	0.037	-
2 441	39	Bluetooth DH5	14.0	13.38	-0.13	Left	Ant1	9	0.115	1.153	1.010	0.134	-
2 441	39	Bluetooth DH5	14.0	13.38	-0.11	Top	Ant1	24	0.012	1.153	1.010	0.014	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram					

13.2 SAR Test Notes

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in FCC KDB Publication 616217 D04v01r02 and KDB Publication 447498 D01v06.
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 D01 v06.
6. 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. the maximum tune-up tolerance limit.
7. This device utilizes power reduction for some wireless mode and technologies, as outlined in sec. 4.3 The maximum output power allowed for each transmitter and exposure condition was evaluated for SAR compliance based on expected use conditions and simultaneous scenarios.
8. FCC KDB Publication 616217 D04v01r02 Section 4.3, SAR tests are required for the back surface and edges of the tablet with the tablet touching the phantom. The SAR Exclusion Threshold in FCC KDB 447498 D01 v06 was applied to determine SAR test exclusion for adjacent edge configurations

GSM/GPRS Test Notes:

1. This EUT'S GSM and GPRS device class is B.
2. Justification for reduced test configurations per KDB 941225 D01v03r01: The source-based time-averaged output power was evaluated for all multi-slot operations. The multi-slot configuration with the highest frame averaged output power including tolerance was evaluated for SAR.
3. Per FCC KDB 447498 D01 v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is 0.8 W/kg then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is 1/2 dB, instead of the middle channel, the highest output power channel must be used.

UMTS Notes:

1. The 12.2 kbps RMC mode is the primary mode per KDB 941225 D01v03r01.
2. UMTS SAR was tested under RMC 12.2 kbps with HSPA inactive per KDB publication 941225 D01v03r01. AMR and HSPA SAR was not required per the 3G Test Reduction Procedure in KDB Publication 941225 D01v03r01.
3. Per FCC KDB 447498 D01 v06, 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.
4. When Power back-off of UMTS B4/B2 are applied, MPR of HSUPA is set to 0.

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 D01 v06, if the reported (scaled) LTE TDD Band 41 SAR measured at the highest output power channel for each test configuration is 0.6 W/kg then testing at the other channels is not required for such test configurations.
7. TDD LTE (Power Class 3) was tested using UL-DL configuration 0 with 6 UL sub frames and 2S 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).
8. Per KDB 941225 D05Av01r02, SAR for LTE Carrier Aggregation operations was not needed because the maximum average output power in LTE CA mode was not > 0.25 dB higher than the maximum output power when downlink CA was not activated.
9. 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 Sub Ant2 edge, middle and lower edge of each required test channel. When the reported SAR is >0.8 W/kg, testing for other Channels is performed at the highest output power level for 1RB, and 50% RB configuration for that channel. Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are >0.8 W/kg, testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation <1.45 W/kg. Testing for 16-QAM modulation is not required because the reported SAR for QPSK is <1.45 W/kg and its output power is not more than 0.5 dB higher than that a QPSK. Testing for the other channel Bandwidths is not required because the reported SAR for the highest channel Bandwidth is <1.45 W/kg and its output power is not more than 0.5 dB higher than that of the highest channel Bandwidth.

NR Notes:

1. 5G Sub 6 NR Bands supports SA and NSA EN-DC operations.
2. SAR tests for NR Bands and LTE Anchors Bands were performed separately due to limitations in SAR probe calibration factors.
3. Due to test setup limitations, SAR testing for NR was performed using FTM mode software to establish the connection.
4. The device was configured with the tuner state selected by the device in LTE mode with auto-tune active at the same frequency as the NR test results. Additional Tuner states were evaluated per April 2019 TCB Workshop guidance.
5. NR modulations and RB Size/Offsets were selected for testing such that configurations with the highest ouuput power were evaluated for SAR tests.
6. For final implementation, TDD NR slot configuration is synchronized using maximum duty cycle of 25%. SAR testing was performed using FTM mode with a 25% duty cycle applied to match final duty cycle.

WLAN Notes:

1. Per KDB 2482227 D01v02r02 justification for test configurations of 2.4 GHz WiFi Single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11 g/n) was not required due to the maximum allowed powers and the highest reported DSSS SAR.
2. Per KDB 2482227 D01v02r02 justification for test configurations of 5 GHz WiFi Single transmission chain operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed powers. Other transmission modes were not investigated since the highest reported SAR for initial test configuration adjusted by the ration of maximum output powers is less than 1.2 W/kg for 1g SAR and less than 3.0 W/kg for 10 g SAR.
3. When the maximum reported 1g averaged SAR is ≤ 0.8 W/kg, SAR testing on additional channels was not required. Otherwise, SAR for the next highest output power channel was required until the reported SAR result was ≤ 1.20 W/kg or all test channels were measured.
4. The device was configured to transmit continuously at the required data rated, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100 % transmission duty factor to determine compliance. Procedures used to measure the duty factor are identical to that in the associated WLAN test reports.

Bluetooth Notes:

1. Bluetooth SAR was measured with the device connected to a call box with hopping disabled with DH5 operation and Tx Tests mode type. Per October 2016 TCBC Workshop Notes, the reported SAR was scaled to Bluetooth [BDR] 77.57% transmission duty factor to determine compliance. Please see sec.11.6 for the time-domain plot and calculation for duty factor of the device

14. Simultaneous SAR Analysis

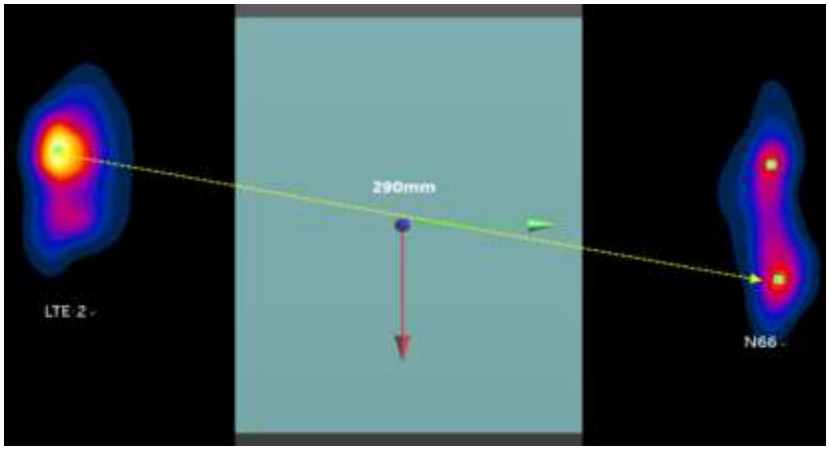
14.1 Body SAR Simultaneous Transmission Analysis

Simultaneous Transmission Summation Scenario with 2.4 GHz WLAN, 5 GHz WLAN, Bluetooth														
Band		WWAN SAR	2.4 GHz WLAN SISO WiFi1	2.4 GHz WLAN MIMO	5 GHz WLAN SISO WiFi2	5 GHz WLAN MIMO	BT	∑ 1-g SAR	∑ 1-g SAR	∑ 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)	(W/kg)	(W/kg)	(W/kg)	(Yes / No)
		1	2	3	4	5	6	1+2	1+3	1+4	1+5	1+6	1+4+6	
GSM 850 (Main1 Ant)	Rear	0.569	0.350	0.608	0.457	0.725	0.260	0.919	1.177	1.026	1.294	0.829	1.286	No
	Front							0.000	0.000	0.000	0.000	0.000	0.000	No
	Left	0.165	0.378	0.360	0.400	0.753	0.172	0.543	0.525	0.565	0.918	0.337	0.737	No
	Right	0.086	0.400	0.764	0.972	0.927	0.400	0.486	0.850	1.058	1.013	0.486	1.458	No
	Top	0.777	0.221	0.251	0.135	0.181	0.145	0.998	1.028	0.912	0.958	0.922	1.057	No
	Bottom							0.000	0.000	0.000	0.000	0.000	0.000	No
GSM 1900 (Main1 Ant)	Rear	0.648	0.350	0.608	0.457	0.725	0.260	0.998	1.256	1.105	1.373	0.908	1.365	No
	Front							0.000	0.000	0.000	0.000	0.000	0.000	No
	Left	0.285	0.378	0.360	0.400	0.753	0.172	0.663	0.645	0.685	1.038	0.457	0.857	No
	Right	0.109	0.400	0.764	0.972	0.927	0.400	0.509	0.873	1.081	1.036	0.509	1.481	No
	Top	0.541	0.221	0.251	0.135	0.181	0.145	0.762	0.792	0.676	0.722	0.686	0.821	No
	Bottom							0.000	0.000	0.000	0.000	0.000	0.000	No
UMTS Band 2 (Main1 Ant)	Rear	0.772	0.350	0.608	0.457	0.725	0.260	1.122	1.380	1.229	1.497	1.032	1.489	No
	Front							0.000	0.000	0.000	0.000	0.000	0.000	No
	Left	0.656	0.378	0.360	0.400	0.753	0.172	1.034	1.016	1.056	1.409	0.828	1.228	No
	Right	0.203	0.400	0.764	0.972	0.927	0.400	0.603	0.967	1.175	1.130	0.603	**1.575**	No
	Top	0.747	0.221	0.251	0.135	0.181	0.145	0.968	0.998	0.882	0.928	0.892	1.027	No
	Bottom							0.000	0.000	0.000	0.000	0.000	0.000	No
UMTS Band 4 (Main1 Ant)	Rear	0.620	0.350	0.608	0.457	0.725	0.260	0.970	1.228	1.077	1.345	0.880	1.337	No
	Front							0.000	0.000	0.000	0.000	0.000	0.000	No
	Left	0.567	0.378	0.360	0.400	0.753	0.172	0.945	0.927	0.967	1.320	0.739	1.139	No
	Right	0.116	0.400	0.764	0.972	0.927	0.400	0.516	0.880	1.088	1.043	0.516	1.488	No
	Top	0.784	0.221	0.251	0.135	0.181	0.145	1.005	1.035	0.919	0.965	0.929	1.064	No
	Bottom							0.000	0.000	0.000	0.000	0.000	0.000	No
UMTS Band 5 (Main1 Ant)	Rear	0.366	0.350	0.608	0.457	0.725	0.260	0.716	0.974	0.823	1.091	0.626	1.083	No
	Front							0.000	0.000	0.000	0.000	0.000	0.000	No
	Left	0.123	0.378	0.360	0.400	0.753	0.172	0.501	0.483	0.523	0.876	0.295	0.695	No
	Right	0.147	0.400	0.764	0.972	0.927	0.400	0.547	0.911	1.119	1.074	0.547	1.519	No
	Top	0.727	0.221	0.251	0.135	0.181	0.145	0.948	0.978	0.862	0.908	0.872	1.007	No
	Bottom							0.000	0.000	0.000	0.000	0.000	0.000	No
LTE Band 2 (Main1 Ant)	Rear	0.633	0.350	0.608	0.457	0.725	0.260	0.983	1.241	1.090	1.358	0.893	1.350	No
	Front							0.000	0.000	0.000	0.000	0.000	0.000	No
	Left	0.470	0.378	0.360	0.400	0.753	0.172	0.848	0.830	0.870	1.223	0.642	1.042	No
	Right	0.169	0.400	0.764	0.972	0.927	0.400	0.569	0.933	1.141	1.096	0.569	1.541	No
	Top	0.481	0.221	0.251	0.135	0.181	0.145	0.702	0.732	0.616	0.662	0.626	0.761	No
	Bottom							0.000	0.000	0.000	0.000	0.000	0.000	No
LTE Band 12 (Main1 Ant)	Rear	0.265	0.350	0.608	0.457	0.725	0.260	0.615	0.873	0.722	0.990	0.525	0.982	No
	Front							0.000	0.000	0.000	0.000	0.000	0.000	No
	Left	0.124	0.378	0.360	0.400	0.753	0.172	0.502	0.484	0.524	0.877	0.296	0.696	No
	Right	0.044	0.400	0.764	0.972	0.927	0.400	0.444	0.808	1.016	0.971	0.444	1.416	No
	Top	0.349	0.221	0.251	0.135	0.181	0.145	0.570	0.600	0.484	0.530	0.494	0.629	No
	Bottom							0.000	0.000	0.000	0.000	0.000	0.000	No

Simultaneous Transmission Summation Scenario with 2.4 GHz WLAN, 5 GHz WLAN, Bluetooth														
Band		WWAN SAR	2.4 GHz WLAN SISO Ant.1	2.4 GHz WLAN MIMO	5 GHz WLAN SISO Ant.2	5 GHz WLAN MIMO	BT	∑ 1-g SAR	∑ 1-g SAR	∑ 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)	(W/kg)	(W/kg)	(W/kg)	(Yes / No)
		1	2	3	4	5	6	1+2	1+3	1+4	1+5	1+6	1+4+6	
LTE Band 13 (Main1 Ant)	Rear	0.281	0.350	0.608	0.457	0.725	0.260	0.631	0.889	0.738	1.006	0.541	0.998	No
	Front							0.000	0.000	0.000	0.000	0.000	0.000	No
	Left	0.065	0.378	0.360	0.400	0.753	0.172	0.443	0.425	0.465	0.818	0.237	0.637	No
	Right	0.034	0.400	0.764	0.972	0.927	0.400	0.434	0.798	1.006	0.961	0.434	1.406	No
	Top	0.631	0.221	0.251	0.135	0.181	0.145	0.852	0.882	0.766	0.812	0.776	0.911	No
	Bottom							0.000	0.000	0.000	0.000	0.000	0.000	No
LTE Band 26 (Main1 Ant)	Rear	0.425	0.350	0.608	0.457	0.725	0.260	0.775	1.033	0.882	1.150	0.685	1.142	No
	Front							0.000	0.000	0.000	0.000	0.000	0.000	No
	Left	0.098	0.378	0.360	0.400	0.753	0.172	0.476	0.458	0.498	0.851	0.270	0.670	No
	Right	0.059	0.400	0.764	0.972	0.927	0.400	0.459	0.823	1.031	0.986	0.459	1.431	No
	Top	0.615	0.221	0.251	0.135	0.181	0.145	0.836	0.866	0.750	0.796	0.760	0.895	No
	Bottom							0.000	0.000	0.000	0.000	0.000	0.000	No
LTE Band 41 (Main1 Ant)	Rear	0.551	0.350	0.608	0.457	0.725	0.260	0.901	1.159	1.008	1.276	0.811	1.268	No
	Front							0.000	0.000	0.000	0.000	0.000	0.000	No
	Left	0.115	0.378	0.360	0.400	0.753	0.172	0.493	0.475	0.515	0.868	0.287	0.687	No
	Right	0.108	0.400	0.764	0.972	0.927	0.400	0.508	0.872	1.080	1.035	0.508	1.480	No
	Top	0.743	0.221	0.251	0.135	0.181	0.145	0.964	0.994	0.878	0.924	0.888	1.023	No
	Bottom							0.000	0.000	0.000	0.000	0.000	0.000	No
LTE Band 66 (Main1 Ant)	Rear	0.339	0.350	0.608	0.457	0.725	0.260	0.689	0.947	0.796	1.064	0.599	1.056	No
	Front							0.000	0.000	0.000	0.000	0.000	0.000	No
	Left	0.403	0.378	0.360	0.400	0.753	0.172	0.781	0.763	0.803	1.156	0.575	0.975	No
	Right	0.106	0.400	0.764	0.972	0.927	0.400	0.506	0.870	1.078	1.033	0.506	1.478	No
	Top	0.636	0.221	0.251	0.135	0.181	0.145	0.857	0.887	0.771	0.817	0.781	0.916	No
	Bottom							0.000	0.000	0.000	0.000	0.000	0.000	No
NR Band n5 (Main1 Ant)	Rear	0.427	0.350	0.608	0.457	0.725	0.260	0.777	1.035	0.884	1.152	0.687	1.144	No
	Front							0.000	0.000	0.000	0.000	0.000	0.000	No
	Left	0.126	0.378	0.360	0.400	0.753	0.172	0.504	0.486	0.526	0.879	0.298	0.698	No
	Right	0.016	0.400	0.764	0.972	0.927	0.400	0.416	0.780	0.988	0.943	0.416	1.388	No
	Top	0.658	0.221	0.251	0.135	0.181	0.145	0.879	0.909	0.793	0.839	0.803	0.938	No
	Bottom							0.000	0.000	0.000	0.000	0.000	0.000	No
NR Band n66 (Main1 Ant)	Rear	0.397	0.350	0.608	0.457	0.725	0.260	0.747	1.005	0.854	1.122	0.657	1.114	No
	Front							0.000	0.000	0.000	0.000	0.000	0.000	No
	Left	0.428	0.378	0.360	0.400	0.753	0.172	0.806	0.788	0.828	1.181	0.600	1.000	No
	Right	0.139	0.400	0.764	0.972	0.927	0.400	0.539	0.903	1.111	1.066	0.539	1.511	No
	Top	0.662	0.221	0.251	0.135	0.181	0.145	0.883	0.913	0.797	0.843	0.807	0.942	No
	Bottom							0.000	0.000	0.000	0.000	0.000	0.000	No

Simultaneous Transmission Summation Scenario with 2.4 GHz WLAN, 5 GHz WLAN, Bluetooth																
Band	EN-DC Band		NR Band SAR	EN-DC LTE Band SAR	2.4 GHz WLAN SISO Ant.1	2.4 GHz WLAN MIMO	5 GHz WLAN SISO Ant.2	5 GHz WLAN MIMO	BT	∑ 1-g SAR	∑ 1-g SAR	∑ 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)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(Yes / No)
			1	2	3	4	5	6	7	1+2+3	1+2+4	1+2+5	1+2+6	1+2+7	1+2+5+7	
NR Band n5 (Main1 Ant)	LTE Band 2 (Main1 Ant)	Rear	0.427	0.633	0.350	0.608	0.457	0.725	0.260	1.410	1.668(#1)	1.517	1.785(#2,3)	1.320	1.777(#4,5)	Yes
		Front								0.000	0.000	0.000	0.000	0.000	0.000	No
		Left	0.126	0.470	0.378	0.360	0.400	0.753	0.172	0.974	0.956	0.996	1.349	0.768	1.168	No
		Right	0.016	0.169	0.400	0.764	0.972	0.927	0.400	0.585	0.949	1.157	1.112	0.585	1.557	No
		Top	0.658	0.481	0.221	0.251	0.135	0.181	0.145	1.360	1.390	1.274	1.320	1.284	1.419	No
		Bottom								0.000	0.000	0.000	0.000	0.000	0.000	No
	LTE Band 66 (Main1 Ant)	Rear	0.427	0.339	0.350	0.608	0.457	0.725	0.260	1.116	1.374	1.223	1.491	1.026	1.483	No
		Front								0.000	0.000	0.000	0.000	0.000	0.000	No
		Left	0.126	0.403	0.378	0.360	0.400	0.753	0.172	0.907	0.889	0.929	1.282	0.701	1.101	No
		Right	0.016	0.106	0.400	0.764	0.972	0.927	0.400	0.522	0.886	1.094	1.049	0.522	1.494	No
		Top	0.658	0.636	0.221	0.251	0.135	0.181	0.145	1.515	1.545	1.429	1.475	1.439	1.574	No
		Bottom								0.000	0.000	0.000	0.000	0.000	0.000	No
NR Band n66 (Main1 Ant)	LTE Band 26(5) (Main1 Ant)	Rear	0.397	0.425	0.350	0.608	0.457	0.725	0.260	1.172	1.430	1.279	1.547	1.082	1.539	No
		Front								0.000	0.000	0.000	0.000	0.000	0.000	No
		Left	0.428	0.098	0.378	0.360	0.400	0.753	0.172	0.904	0.886	0.926	1.279	0.698	1.098	No
		Right	0.139	0.059	0.400	0.764	0.972	0.927	0.400	0.598	0.962	1.170	1.125	0.598	1.570	No
		Top	0.662	0.615	0.221	0.251	0.135	0.181	0.145	1.498	1.528	1.412	1.458	1.422	1.557	No
		Bottom								0.000	0.000	0.000	0.000	0.000	0.000	No
	LTE Band 12 (Main1 Ant)	Rear	0.397	0.265	0.350	0.608	0.457	0.725	0.260	1.012	1.270	1.119	1.387	0.922	1.379	No
		Front								0.000	0.000	0.000	0.000	0.000	0.000	No
		Left	0.428	0.124	0.378	0.360	0.400	0.753	0.172	0.930	0.912	0.952	1.305	0.724	1.124	No
		Right	0.139	0.044	0.400	0.764	0.972	0.927	0.400	0.583	0.947	1.155	1.110	0.583	1.555	No
		Top	0.662	0.349	0.221	0.251	0.135	0.181	0.145	1.232	1.262	1.146	1.192	1.156	1.291	No
		Bottom								0.000	0.000	0.000	0.000	0.000	0.000	No
	LTE Band 13 (Main1 Ant)	Rear	0.397	0.281	0.350	0.608	0.457	0.725	0.260	1.028	1.286	1.135	1.403	0.938	1.395	No
		Front								0.000	0.000	0.000	0.000	0.000	0.000	No
		Left	0.428	0.065	0.378	0.360	0.400	0.753	0.172	0.871	0.853	0.893	1.246	0.665	1.065	No
		Right	0.139	0.034	0.400	0.764	0.972	0.927	0.400	0.573	0.937	1.145	1.100	0.573	1.545	No
		Top	0.662	0.631	0.221	0.251	0.135	0.181	0.145	1.514	1.544	1.428	1.474	1.438	1.573	No
		Bottom								0.000	0.000	0.000	0.000	0.000	0.000	No

Note: The separation distance between the SAR peak of n66 of Main 1 antenna and LTE anchor B2 of Sub 2 antenna is 290mm, so simultaneous transmission analysis was not performed.



14.2 SAR to Peak Location Separation Ratio (SPLSR)

FCC KDB 447498 D01 v06. 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

Mode/Band	X(mm)	Y(mm)	Reported SAR [W/kg]
NR Band n5 Main1 Ant	-0.03	0.145	0.427
LTE Band 2 Main1 Ant	-0.015	0.145	0.633
2.4 GHz WLAN MIMO	-0.084	0.142	0.608
5 GHz WLAN MIMO ANT1	0.09	0.140	0.725
5 GHz WLAN MIMO ANT2	-0.09	0.140	
5 GHz WLAN SISO ANT2	-0.09	0.140	0.457
Bluetooth ANT1	0.084	0.142	0.260

SPLSR Combination (Sum-Peak Locaiton Separation Ratio)
This Procedure can only be applied when simultaneous transmission SAR is > 1.6 W/kg, it does not meet SPLSR criteria, and antenna pair is co-located

Test Procedure:
1. Instead of doing a small volume scan over a co-located antenna pair, sum the SAR value of the co-located pair and use that value in SPLSR calculation.

2. This calculation use the minimum distance between the spatially antenna and the closest antenna of the co-located antenna pair to be conservative

3. Sum-Peak Locaiton Separation Ratio

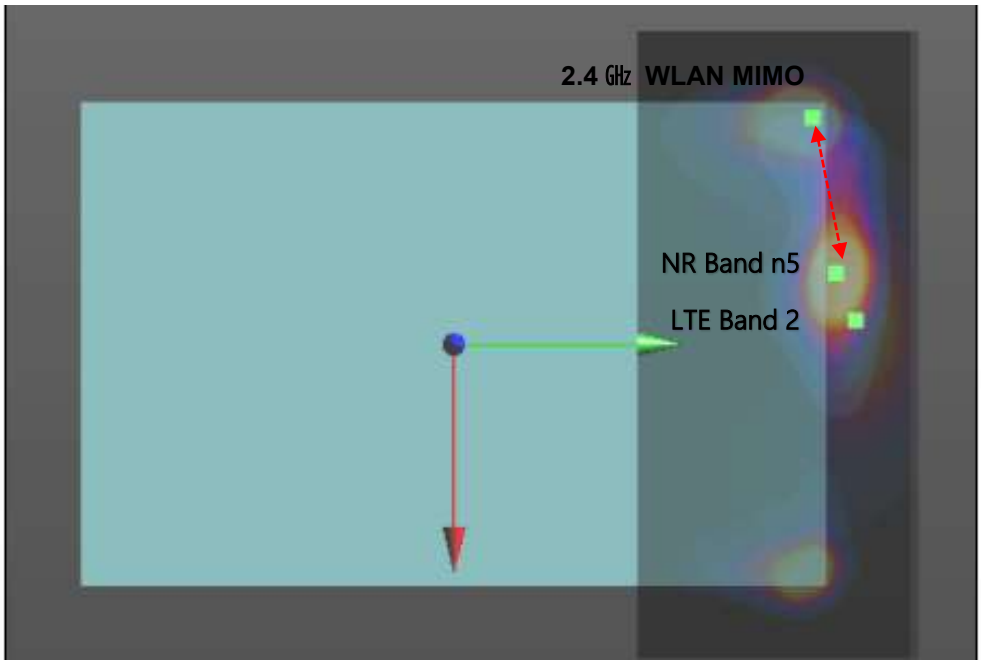
2&3 Co-located Pair Antenna

Mode			Sum 1g SAR	Sum 1g SAR	1+2+3 Peak SAR Separation Distance	1+3 Peak SAR Separation Distance	1+(2+3) SPLSR	Plot
			[W/kg]	[W/kg]	[W/kg]	[W/kg]		
1	2	3	1+2+3	2+3	[mm]	[mm]		
2.4 GHz WLAN MIMO	NR Band n5	LTE Band 2	1.668	1.060	54.083	69.181	0.040	#1
5 GHz WLAN MIMO ANT1	LTE Band 2	NR Band n5	1.785	1.060	105.238	120.108	0.023	#2
5 GHz WLAN MIMO ANT2	NR Band n5	LTE Band 2	1.785	1.060	60.208	75.273	0.040	#3

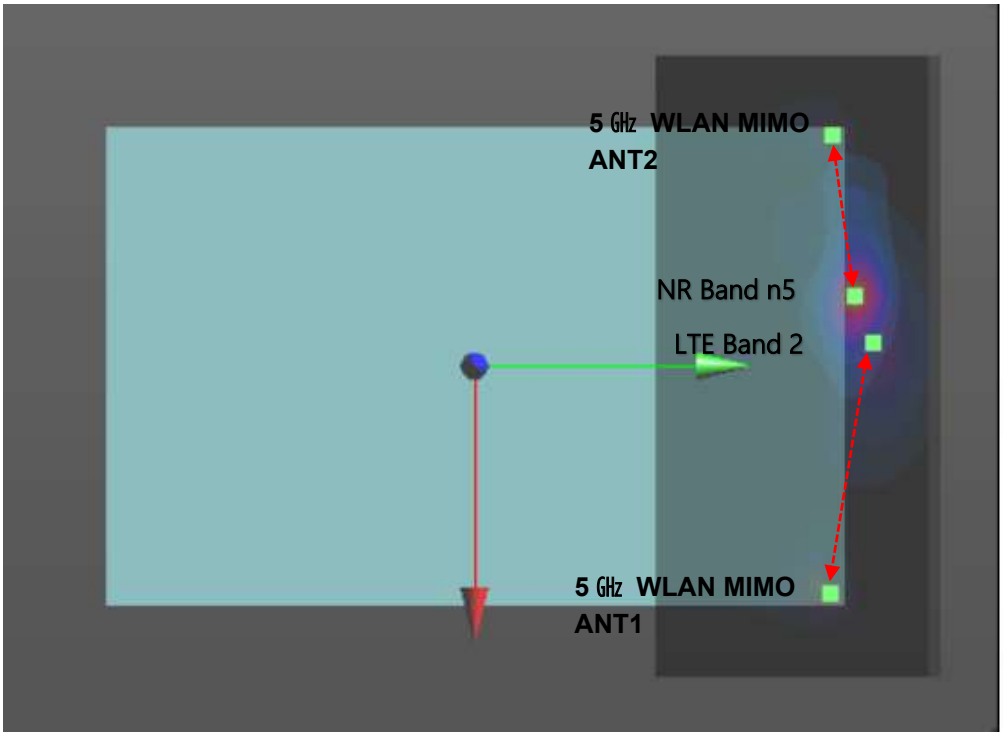
Mode				Sum 1g SAR	Sum 1g SAR	1+2 Peak SAR Separation Distance	1+3 Peak SAR Separation Distance	1+(2+3+4) SPLSR	Plot
				[W/kg]	[W/kg]	[W/kg]	[W/kg]		
1	2	3	4	1+2+3+4	2+3+4	[mm]	[mm]		
5 GHz WLAN SISO ANT2	NR Band n5	LTE Band 2	Bluetooth ANT1	1.777	1.320	60.208	75.273	0.039	#4
Bluetooth ANT1	LTE Band 2	NR Band n5	5 GHz WLAN SISO ANT2	1.777	1.517	99.172	114.044	0.024	#5

SPLSR Plot

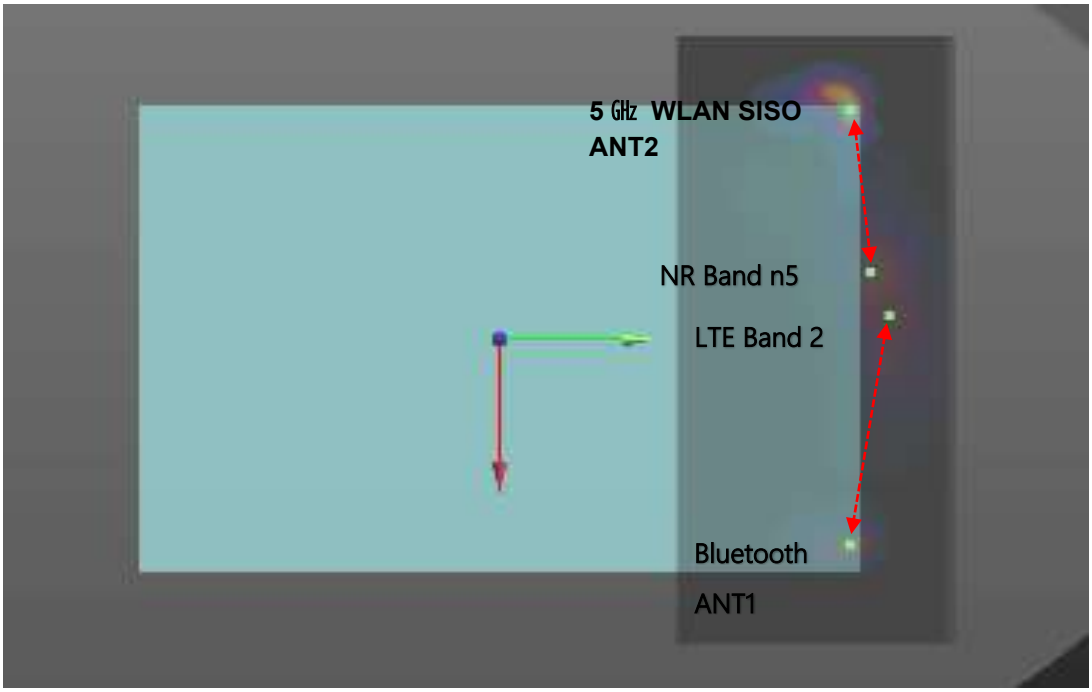
Plot #1 NR Band n5+ LTE Band 2 Main 1 Ant + 2.4 GHz WLAN MIMO



Plot #2, #3 NR Band n5 + LTE Band 2 Main 1 Ant + 5 GHz WLAN MIMO ANT1/2



Plot #4, #5 Bluetooth ANT1 + NR Band n5+ LTE Band 2 Main 1 Ant + 5 GHz WLAN SISO ANT2



14.3 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 measured volumetric simultaneous SAR summation is required per FCC KDB Publication 447498 D01 v06 and IEEE1528-2013.

15. SAR Measurement Variability and Uncertainty

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

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

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

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

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

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

Body SAR measurement variability Results

Frequency		Mode/Band	Configuration	Measured SAR	Repeated SAR	SAR Ratio
㎒	Channel			(W/kg)	(W/kg)	
1 900	19100	LTE Band 2 (Sub2 Ant.)	Rear (Active)	0.907	0.866	1.05

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	ELI Phantom	-	N/A	N/A	N/A
HP	SAR System Control PC	-	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F11/5K3RA1/C/01	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F13/5SD0A1/C/01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F11/5K3RA1/A/01	N/A	N/A	N/A
Staubli	TX90 Xlspeag	F13/5SD0A1/A/01	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	S-1203 0309	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	001729	N/A	N/A	N/A
TESTO	175-H1/Thermometer 175-H1	40331936309	12/29/2022	Annual	12/29/2023
TESTO	175-H1/Thermometer 608-H1	83348029	03/27/2023	Annual	03/27/2024
SPEAG	DAE4	504	01/10/2023	Annual	01/10/2024
SPEAG	DAE4	466	04/25/2023	Annual	04/25/2024
SPEAG	E-Field Probe EX3DV4	3797	01/24/2023	Annual	01/24/2024
SPEAG	E-Field Probe EX3DV4	7679	08/19/2022	Annual	08/19/2023
SPEAG	Dipole D750V3	1014	05/23/2023	Annual	05/23/2024
SPEAG	Dipole D835V2	4d165	05/23/2023	Annual	05/23/2024
SPEAG	Dipole D1800V2	2d015	05/17/2023	Annual	05/17/2024
SPEAG	Dipole D1900V2	5d061	01/23/2023	Annual	01/23/2024
SPEAG	Dipole D2450V2	1049	04/25/2023	Annual	04/25/2024
SPEAG	Dipole D2600V2	1106	05/24/2023	Annual	05/24/2024
SPEAG	Dipole D5 GHz V2	1317	05/17/2023	Annual	05/17/2024
Agilent	Power Meter E4419B	MY41291386	09/27/2022	Annual	09/27/2023
Agilent	Power Meter N1911A	MY45101406	05/26/2023	Annual	05/26/2024
Agilent	Power Sensor 8481A	SG1091286	09/272022	Annual	09/27/2023
Agilent	Power Sensor 8481A	MY41090675	09/27/2022	Annual	09/27/2023
Agilent	Wideband Power Sensor N1921A	MY55220026	08/02/2022	Annual	08/02/2023
Agilent	11636B/Power Divider	58698	01/26/2023	Annual	01/26/2024
SPEAG	DAKS 3.5	1038	01/25/2023	Annual	01/25/2024
SPEAG	Vector Reflectometer	00141013	02/13/2023	Annual	02/13/2024
SPEAG	MXA Signal Analyzer	MY49100108	01/13/2023	Annual	01/13/2024
Agilent	WIRELESS COMMUNICATION E5515C	MY48361100	09/27/2022	Annual	09/27/2023
Agilent	WIRELESS COMMUNICATION E5515C	MY48360252	08/08/2022	Annual	08/08/2023
R&S	Wireless Communication Test Set CMW500	115733	03/23/2023	Annual	03/23/2024
R&S	Wireless Communication Test Set CMW500	139103	12/15/2022	Annual	12/15/2023
Agilent	SIGNAL GENERATOR N5182A	MY47070230	03/23/2023	Annual	03/23/2024
EMPOWER	RF Power Amplifier	1084	05/26/2023	Annual	05/26/2024
EMPOWER	RF Power Amplifier	1011	09/27/2022	Annual	09/27/2023
MICRO LAB	LP Filter / LA-15N	10453	09/27/2022	Annual	09/27/2023
MICRO LAB	LP Filter / LA-30N	-	09/27/2022	Annual	09/27/2023
MICRO LAB	LP Filter / LA-60N	32011	09/27/2022	Annual	09/27/2023
Agilent	Attenuator (3dB) 8693B	MY39260298	08/25/2022	Annual	08/25/2023
HP	Attenuator (3dB) 33340A	02427	08/25/2022	Annual	08/25/2023
HP	Attenuator (20dB) 8493C	09271	08/25/2022	Annual	08/25/2023
Agilent	Directional Bridge 86205A	3140A04581	04/25/2023	Annual	04/25/2024
OSI	Power Divider	#3	05/26/2023	Annual	05/26/2024
HP	Dual Directional Coupler	16072	09/27/2022	Annual	09/27/2023
Anritsu	Radio Communication Tester MT8000A	6261987928	01/25/2023	Annual	01/25/2024
Anritsu	Radio Communication Tester MT8000A	6262036812	12/08/2022	Annual	12/08/2023
Anritsu	Radio Communication Tester MT8820C	6200695605	03/23/2023	Annual	03/23/2024
Anritsu	Radio Communication Tester MT8821C	6201502997	05/26/2023	Annual	05/26/2024
Anritsu	Radio Communication Tester MT8821C	6262044720	12/07/2022	Annual	12/07/2023
ROHDE&SCHWARZ	BLUETOOTH TESTER CBT	100272	01/25/2023	Annual	01/25/2024

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

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

19. References

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

[17] N. Kuster, R. Kastle, T. Schmid, Dosimetric evaluation of mobile communications equipment with known precision, IEEE Transaction on Communications, vol. E80-B, no. 5, May 1997, pp. 645-652.

[18] CENELEC CLC/SC111B, European Prestandard (prENV 50166-2), Human Exposure to Electromagnetic Fields High-frequency: 10 kHz-300 GHz, Jan. 1995.

[19] Prof. Dr. Niels Kuster, ETH, EidgenØssischeTechnischeHoschschuleZòrich, Dosimetric Evaluation of the Cellular Phone.

[20] IEC 62209-1, Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation and procedures – Part 1:Procedure to determine the

specific absorption rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz 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.

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

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

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

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

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

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

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

[29] FCC General RF Exposure Guidance and SAR procedures for Dongles, KDB 447498 D01,D02,D04.

Appendix *A.* DUT Ant. Information & SETUP PHOTO

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

Report No.
HCT-SR-2307-FC003-P

Appendix B. – SAR Test Plots

Test Laboratory:	HCT CO., LTD
EUT Type:	Tablet
Liquid Temperature:	19.1 ℃
Ambient Temperature:	19.2 ℃
Test Date:	06/19/2023
Plot No.:	1

DUT: SM-X616B

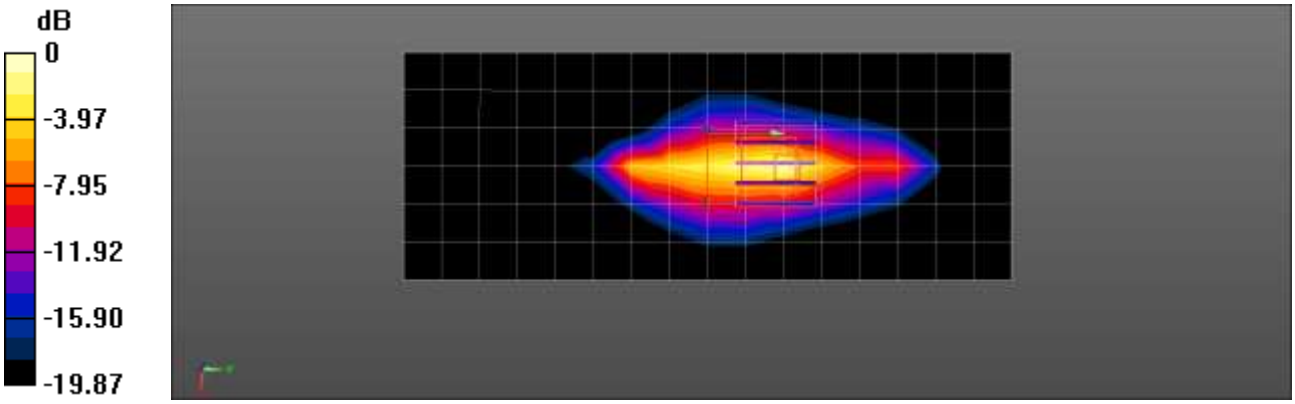
Communication System: UID 0, GSM850 GPRS 2TX (0); Frequency: 836.6 MHz;Duty Cycle: 1:4.14954
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.941 S/m; ε_r = 41.54; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(8.89, 8.47, 8.88) @ 836.6 MHz; Calibrated: 2023-01-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2023-01-10
- Phantom: ELI v5.0_2014_03_05; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

GSM850 2Tx Body Top 190ch/Area Scan (7x17x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.43 W/kg

GSM850 2Tx Body Top 190ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.24 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 2.34 W/kg
SAR(1 g) = 0.702 W/kg; SAR(10 g) = 0.317 W/kg
Maximum value of SAR (measured) = 1.66 W/kg



0 dB = 1.66 W/kg = 2.20 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Tablet
Liquid Temperature:	23.9 ℃
Ambient Temperature:	24.0 ℃
Test Date:	06/12/2023
Plot No.:	2

DUT: SM-X616B

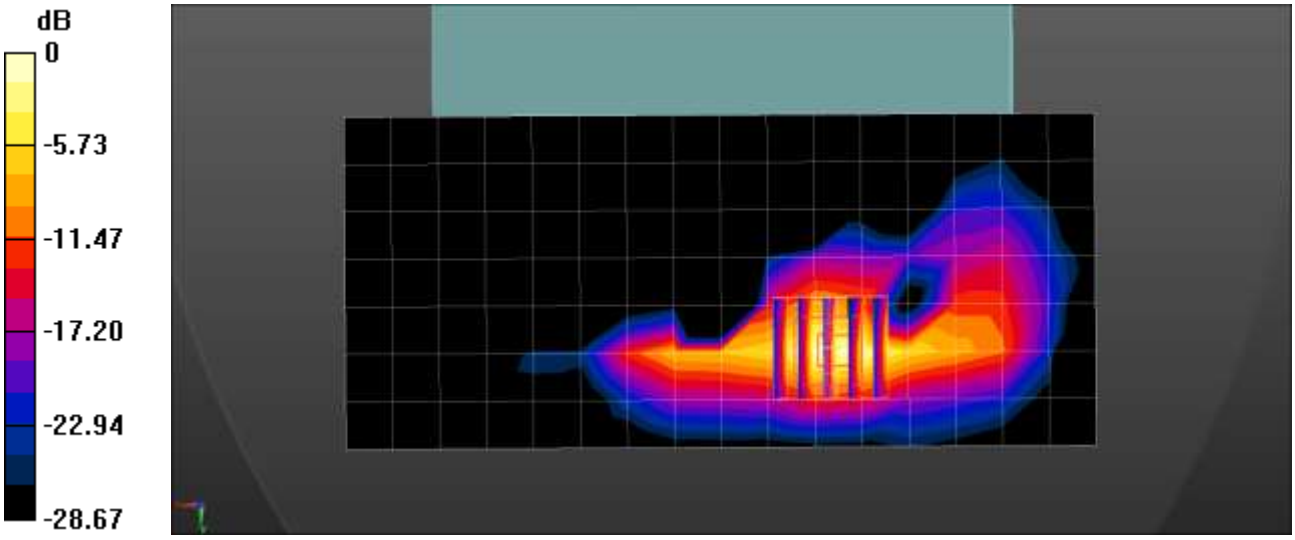
Communication System: UID 0, GSM 1900 2TX (0); Frequency: 1880 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 1880 MHz; σ = 1.37 S/m; ε_r = 39.25; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7679; ConvF(8.57, 8.57, 8.57) @ 1880 MHz; Calibrated: 2022-08-19
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2023-04-25
- Phantom: ELI V4.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (4)

GSM1900 2Tx Body Rear 661ch/Area Scan (17x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.869 W/kg

GSM1900 2Tx Body Rear 661ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.724 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 1.46 W/kg
SAR(1 g) = 0.516 W/kg; SAR(10 g) = 0.199 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:	Tablet
Liquid Temperature:	19.3 ℃
Ambient Temperature:	19.3 ℃
Test Date:	06/20/2023
Plot No.:	3

DUT: SM-X616B

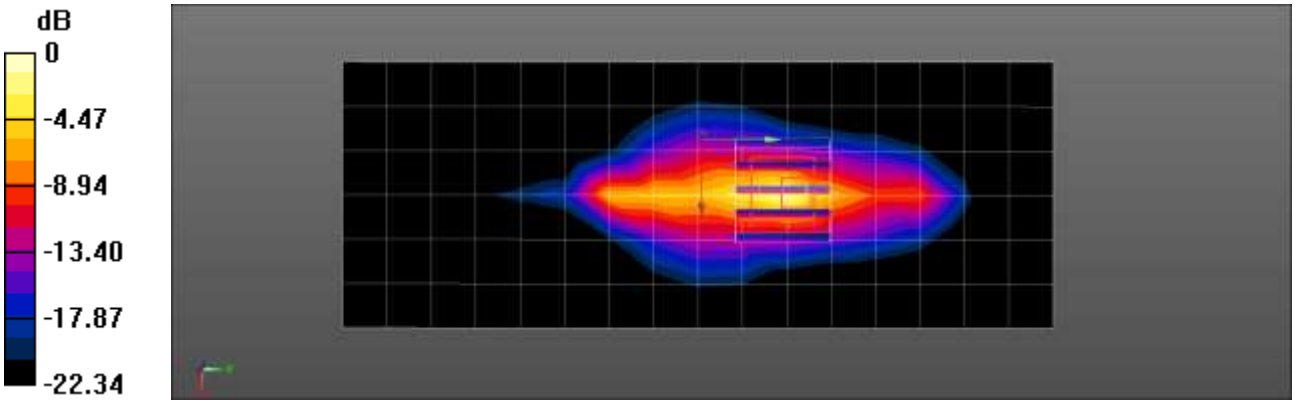
Communication System: UID 0, WCDMA850 (0); Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.941 S/m; ε_r = 41.537; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(8.89, 8.47, 8.88) @ 836.6 MHz; Calibrated: 2023-01-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2023-01-10
- Phantom: ELI v5.0_2014_03_05; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

UMTS Band 5 Body Top 4183ch/Area Scan (7x17x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.40 W/kg

UMTS Band 5 Body Top 4183ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.01 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 2.70 W/kg
SAR(1 g) = 0.620 W/kg; SAR(10 g) = 0.233 W/kg
Maximum value of SAR (measured) = 1.78 W/kg



0 dB = 1.78 W/kg = 2.50 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Tablet
Liquid Temperature:	23.3 ℃
Ambient Temperature:	23.4 ℃
Test Date:	06/13/2023
Plot No.:	4

DUT: SM-X616B

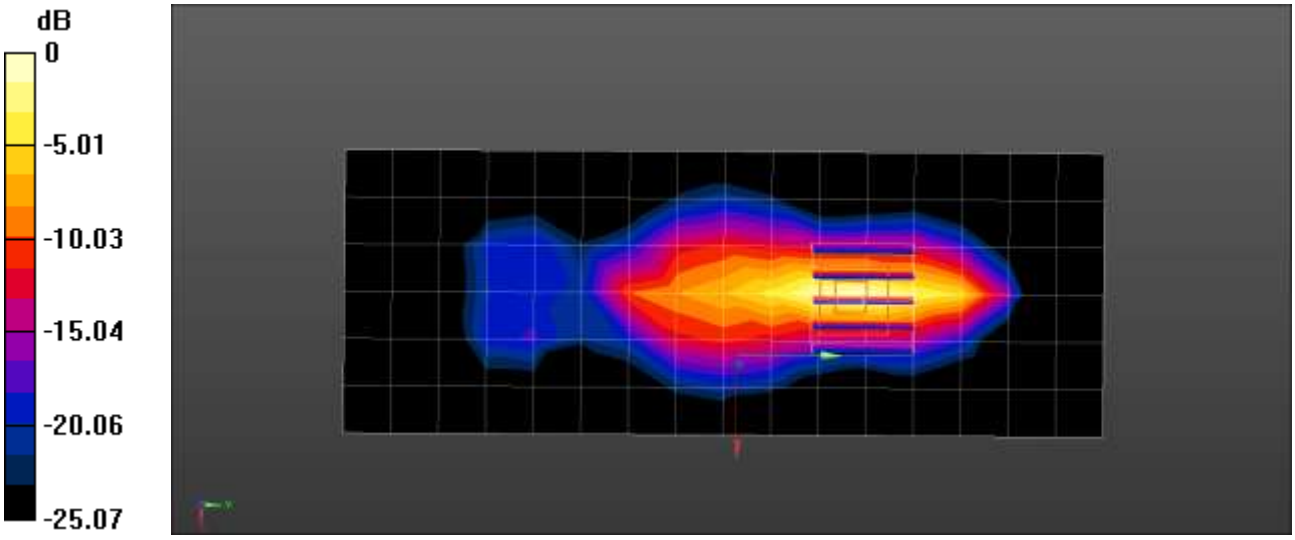
Communication System: UID 0, UMTS Band 4 (0); Frequency: 1732.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.328 S/m; ε_r = 39.687; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7679; ConvF(8.98, 8.98, 8.98) @ 1732.4 MHz; Calibrated: 2022-08-19
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2023-04-25
- Phantom: ELI V4.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (4)

UMTS Band 4 Body Top 1412ch/Area Scan (7x17x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.32 W/kg

UMTS Band 4 Body Top 1412ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.71 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 2.05 W/kg
SAR(1 g) = 0.617 W/kg; SAR(10 g) = 0.228 W/kg
Maximum value of SAR (measured) = 1.46 W/kg



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

Test Laboratory:	HCT CO., LTD
EUT Type:	Tablet
Liquid Temperature:	23.4 ℃
Ambient Temperature:	23.5 ℃
Test Date:	06/20/2023
Plot No.:	5

DUT: SM-X616B

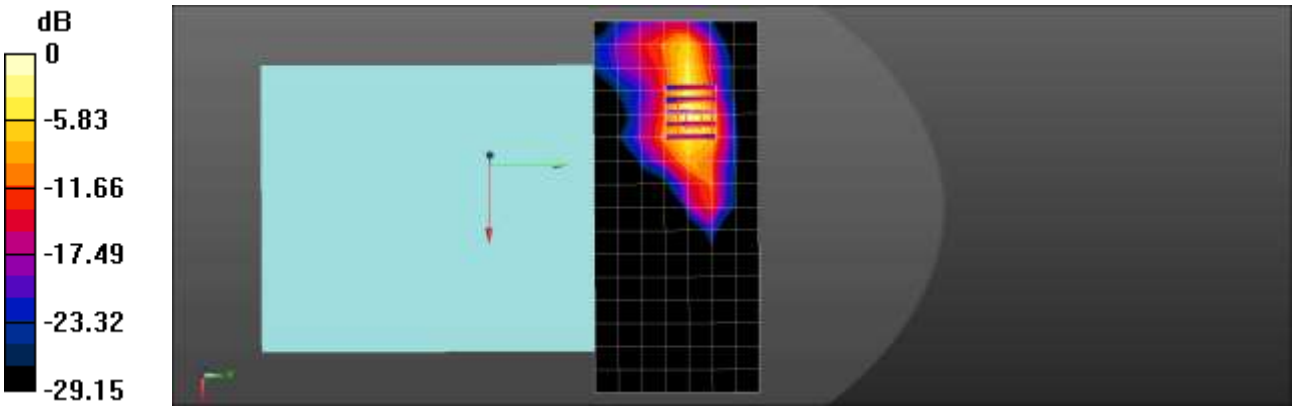
Communication System: UID 0, WCDMA1900 (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.37 S/m; ε_r = 39.254; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7679; ConvF(8.57, 8.57, 8.57) @ 1880 MHz; Calibrated: 2022-08-19
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2023-04-25
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 Bx; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

UMTS Band 2 Body Rear 9400ch/Area Scan (17x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.17 W/kg

UMTS Band 2 Body Rear 9400ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.45 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 1.98 W/kg
SAR(1 g) = 0.694 W/kg; SAR(10 g) = 0.270 W/kg
Maximum value of SAR (measured) = 1.42 W/kg



0 dB = 1.42 W/kg = 1.52 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Tablet
Liquid Temperature:	22.7 ℃
Ambient Temperature:	22.8 ℃
Test Date:	07/06/2023
Plot No.:	6

DUT: SM-X616B

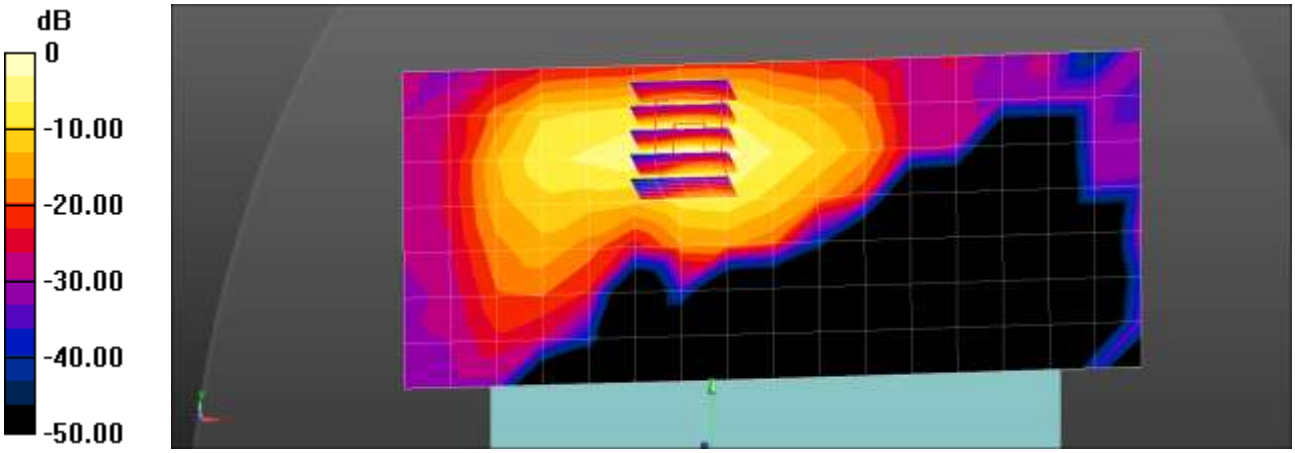
Communication System: UID 0, LTE Band 2 (0); Frequency: 1860 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1860 MHz; σ = 1.351 S/m; ε_r = 39.346; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7679; ConvF(8.57, 8.57, 8.57) @ 1860 MHz; Calibrated: 2022-08-19
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2023-04-25
- Phantom: ELI V4.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (4)

LTE Band 2 Body Rear QPSK 20MHz 1RB 0offset 18700ch/Area Scan (17x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.787 W/kg

LTE Band 2 Body Rear QPSK 20MHz 1RB 0offset 18700ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.16 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.51 W/kg
SAR(1 g) = 0.567 W/kg; SAR(10 g) = 0.233 W/kg
Maximum value of SAR (measured) = 1.11 W/kg



0 dB = 0.787 W/kg = -1.04 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Tablet
Liquid Temperature:	22.3 ℃
Ambient Temperature:	22.4 ℃
Test Date:	06/19/2023
Plot No.:	7

DUT: SM-X616B

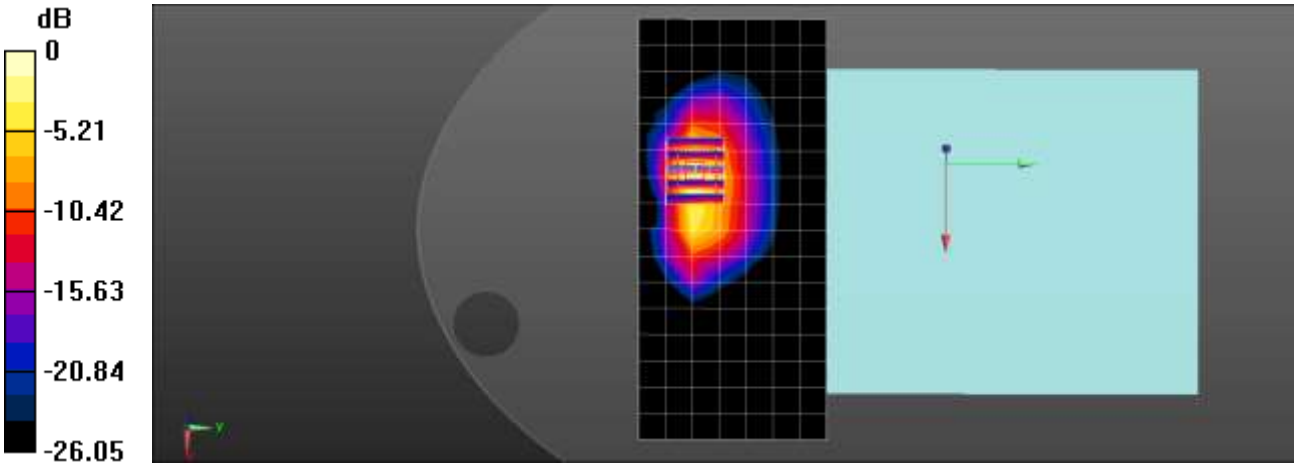
Communication System: UID 0, LTE Band 2 (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.41 S/m; ε_r = 39.171; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7679; ConvF(8.57, 8.57, 8.57) @ 1900 MHz; Calibrated: 2022-08-19
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2023-04-25
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 Bx; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

LTE Band 2 Body Rear QPSK 20MHz 50RB 0offset 19100ch/Area Scan (17x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.10 W/kg

LTE Band 2 Body Rear QPSK 20MHz 50RB 0offset 19100ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.10 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 2.71 W/kg
SAR(1 g) = 0.907 W/kg; SAR(10 g) = 0.360 W/kg
Smallest distance from peaks to all points 3 dB below = 7.2 mm
Ratio of SAR at M2 to SAR at M1 = 32.3%
Maximum value of SAR (measured) = 1.91 W/kg



0 dB = 1.91 W/kg = 2.81 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Tablet
Liquid Temperature:	20.1 ℃
Ambient Temperature:	20.2 ℃
Test Date:	06/13/2023
Plot No.:	8

DUT: SM-X616B

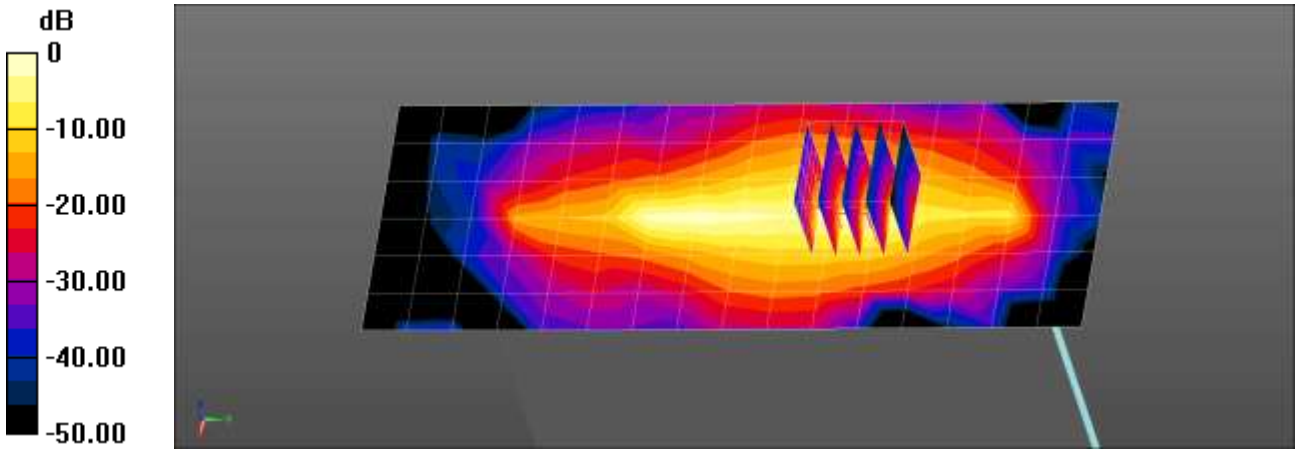
Communication System: UID 0, LTE Band12 (0); Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 707.5 MHz; σ = 0.85 S/m; ε_r = 43.465; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(9.51, 9.05, 9.15) @ 707.5 MHz; Calibrated: 2023-01-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2023-01-10
- Phantom: ELI v5.0_2014_03_05; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

LTE Band 12 Body Top QPSK 10MHz 25RB 0offset 23095ch/Area Scan (7x17x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.768 W/kg

LTE Band 12 Body Top QPSK 10MHz 25RB 0offset 23095ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.35 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 1.01 W/kg
SAR(1 g) = 0.296 W/kg; SAR(10 g) = 0.128 W/kg
Maximum value of SAR (measured) = 0.716 W/kg



0 dB = 0.768 W/kg = -1.15 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Tablet
Liquid Temperature:	19.6 ℃
Ambient Temperature:	19.7 ℃
Test Date:	06/14/2023
Plot No.:	9

DUT: SM-X616B

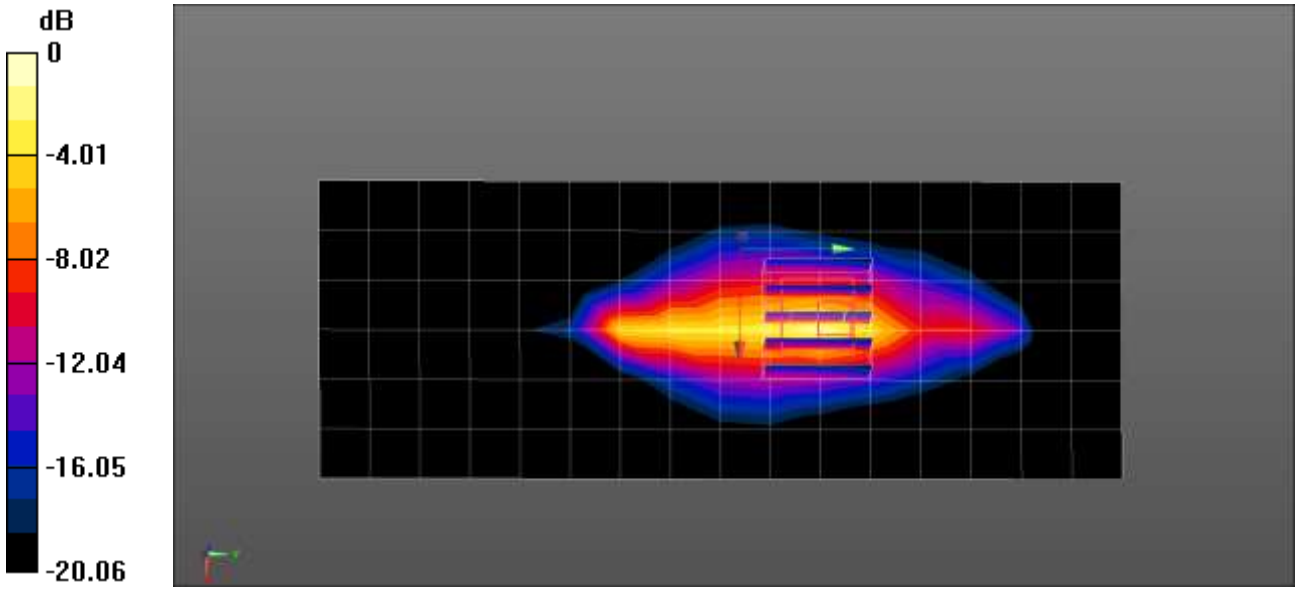
Communication System: UID 0, LTE Band 13 (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 782 MHz; σ = 0.929 S/m; ε_r = 42.371; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(9.51, 9.05, 9.15) @ 782 MHz; Calibrated: 2023-01-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2023-01-10
- Phantom: ELI v5.0_2014_03_05; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

LTE Band 13 Body Top QPSK 10MHz 25RB 0offset 23230ch/Area Scan (7x17x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.888 W/kg

LTE Band 13 Body Top QPSK 10MHz 25RB 0offset 23230ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.64 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 1.80 W/kg
SAR(1 g) = 0.527 W/kg; SAR(10 g) = 0.224 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:	Tablet
Liquid Temperature:	19.5 ℃
Ambient Temperature:	19.6 ℃
Test Date:	06/15/2023
Plot No.:	10

DUT: SM-X616B

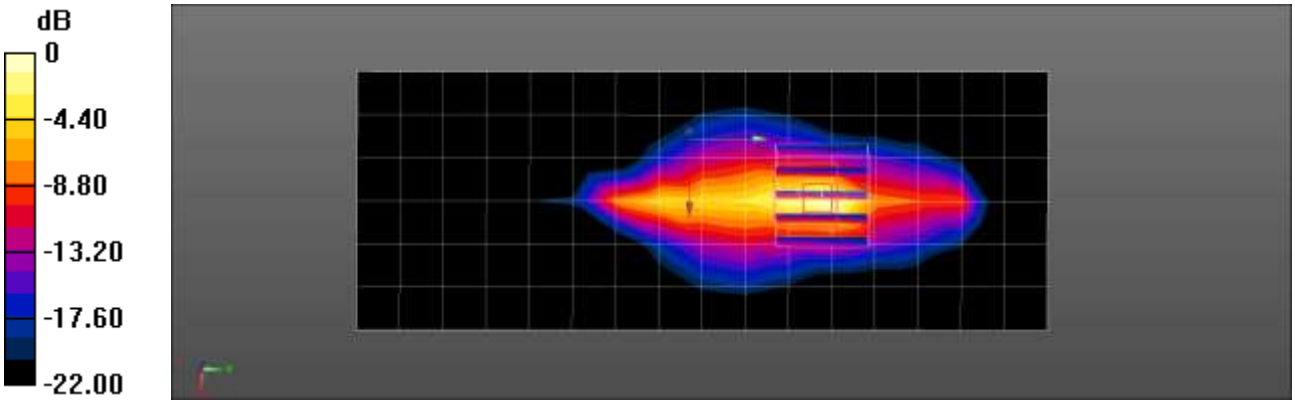
Communication System: UID 0, LTE Band 26 (0); Frequency: 831.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 831.5 MHz; σ = 0.936 S/m; ε_r = 41.598; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(8.89, 8.47, 8.88) @ 831.5 MHz; Calibrated: 2023-01-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2023-01-10
- Phantom: ELI v5.0_2014_03_05; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

LTE Band 26 Body Top QPSK 15MHz 36RB 0offset 26865ch/Area Scan (7x17x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.43 W/kg

LTE Band 26 Body Top QPSK 15MHz 36RB 0offset 26865ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.43 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 1.84 W/kg
SAR(1 g) = 0.503 W/kg; SAR(10 g) = 0.203 W/kg
Maximum value of SAR (measured) = 1.29 W/kg



0 dB = 1.29 W/kg = 1.11 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Tablet
Liquid Temperature:	19.8 ℃
Ambient Temperature:	19.8 ℃
Test Date:	06/16/2023
Plot No.:	11

DUT: SM-X616B

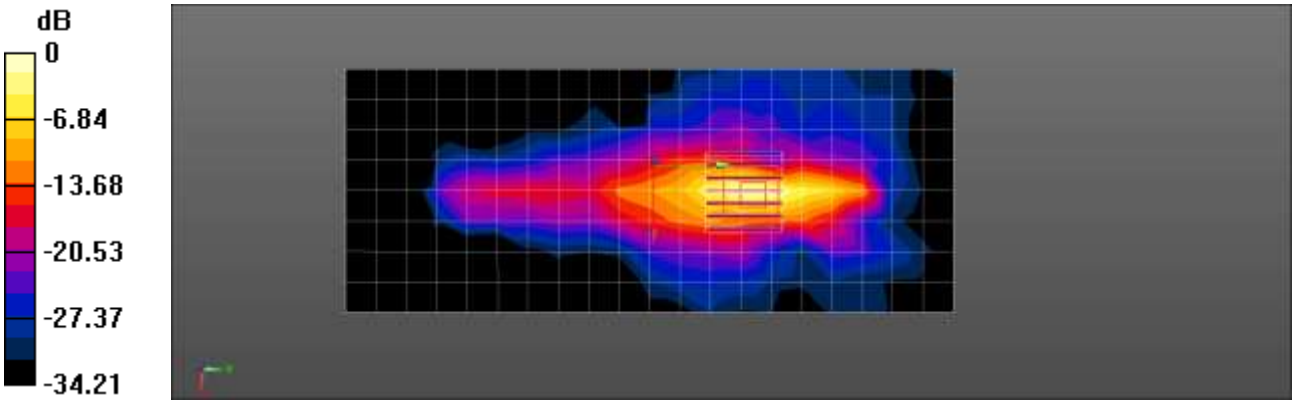
Communication System: UID 0, LTE Band 41 (0); Frequency: 2593 MHz;Duty Cycle: 1:1.58016
Medium parameters used (interpolated): f = 2593 MHz; σ = 2.024 S/m; ε_r = 39.079; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.22, 7.05, 7.34) @ 2593 MHz; Calibrated: 2023-01-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2023-01-10
- Phantom: ELI v5.0_2014_03_05; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

LTE Band 41 Body Top QPSK 20MHz 1RB 0offset 40620ch/Area Scan (9x21x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 1.38 W/kg

LTE Band 41 Body Top QPSK 20MHz 1RB 0offset 40620ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.273 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 2.59 W/kg
SAR(1 g) = 0.673 W/kg; SAR(10 g) = 0.216 W/kg
Maximum value of SAR (measured) = 1.72 W/kg



0 dB = 1.72 W/kg = 2.36 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Tablet
Liquid Temperature:	22.2 ℃
Ambient Temperature:	22.3 ℃
Test Date:	06/16/2023
Plot No.:	12

DUT: SM-X616B

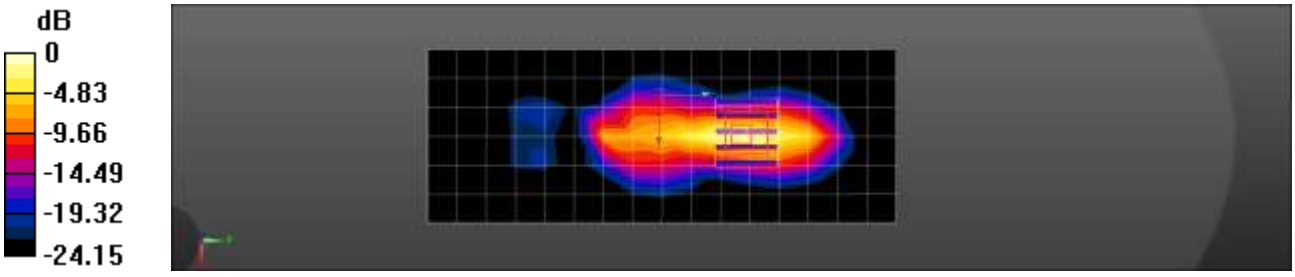
Communication System: UID 0, LTE 66 (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1745 MHz; σ = 1.342 S/m; ε_r = 39.634; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7679; ConvF(8.98, 8.98, 8.98) @ 1745 MHz; Calibrated: 2022-08-19
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2023-04-25
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 Bx; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

LTE Band 66 Body Top QPSK 20MHz 50RB 0offset 132322ch/Area Scan (7x17x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.21 W/kg

LTE Band 66 Body Top QPSK 20MHz 50RB 0offset 132322ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.98 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 1.88 W/kg
SAR(1 g) = 0.588 W/kg; SAR(10 g) = 0.231 W/kg
Maximum value of SAR (measured) = 1.37 W/kg



0 dB = 1.37 W/kg = 1.37 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Tablet
Liquid Temperature:	19.2 ℃
Ambient Temperature:	19.3 ℃
Test Date:	06/27/2023
Plot No.:	13

DUT: SM-X616B

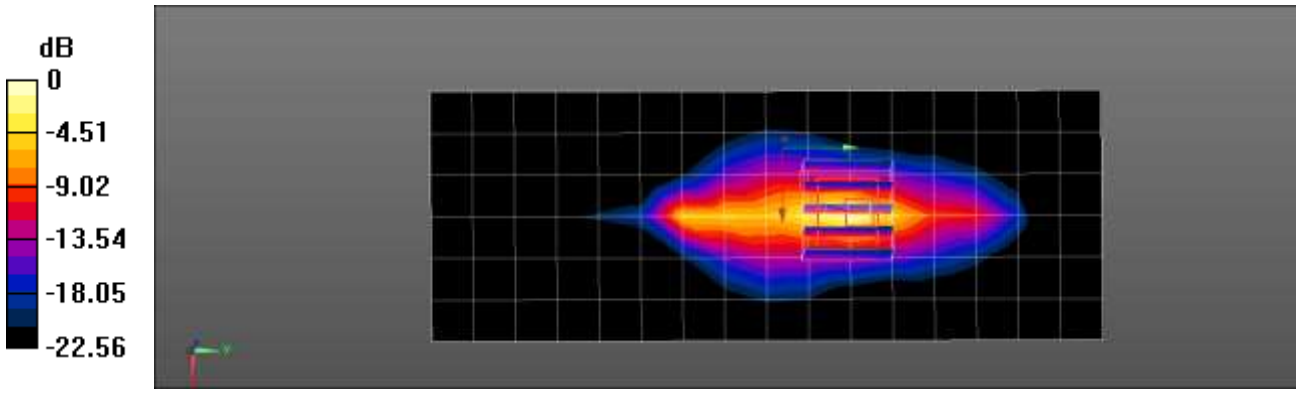
Communication System: UID 0, NR Band 5 (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.941 S/m; ε_r = 41.528; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(8.89, 8.47, 8.88) @ 836.5 MHz; Calibrated: 2023-01-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2023-01-10
- Phantom: ELI v5.0_2014_03_05; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

NR Band n5 Body Top DFT-s QPSK 20MHz 50RB 0offset 167300ch/Area Scan (7x17x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.44 W/kg

NR Band n5 Body Top DFT-s QPSK 20MHz 50RB 0offset 167300ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.35 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 2.69 W/kg
SAR(1 g) = 0.637 W/kg; SAR(10 g) = 0.239 W/kg
Maximum value of SAR (measured) = 1.80 W/kg



0 dB = 1.80 W/kg = 2.55 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	21.9 ℃
Ambient Temperature:	22.0 ℃
Test Date:	06/29/2023
Plot No.:	14

DUT: SM-X616B

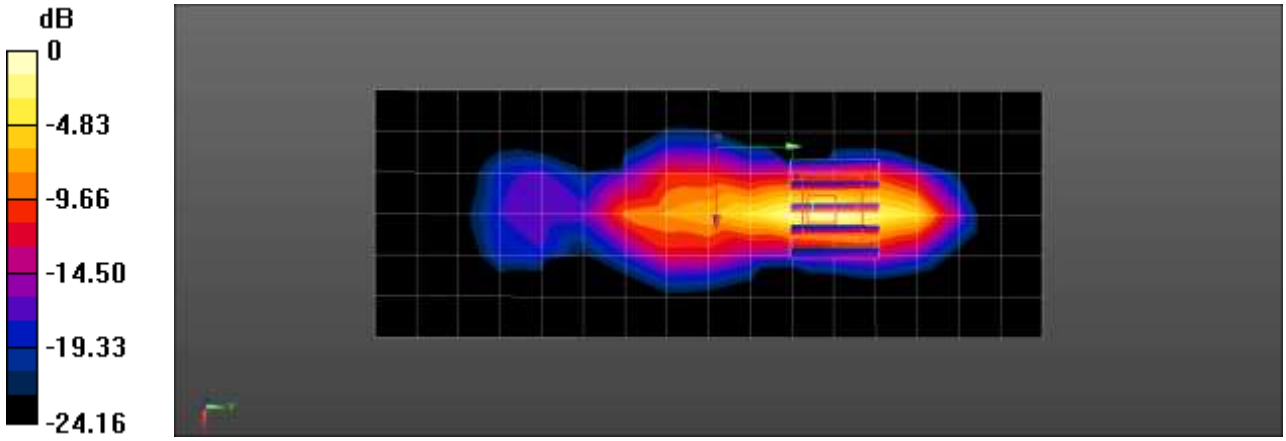
Communication System: UID 0, n66 (0); Frequency: 1770 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1770 MHz; σ = 1.358 S/m; ε_r = 39.535; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7679; ConvF(8.98, 8.98, 8.98) @ 1770 MHz; Calibrated: 2022-08-19
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2023-04-25
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 Bx; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

NR Band n66 Body Top CP QPSK 20MHz 1RB 1offset 354000ch/Area Scan (7x17x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.33 W/kg

NR Band n66 Body Top CP QPSK 20MHz 1RB 1offset 354000ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.07 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.97 W/kg
SAR(1 g) = 0.608 W/kg; SAR(10 g) = 0.238 W/kg
Maximum value of SAR (measured) = 1.44 W/kg



0 dB = 1.44 W/kg = 1.58 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	19.0 ℃
Ambient Temperature:	19.1 ℃
Test Date:	07/05/2023
Plot No.:	15

DUT: SM-X616B

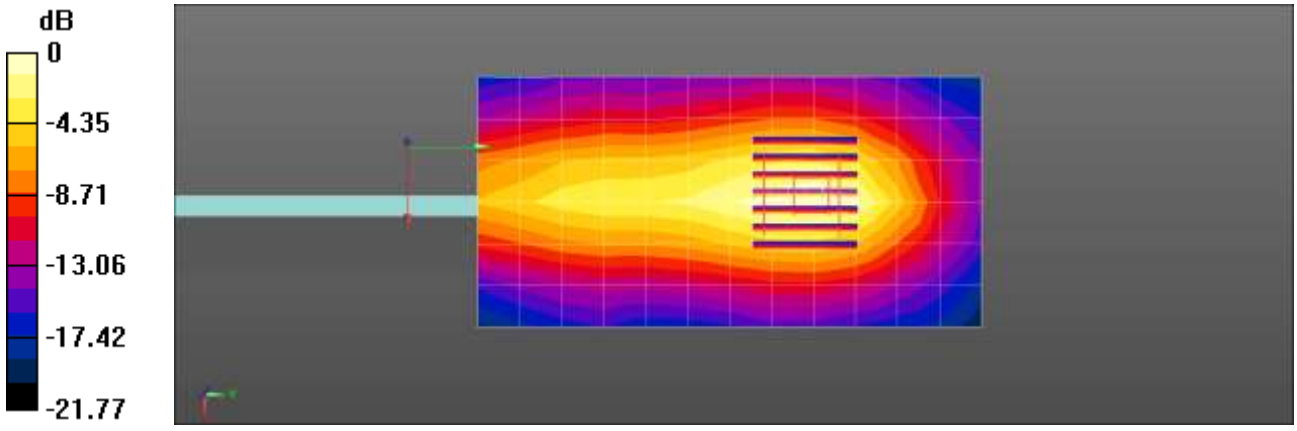
Communication System: UID 0, 2450MHz FCC (0); Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; σ = 1.867 S/m; ε_r = 38.531; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.46, 7.1, 7.34) @ 2462 MHz; Calibrated: 2023-01-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2023-01-10
- Phantom: ELI v5.0_2014_03_05; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

802.11b Body Left 1Mbps 11ch/Area Scan (7x13x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.533 W/kg

802.11b Body Left 1Mbps 11ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.818 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.685 W/kg
SAR(1 g) = 0.341 W/kg; SAR(10 g) = 0.173 W/kg
Maximum value of SAR (measured) = 0.552 W/kg



0 dB = 0.552 W/kg = -2.58 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	19.0 ℃
Ambient Temperature:	19.1 ℃
Test Date:	07/05/2023
Plot No.:	16

DUT: SM-X616B

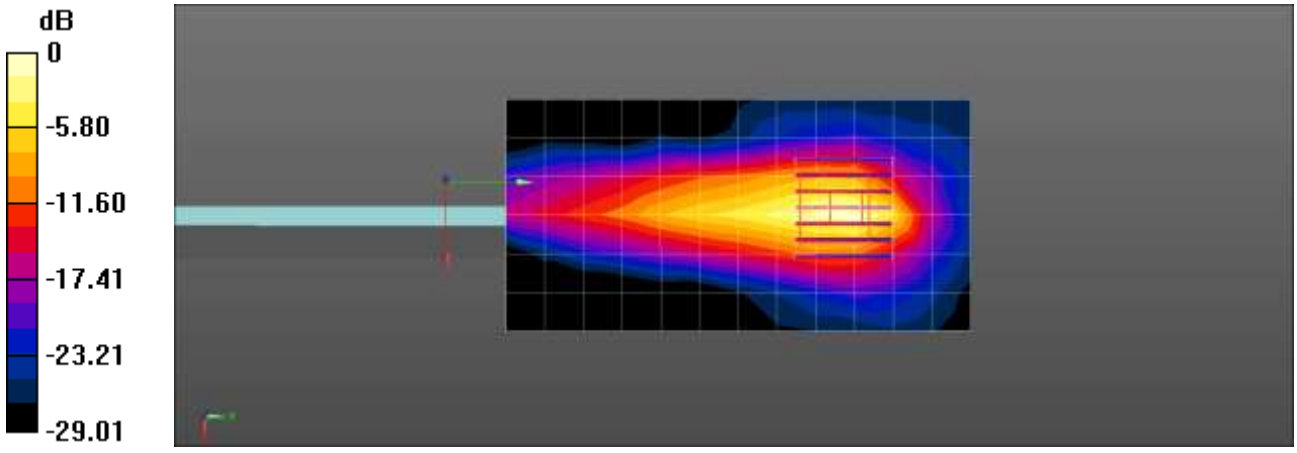
Communication System: UID 0, 2450MHz FCC (0); Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; σ = 1.867 S/m; ε_r = 38.531; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.46, 7.1, 7.34) @ 2462 MHz; Calibrated: 2023-01-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2023-01-10
- Phantom: ELI v5.0_2014_03_05; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

802.11b Body Right 1Mbps 11ch/Area Scan (7x13x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 1.31 W/kg

802.11b Body Right 1Mbps 11ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.64 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 1.97 W/kg
SAR(1 g) = 0.655 W/kg; SAR(10 g) = 0.255 W/kg
Maximum value of SAR (measured) = 1.37 W/kg



0 dB = 1.37 W/kg = 1.37 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	19.0 ℃
Ambient Temperature:	19.1 ℃
Test Date:	07/06/2023
Plot No.:	17

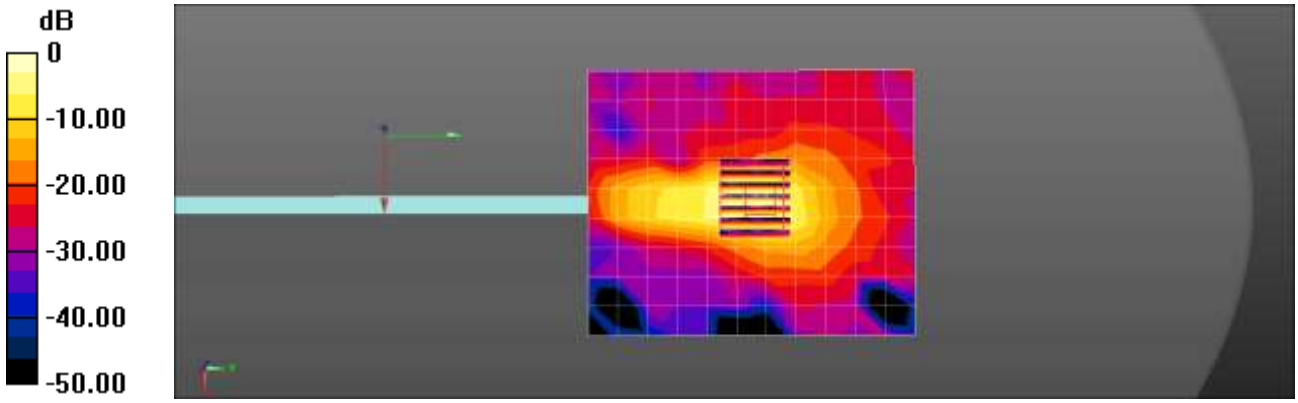
DUT: SM-X616B
Communication System: UID 0, WIFI 5GHz (0); Frequency: 5290 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5290 MHz; σ = 4.706 S/m; ε_r = 36.682; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(5.08, 4.78, 5.04) @ 5290 MHz; Calibrated: 2023-01-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2023-01-10
- Phantom: ELI v5.0_2014_03_05; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

802.11ac80 Body Right MCS0 58ch/Area Scan (10x12x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.891 W/kg

802.11ac80 Body Right MCS0 58ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 10.72 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 4.16 W/kg
SAR(1 g) = 0.693 W/kg; SAR(10 g) = 0.184 W/kg
Maximum value of SAR (measured) = 2.01 W/kg



0 dB = 2.01 W/kg = 3.03 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	18.7 ℃
Ambient Temperature:	18.7 ℃
Test Date:	07/10/2023
Plot No.:	18

DUT: SM-X616B

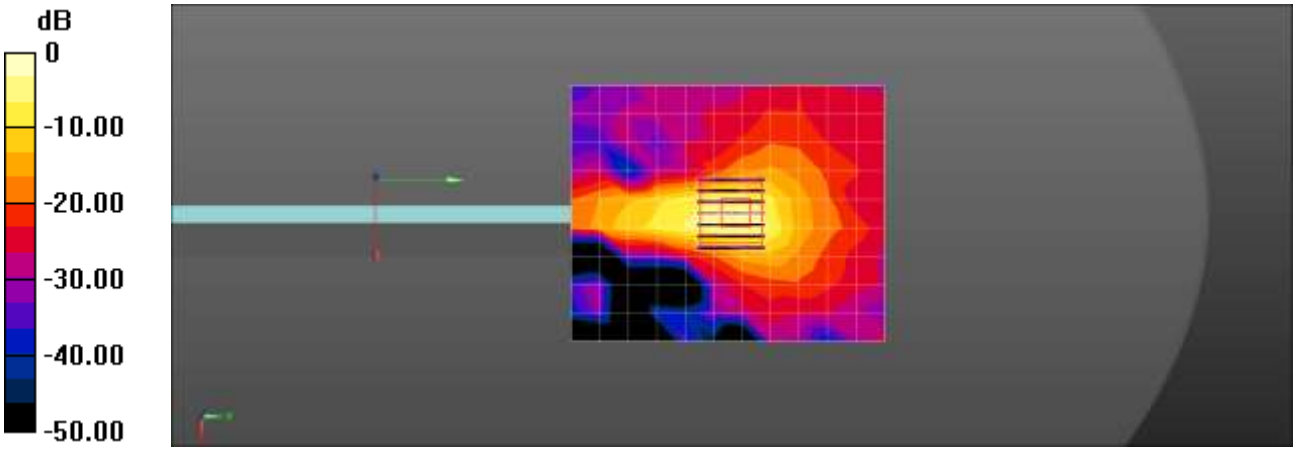
Communication System: UID 0, WIFI 5GHz (0); Frequency: 5775 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5775 MHz; σ = 5.135 S/m; ε_r = 36.255; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(4.53, 4.29, 4.52) @ 5775 MHz; Calibrated: 2023-01-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2023-01-10
- Phantom: ELI v5.0_2014_03_05; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

802.11ac80 Body Right MCS0 155ch/Area Scan (10x12x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.934 W/kg

802.11ac80 Body Right MCS0 155ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 9.956 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 4.03 W/kg
SAR(1 g) = 0.628 W/kg; SAR(10 g) = 0.157 W/kg
Maximum value of SAR (measured) = 1.90 W/kg



0 dB = 1.90 W/kg = 2.79 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	18.7 ℃
Ambient Temperature:	18.6 ℃
Test Date:	07/03/2023
Plot No.:	19

DUT: SM-X616B

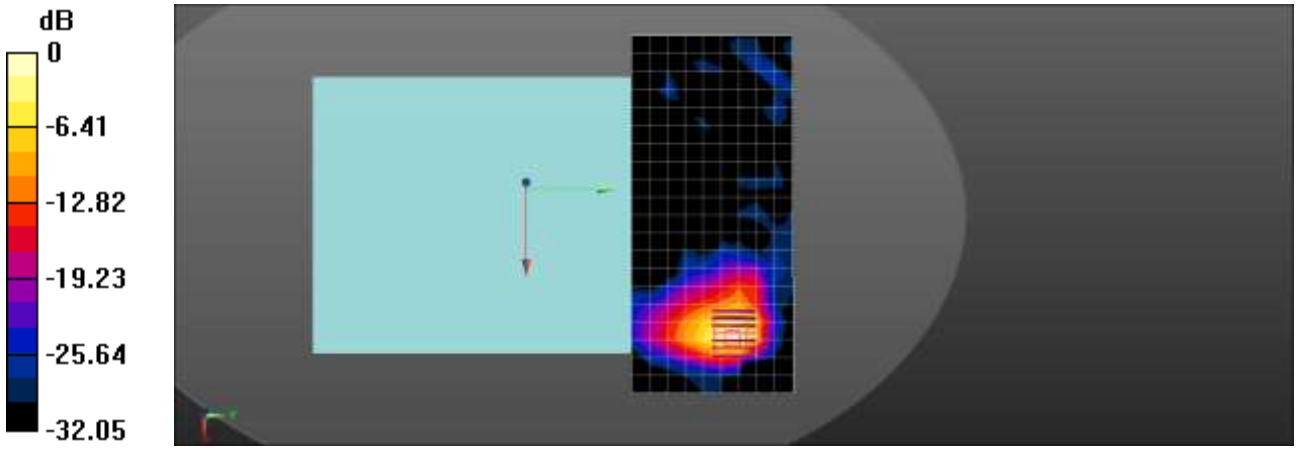
Communication System: UID 0, Bluetooth (0); Frequency: 2480 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2480 MHz; σ = 1.863 S/m; ε_r = 39.625; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.46, 7.1, 7.34) @ 2480 MHz; Calibrated: 2023-01-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2023-01-10
- Phantom: ELI v5.0_2014_03_05; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Bluetooth Body Rear DH5 78ch/Area Scan (21x10x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.502 W/kg

Bluetooth Body Rear DH5 78ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.589 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.737 W/kg
SAR(1 g) = 0.252 W/kg; SAR(10 g) = 0.097 W/kg
Maximum value of SAR (measured) = 0.495 W/kg



0 dB = 0.495 W/kg = -3.05 dBW/kg

Appendix C. – Dipole Verification Plots

■ Verification Data (750 MHz Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 20.1 ℃
Test Date: 06/13/2023

DUT: D750V3 - SN1014; Type: D750V3; Serial: SN1014

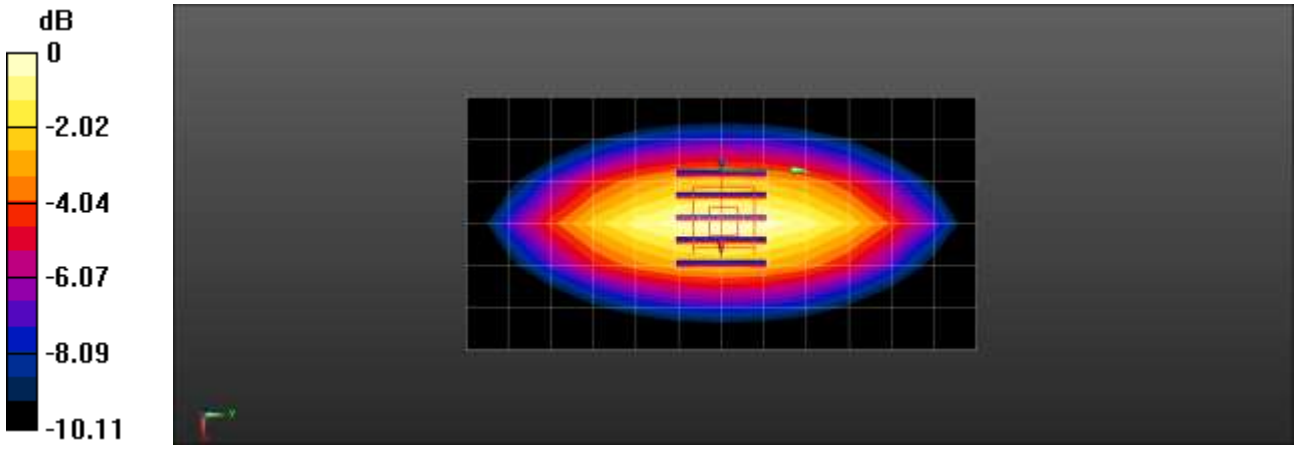
Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; σ = 0.894 S/m; ε_r = 42.828; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(9.51, 9.05, 9.15) @ 750 MHz; Calibrated: 2023-01-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2023-01-10
- Phantom: ELI v5.0_2014_03_05; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/750MHz Head Verification/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.569 W/kg

Dipole/750MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.56 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.643 W/kg
SAR(1 g) = 0.425 W/kg; SAR(10 g) = 0.280 W/kg
Maximum value of SAR (measured) = 0.570 W/kg



0 dB = 0.570 W/kg = -2.44 dBW/kg

■ Verification Data (750 MHz Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 19.6 ℃
Test Date: 06/14/2023

DUT: D750V3 - SN1014; Type: D750V3; Serial: SN1014

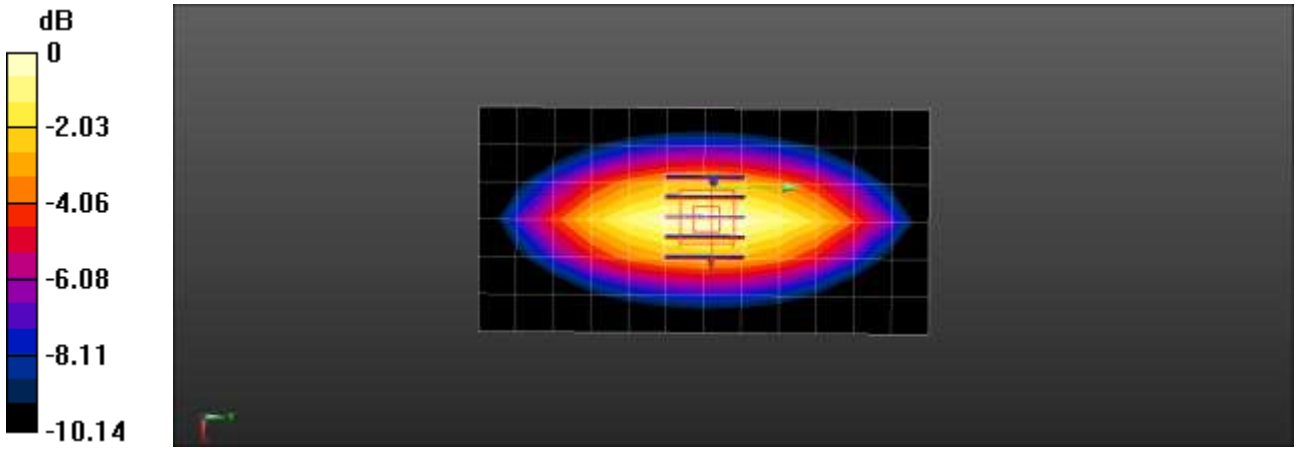
Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; σ = 0.894 S/m; ε_r = 42.841; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(9.51, 9.05, 9.15) @ 750 MHz; Calibrated: 2023-01-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2023-01-10
- Phantom: ELI v5.0_2014_03_05; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/750MHz Head Verification/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.576 W/kg

Dipole/750MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.64 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.649 W/kg
SAR(1 g) = 0.426 W/kg; SAR(10 g) = 0.281 W/kg
Maximum value of SAR (measured) = 0.574 W/kg



0 dB = 0.574 W/kg = -2.41 dBW/kg

■ Verification Data (835 MHz Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	19.1 ℃
Test Date:	06/19/2023

DUT: D835V2; Type: D835V2; SN:4d165

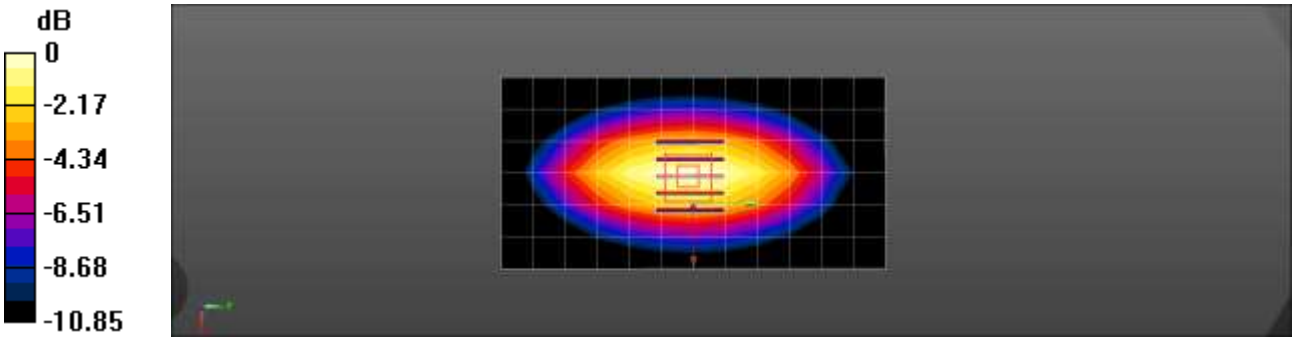
Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 835 MHz; σ = 0.94 S/m; ε_r = 41.562; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(8.89, 8.47, 8.88) @ 835 MHz; Calibrated: 2023-01-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2023-01-10
- Phantom: ELI v5.0_2014_03_05; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/835MHz Head Verification/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.667 W/kg

Dipole/835MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.14 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.784 W/kg
SAR(1 g) = 0.488 W/kg; SAR(10 g) = 0.320 W/kg
Maximum value of SAR (measured) = 0.673 W/kg



0 dB = 0.673 W/kg = -1.72 dBW/kg

■ Verification Data (835 MHz Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	19.3 ℃
Test Date:	06/20/2023

DUT: D835V2; Type: D835V2; SN:4d165

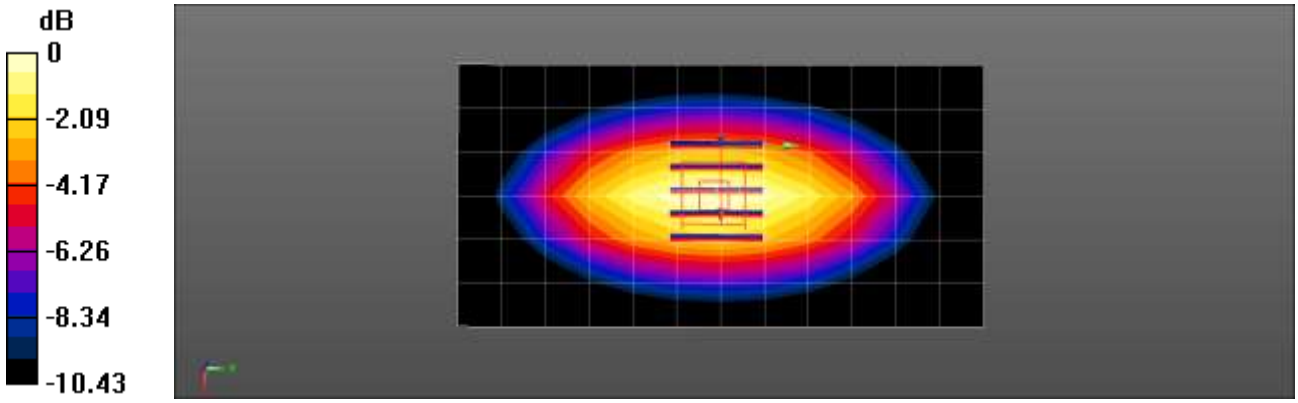
Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 835 MHz; σ = 0.94 S/m; ε_r = 41.559; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(8.89, 8.47, 8.88) @ 835 MHz; Calibrated: 2023-01-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2023-01-10
- Phantom: ELI v5.0_2014_03_05; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/835MHz Head Verification/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.679 W/kg

Dipole/835MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.20 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.784 W/kg
SAR(1 g) = 0.502 W/kg; SAR(10 g) = 0.335 W/kg
Maximum value of SAR (measured) = 0.679 W/kg



0 dB = 0.679 W/kg = -1.68 dBW/kg

■ Verification Data (835 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	19.5 ℃
Test Date:	06/15/2023

DUT: D835V2; Type: D835V2; SN:4d165

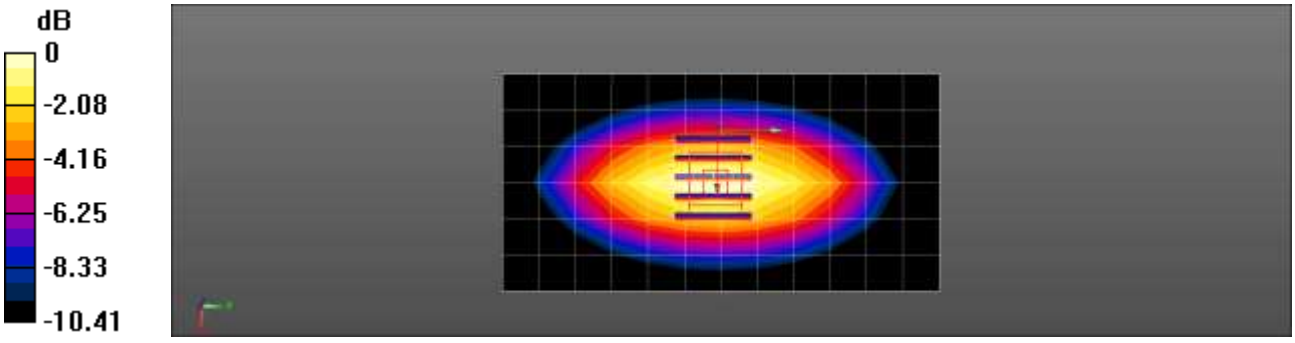
Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 835 MHz; σ = 0.94 S/m; ε_r = 41.55; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(8.89, 8.47, 8.88) @ 835 MHz; Calibrated: 2023-01-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2023-01-10
- Phantom: ELI v5.0_2014_03_05; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/835MHz Head Verification/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.683 W/kg

Dipole/835MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.43 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.788 W/kg
SAR(1 g) = 0.502 W/kg; SAR(10 g) = 0.334 W/kg
Maximum value of SAR (measured) = 0.682 W/kg



0 dB = 0.682 W/kg = -1.66 dBW/kg

■ Verification Data (835 MHz Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	19.2 ℃
Test Date:	06/27/2023

DUT: D835V2; Type: D835V2; SN:4d165

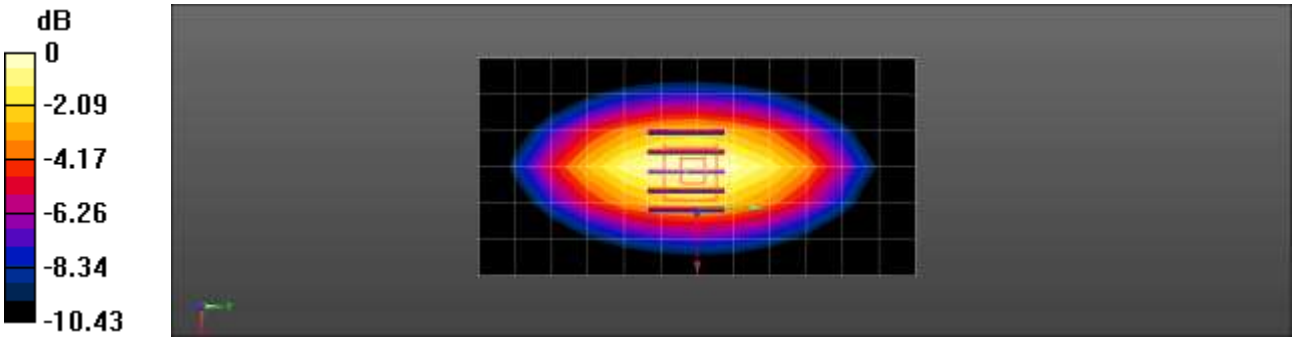
Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 835 MHz; σ = 0.94 S/m; ε_r = 41.548; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(8.89, 8.47, 8.88) @ 835 MHz; Calibrated: 2023-01-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2023-01-10
- Phantom: ELI v5.0_2014_03_05; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/835MHz Head Verification/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.672 W/kg

Dipole/835MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.23 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.784 W/kg
SAR(1 g) = 0.501 W/kg; SAR(10 g) = 0.334 W/kg
Maximum value of SAR (measured) = 0.677 W/kg



0 dB = 0.677 W/kg = -1.69 dBW/kg

■ Verification Data (1 800 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	23.3 ℃
Test Date:	06/13/2023

DUT: D1800V2; Type: D1800V2; SN:2d015

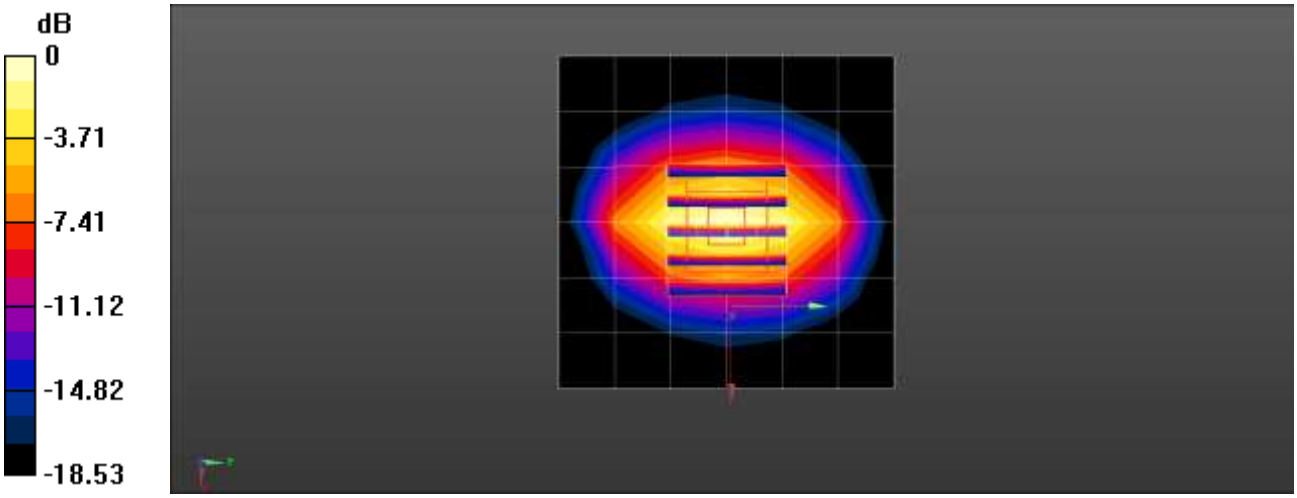
Communication System: UID 0, CW (0); Frequency: 1800 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1800 MHz; σ = 1.4 S/m; ε_r = 39.381; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7679; ConvF(8.98, 8.98, 8.98) @ 1800 MHz; Calibrated: 2022-08-19
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2023-04-25
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 Bx; 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) = 3.00 W/kg

Dipole/1800MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 48.07 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 3.61 W/kg
SAR(1 g) = 1.88 W/kg; SAR(10 g) = 0.969 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:	22.2 ℃
Test Date:	06/16/2023

DUT: D1800V2; Type: D1800V2; SN:2d015

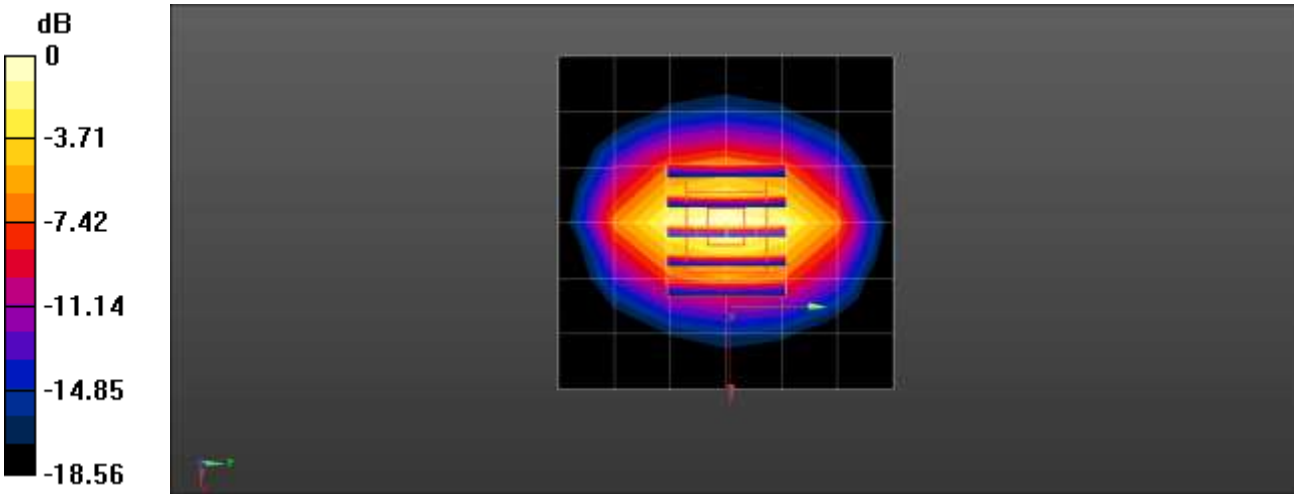
Communication System: UID 0, CW (0); Frequency: 1800 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1800 MHz; σ = 1.4 S/m; ε_r = 39.382; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7679; ConvF(8.98, 8.98, 8.98) @ 1800 MHz; Calibrated: 2022-08-19
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2023-04-25
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 Bx; 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) = 3.00 W/kg

Dipole/1800MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 48.12 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 3.62 W/kg
SAR(1 g) = 1.88 W/kg; SAR(10 g) = 0.969 W/kg
Maximum value of SAR (measured) = 3.01 W/kg



0 dB = 3.01 W/kg = 4.79 dBW/kg

■ Verification Data (1 800 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	21.9 ℃
Test Date:	06/29/2023

DUT: D1800V2; Type: D1800V2; SN:2d015

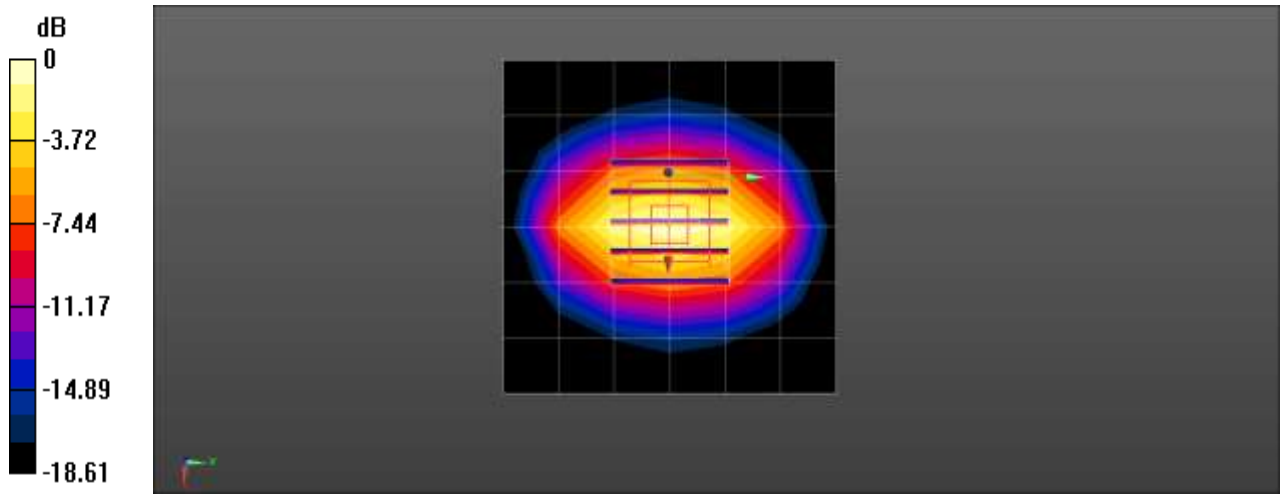
Communication System: UID 0, CW (0); Frequency: 1800 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1800 MHz; σ = 1.39 S/m; ε_r = 39.384; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7679; ConvF(8.98, 8.98, 8.98) @ 1800 MHz; Calibrated: 2022-08-19
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2023-04-25
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 Bx; 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) = 2.97 W/kg

Dipole/1800MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 48.17 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 3.59 W/kg
SAR(1 g) = 1.87 W/kg; SAR(10 g) = 0.961 W/kg
Maximum value of SAR (measured) = 2.98 W/kg



0 dB = 2.98 W/kg = 4.74 dBW/kg

■ Verification Data (1 900 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	23.9 ℃
Test Date:	06/12/2023

DUT: D1900V2; Type: D1900V2; SN:5d061

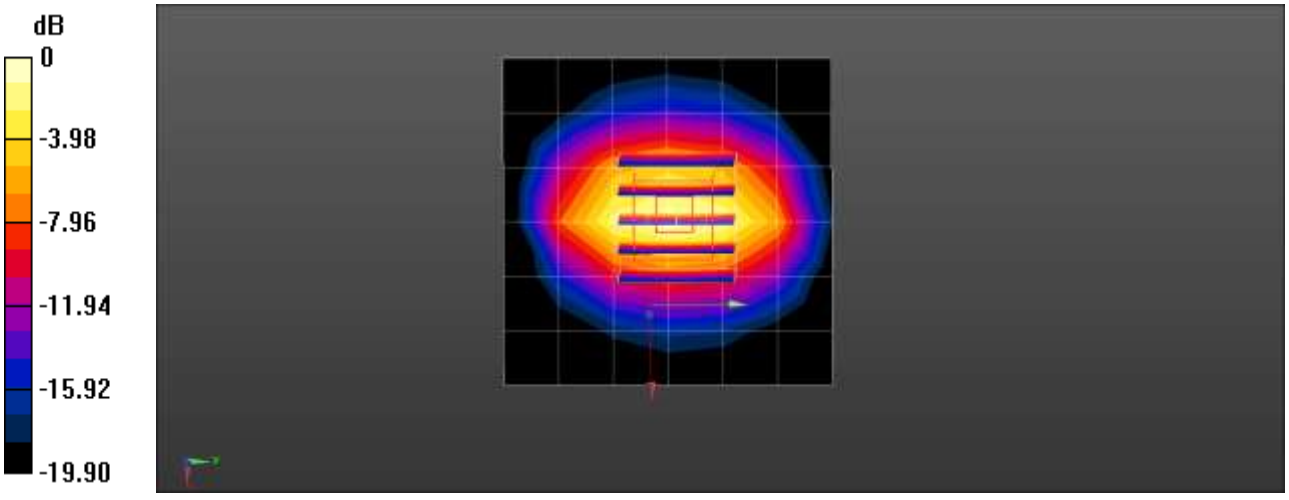
Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.389 S/m; ε_r = 39.164; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7679; ConvF(8.57, 8.57, 8.57) @ 1900 MHz; Calibrated: 2022-08-19
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2023-04-25
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 Bx; 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) = 2.96 W/kg

Dipole/1900MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 48.11 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 3.94 W/kg
SAR(1 g) = 1.92 W/kg; SAR(10 g) = 0.959 W/kg
Maximum value of SAR (measured) = 3.17 W/kg



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

■ Verification Data (1 900 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	23.4 ℃
Test Date:	06/20/2023

DUT: D1900V2; Type: D1900V2; SN:5d061

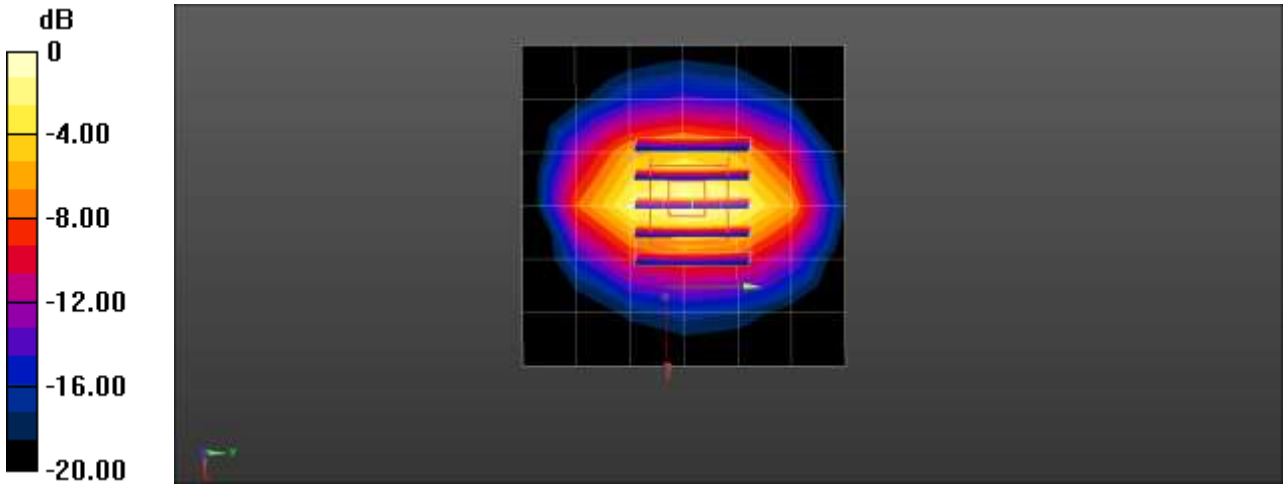
Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.389 S/m; ε_r = 39.165; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7679; ConvF(8.57, 8.57, 8.57) @ 1900 MHz; Calibrated: 2022-08-19
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2023-04-25
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 Bx; 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) = 2.97 W/kg

Dipole/1900MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 48.07 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 3.95 W/kg
SAR(1 g) = 1.92 W/kg; SAR(10 g) = 0.960 W/kg
Maximum value of SAR (measured) = 3.17 W/kg



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

■ Verification Data (1 900 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	22.7 ℃
Test Date:	07/06/2023

DUT: D1900V2; Type: D1900V2; SN:5d061

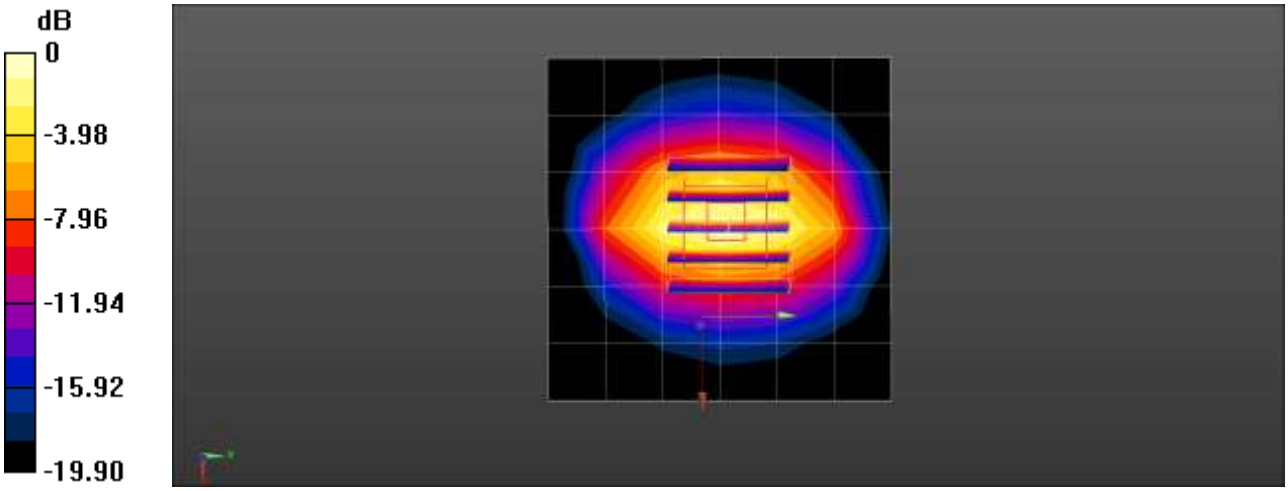
Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.389 S/m; ε_r = 39.18; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7679; ConvF(8.57, 8.57, 8.57) @ 1900 MHz; Calibrated: 2022-08-19
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2023-04-25
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 Bx; 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) = 2.95 W/kg

Dipole/1900MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 48.28 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 3.93 W/kg
SAR(1 g) = 1.92 W/kg; SAR(10 g) = 0.959 W/kg
Maximum value of SAR (measured) = 3.17 W/kg



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

■ Verification Data (1 900 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	22.3 ℃
Test Date:	06/19/2023

DUT: D1900V2; Type: D1900V2; SN:5d061

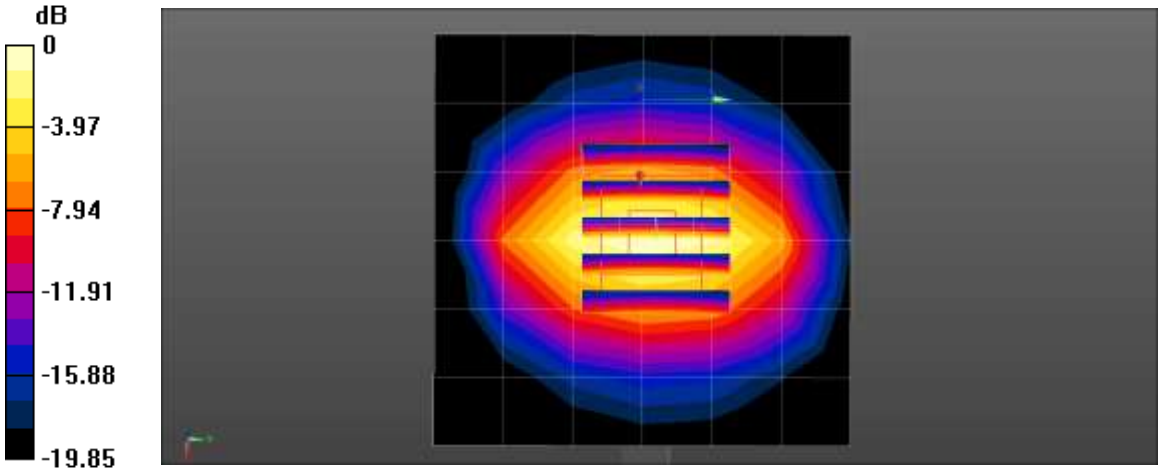
System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.41 S/m; ε_r = 39.171; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7679; ConvF(8.57, 8.57, 8.57) @ 1900 MHz; Calibrated: 2022-08-19
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2023-04-25
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 Bx; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Dipole/1900MHz Head Verification/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 3.17 W/kg

Dipole/1900MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 49.65 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 3.97 W/kg
SAR(1 g) = 1.93 W/kg; SAR(10 g) = 0.967 W/kg
Maximum value of SAR (measured) = 3.20 W/kg



0 dB = 3.20 W/kg = 5.05 dBW/kg

■ Verification Data (2 450 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	19.0 ℃
Test Date:	07/05/2023

DUT: D2450V2; Type: D2450V2; Serial: SN1049

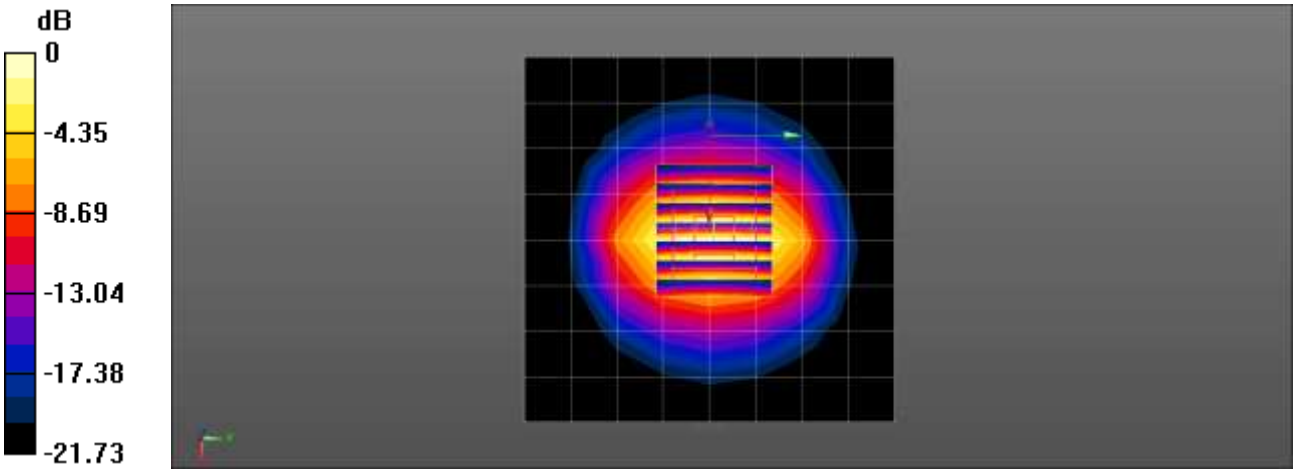
Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.853 S/m; ε_r = 38.573; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.46, 7.1, 7.34) @ 2450 MHz; Calibrated: 2023-01-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2023-01-10
- Phantom: ELI v5.0_2014_03_05; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/2450MHz Head Verification/Area Scan (9x9x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 4.50 W/kg

Dipole/2450MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 51.69 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 5.48 W/kg
SAR(1 g) = 2.68 W/kg; SAR(10 g) = 1.24 W/kg
Maximum value of SAR (measured) = 4.47 W/kg



0 dB = 4.47 W/kg = 6.50 dBW/kg

■ Verification Data (2 450 ㎒ Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 18.6 ℃
Test Date: 07/03/2023

DUT: D2450V2; Type: D2450V2; Serial: SN1049

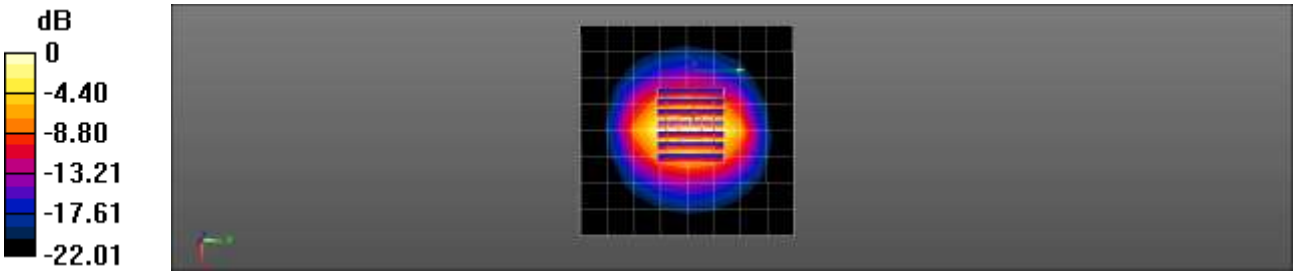
Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.828 S/m; ε_r = 39.736; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.46, 7.1, 7.34) @ 2450 MHz; Calibrated: 2023-01-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2023-01-10
- Phantom: ELI v5.0_2014_03_05; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/2450MHz Head Verification/Area Scan (9x9x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 4.41 W/kg

Dipole/2450MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.04 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 5.46 W/kg
SAR(1 g) = 2.64 W/kg; SAR(10 g) = 1.23 W/kg
Maximum value of SAR (measured) = 4.46 W/kg



0 dB = 4.46 W/kg = 6.49 dBW/kg

■ Verification Data (2 600 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	19.8 ℃
Test Date:	06/16/2023

DUT: D2600V2; Type: D2600V2; Serial: SN:1106

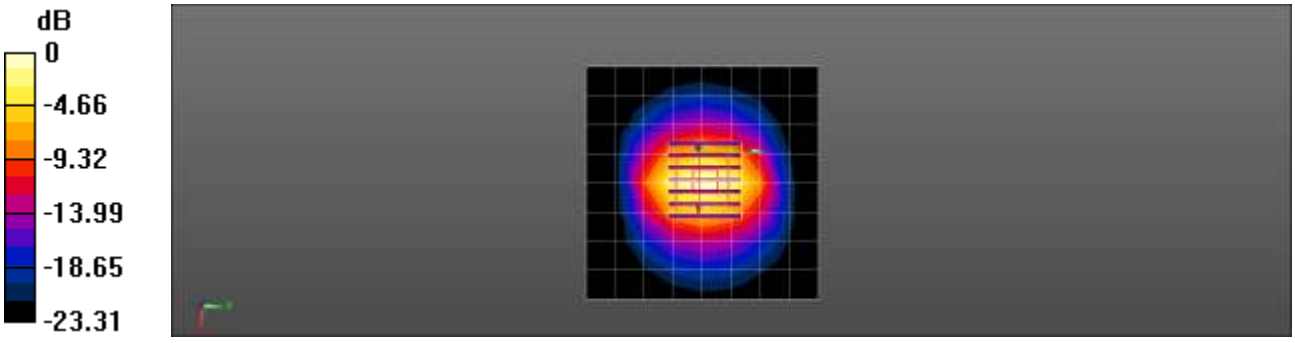
Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; σ = 2.032 S/m; ε_r = 39.05; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.22, 7.05, 7.34) @ 2600 MHz; Calibrated: 2023-01-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2023-01-10
- Phantom: ELI v5.0_2014_03_05; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/2600MHz Head Verification/Area Scan (9x9x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 4.62 W/kg

Dipole/2600MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 50.47 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 5.72 W/kg
SAR(1 g) = 2.71 W/kg; SAR(10 g) = 1.21 W/kg
Maximum value of SAR (measured) = 4.62 W/kg



0 dB = 4.62 W/kg = 6.65 dBW/kg

■ Verification Data (5 250 ㎒ Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 19.0 ℃
Test Date: 07/06/2023

DUT: D5GHzV2 - SN1317; Type: D5GHzV2; Serial: SN1317

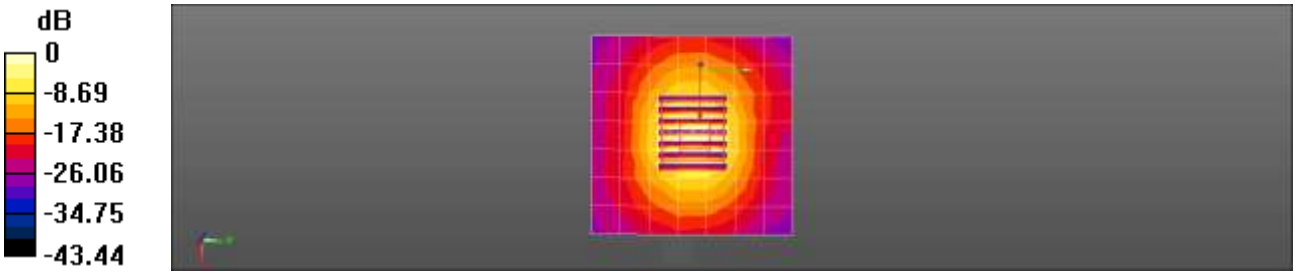
Communication System: UID 0, CW (0); Frequency: 5250 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5250 MHz; σ = 4.64 S/m; ε_r = 36.715; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(5.08, 4.78, 5.04) @ 5250 MHz; Calibrated: 2023-01-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2023-01-10
- Phantom: ELI v5.0_2014_03_05; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/5250MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 6.90 W/kg

Dipole/5250MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 52.46 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 19.7 W/kg
SAR(1 g) = 4.22 W/kg; SAR(10 g) = 1.23 W/kg
Maximum value of SAR (measured) = 10.7 W/kg



0 dB = 10.7 W/kg = 10.29 dBW/kg

■ Verification Data (5 600 ㎒ Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 18.9 ℃
Test Date: 07/07/2023

DUT: D5GHzV2 - SN1317; Type: D5GHzV2; Serial: SN1317

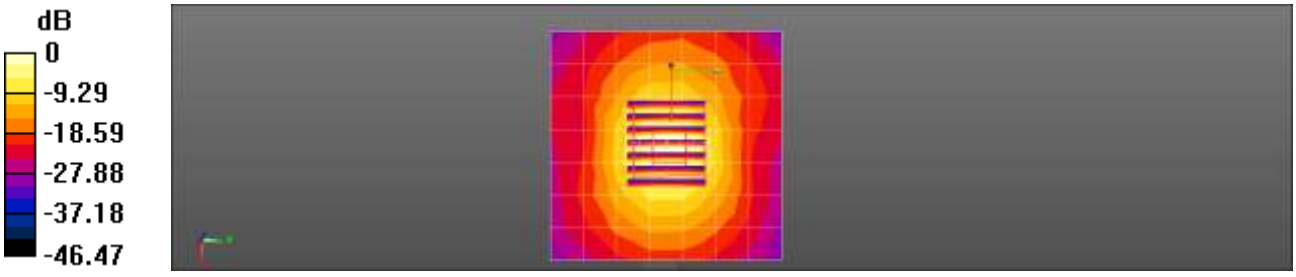
Communication System: UID 0, CW (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5600 MHz; σ = 4.942 S/m; ε_r = 36.444; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(4.37, 4.3, 4.48) @ 5600 MHz; Calibrated: 2023-01-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2023-01-10
- Phantom: ELI v5.0_2014_03_05; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/5600MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 7.38 W/kg

Dipole/5600MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 52.84 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 21.3 W/kg
SAR(1 g) = 4.31 W/kg; SAR(10 g) = 1.25 W/kg
Maximum value of SAR (measured) = 11.3 W/kg



0 dB = 11.3 W/kg = 10.53 dBW/kg

■ Verification Data (5 750 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	18.7 ℃
Test Date:	07/10/2023

DUT: D5GHzV2 - SN1317; Type: D5GHzV2; Serial: SN1317

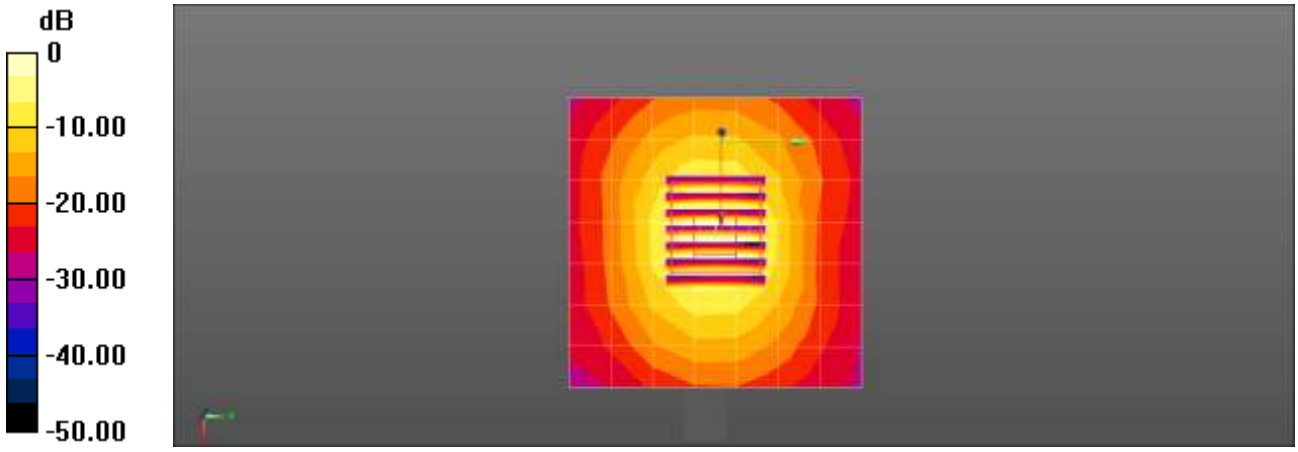
Communication System: UID 0, CW (0); Frequency: 5750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5750 MHz; σ = 5.149 S/m; ε_r = 36.243; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(4.53, 4.29, 4.52) @ 5750 MHz; Calibrated: 2023-01-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2023-01-10
- Phantom: ELI v5.0_2014_03_05; Type: QDOVA002AA; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Dipole/5750MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 6.84 W/kg

Dipole/5750MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 49.18 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 18.6 W/kg
SAR(1 g) = 3.89 W/kg; SAR(10 g) = 1.17 W/kg
Maximum value of SAR (measured) = 10.1 W/kg



0 dB = 10.1 W/kg = 10.04 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		1 900		2 450 – 2 700		3500 - 5 800	
Tissue Type	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	41.1	51.7	40.45	53.06	54.9	70.17	71.88	73.2	65.52	78.66
Salt (NaCl)	1.4	0.9	1.45	0.94	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
HEC	0.2	0	1.0	1.0	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
Triton X-100	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	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
2	3797	EX3DV4	Head	750	1014	2023-06-07	41.9	0.89	PASS	PASS	PASS	N/A	N/A	N/A
2	3797	EX3DV4	Head	835	4d165	2023-06-07	41.5	0.90	PASS	PASS	PASS	N/A	N/A	N/A
2	3797	EX3DV4	Head	835	4d165	2023-06-07	41.5	0.90	PASS	PASS	PASS	GMSK	PASS	N/A
11	7679	EX3DV4	Head	1800	2d015	2023-06-07	40.1	1.37	PASS	PASS	PASS	N/A	N/A	N/A
11	7679	EX3DV4	Head	1800	2d015	2023-06-07	40.1	1.37	PASS	PASS	PASS	GMSK	PASS	N/A
11	7679	EX3DV4	Head	1900	5d061	2023-02-27	40.0	1.40	PASS	PASS	PASS	N/A	N/A	N/A
11	7679	EX3DV4	Head	1900	5d061	2023-02-27	40.0	1.40	PASS	PASS	PASS	GMSK	PASS	N/A
2	3797	EX3DV4	Head	2450	1049	2023-05-26	39.2	1.80	PASS	PASS	PASS	OFDM	N/A	PASS
2	3797	EX3DV4	Head	2600	1106	2023-02-27	39.0	1.96	PASS	PASS	PASS	TDD	PASS	N/A
2	3797	EX3DV4	Head	5250	1317	2023-06-29	35.9	4.71	PASS	PASS	PASS	OFDM	N/A	PASS
2	3797	EX3DV4	Head	5600	1317	2023-06-29	35.5	5.07	PASS	PASS	PASS	OFDM	N/A	PASS
2	3797	EX3DV4	Head	5750	1317	2023-06-29	35.4	5.22	PASS	PASS	PASS	OFDM	N/A	PASS

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.