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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:**Jul. 16, 2021 **Test Report No.:**HCT-SR-2106-FC004-R2 **Test Site: HCT CO., LTD.**

FCC ID: **A3LSMG990B**

Equipment Type:	**Mobile Phone**
Application Type	**Certification**
FCC Rule Part(s):	**CFR §2.1093**
Model Name:	**SM-G990B/DS**
Additional Model Name:	**SM-G990B**
Date of Test:	**May.03, 2021 ~Jun. 08, 2021**

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

Da-sol Lee
Test Engineer
SAR Team
Certification Division

Reviewed By

Yun-jeang, Heo
Technical Manager
SAR Team
Certification Division

REVISION HISTORY

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

Revision No.	Date of Issue	Description
0	Jul.02, 2021	Initial Release
1	Jul.14, 2021	Revised page 154 and 226
2	Jul.16, 2021	Revised page 20

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

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

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

- October 2013 TCB Workshop Notes (GPRS testing criteria)
- October 2014 TCB Workshop Notes (Overlapping LTE Bands)
- April 2015 TCB Workshop Notes (Simultaneous transmission summation clarified)
- October 2016 TCB Workshop Notes (Bluetooth Duty Factor)
- November 2017 TCBC Workshop Notes (LTE Carrier Aggregation)
- May 2017 TCBC Workshop Notes (LTE Band 41 Power Class 2)
- April 2019 TCBC Workshop Notes (IEEE 802.11 ax)
- April 2018 TCBC Workshop Notes (LTE DL CA SAR Test Exclusion)
- April 2019 and Oct 2020 TCBC Workshop Notes (Dynamic Antenna tuning)

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-G990B/DS
Additional Model Name	SM-G990B
Equipment Type	Mobile Phone
FCC ID	A3LSMG990B
Application Type	Certification
Applicant	SAMSUNG Electronics Co., Ltd.

3.2 Attestation of test result of device under test

The Highest Reported SAR						
Band	Tx. Frequency	Equipment Class	Reported SAR (W/kg)			
			1g Head	1g Body-Worn	1g Hotspot	10g Extremity
GSM/GPRS/EDGE 850	824.2 ㎒ ~ 848.8 ㎒	PCE	0.32	0.50	0.99	N/A
GSM/GPRS/EDGE 1900	1 850.2 ㎒~ 1 909.8 ㎒	PCE	<0.10	0.33	0.65	1.05
UMTS Band 5	826.4 ㎒~ 846.6 ㎒	PCE	0.25	0.45	0.77	N/A
UMTS Band 4	1 712.4 ㎒~ 1 752.6 ㎒	PCE	0.18	0.61	1.19	2.49
UMTS Band 2	1 852.4 ㎒~ 1 907.6 ㎒	PCE	0.17	0.35	0.77	1.24
LTE Band 2 (PCS)	1 850.7 ㎒~ 1 909.3 ㎒	PCE	0.16	0.36	0.71	1.09
LTE Band 4 (AWS)	1 710.7 ㎒~ 1 754.3 ㎒	PCE	N/A	N/A	N/A	N/A
LTE Band 5 (Cell)	824.7 ㎒~ 848.3 ㎒	PCE	N/A	N/A	N/A	N/A
LTE Band 12	699.7 ㎒~ 715.3 ㎒	PCE	0.14	0.22	0.44	N/A
LTE Band 17	706.5 ㎒~ 713.5 ㎒	PCE	N/A	N/A	N/A	N/A
LTE Band 26(Cell)	814.7 ㎒~ 848.3 ㎒	PCE	0.16	0.24	0.44	N/A
LTE TDD Band 41	2 498.5 ㎒ ~ 2 687.5 ㎒	PCE	0.13	0.29	0.78	1.53
LTE Band 66 (AWS)	1 710.7 ㎒ ~ 1 779.3 ㎒	PCE	0.12	0.51	0.49	1.02
NR Band n5	826.5 ㎒~ 846.5 ㎒	PCE	0.23	0.39	0.69	N/A
NR Band n66	1 712.5 ㎒~ 1 777.5 ㎒	PCE	0.21	0.36	0.79	1.40
802.11b	2 412 ㎒~ 2 462 ㎒	DTS	0.65	0.33	0.74	N/A
U-NII-1	5 180 ㎒~ 5 240 ㎒	NII	N/A	N/A	N/A	N/A
U-NII-2A	5 260 ㎒~ 5 320 ㎒	NII	0.60	0.10	N/A	1.22
U-NII-2C	5 500 ㎒~ 5 720 ㎒	NII	0.54	0.11	N/A	1.25
U-NII-3	5 745 ㎒~ 5 825 ㎒	NII	0.35	0.13	0.21	N/A
Bluetooth	2 402 ㎒~ 2 480 ㎒	DSS	0.46	<0.10	0.15	N/A
Simultaneous SAR per KDB 690783 D01v01r03			**1.54**	**1.23**	**1.59**	**3.53**
Date(s) of Tests:	May. 03, 2021 ~ Jun. 08, 2021					

4. Device Under Test Description

4.1 DUT specification

Device Wireless specification overview		
Band & Mode	**Operating Mode**	**Tx Frequency**
GSM850	Voice / Data	824.2 ㎒~ 848.8 ㎒
GSM1900	Voice / Data	1 850.2 ㎒~ 1 909.8 ㎒
UMTS BAND 5	Voice / Data	826.4 ㎒~ 846.6 ㎒
UMTS BAND 4	Voice / Data	1 712.4 ㎒~ 1 752.6 ㎒
UMTS BAND 2	Voice / Data	1 852.4 ㎒~ 1 907.6 ㎒
LTE Band 2 (PCS)	Voice / Data	1 850.7 ㎒~ 1 909.3 ㎒
LTE Band 4 (AWS)	Voice / Data	1 710.7 ㎒~ 1 754.3 ㎒
LTE Band 5 (Cell)	Voice / Data	824.7 ㎒~ 848.3 ㎒
LTE Band 12	Voice / Data	699.7 ㎒~ 715.3 ㎒
LTE Band 17	Voice / Data	706.5 ㎒~ 713.5 ㎒
LTE Band 26	Voice / Data	814.7 ㎒~ 848.3 ㎒
LTE TDD Band 41	Voice / Data	2 498.5 ㎒ ~ 2 687.5 ㎒
LTE Band 66 (AWS)	Voice / Data	1 710.7 ㎒ ~ 1 779.3 ㎒
NR Band n5	Data	826.5 ㎒~ 846.5 ㎒
NR Band n66	Data	1 712.5 ㎒~ 1 777.5 ㎒
U-NII-1	Voice / Data	5 180 ㎒ ~ 5 240 ㎒
U-NII-2A	Voice / Data	5 260 ㎒ ~ 5 320 ㎒
U-NII-2C	Voice / Data	5 500 ㎒ ~ 5 720 ㎒
U-NII-3	Voice / Data	5 745 ㎒ ~ 5 825 ㎒
2.4 ㎓ WLAN	Voice / Data	2 412 ㎒ ~ 2 462 ㎒
Bluetooth / LE 5.0	Data	2 402 ㎒ ~ 2 480 ㎒
NFC	Data	13.56 ㎒
WPC	Data	110 kHz ~ 148 kHz

Device Description		
H/W	REV1.1	
S/W	G990B.001	
Device Serial Numbers	**Mode**	**Serial Number**
	GSM850 / GSM1900	UDT0593M
	UMTS B5 / UMTS B4 / UMTS B1900	UDT0593M, UDT0753M, UDT0781M
	LTE B2 / LTE B12 / LTE 26 / LTE B41 / LTE B66	UDT0593M, UDT0753M, UDT0764M, UDT0781M
	LTE B2 Phablet / LTE B41 Phablet / LTE B66 Phablet	UDT0593M, UDT0753M
	NR n5 / NR n66	UDT0593M, UDT0781M
	NR n66 Phablet	UDT0781M
	2.4GHz WLAN / 5GHz WLAN/ Bluetooth	UDT0781M, UDT0764M, UDT0593M
	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 utilizes a power reduction mechanism for some wireless modes and Bands for SAR compliance under some conditions when the device is being used 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 .

This device uses an independent fixed level power reduction mechanism for WLAN operations when during all voice or VoIP held to ear scenarios. Per FCC Guidance, the held-to-ear exposure
conditions were evaluated at reduced power according to the head SAR positions described in IEEE 1528-2013.
Detailed descriptions of the power reduction mechanism are included in the operational description.
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

(tolerance : -1.5 dB ~ +1.0 dB)

A. GSM Modes

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/GPRS/EDGE 850	Maximum	33.5	33.5	32.5	30.5	28.5	28.0	26.0	24.5	23.5
	Nominal	32.5	32.5	31.5	29.5	27.5	27.0	25.0	23.5	22.5
GSM/GPRS/EDGE1900	Maximum	30.0	30.0	29.0	26.5	24.5	26.5	25.0	23.0	22.0
	Nominal	29.0	29.0	28.0	25.5	23.5	25.5	24.0	22.0	21.0

B. UMTS Modes

Mode/ Band		ModulatedAverage(dBm)			
		3GPPUMTS	3GPPHSDPA	3GPPHSUPA	DC-HSDPA
UMTS Band 5 (850 ㎒)	Maximum	24.0	23.0	23.0	23.0
	Nominal	23.0	22.0	22.0	22.0
UMTS Band 4 (1700 ㎒)	Maximum	23.0	22.0	22.0	22.0
	Nominal	22.0	21.0	21.0	21.0
UMTS Band 2 (1900 ㎒)	Maximum	23.0	22.0	22.0	22.0
	Nominal	22.0	21.0	21.0	21.0

C. LTE Modes

Mode / Band		Modulated Average (dBm)
		Max
LTE Band 2 (PCS)	Maximum	22.5
	Nominal	21.5
LTE Band 4 (AWS)	Maximum	24.5
	Nominal	23.5
LTE Band 5 (Cell)	Maximum	25.0
	Nominal	24.0
LTE Band 12	Maximum	25.0
	Nominal	24.0
LTE Band 17	Maximum	25.0
	Nominal	24.0
LTE Band 26(Cell)	Maximum	25.0
	Nominal	24.0
LTE TDD Band 41PC3	Maximum	24.5
	Nominal	23.5
LTE TDD Band 41 (HPUE) PC2	Maximum	26.0
	Nominal	25.0
LTEBand 66 (AWS)	Maximum	24.5
	Nominal	23.5

D. 5G NR SUB 6

Mode / Band		Modulated Average (dBm)
		Max
n5	Maximum	25.0
	Nominal	24.0
n66	Maximum	23.5
	Nominal	22.5

4.3.2 Reduced PCE Power(Hotspot Mode / Grip Sensor on/ Earjack Insert Mode)

A. GSM Modes

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/GPRS/EDGE1900 Hotspot Mode	Maximum	27.0	27.0	25.0	23.5	21.5	24.0	22.0	20.0	19.0
	Nominal	26.0	26.0	24.0	22.5	20.5	23.0	21.0	19.0	18.0
GSM/GPRS/EDGE1900 Grip Sensor on	Maximum	27.0	27.0	25.0	23.5	21.5	24.0	22.0	20.0	19.0
	Nominal	26.0	26.0	24.0	22.5	20.5	23.0	21.0	19.0	18.0
GSM/GPRS/EDGE1900 Earjack Insert Mode	Maximum	27.0	27.0	25.0	23.5	21.5	24.0	22.0	20.0	19.0
	Nominal	26.0	26.0	24.0	22.5	20.5	23.0	21.0	19.0	18.0

B. UMTS Modes

Mode/ Band		ModulatedAverage(dBm)			
		3GPPUMTS	3GPPHSDPA	3GPPHSUPA	DC-HSDPA
UMTS Band 4 (1700 ㎒) Hotspot Mode	Maximum	20.0	19.0	19.0	19.0
	Nominal	19.0	18.0	18.0	18.0
UMTS Band 2 (1900 ㎒) Hotspot Mode	Maximum	19.5	18.5	18.5	18.5
	Nominal	18.5	17.5	17.5	17.5
UMTS Band 4 (1700 ㎒) Grip Sensor on	Maximum	20.0	19.0	19.0	19.0
	Nominal	19.0	18.0	18.0	18.0
UMTS Band 2 (1900 ㎒) Grip Sensor on	Maximum	19.5	18.5	18.5	18.5
	Nominal	18.5	17.5	17.5	17.5
UMTS Band 4(1700 ㎒) Earjack Insert Mode	Maximum	20.0	19.0	19.0	19.0
	Nominal	19.0	18.0	18.0	18.0
UMTS Band 2 (1900 ㎒) Earjack Insert Mode	Maximum	19.5	18.5	18.5	18.5
	Nominal	18.5	17.5	17.5	17.5

C. LTE Modes

Mode / Band		Modulated Average (dBm)		
		Hotspot Mode	Grip Sensor on	Earjack Insert Mode
LTE Band 2	Max allowed power	19.0	19.0	19.0
	Nominal Power	18.0	18.0	18.0
LTE Band 4	Max allowed power	20.0	20.0	20.0
	Nominal Power	19.0	19.0	19.0
LTE Band 5	Max allowed power			
	Nominal Power			
LTE Band 12	Max allowed power			
	Nominal Power			
LTE Band 17	Max allowed power			
	Nominal Power			
LTE Band 26	Max allowed power			
	Nominal Power			
LTE TDD Band 41PC3	Max allowed power	21.5	21.5	21.5
	Nominal Power	20.5	20.5	20.5
LTE TDD Band 41 (HPUE) PC2	Max allowed power	23.0	23.0	23.0
	Nominal Power	22.0	22.0	22.0
LTEBand 66 (AWS)	Max allowed power	20.0	20.0	20.0
	Nominal Power	19.0	19.0	19.0

D. 5G NR SUB 6

Mode / Band		Modulated Average (dBm)		
		Hotspot Mode	Grip Sensor on	Earjack Insert Mode
n66	Max allowed power	20.0	20.0	20.0
	Nominal Power	19.0	19.0	19.0

4.3.3 Maximum 2.4 GHz, 5 GHz WIFI output power

MaximumPower

Mode	Band	SISO(ANT 1)						SISO(ANT 2)						MIMO					
		a	b	g	n	ac	ax (SU)	a	b	g	n	ac	ax (SU)	a (CDD+STBC)	b	g (CDD+STBC)	n (CDD+STBC, SDM)	ac (CDD+STBC, SDM)	ax(SU) (CDD+STBC, SDM)
2.4GHz	2.45GHz		18	16 (Ch1,8,9 : 15 Ch10 : 14 Ch11 : 13)	15 (Ch1,10 : 14 Ch11 : 12)				18	16 (Ch1,8,9 : 15 Ch10 : 14 Ch11 : 13)	15 (Ch1,10 : 14 Ch11 : 12)					19 (Ch1,8,9 : 18 Ch10 : 17 Ch11 : 16)	18 (Ch1,10 : 17 Ch11 : 15)		15.5
5GHZ (20MHz)	5200MHz	16			16	16		16			16	16		19			19	19	15
	5300MHz	16			16	16		16			16	16		19			19	19	15
	5500MHz	16			16	16		16			16	16		19			19	19	15
	5800MHz	16			16	16		16			16	16		19			19	19	15
5GHZ (40MHz)	5200MHz				15 (ch38 : 13)	15 (ch38 : 14)					15 (ch38 : 13)	15 (ch38 : 14)					18 (ch38 : 16)	18 (ch38 : 17)	11.5
	5300MHz				15 (ch62 : 12)	15 (ch62 : 13)					15 (ch62 : 12)	15 (ch62 : 13)					18 (ch62 : 15)	18 (ch62 : 16)	11.5
	5500MHz				15 (ch102 : 11)	15 (ch102 : 12)					15 (ch102 : 11)	15 (ch102 : 12)					18 (ch102 : 14)	18 (ch102 : 15)	11.5
	5800MHz				15	15					15	15					18	18	11.5
5GHZ (80MHz)	5200MHz					12						12						15	10.5
	5300MHz					12						12						15	10.5
	5500MHz					14 (ch106 : 12)						14 (ch106 : 12)						17 (ch106 : 15)	10.5
	5800MHz					14						14						17	10.5

(Uppertolerance:target+1.0dB)

Reduced Power-receiverActive(RCV-ON):

Mode	Band	SISO(ANT 1)						SISO(ANT 2)						MIMO					
		a	b	g	n	ac	ax (SU)	a	b	g	n	ac	ax (SU)	a (CDD+STBC)	b	g (CDD+STBC)	n (CDD+STBC, SDM)	ac (CDD+STBC, SDM)	ax(SU) (CDD+STBC, SDM)
2.4GHz	2.45GHz		13	13	13				13	13	13					16	16		15.5
5GHZ (20MHz)	5200MHz	12			12	12		12			12	12		15			15	15	15
	5300MHz	12			12	12		12			12	12		15			15	15	15
	5500MHz	12			12	12		12			12	12		15			15	15	15
	5800MHz	12			12	12		12			12	12		15			15	15	15
5GHZ (40MHz)	5200MHz				12	12					12	12					15	15	11.5
	5300MHz				12	12					12	12					15	15	11.5
	5500MHz				12	12					12	12					15	15	11.5
	5800MHz				12	12					12	12					15	15	11.5
5GHZ (80MHz)	5200MHz					12						12						15	10.5
	5300MHz					12						12						15	10.5
	5500MHz					12						12						15	10.5
	5800MHz					12						12						15	10.5

(Uppertolerance:target+1.0dB)

ReducedPower–RSDB

Mode	Band	SISO(ANT 1)						SISO(ANT 2)						MIMO					
		a	b	g	n	ac	ax (SU)	a	b	g	n	ac	ax (SU)	a (CDD+STBC)	b	g (CDD+STBC)	n (CDD+STBC, SDM)	ac (CDD+STBC, SDM)	ax(SU) (CDD+STBC, SDM)
2.4GHz	2.45GHz		13	13	13				13	13	13					16	16		15.5
5GHZ (20MHz)	5200MHz	12			12	12		12			12	12		15			15	15	15
	5300MHz	12			12	12		12			12	12		15			15	15	15
	5500MHz	12			12	12		12			12	12		15			15	15	15
	5800MHz	12			12	12		12			12	12		15			15	15	15
5GHZ (40MHz)	5200MHz				12	12					12	12					15	15	11.5
	5300MHz				12	12					12	12					15	15	11.5
	5500MHz				12	12					12	12					15	15	11.5
	5800MHz				12	12					12	12					15	15	11.5
5GHZ (80MHz)	5200MHz					12						12						15	10.5
	5300MHz					12						12						15	10.5
	5500MHz					12						12						15	10.5
	5800MHz					12						12						15	10.5

(Uppertolerance:target+1.0dB)

Reduced Power–RSDB with receiver Active (RCV-ON):

Mode	Band	SISO(ANT 1)						SISO(ANT 2)						MIMO					
		a	b	g	n	ac	ax (SU)	a	b	g	n	ac	ax (SU)	a (CDD+STBC)	b	g (CDD+STBC)	n (CDD+STBC, SDM)	ac (CDD+STBC, SDM)	ax(SU) (CDD+STBC, SDM)
2.4GHz	2.45GHz		12	12	12				12	12	12					15	15		15
5GHZ (20MHz)	5200MHz	12			12	12		12			12	12		15			15	15	15
	5300MHz	12			12	12		12			12	12		15			15	15	15
	5500MHz	12			12	12		12			12	12		15			15	15	15
	5800MHz	12			12	12		12			12	12		15			15	15	15
5GHZ (40MHz)	5200MHz				12	12					12	12					15	15	11.5
	5300MHz				12	12					12	12					15	15	11.5
	5500MHz				12	12					12	12					15	15	11.5
	5800MHz				12	12					12	12					15	15	11.5
5GHZ (80MHz)	5200MHz					12						12						15	10.5
	5300MHz					12						12						15	10.5
	5500MHz					12						12						15	10.5
	5800MHz					12						12						15	10.5

(Uppertolerance:target+1.0dB)

802.11ax RU Tx power Tables

Tones	SISO (ANT1) /in dBm				SISO (ANT2) /in dBm				MIMO (ALL) /in dBm			
	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz
	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index
26T									12	8	8	8
52T									13	10.5	9	8
106T									15.5	14	11	9
242T									16.5 (CH11.15.5)	15	13	11
484T											13	11
996T												11

(Uppertolerance:target+1.0dB)

Reduced Power 11ax RU Tx power Tables (RCV-ON):

Tones	SISO (ANT1) /in dBm				SISO (ANT2) /in dBm				MIMO (ALL) /in dBm			
	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz
	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index
26T									12	8	8	8
52T									13	10.5	9	8
106T									15.5	14	11	9
242T									15.5	15	13	11
484T											13	11
996T												11

(Uppertolerance:target+1.0dB)

Reduced Power 11ax RU Tx power Tables –RSDB

Tones	SISO (ANT1) /in dBm				SISO (ANT2) /in dBm				MIMO (ALL) /in dBm			
	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz
	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index
26T									12	8	8	8
52T									13	10.5	9	8
106T									15.5	14	11	9
242T									15.5	15	13	11
484T											13	11
996T												11

(Uppertolerance:target+1.0dB)

Reduced Power 11ax RU Tx power Tables –RSDB with receiver Active (RCV-ON):

	SISO (ANT1) /in dBm				SISO (ANT2) /in dBm				MIMO (ALL) /in dBm			
Tones	*2.4G*	*5G/20Mhz*	*5G/40Mhz*	*5G/80Mhz*	*2.4G*	*5G/20Mhz*	*5G/40Mhz*	*5G/80Mhz*	*2.4G*	*5G/20Mhz*	*5G/40Mhz*	*5G/80Mhz*
	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index	Ch& RU index
26T									**12**	8	**8**	**8**
52T									**13**	10.5	9	8
106T									15	14	**11**	9
242T									15	15	13	11
484T											13	11
996T												**11**

Legacy(11b/g/n/a/ac) Real Simultaneous Dual Band (RSDB) Power

	# TX	5GHz WIFI [dBm]		2.4GHz WIFI [dBm]		802.11 Modes
		Ant1	Ant2	Ant1	Ant2	
2.4 GHz + 5 GHz RSDB & MIMO	3	BW20: 12 BW40: 12 BW80: 12	BW20: 12 BW40: 12 BW80: 12	13	-	2.4 GHz: b only 5 GHz: a, n, ac
	3	BW20: 12 BW40: 12 BW80: 12	BW20: 12 BW40: 12 BW80: 12	-	13	
2.4 GHz + 5 GHz RSDB MIMO	4	BW20: 12 BW40: 12 BW80: 12	BW20: 12 BW40: 12 BW80: 12	13	13	2.4 GHz: g, n 5 GHz: a, n, ac

(Uppertolerance:target+1.0dB)

Legacy(11b/g/n/a/ac) Real Simultaneous Dual Band (RSDB) Power with RCV On

	# TX	5GHz WIFI [dBm]		2.4GHz WIFI [dBm]		802.11 Modes
		Ant1	Ant2	Ant1	Ant2	
2.4 GHz + 5 GHz RSDB & MIMO	3	BW20: 12 BW40: 12 BW80: 12	BW20: 12 BW40: 12 BW80: 12	12	-	2.4 GHz: b only 5 GHz: a, n, ac
	3	BW20: 12 BW40: 12 BW80: 12	BW20: 12 BW40: 12 BW80: 12	-	12	
2.4 GHz + 5 GHz RSDB MIMO	4	BW20: 12 BW40: 12 BW80: 12	BW20: 12 BW40: 12 BW80: 12	12	12	2.4 GHz: g, n 5 GHz: a, n, ac

(Upper tolerance:target+1.0dB)

802.11ax Simultaneous Dual Band (RSDB) Power

	# TX	5GHz WIFI [dBm]		2.4GHz WIFI [dBm]		802.11 Modes
		Ant1	Ant2	Ant1	Ant2	
2.4 GHz + 5 GHz RSDB MIMO	4	BW20: 12 BW40: 12 BW80: 12	BW20: 12 BW40: 12 BW80: 12	12	12	2.4 GHz: 11ax 5 GHz: 11ax

(Uppertolerance:target+1.0dB)

802.11ax(SU, 242T) Real Simultaneous Dual Band (RSDB) Power with RCV On

	# TX	5GHz WIFI [dBm]		2.4GHz WIFI [dBm]		802.11 Modes
		Ant1	Ant2	Ant1	Ant2	
2.4 GHz + 5 GHz RSDB MIMO	4	BW20: 12 BW40: 12 BW80: 12	BW20: 12 BW40: 12 BW80: 12	12	12	2.4 GHz: 11ax 5 GHz: 11ax

(Upper tolerance:target+1.0dB)

4.34.4 Maximum Bluetooth Power

Mode / Band			Modulated Average (dBm)
Bluetooth	1Mbps	Maximum	15.0
		Nominal	14.0
	EDR	Maximum	11.5
		Nominal	10.5
Bluetooth LE	2M Mbps	Maximum	8
		Nominal	7
	1Mbps, 125/500Kbps	Maximum	8
		Nominal	7

4.5 LTE Information

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

Ch. No.& Freq.(㎒)		Low	Mid	High
LTE Band 2 (PCS)	1.4 ㎒	1 850.7 (18607)	1 880.0 (18900)	1 909.3 (19193)
	3 ㎒	1 851.5 (18615)	1 880.0 (18900)	1 908.5 (19185)
	5 ㎒	1 852.5 (18625)	1 880.0 (18900)	1 907.5 (19175)
	10 ㎒	1 855.0 (18650)	1 880.0 (18900)	1 905.0 (19150)
	15 ㎒	1 857.5 (18675)	1 880.0 (18900)	1 902.5 (19125)
	20 ㎒	1 860.0 (18700)	1 880.0 (18900)	1 900.0 (19100)
LTE Band 4 (AWS)	1.4 ㎒	1 710.7 (19957)	1 732.5 (20175)	1 754.3 (20393)
	3 ㎒	1 711.5 (19965)	1 732.5 (20175)	1 753.5 (20385)
	5 ㎒	1 712.5 (19975)	1 732.5 (20175)	1 752.5 (20375)
	10 ㎒	1 715.0 (20000)	1 732.5 (20175)	1 750.0 (20350)
	15 ㎒	1 717.5 (20025)	1 732.5 (20175)	1 747.5 (20325)
	20 ㎒	1 720.0 (20050)	1 732.5 (20175)	1 745.0 (20300)
LTE Band 5 (Cell)	1.4 ㎒	824.7 (20407)	836.5 (20525)	848.3 (20643)
	3 ㎒	825.5 (20415)	836.5 (20525)	847.5 (20635)
	5 ㎒	826.5 (20425)	836.5 (20525)	846.5 (20625)
	10 ㎒	829.0 (20450)	836.5 (20525)	844.0 (20600)
LTE Band 12	1.4 ㎒	699.7 (23017)	707.5 (23095)	715.3 (23173)
	3 ㎒	700.5 (23025)	707.5 (23095)	714.5 (23165)
	5 ㎒	701.5 (23035)	707.5 (23095)	713.5 (23155)
	10 ㎒	704.0 (23060)	707.5 (23095)	711.0 (23130)
LTE Band 17	5 ㎒	706.5(23755)	710.0(23790)	713.5(23825)
	10 ㎒		710.0(23790)	
LTE 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)	841.5 (26965)

Ch. No.& Freq.(MHz)		Low	Mid	High
LTE Band 66 (AWS)	1.4 MHz	1 710.7 (131979)	1 745 (132322)	1 779.3 (132665)
	3 MHz	1 711.5 (131987)	1 745 (132322)	1 778.5 (132657)
	5 MHz	1 712.5 (131997)	1 745 (132322)	1 777.5 (132647)
	10 MHz	1 715.0 (132022)	1 745 (132322)	1 775.0 (132622)
	15 MHz	1 717.5 (132047)	1 745 (132322)	1 772.5 (132597)
	20 MHz	1 720.0 (132072)	1 745 (132322)	1 770.0 (132572)

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

UE Category	LTE Rel. 15, DL: Category 20, UL: Category 18
HPUE Power Class	LTE TDD 41 Power Class 3 :(Duty: 63.3%) Power Class 2 : (Duty:43.3%)
Modulations Supported in UL	QPSK, 16QAM, 64QAM,256 QAM
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3	Yes
A-MPR disabled for SAR Testing.	Yes
LTE Carrier Aggregation	This device supports Inter-Band & Intra-Band DL-link Carrier aggregations and intra-Band UL-link Carrier aggregations. Detaled information 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 carrieraggregation, downlink MIMO. All other uplink communications are identical to the release 8 specifications. The following LTE Release 16 Features are not supported: Relay, Hetnet, Enhanced elCl, MDH, cross-carrier Scheduling, Enhanced SC-FDMA.

Item.		Description
Frequency Range	NR Band n5 (Cell)	826.5 MHz~ 846.5 MHz
	NR Band n66 (AWS)	1 712.5 MHz~ 1 777.5 MHz
Channel Bandwidths	NR Band n5 (Cell)	5 MHz, 10 MHz, 15 MHz, 20 MHz
	NR Band n66(AWS)	5 MHz, 10 MHz, 15 MHz, 20 MHz

Ch. No.& Freq.(MHz)		Low / Low-Mid	Mid	Mid-High / High
NR Band n5 (Cell)	5 MHz	826.5 (165300)	836.5 (167300)	846.5 (169300)
	10 MHz	829 (165800)	836.5 (167300)	844 (168800)
	15 MHz	831.5 (166300)	836.5 (167300)	841.5 (168300)
	20 MHz	834 (166800)	836.5 (167300)	839 (167800)
NR Band n66(AWS)	5 MHz	1712.5 (342500)	1745 (349000)	1777.5 (355500)
	10 MHz	1715 (343000)	1745 (349000)	1775 (355000)
	15 MHz	1717.5 (343500)	1745 (349000)	1772.5 (354500)
	20 MHz	1720 (344000)	1745 (349000)	1770 (354000)

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 a regation combinations
LTE Anchor Bands for NR Band n5(Cell)	LTE Band 2/ 66
LTE Anchor Bands for NR Band n66(AWS)	LTE Band 5/ 12

4.6 DUT Antenna Locations

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

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

Mode	Rear	Front	Left	Right	Bottom	Top
GSM/GPRS/EDGE 850	Yes	Yes	Yes	Yes	Yes	No
GSM/GPRS/EDGE 1900	Yes	Yes	Yes	Yes	Yes	No
UMTS BAND 5	Yes	Yes	Yes	Yes	Yes	No
UMTS BAND 4	Yes	Yes	Yes	Yes	Yes	No
UMTS BAND 2	Yes	Yes	Yes	Yes	Yes	No
LTE Band 2 (PCS)	Yes	Yes	Yes	Yes	Yes	No
LTE Band 4 (AWS)	Yes	Yes	Yes	Yes	Yes	No
LTE Band 5 (Cell)	Yes	Yes	Yes	Yes	Yes	No
LTE Band 12	Yes	Yes	Yes	Yes	Yes	No
LTE Band 17	Yes	Yes	Yes	Yes	Yes	No
LTE Band 26	Yes	Yes	Yes	Yes	Yes	No
LTE TDD Band 41	Yes	Yes	Yes	No	Yes	No
LTE Band 66 (AWS)	Yes	Yes	Yes	Yes	Yes	No
NR Band n5	Yes	Yes	Yes	Yes	Yes	No
NR Band n66	Yes	Yes	Yes	Yes	Yes	No
2.4 GHz WLAN	Yes	Yes	Yes	No	No	Yes
5 GHz WLAN	Yes	Yes	Yes	No	No	Yes
Bluetooth	Yes	Yes	Yes	No	No	Yes

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

4.7 Near Field Communications (NFC) Antenna

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

4.8 SAR Summation Scenario

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

No.	CapableTransmit Configuration	Head	Body-Worn	Wireless	Phablet	Notes
			Accessory	Router		
1	GSMvoice+ 2.4GHz WI-FI	Yes	Yes	N/A	Yes	
2	GSMvoice+ 5GHz WI-FI	Yes	Yes	N/A	Yes	
3	GSMvoice+ 2.4GHz Bluetooth	Yes^	Yes	N/A	Yes^	BluetoothTetheringis considered
4	GSMvoice+ 2.4GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
5	GSMvoice+ 5GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
6	GSMvoice+ 2.4GHz WI-FI+ 5GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
7	GSMvoice+ 2.4GHz WI-FI MIMO + 5GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
8	GSMvoice+ 2.4GHz Bluetooth+ 5GHz WI-FI MIMO	Yes^	Yes	N/A	Yes^	BluetoothTetheringis considered
9	UMTS + 2.4GHz WI-FI	Yes	Yes	Yes	Yes	
10	UMTS + 5GHz WI-FI	Yes	Yes	Yes	Yes	
11	UMTS + 2.4GHz Bluetooth	Yes^	Yes	Yes^	Yes^	BluetoothTetheringis considered
12	UMTS + 2.4GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
13	UMTS + 5GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
14	UMTS + 2.4GHz WI-FI+ 5GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
15	UMTS + 2.4GHz WI-FI MIMO + 5GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
16	UMTS + 2.4GHz Bluetooth+ 5GHz WI-F MIMO	Yes^	Yes	Yes^	Yes^	BluetoothTetheringis considered
17	LTE + 5GNR	Yes	Yes	N/A	Yes	
18	LTE + 2.4GHz WI-FI	Yes	Yes	Yes	Yes	
19	LTE + 2.4GHz WI-FI+ 5GNR	Yes	Yes	Yes	Yes	
20	LTE + 5GHz WI-FI	Yes	Yes	Yes	Yes	
21	LTE + 5GHz WI-FI+ 5GNR	Yes	Yes	Yes	Yes	
22	LTE + 2.4GHz Bluetooth	Yes^	Yes	Yes^	Yes^	BluetoothTetheringis considered
23	LTE + 2.4GHz Bluetooth+ 5GNR	Yes^	Yes	Yes^	Yes^	BluetoothTetheringis considered
24	LTE + 2.4GHz Bluetooth+ 5GHz WI-FI MIMO	Yes^	Yes	Yes^	Yes^	BluetoothTetheringis considered
25	LTE + 2.4GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
26	LTE + 2.4GHz WI-FI MIMO + 5GNR	Yes*	Yes	Yes	Yes	
27	LTE + 5GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
28	LTE + 5GHz WI-FI MIMO + 5GNR	Yes*	Yes	Yes	Yes	
29	LTE + 2.4GHz WI-FI+ 5GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
30	LTE + 2.4GHz WI-FI+ 5GHz WI-FI MIMO+ 5GNR	Yes*	Yes	Yes	Yes	
31	LTE + 2.4GHz WI-FI MIMO + 5GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
32	LTE + 2.4GHz WI-FI MIMO + 5GHz WI-FI MIMO + 5GNR	Yes*	Yes	Yes	Yes	
33	LTE + 2.4GHz Bluetooth+ 5GHz WI-FI MIMO	Yes^ *	Yes	Yes^	Yes^	BluetoothTetheringis considered
34	LTE + 2.4GHz Bluetooth+ 5GHz WI-FI MIMO + 5GNR	Yes^ *	Yes	Yes^	Yes^	BluetoothTetheringis considered
35	GPRS/EDGE data+ 2.4GHz WI-FI	Yes*	Yes*	Yes	Yes*	Pre-installedVOIP applications areconsidered
36	GPRS/EDGE data+ 5GHz WI-FI	Yes*	Yes*	Yes	Yes*	Pre-installedVOIP applications areconsidered
37	GPRS/EDGE data+ 2.4GHz Bluetooth	Yes*^	Yes*	Yes^	Yes*^	Pre-installedVOIP applications areconsidered
38	GPRS/EDGE data+ 2.4GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes*	Pre-installedVOIP applications areconsidered
39	GPRS/EDGE data+ 5GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes*	Pre-installedVOIP applications areconsidered
40	GPRS/EDGE data+ 2.4GHz WI-FI+ 5GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes*	Pre-installedVOIP applications areconsidered
41	GPRS/EDGE data+ 2.4GHz WI-FI MIMO + 5GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes*	Pre-installedVOIP applications areconsidered
42	GPRS/EDGE data+ 2.4GHz Bluetooth+ 5GHz WI-FI MIMO	Yes*^	Yes*	Yes^	Yes*^	Pre-installedVOIP applications areconsidered

Note:

1. 2.4GHz WLAN and 2.4GHz Bluetoothcannot transmit simultaneously
2. The device does not support licensed Bands simultaneously transmitting.
3. UMTS +WLAN scenario also represents the UMTS Voice/DATA + WLAN hotspot scenario.
4. VoIP is supported in GPRS/EDGE
5. The highest reported SAR for each exposure condition is used for SAR summation purpose.
6. Wi-Fi Hotspot is supported for 2.4 GHz/ UNII-3 of 5 GHz WLAN.
7. This device supports Bluetooth tethering. ^ BluetoothTetheringis considered.
8. * Pre-installedVOIP applications areconsidered
9. Per the manufacturer, WIFI Direct is not expected to be used in conjunction with a held to ear or Body worn accessory voice call. Therefore, there are no simultaneous transmission scenarios involving WIFi Direct beyond that listed in the above table.
10. This device supports 2x2 MIMO Tx for WLAN 802.11a/g/n/ac/ax. 802.11a/g/n/ac/ax supports CDD and STBC and 802.11n/ac/ax additionally supports SDM. Each WLAN antenna can transmit independentlyor together when operating with MIMO.
11. This device supports VOLTE.
12. This device supports VOWIFI
13. LTE + 5G NR FR1 Scenarios are supported NSA and SA Connectivity.

4.9 SAR Test Considerations

4.9.1 WiFi

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

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

This device supports IEEE 802.11ax with the following features:

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

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

4.8.2Licensed Transmitter(s)

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

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

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

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

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

LTE capabilities with overlapping transmission frequency ranges were applied to LTE Band 26 and LTE Band 5, LTE Band 12 and LTE Band 17, LTE Band 66 and LTE Band 4 of this model.

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

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

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

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

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

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

5. Introduction

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

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

SAR Definition

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

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

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

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

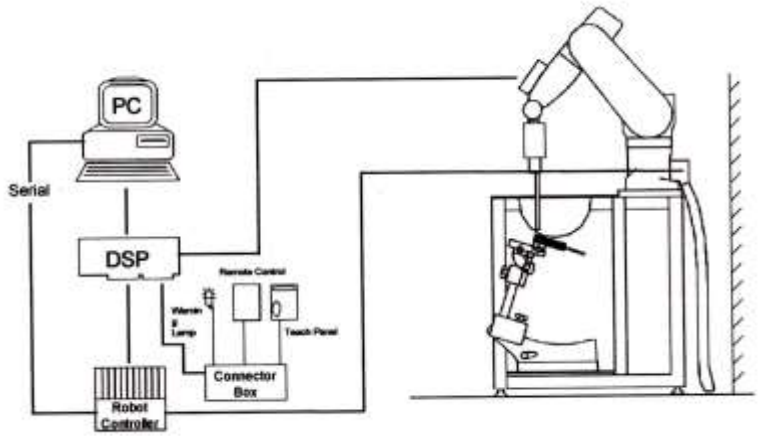


Figure 2. HCT SAR Lab. Test Measurement Set-up

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

8. Description of Test Position

8.1 EAR REFERENCE POINT

Figure 8-2 shows the front, back and side views of the SAM phantom. The center-of-mouth reference point is labeled “M”, the left ear reference point (ERP) is marked “LE”, and the right ERP is marked “RE.” Each ERP is on the B-M (back-mouth) line located 15 mm behind the entrance-to-ear-canal (EEC) point, as shown in Figure 6-1. The Reference Plane is defined as passing through the two ear reference point and point M. The line N-F (Neck-Front), also called the Reference Pivoting Line, is not perpendicular to the reference plane (See Figure 5-1), Line B-M is perpendicular to the N-F line. Both N-F and B-M lines are marked on the external phantom shell to facilitate handset positioning.

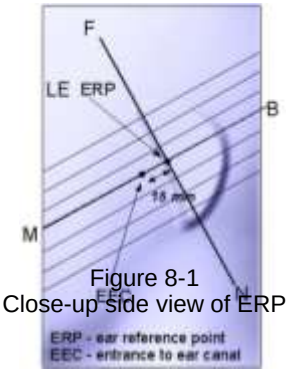


Figure 8-1
Close-up side view of ERP

8.2 HANDSET REFERENCE POINTS

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

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

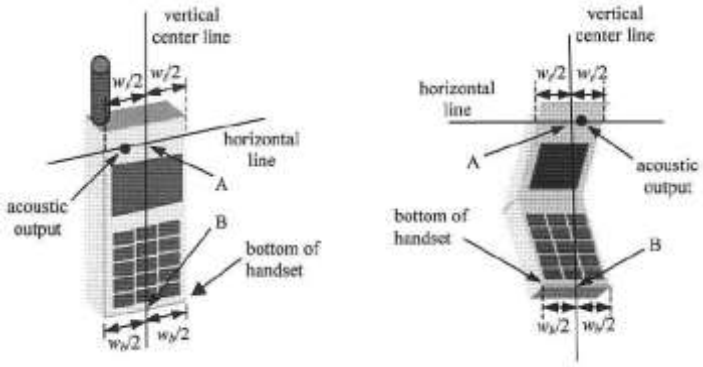


Figure 6-3. Handset vertical and horizontal reference lines

8.3 Device Holder

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

8.4 Position for cheek

Figure 6.4. shows cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

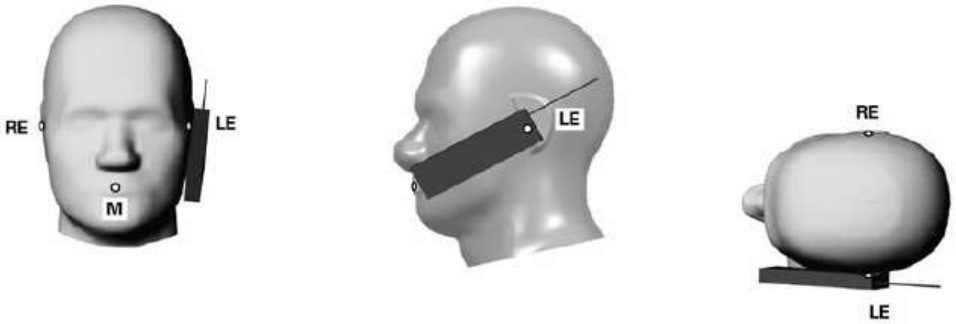


Figure 8.4 Cheek/ Touch position of the wireless device

8.5 Definition of the “tilted” position

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

Figure 8.5. Tilt 15°position of the wireless device

8.6 Body-Worn Accessory Configurations

Body-worn operating configurations are tested with the belt-dips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 6-6). Per FCC KDB Publication 648474 D04v01r03 Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in Body-worn accessories. The Body-worn accessory procedures in FCC KDB Publication 447498 D01v06 should be used to test for Body-worn accessory SAR compliance, without a headset connected to it.. When the reported SAR for a body- worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency Band should be repeated for that body- worn accessory with a headset attached to the handset.

Figure 8-6
Sample Body-Worn Diagram

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

8.7 Wireless Router Configurations

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

When the user enables the personal wireless router functions for the handset actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WIFI transmitter according to FCC KDB Publication 447498 D01v06 publication procedures. The Portable Hotspot feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

8.8 Extremity Exposure Configurations

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

For smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear. the phablets procedures outlined in KDB Publication 648474 D04 v01r03 should be applied to evaluate SAR compliance. A device marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance. In addition to the normally required head and body-worm accessory SAR test procedures required for handsets, the UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna ≤25 mm from that surface or edge, in direct contact with the phantom, for 10-g SAR. The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, 10-g SAR is required only for the surfaces and edges with hotspot mode scaled to the maximum output power (including tolerance) is 1-g SAR > 1.2 W/kg.

8.9 Additional Test Positions due to Proximity Conditions

This device uses a sensor to reduce output powers in extremity (hand-held) use conditions.

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 v01r02 Section 6 was 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 mm. was used as the test separation distance for SAR testing. Sensor triggering distance summary data is included in below table.

Wireless technologies	Position	§6.2 Triggering Distance	§6.3 Coverage	§6.4 Tilt Angle	Worst case distance for Phablet SAR
GSM1900,UMTS B2/B4, LTEB2/4/66/41,NR n66	Rear	9	N/A	N/A	8
	Front	7	N/A	N/A	6
	Bottom	14	N/A	N/A	13

8.10 Bluetooth tethering Configurations

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

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

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

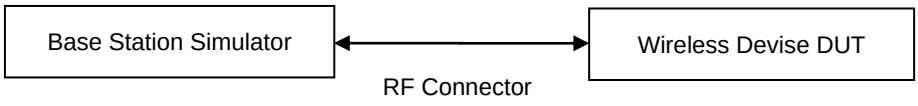
The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 and power control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

10.3.5DC-HSDPA

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

DC-HSDPA Configurations

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



10.4 SAR Measurement Conditions for LTE

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

10.4.1 Spectrum Plots for RB Configurations

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

10.4.2 MPR

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

10.4.3 A-MPR

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

10.4.4 Required RB Size and RB offsets for SAR testing

According to FCC KDB 941225 D05v02r05

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

10.4.5 Downlink Carrier Aggregation

Conducted power measurements with LTE Carrier aggregation (CA) downlink only active are made in accordance to KDB publication 941225 D05Av01r02. The RRC connection is only handled by one cell, the primary component carrier (PCC) for downlink and uplink communications. After making a data connection to the PCC, the UE device adds secondary component carrier (SCC) on the downlink only. All uplink communications and acknowledgements remain identical to specifications when downlink carrier aggregation is inactive on the PCC. For every supported combination of downlink only carrier aggregation, additional conducted output Powers are measured with downlink carrier aggregation active for the configuration with highest measured maximum conducted power with the downlink carrier aggregation inactive measured among the channel Bandwidth, modulation and RB combinations in each frequency Band. Per FCC KDB Publication 941225 D05Av01r02, no SAR measurements are required for carrier aggregation configurations when the

average output power with downlink only carrier aggregation active is not more than 0.25dB higher than the average output power with downlink only carrier aggregation inactive.

10.4.6 LTE(TDD) Considerations

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

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

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

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

Table 4.2-2: Uplink-downlink configurations.

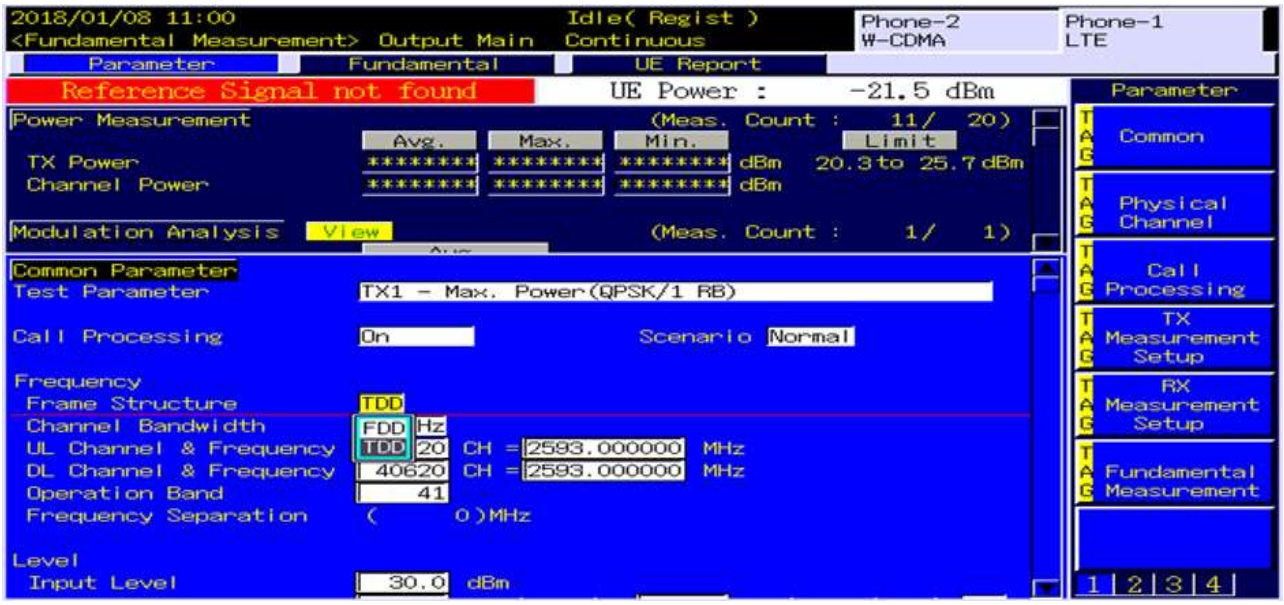
Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number									
		0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	U	U	D	S	U	U	U
1	5 ms	D	S	U	U	D	D	S	U	U	D
2	5 ms	D	S	U	D	D	D	S	U	D	D
3	10 ms	D	S	U	U	U	D	D	D	D	D
4	10 ms	D	S	U	U	D	D	D	D	D	D
5	10 ms	D	S	U	D	D	D	D	D	D	D
6	5 ms	D	S	U	U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

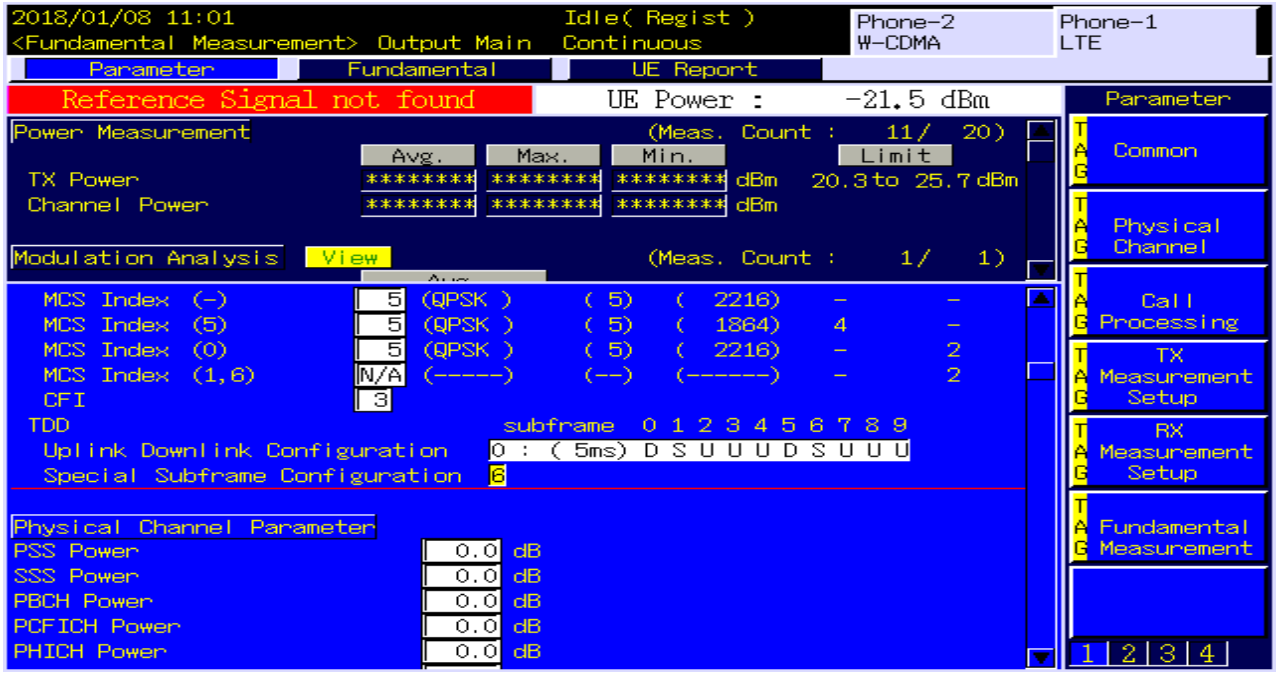
Example for calculated Duty Cycle for Uplink-Downlink Configuration 0:
Calculated Duty Cycle = (5120 x (1/(15000 x 2048)) x 2 + 0.006)/0.01 = 63.33 %
Where
T_s = 1/(15000 x 2048) seconds

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

10.4.7 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 chipset based test mode software to ensure the results are consistent and reliable. See KDB Publication 248227 D01v02r02 for more details.

10.5.1 General Device Setup

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

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

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

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

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

10.5.4 Initial Test Position Procedure

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

10.5.5 2.4 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 are the same for multiple test channels, either according to the default or additional power measurement requirements, SAR is measured using the channel closest to the middle of the frequency Band or aggregated Band. When there are multiple channels with the same maximum output power, SAR is measured using the higher number channel.

10.5.7 Initial Test Configuration Procedure

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

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

10.5.8 Subsequent Test Configuration Procedures

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

11. Output Power Specifications

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

Licensed Bands

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

Test Overview

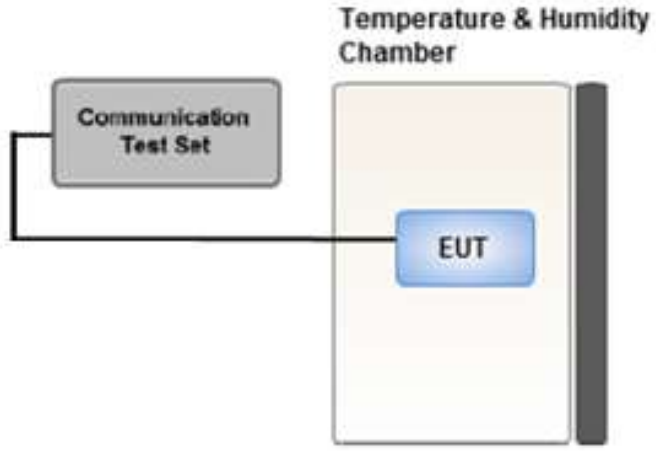
According to ANSI C63.26-2015 Section 5.2.1 when measuring the maximum RF output power from such devices, control over the EUT must be provided either through special test software (provided by manufacturer specifically for compliance testing, but not accessible by an end user) or through use of a base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

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

Test Procedure

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

Test setup



11.1GSM

11.1.1 GSM Maximum Conducted Output Power

Mode / Band		Voice	GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)			
		GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Maximum		33.50	33.50	32.50	30.50	28.50	28.00	26.00	24.50	23.50
Nominal		32.50	32.50	31.50	29.50	27.50	27.00	25.00	23.50	22.50
GSM 850	128	32.24	31.83	31.10	29.33	27.50	26.76	25.3	23.27	22.2
	190	32.19	32.19	32.04	29.95	27.90	26.95	25.47	23.51	22.51
	251	32.28	32.20	31.96	29.33	27.43	26.66	25.23	23.43	21.73
Maximum		30.00	30.00	29.00	26.50	24.50	26.50	25.00	23.00	22.00
Nominal		29.00	29.00	28.00	25.50	23.50	25.50	24.00	22.00	21.00
GSM 1900	512	28.73	28.59	27.50	25.31	23.17	25.01	23.66	21.67	20.57
	661	28.55	28.91	27.88	25.16	23.34	25.45	23.93	21.96	20.83
	810	29.27	29.17	27.61	25.83	23.63	25.60	24.14	22.21	21.12

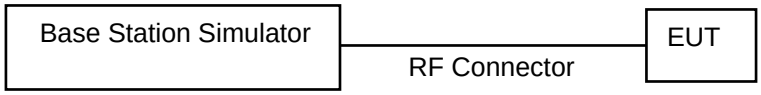
GSM Conducted output powers (Burst-Average)

Mode / Band		Voice	GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)			
		GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Maximum		24.47	24.47	26.48	26.24	25.49	18.97	19.98	20.24	20.49
Nominal		23.47	23.47	25.48	25.24	24.49	17.97	18.98	19.24	19.49
GSM 850	128	23.21	22.80	25.08	25.07	24.49	17.73	19.28	19.01	19.19
	190	23.16	23.16	26.02	25.69	24.89	17.92	19.45	19.25	19.50
	251	23.25	23.17	25.94	25.07	24.42	17.63	19.21	19.17	18.72
Maximum		20.97	20.97	22.98	22.24	21.49	17.47	18.98	18.74	18.99
Nominal		19.97	19.97	21.98	21.24	20.49	16.47	17.98	17.74	17.99
GSM 1900	512	19.70	19.56	21.48	21.05	20.16	15.98	17.64	17.41	17.56
	661	19.52	19.88	21.86	20.90	20.33	16.42	17.91	17.70	17.82
	810	20.24	20.14	21.59	21.57	20.62	16.57	18.12	17.95	18.11

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

GSM Class : B
GSM voice: Head SAR , Body worn SAR
GPRS/EDGE Multi-slots 33 : Hotspot SAR with GPRS/EDGE
Multi-slot Class 33 with CS 1 (GMSK)



11.1.2 GSM Reduced Conducted Output Power (Hotspot mode activated)

Mode / Band		Voice	GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)			
		GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Maximum		27.00	27.00	25.00	23.50	21.50	24.00	22.00	20.00	19.00
Nominal		26.00	26.00	24.00	22.50	20.50	23.00	21.00	19.00	18.00
GSM 1900	512	26.20	26.24	24.29	22.78	20.80	22.62	20.67	18.50	17.39
	661	26.70	26.54	24.49	22.95	21.05	23.08	20.93	19.03	17.97
	810	26.72	26.82	24.86	23.35	21.33	23.17	21.21	19.14	18.18

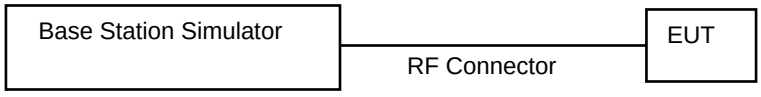
GSM Conducted output powers (Burst-Average)

Mode / Band		Voice	GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)			
		GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Maximum		17.97	17.97	18.98	19.24	18.49	14.97	15.98	15.74	15.99
Nominal		16.97	16.97	17.98	18.24	17.49	13.97	14.98	14.74	14.99
GSM 1900	512	17.17	17.21	18.27	18.52	17.79	13.59	14.65	14.24	14.38
	661	17.67	17.51	18.47	18.69	18.04	14.05	14.91	14.77	14.96
	810	17.69	17.79	18.84	19.09	18.32	14.14	15.19	14.88	15.17

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

GSM Class : B
GSM voice/GPRS VOIP: Head SAR , Body worn SAR
GPRS/EDGE Multi-slots 33 : Hotspot SAR with GPRS/EDGE
Multi-slot Class 33 with CS 1 (GMSK)



11.1.3 GSM Reduced Conducted Output Power (Grip back and Ear jackActivated)

Mode / Band		Voice	GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)			
		GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Maximum		27.00	27.00	25.00	23.50	21.50	24.00	22.00	20.00	19.00
Nominal		26.00	26.00	24.00	22.50	20.50	23.00	21.00	19.00	18.00
GSM 1900	512	26.20	26.24	24.42	22.85	20.89	22.56	20.61	18.51	17.27
	661	26.70	26.73	24.61	23.08	21.13	22.99	20.86	18.92	17.83
	810	26.73	26.76	24.88	23.32	21.43	23.22	21.31	19.21	18.22

GSM Conducted output powers (Burst-Average)

Mode / Band		Voice	GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)			
		GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Maximum		17.97	17.97	18.98	19.24	18.49	14.97	15.98	15.74	15.99
Nominal		16.97	16.97	17.98	18.24	17.49	13.97	14.98	14.74	14.99
GSM 1900	512	17.17	17.21	18.40	18.59	17.88	13.53	14.59	14.25	14.26
	661	17.67	17.70	18.59	18.82	18.12	13.96	14.84	14.66	14.82
	810	17.70	17.73	18.86	19.06	18.42	14.19	15.29	14.95	15.21

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

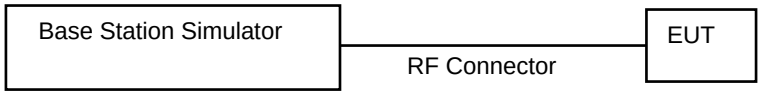
4 Tx slot = 3.01 dB, Frame-Average output power = Burst-Average output power – 3.01 dB

GSM Class : B

GSM voice/GPRS VOIP: Head SAR , Body worn SAR

GPRS/EDGE Multi-slots 33 : Hotspot SAR with GPRS/EDGE

Multi-slot Class 33 with CS 1 (GMSK)



11.2UMTS

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

11.2.1 UMTS Maximum Conducted Output Power

UMTS Band 5 Maximum Conducted Output Power

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	23.19	23.35	23.23	-
99		12.2 kbps AMR	23.16	23.33	23.27	-
5	HSDPA	Subtest 1	22.03	22.15	22.05	0
5		Subtest 2	22.01	22.14	22.07	0
5		Subtest 3	21.42	21.65	21.54	0.5
5		Subtest 4	21.52	21.64	21.56	0.5
6	HSUPA	Subtest 1	21.97	22.12	22.03	0
6		Subtest 2	20.00	20.15	20.05	2
6		Subtest 3	21.03	21.12	21.04	1
6		Subtest 4	19.81	19.94	19.86	2
6		Subtest 5	22.01	22.12	22.04	0
8	DC-HSDPA	Subtest1	21.88	22.03	21.92	0
8		Subtest2	21.89	22.04	21.93	0
8		Subtest3	21.40	21.54	21.41	0.5
8		Subtest4	21.40	21.55	21.41	0.5

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	22.83	22.45	21.99	-
99		12.2 kbps AMR	22.84	22.45	21.99	-
5	HSDPA	Subtest 1	21.70	21.32	20.89	0
5		Subtest 2	21.70	21.32	20.89	0
5		Subtest 3	21.20	20.83	20.37	0.5
5		Subtest 4	21.19	20.83	20.37	0.5
6	HSUPA	Subtest 1	21.72	21.31	20.88	0
6		Subtest 2	19.68	19.31	18.88	2
6		Subtest 3	20.72	20.56	19.83	1
6		Subtest 4	19.70	19.32	18.89	2
6		Subtest 5	21.71	21.30	20.86	0
8	DC-HSDPA	Subtest1	21.68	21.38	20.79	0
8		Subtest2	21.67	21.36	20.78	0
8		Subtest3	21.12	21.10	20.27	0.5
8		Subtest4	21.12	21.09	20.27	0.5

UMTS Average Conducted output powers

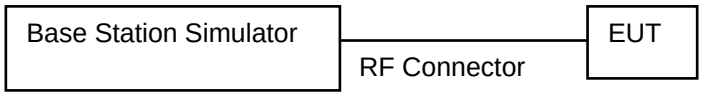
UMTS Band 2Maximum Conducted Output Power

3GPP Release Version	Mode	3GPP 34.121	UMTS Band 2 [dBm]			3GPP MPR
		Subtest	UL9262 DL9662	UL9400 DL9800	UL9538 DL9938	
99	UMTS	12.2 kbps RMC	22.29	22.22	22.44	-
99		12.2 kbps AMR	22.30	22.22	22.44	-
5	HSDPA	Subtest 1	21.21	21.16	21.42	0
5		Subtest 2	21.21	21.18	21.42	0
5		Subtest 3	20.73	20.66	20.94	0.5
5		Subtest 4	20.72	20.66	20.92	0.5
6	HSUPA	Subtest 1	21.15	21.16	21.35	0
6		Subtest 2	19.22	19.16	19.44	2
6		Subtest 3	20.18	20.17	20.38	1
6		Subtest 4	19.20	19.16	19.43	2
6		Subtest 5	21.16	21.15	21.36	0
8	DC-HSDPA	Subtest 1	21.18	21.16	21.34	0
8		Subtest2	21.19	21.15	21.35	0
8		Subtest3	20.67	20.65	20.87	0.5
8		Subtest4	20.65	20.61	20.86	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.



11.2.2 UMTS Reduced Conducted Output Power (Hotspot mode activated)

UMTS Band 4 Hotspot Back-off 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	19.84	19.43	19.05	-
99		12.2 kbps AMR	19.84	19.43	19.05	
5	HSDPA	Subtest 1	18.69	18.27	17.99	0
5		Subtest 2	18.69	18.27	17.99	0
5		Subtest 3	18.20	17.83	17.41	0.5
5		Subtest 4	18.19	17.83	17.41	0.5
6	HSUPA	Subtest 1	18.62	18.11	17.75	0
6		Subtest 2	16.70	16.27	15.87	2
6		Subtest 3	17.71	17.28	16.88	1
6		Subtest 4	16.71	16.27	15.88	2
6		Subtest 5	18.18	17.58	17.30	0
8	DC-HSDPA	Subtest 1	18.86	18.45	17.99	0
8		Subtest2	18.81	18.45	17.95	0
8		Subtest3	18.36	17.94	17.41	0.5
8		Subtest4	18.34	17.94	17.41	0.5

UMTS Average Conducted output powers

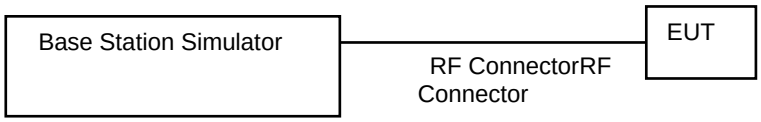
UMTS Band 2 Hotspot Back-off Power

3GPP Release Version	Mode	3GPP 34.121	UMTS Band 2 [dBm]			3GPP MPR
		Subtest	UL9262 DL9662	UL9400 DL9800	UL9538 DL9938	
99	UMTS	12.2 kbps RMC	18.80	18.70	18.96	-
99		12.2 kbps AMR	18.80	18.70	18.96	
5	HSDPA	Subtest 1	17.75	17.66	17.93	0
5		Subtest 2	17.75	17.65	17.93	0
5		Subtest 3	17.24	17.17	17.41	0.5
5		Subtest 4	17.24	17.17	17.41	0.5
6	HSUPA	Subtest 1	17.69	17.65	17.91	0
6		Subtest 2	15.70	15.64	15.93	2
6		Subtest 3	16.71	16.65	16.92	1
6		Subtest 4	15.70	15.63	15.93	2
6		Subtest 5	17.37	17.39	17.62	0
8	DC-HSDPA	Subtest 1	17.30	17.45	16.88	0
8		Subtest2	17.29	17.44	16.80	0
8		Subtest3	16.80	16.94	16.30	0.5
8		Subtest4	16.80	16.94	16.40	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.



11.2.3 UMTS Reduced Conducted Output Power – (Grip back Activated/ Ear jack Activated)

UMTS Band 4 Grip Back-off Power

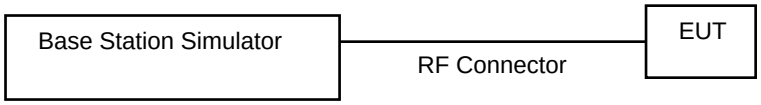
3GPP Release Version	Mode	3GPP 34.121	UMTS Band 4 [dBm]			3GPP MPR
		Subtest	UL 1312 DL 1537	UL 1412 DL 1637	UL 1513 DL 1738	
99	UMTS	12.2 kbps RMC	19.86	19.43	19.04	-
99		12.2 kbps AMR	19.86	19.43	19.04	
5	HSDPA	Subtest 1	18.70	18.28	18.00	0
5		Subtest 2	18.70	18.27	17.99	0
5		Subtest 3	18.20	17.84	17.41	0.5
5		Subtest 4	18.20	17.84	17.42	0.5
6	HSUPA	Subtest 1	18.63	18.12	17.75	0
6		Subtest 2	16.71	16.27	15.89	2
6		Subtest 3	17.73	17.29	16.88	1
6		Subtest 4	16.73	16.27	15.88	2
6		Subtest 5	18.20	17.59	17.31	0
8	DC-HSDPA	Subtest 1	18.87	18.46	18.00	0
8		Subtest2	18.82	18.46	17.97	0
8		Subtest3	18.37	17.96	17.42	0.5
8		Subtest4	18.35	17.95	17.43	0.5

UMTS Average Conducted output powers

UMTS Band 2 Grip back-off Power

3GPP Release Version	Mode	3GPP 34.121	UMTS Band 2 [dBm]			3GPP MPR
		Subtest	UL9262 DL9662	UL9400 DL9800	UL9538 DL9938	
99	UMTS	12.2 kbps RMC	18.79	18.71	18.97	-
99		12.2 kbps AMR	18.79	18.71	18.97	
5	HSDPA	Subtest 1	17.76	17.66	17.93	0
5		Subtest 2	17.77	17.67	17.95	0
5		Subtest 3	17.25	17.18	17.42	0.5
5		Subtest 4	17.26	17.17	17.43	0.5
6	HSUPA	Subtest 1	17.70	17.67	17.92	0
6		Subtest 2	15.71	15.65	15.94	2
6		Subtest 3	16.71	16.65	16.93	1
6		Subtest 4	15.71	15.64	15.94	2
6		Subtest 5	17.38	17.40	17.62	0
8	DC-HSDPA	Subtest 1	17.31	17.47	16.90	0
8		Subtest 2	17.30	17.46	16.81	0
8		Subtest 3	16.81	16.96	16.31	0.5
8		Subtest 4	16.81	16.95	16.41	0.5

- 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 B2/B4/B5/B12/B17/B26/B41/B66 at 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]

LTE Band 2 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18607 Ch. 1850.7 ㎒	18900 Ch. 1880 ㎒	19193 Ch. 1909.3 ㎒		
1.4 ㎒	QPSK	1	0	21.70	21.58	21.78	0	0
		1	3	21.69	21.57	21.87	0	0
		1	5	21.59	21.52	21.78	0	0
		3	0	21.68	21.58	21.84	0	0
		3	1	21.76	21.64	21.86	0	0
		3	3	21.62	21.52	21.77	0	0
		6	0	20.79	20.65	20.87	0-1	1
	16QAM	1	0	20.97	20.88	21.26	0-1	1
		1	3	21.04	21.00	21.24	0-1	1
		1	5	21.09	21.03	21.10	0-1	1
		3	0	20.89	20.74	21.00	0-1	1
		3	1	20.91	20.83	20.96	0-1	1
		3	3	20.81	20.73	21.00	0-1	1
		6	0	19.75	19.68	19.97	0-2	2
	64QAM	1	0	19.93	19.85	20.11	0-2	2
		1	3	19.98	19.81	20.12	0-2	2
		1	5	19.83	19.79	19.94	0-2	2
		3	0	19.90	19.77	20.01	0-2	2
		3	1	19.90	19.97	20.01	0-2	2
		3	3	19.89	19.79	19.93	0-2	2
		6	0	18.75	18.67	18.96	0-3	3
	256QAM	1	0	16.84	16.62	17.07	0-5	5
		1	3	16.89	16.76	17.04	0-5	5
		1	5	16.76	16.76	16.96	0-5	5
		3	0	16.90	16.76	17.00	0-5	5
		3	1	16.88	16.78	17.14	0-5	5
		3	3	16.83	16.71	16.97	0-5	5
		6	0	16.81	16.72	16.95	0-5	5

LTE Band 2 _ 3 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18615 Ch. 1851.5 ㎒	18900 Ch. 1880 ㎒	19185 Ch. 1908.5 ㎒		
3 ㎒	QPSK	1	0	21.82	21.66	21.88	0	0
		1	7	21.69	21.62	21.86	0	0
		1	14	21.63	21.60	21.78	0	0
		8	0	20.82	20.72	20.98	0-1	1
		8	3	20.81	20.78	21.00	0-1	1
		8	7	20.74	20.70	20.92	0-1	1
		15	0	20.77	20.70	20.95	0-1	1
	16QAM	1	0	21.11	21.04	21.28	0-1	1
		1	7	20.94	21.07	21.21	0-1	1
		1	14	20.98	21.07	21.27	0-1	1
		8	0	19.87	19.90	20.15	0-2	2
		8	3	19.98	19.84	20.06	0-2	2
		8	7	19.89	19.82	20.09	0-2	2
		15	0	19.86	19.69	20.04	0-2	2
	64QAM	1	0	19.97	19.88	20.16	0-2	2
		1	7	19.91	19.89	20.19	0-2	2
		1	14	19.99	19.73	20.12	0-2	2
		8	0	18.83	18.80	18.95	0-3	3
		8	3	18.90	18.75	18.98	0-3	3
		8	7	18.77	18.77	18.99	0-3	3
		15	0	18.90	18.79	19.03	0-3	3
	256QAM	1	0	16.98	16.87	17.17	0-5	5
		1	7	16.85	16.93	17.08	0-5	5
		1	14	16.83	16.66	17.15	0-5	5
		8	0	16.83	16.77	17.05	0-5	5
		8	3	16.92	16.84	17.10	0-5	5
		8	7	16.82	16.81	17.04	0-5	5
		15	0	16.83	16.76	17.00	0-5	5

LTE Band 2 _ 5 ㎒ Bandwidth

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	21.75	21.67	21.85	0	0
		1	12	21.70	21.76	21.87	0	0
		1	24	21.64	21.59	21.76	0	0
		12	0	20.83	20.78	21.01	0-1	1
		12	6	20.86	20.79	21.06	0-1	1
		12	11	20.79	20.76	21.00	0-1	1
		25	0	20.77	20.70	20.96	0-1	1
	16QAM	1	0	21.04	20.81	21.38	0-1	1
		1	12	21.19	20.99	21.23	0-1	1
		1	24	21.00	21.01	21.09	0-1	1
		12	0	19.89	19.81	20.08	0-2	2
		12	6	19.89	19.81	20.06	0-2	2
		12	11	19.83	19.76	20.02	0-2	2
		25	0	19.86	19.76	20.03	0-2	2
	64QAM	1	0	19.89	19.90	20.00	0-2	2
		1	12	19.93	19.86	20.21	0-2	2
		1	24	19.77	19.80	20.10	0-2	2
		12	0	18.84	18.77	19.06	0-3	3
		12	6	18.91	18.78	19.07	0-3	3
		12	11	18.83	18.74	19.00	0-3	3
		25	0	18.74	18.74	18.98	0-3	3
	256QAM	1	0	16.91	16.71	17.05	0-5	5
		1	12	17.01	17.04	17.27	0-5	5
		1	24	16.84	16.95	17.01	0-5	5
		12	0	16.89	16.77	17.02	0-5	5
		12	6	16.85	16.76	17.11	0-5	5
		12	11	16.74	16.70	16.95	0-5	5
		25	0	16.85	16.73	17.02	0-5	5

LTE Band 2 _ 10 ㎒ Bandwidth

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	21.44	21.68	21.71	0	0
		1	24	21.65	21.70	21.78	0	0
		1	49	21.44	21.48	21.94	0	0
		25	0	20.71	20.54	20.85	0-1	1
		25	12	20.85	20.77	20.94	0-1	1
		25	24	20.76	20.71	20.91	0-1	1
		50	0	20.76	20.67	20.82	0-1	1
	16QAM	1	0	20.68	20.73	21.18	0-1	1
		1	24	21.20	21.11	21.45	0-1	1
		1	49	20.97	20.86	21.31	0-1	1
		25	0	19.72	19.65	19.88	0-2	2
		25	12	19.79	19.79	19.89	0-2	2
		25	24	19.67	19.69	19.91	0-2	2
		50	0	19.65	19.65	19.83	0-2	2
	64QAM	1	0	19.66	19.59	20.09	0-2	2
		1	24	20.00	19.98	20.15	0-2	2
		1	49	19.66	19.60	20.25	0-2	2
		25	0	18.78	18.63	18.86	0-3	3
		25	12	18.82	18.74	18.97	0-3	3
		25	24	18.71	18.65	18.92	0-3	3
		50	0	18.77	18.72	18.83	0-3	3
	256QAM	1	0	16.53	16.46	16.59	0-5	5
		1	24	17.19	17.13	16.88	0-5	5
		1	49	16.88	16.89	16.69	0-5	5
		25	0	16.76	16.51	16.86	0-5	5
		25	12	16.92	16.83	17.01	0-5	5
		25	24	16.75	16.70	16.93	0-5	5
		50	0	16.69	16.69	16.82	0-5	5

LTE Band 2 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18675 Ch. 1857.5 ㎒	18900 Ch. 1880 ㎒	19125 Ch. 1902.5 ㎒		
15 ㎒	QPSK	1	0	21.39	21.46	21.76	0	0
		1	36	21.56	21.57	21.83	0	0
		1	74	21.50	21.66	21.84	0	0
		36	0	20.69	20.49	20.72	0-1	1
		36	18	20.75	20.70	20.85	0-1	1
		36	39	20.74	20.75	20.93	0-1	1
		75	0	20.69	20.62	20.82	0-1	1
	16QAM	1	0	20.76	21.04	20.96	0-1	1
		1	36	20.95	20.82	21.07	0-1	1
		1	74	20.92	21.04	21.27	0-1	1
		36	0	19.74	19.52	19.80	0-2	2
		36	18	19.79	19.76	19.83	0-2	2
		36	39	19.72	19.67	20.00	0-2	2
		75	0	19.71	19.67	19.89	0-2	2
	64QAM	1	0	19.70	19.78	20.07	0-2	2
		1	36	19.75	19.72	19.94	0-2	2
		1	74	19.88	19.91	20.03	0-2	2
		36	0	18.72	18.61	18.82	0-3	3
		36	18	18.76	18.74	18.93	0-3	3
		36	39	18.82	18.76	19.00	0-3	3
		75	0	18.76	18.67	18.83	0-3	3
	256QAM	1	0	16.80	16.63	16.69	0-5	5
		1	36	16.90	16.97	16.98	0-5	5
		1	74	16.83	16.78	17.05	0-5	5
		36	0	16.68	16.54	16.81	0-5	5
		36	18	16.78	16.73	16.90	0-5	5
		36	39	16.72	16.76	16.91	0-5	5
		75	0	16.73	16.75	16.84	0-5	5

LTE Band 2 _ 20 ㎒ Bandwidth

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	21.64	21.59	21.79	0	0
		1	49	21.86	21.57	21.81	0	0
		1	99	21.59	21.57	21.65	0	0
		50	0	20.66	20.53	20.72	0-1	1
		50	25	20.93	20.70	20.89	0-1	1
		50	49	20.70	20.67	20.87	0-1	1
		100	0	20.69	20.73	20.78	0-1	1
	16QAM	1	0	20.91	20.91	21.13	0-1	1
		1	49	20.75	20.88	21.13	0-1	1
		1	99	20.97	21.02	21.12	0-1	1
		50	0	19.67	19.51	19.68	0-2	2
		50	25	19.77	19.73	19.94	0-2	2
		50	49	19.70	19.75	19.91	0-2	2
		100	0	19.72	19.61	19.76	0-2	2
	64QAM	1	0	19.83	19.81	19.83	0-2	2
		1	49	19.69	19.80	20.07	0-2	2
		1	99	19.83	19.93	19.98	0-2	2
		50	0	18.58	18.59	18.73	0-3	3
		50	25	18.75	18.71	18.95	0-3	3
		50	49	18.75	18.75	18.97	0-3	3
		100	0	18.74	18.62	18.79	0-3	3
	256QAM	1	0	16.36	16.45	16.50	0-5	5
		1	49	16.97	16.89	16.96	0-5	5
		1	99	16.60	16.78	16.99	0-5	5
		50	0	16.59	16.55	16.68	0-5	5
		50	25	16.75	16.67	16.93	0-5	5
		50	49	16.73	16.81	16.79	0-5	5
		100	0	16.74	16.59	16.77	0-5	5

[LTE Band 4 Conducted Power]

LTE Band 4 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19957 Ch. 1710.7 ㎒	20175 Ch. 1732.5 ㎒	20393 Ch. 1754.3 ㎒		
1.4 ㎒	QPSK	1	0	23.79	23.53	23.21	0	0
		1	3	23.90	23.06	23.24	0	0
		1	5	23.85	23.43	23.05	0	0
		3	0	23.79	23.49	23.16	0	0
		3	1	23.85	22.58	23.21	0	0
		3	3	23.82	22.87	23.09	0	0
		6	0	22.97	22.18	22.23	0-1	1
	16QAM	1	0	23.25	22.90	22.68	0-1	1
		1	3	23.25	22.88	22.46	0-1	1
		1	5	23.32	22.90	22.39	0-1	1
		3	0	23.01	22.69	22.28	0-1	1
		3	1	23.00	22.64	22.28	0-1	1
		3	3	23.11	22.65	22.36	0-1	1
		6	0	22.10	21.68	21.25	0-2	2
	64QAM	1	0	21.32	21.76	21.43	0-2	2
		1	3	21.44	21.83	21.36	0-2	2
		1	5	21.37	21.72	21.39	0-2	2
		3	0	21.24	21.76	21.38	0-2	2
		3	1	21.28	21.72	21.35	0-2	2
		3	3	21.29	21.72	21.36	0-2	2
		6	0	20.17	20.66	20.30	0-3	3
	256QAM	1	0	19.22	18.90	18.39	0-5	5
		1	3	19.12	18.85	18.39	0-5	5
		1	5	18.96	18.59	18.25	0-5	5
		3	0	19.15	18.71	18.32	0-5	5
		3	1	19.12	18.75	18.36	0-5	5
		3	3	18.99	18.75	18.27	0-5	5
		6	0	18.95	18.66	18.20	0-5	5

LTE Band 4 _ 3 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19965 Ch. 1711.5 ㎒	20175 Ch. 1732.5 ㎒	20385 Ch. 1753.5 ㎒		
3 ㎒	QPSK	1	0	23.94	23.59	23.22	0	0
		1	7	23.89	23.56	23.18	0	0
		1	14	23.90	23.43	23.13	0	0
		8	0	23.00	22.68	22.35	0-1	1
		8	3	23.07	22.72	22.38	0-1	1
		8	7	22.98	22.59	22.23	0-1	1
		15	0	23.03	22.65	22.33	0-1	1
	16QAM	1	0	23.36	22.92	22.64	0-1	1
		1	7	23.28	22.88	22.46	0-1	1
		1	14	23.25	22.82	22.58	0-1	1
		8	0	22.12	21.81	21.41	0-2	2
		8	3	22.18	21.79	21.48	0-2	2
		8	7	22.14	21.66	21.43	0-2	2
		15	0	22.03	21.67	21.35	0-2	2
	64QAM	1	0	21.34	21.90	21.44	0-2	2
		1	7	21.45	21.80	21.49	0-2	2
		1	14	21.56	21.68	21.28	0-2	2
		8	0	20.23	20.75	20.34	0-3	3
		8	3	20.32	20.71	20.34	0-3	3
		8	7	20.33	20.58	20.33	0-3	3
		15	0	20.30	20.74	20.34	0-3	3
	256QAM	1	0	19.07	18.78	18.37	0-5	5
		1	7	19.01	18.78	18.57	0-5	5
		1	14	19.03	18.64	18.32	0-5	5
		8	0	19.06	18.70	18.30	0-5	5
		8	3	19.14	18.85	18.46	0-5	5
		8	7	19.15	18.69	18.34	0-5	5
		15	0	19.10	18.66	18.34	0-5	5

LTE Band 4 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19975 Ch. 1712.5 ㎒	20175 Ch. 1732.5 ㎒	20375 Ch. 1752.5 ㎒		
5 ㎒	QPSK	1	0	23.82	23.62	23.22	0	0
		1	12	23.94	23.72	23.30	0	0
		1	24	23.81	23.40	23.05	0	0
		12	0	23.06	22.66	22.29	0-1	1
		12	6	23.08	22.76	22.34	0-1	1
		12	11	23.01	22.58	22.31	0-1	1
		25	0	23.00	22.69	22.27	0-1	1
	16QAM	1	0	23.30	23.15	22.59	0-1	1
		1	12	23.16	22.94	22.53	0-1	1
		1	24	23.31	22.86	22.39	0-1	1
		12	0	22.06	21.80	21.44	0-2	2
		12	6	22.12	21.81	21.38	0-2	2
		12	11	22.03	21.64	21.34	0-2	2
		25	0	21.99	21.68	21.35	0-2	2
	64QAM	1	0	21.26	21.87	21.41	0-2	2
		1	12	21.52	21.76	21.56	0-2	2
		1	24	21.66	21.61	21.25	0-2	2
		12	0	20.19	20.76	20.36	0-3	3
		12	6	20.36	20.76	20.40	0-3	3
		12	11	20.39	20.66	20.30	0-3	3
		25	0	20.26	20.77	20.30	0-3	3
	256QAM	1	0	18.96	18.77	18.31	0-5	5
		1	12	19.33	18.85	18.28	0-5	5
		1	24	18.98	18.51	18.45	0-5	5
		12	0	19.02	18.66	18.29	0-5	5
		12	6	19.05	18.71	18.33	0-5	5
		12	11	18.95	18.59	18.25	0-5	5
		25	0	18.97	18.71	18.31	0-5	5

LTE Band 4 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20000 Ch. 1715 ㎒	20175 Ch. 1732.5 ㎒	20350 Ch. 1750 ㎒		
10 ㎒	QPSK	1	0	23.74	23.30	23.04	0	0
		1	24	23.83	23.53	23.10	0	0
		1	49	23.56	23.20	22.84	0	0
		25	0	22.94	22.75	22.33	0-1	1
		25	12	23.03	22.72	22.33	0-1	1
		25	24	22.93	22.53	22.24	0-1	1
		50	0	22.95	22.64	22.20	0-1	1
	16QAM	1	0	23.01	22.69	22.41	0-1	1
		1	24	23.28	23.12	22.63	0-1	1
		1	49	23.04	22.56	22.33	0-1	1
		25	0	21.93	21.62	21.23	0-2	2
		25	12	22.01	21.62	21.30	0-2	2
		25	24	21.91	21.48	21.22	0-2	2
		50	0	21.92	21.66	21.16	0-2	2
	64QAM	1	0	20.95	21.55	20.93	0-2	2
		1	24	21.67	21.74	21.32	0-2	2
		1	49	21.44	21.46	21.19	0-2	2
		25	0	20.15	20.68	20.34	0-3	3
		25	12	20.47	20.73	20.35	0-3	3
		25	24	20.46	20.50	20.27	0-3	3
		50	0	20.31	20.75	20.35	0-3	3
	256QAM	1	0	19.06	18.48	18.23	0-5	5
		1	24	19.31	18.72	17.98	0-5	5
		1	49	19.07	18.38	18.44	0-5	5
		25	0	18.98	18.69	18.29	0-5	5
		25	12	18.99	18.74	18.45	0-5	5
		25	24	18.88	18.53	18.25	0-5	5
		50	0	18.92	18.65	18.24	0-5	5

LTE Band 4 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20025 Ch. 1717.5 ㎒	20175 Ch. 1732.5 ㎒	20325 Ch. 1747.5 ㎒		
15 ㎒	QPSK	1	0	23.66	23.51	23.24	0	0
		1	36	23.76	23.63	23.11	0	0
		1	74	23.66	23.25	23.07	0	0
		36	0	22.88	22.61	22.31	0-1	1
		36	18	23.00	22.66	22.40	0-1	1
		36	39	22.89	22.50	22.21	0-1	1
		75	0	22.92	22.58	22.30	0-1	1
	16QAM	1	0	22.91	22.76	22.39	0-1	1
		1	36	23.14	22.89	22.55	0-1	1
		1	74	22.90	22.60	22.42	0-1	1
		36	0	21.94	21.60	21.28	0-2	2
		36	18	21.96	21.67	21.31	0-2	2
		36	39	21.89	21.48	21.21	0-2	2
		75	0	21.81	21.60	21.27	0-2	2
	64QAM	1	0	21.39	21.76	21.37	0-2	2
		1	36	21.77	22.02	21.51	0-2	2
		1	74	21.80	21.48	21.30	0-2	2
		36	0	20.40	20.66	20.32	0-3	3
		36	18	20.55	20.64	20.35	0-3	3
		36	39	20.68	20.48	20.26	0-3	3
		75	0	20.48	20.65	20.34	0-3	3
	256QAM	1	0	18.87	18.69	18.34	0-5	5
		1	36	19.21	18.81	18.33	0-5	5
		1	74	18.98	18.53	18.29	0-5	5
		36	0	18.92	18.65	18.37	0-5	5
		36	18	19.04	18.67	18.33	0-5	5
		36	39	18.81	18.57	18.27	0-5	5
		75	0	18.78	18.69	18.32	0-5	5

LTE Band 4 _ 20 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 20175 Ch. 1732.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
20 ㎒	QPSK	1	0	23.47	0	0
		1	49	23.55	0	0
		1	99	23.29	0	0
		50	0	22.61	0-1	1
		50	25	22.64	0-1	1
		50	49	22.41	0-1	1
		100	0	22.57	0-1	1
	16QAM	1	0	22.66	0-1	1
		1	49	22.84	0-1	1
		1	99	22.39	0-1	1
		50	0	21.59	0-2	2
		50	25	21.63	0-2	2
		50	49	21.48	0-2	2
		100	0	21.56	0-2	2
	64QAM	1	0	21.67	0-2	2
		1	49	21.74	0-2	2
		1	99	21.31	0-2	2
		50	0	20.55	0-3	3
		50	25	20.65	0-3	3
		50	49	20.49	0-3	3
		100	0	20.57	0-3	3
	256QAM	1	0	18.52	0-5	5
		1	49	18.64	0-5	5
		1	99	18.54	0-5	5
		50	0	18.69	0-5	5
		50	25	18.68	0-5	5
		50	49	18.50	0-5	5
		100	0	18.60	0-5	5

[LTE Band 5 Conducted Power]

LTE Band 5 _ 1.4 ㎒ Bandwidth

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	23.52	23.86	23.82	0	0
		1	3	23.62	23.97	23.86	0	0
		1	5	23.75	23.87	23.89	0	0
		3	0	23.59	23.86	23.82	0	0
		3	1	23.69	23.90	23.88	0	0
		3	3	23.58	23.90	23.82	0	0
		6	0	22.68	22.99	22.96	0-1	1
	16QAM	1	0	23.08	23.06	23.11	0-1	1
		1	3	23.14	23.43	23.25	0-1	1
		1	5	23.10	23.36	23.13	0-1	1
		3	0	22.86	23.27	23.23	0-1	1
		3	1	22.93	23.20	23.07	0-1	1
		3	3	22.84	23.13	23.05	0-1	1
		6	0	21.92	22.16	22.09	0-2	2
	64QAM	1	0	21.84	22.12	22.06	0-2	2
		1	3	22.02	22.28	22.30	0-2	2
		1	5	21.99	22.19	22.46	0-2	2
		3	0	21.84	22.16	22.20	0-2	2
		3	1	21.79	21.98	21.96	0-2	2
		3	3	21.80	22.04	21.96	0-2	2
		6	0	20.82	20.99	20.99	0-3	3
	256QAM	1	0	18.79	19.06	18.97	0-5	5
		1	3	18.96	19.10	18.95	0-5	5
		1	5	18.88	19.02	18.99	0-5	5
		3	0	18.85	19.08	19.01	0-5	5
		3	1	18.99	19.14	19.13	0-5	5
		3	3	18.95	19.10	19.04	0-5	5
		6	0	18.85	19.00	18.90	0-5	5

LTE Band 5 _ 3 ㎒ Bandwidth

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	23.50	23.91	23.81	0	0
		1	7	23.54	23.94	23.93	0	0
		1	14	23.71	23.90	23.94	0	0
		8	0	22.85	23.06	22.92	0-1	1
		8	3	22.87	23.09	22.99	0-1	1
		8	7	22.85	23.09	23.03	0-1	1
		15	0	22.87	23.02	22.98	0-1	1
	16QAM	1	0	23.20	23.40	23.22	0-1	1
		1	7	23.05	23.17	23.29	0-1	1
		1	14	23.09	23.52	23.57	0-1	1
		8	0	21.87	22.09	22.04	0-2	2
		8	3	21.95	22.17	22.03	0-2	2
		8	7	21.96	22.15	22.09	0-2	2
		15	0	21.87	22.12	21.90	0-2	2
	64QAM	1	0	21.91	22.16	21.99	0-2	2
		1	7	21.97	22.31	22.20	0-2	2
		1	14	21.90	22.22	22.05	0-2	2
		8	0	20.78	20.97	20.94	0-3	3
		8	3	20.95	21.11	21.01	0-3	3
		8	7	20.93	21.14	20.99	0-3	3
		15	0	20.95	21.16	20.96	0-3	3
	256QAM	1	0	18.90	19.05	18.91	0-5	5
		1	7	18.91	19.25	19.08	0-5	5
		1	14	18.97	19.15	19.11	0-5	5
		8	0	18.91	18.98	18.95	0-5	5
		8	3	18.92	19.12	18.94	0-5	5
		8	7	18.92	19.04	19.05	0-5	5
		15	0	18.91	19.06	18.93	0-5	5

LTE Band 5 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20425 Ch. 826.5 ㎒	20525 Ch. 836.5 ㎒	20625 Ch. 846.5 ㎒		
5 ㎒	QPSK	1	0	23.66	23.81	23.81	0	0
		1	12	23.64	23.96	23.87	0	0
		1	24	23.68	23.95	23.91	0	0
		12	0	22.78	22.98	22.94	0-1	1
		12	6	22.91	23.12	23.00	0-1	1
		12	11	22.89	23.08	23.04	0-1	1
		25	0	22.85	23.01	22.95	0-1	1
	16QAM	1	0	23.10	23.25	23.27	0-1	1
		1	12	23.14	23.23	23.16	0-1	1
		1	24	23.04	23.24	23.49	0-1	1
		12	0	21.89	22.06	22.01	0-2	2
		12	6	21.99	22.19	22.11	0-2	2
		12	11	21.94	22.11	22.14	0-2	2
		25	0	21.94	22.08	22.01	0-2	2
	64QAM	1	0	21.94	22.12	22.00	0-2	2
		1	12	22.12	22.45	22.17	0-2	2
		1	24	21.98	22.15	22.09	0-2	2
		12	0	20.94	21.05	20.96	0-3	3
		12	6	20.96	21.11	21.03	0-3	3
		12	11	20.91	21.15	21.07	0-3	3
		25	0	20.91	21.01	21.06	0-3	3
	256QAM	1	0	18.80	18.98	19.05	0-5	5
		1	12	18.95	19.14	19.11	0-5	5
		1	24	18.99	19.09	19.05	0-5	5
		12	0	18.87	18.92	18.89	0-5	5
		12	6	18.96	19.11	19.00	0-5	5
		12	11	18.92	19.02	19.02	0-5	5
		25	0	18.87	19.02	18.97	0-5	5

LTE Band 5 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 20525 Ch. 836.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	24.23	0	0
		1	24	24.05	0	0
		1	49	24.35	0	0
		25	0	23.27	0-1	1
		25	12	23.38	0-1	1
		25	24	23.31	0-1	1
		50	0	23.26	0-1	1
	16QAM	1	0	23.47	0-1	1
		1	24	23.86	0-1	1
		1	49	23.67	0-1	1
		25	0	21.98	0-2	2
		25	12	22.11	0-2	2
		25	24	21.97	0-2	2
		50	0	21.87	0-2	2
	64QAM	1	0	22.22	0-2	2
		1	24	22.37	0-2	2
		1	49	22.29	0-2	2
		25	0	21.02	0-3	3
		25	12	21.14	0-3	3
		25	24	21.02	0-3	3
		50	0	20.97	0-3	3
	256QAM	1	0	18.68	0-5	5
		1	24	19.15	0-5	5
		1	49	18.77	0-5	5
		25	0	18.86	0-5	5
		25	12	19.08	0-5	5
		25	24	18.96	0-5	5
		50	0	18.98	0-5	5

[LTE Band 12 Conducted Power]

LTE Band 12 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23017 Ch. 699.7 ㎒	23095 Ch. 707.5 ㎒	23173 Ch. 715.3 ㎒		
1.4 ㎒	QPSK	1	0	24.04	24.03	24.13	0	0
		1	3	24.10	24.25	24.26	0	0
		1	5	24.09	24.01	24.11	0	0
		3	0	23.95	24.10	24.12	0	0
		3	1	24.11	24.11	24.21	0	0
		3	3	24.02	24.19	24.05	0	0
		6	0	23.19	23.28	23.26	0-1	1
	16QAM	1	0	23.46	23.45	23.40	0-1	1
		1	3	23.40	23.57	23.59	0-1	1
		1	5	23.40	23.59	23.27	0-1	1
		3	0	23.19	23.51	23.53	0-1	1
		3	1	23.43	23.34	23.49	0-1	1
		3	3	23.41	23.32	23.37	0-1	1
		6	0	22.34	22.45	22.44	0-2	2
	64QAM	1	0	22.33	22.30	22.39	0-2	2
		1	3	22.40	22.50	22.64	0-2	2
		1	5	22.41	22.54	22.56	0-2	2
		3	0	22.23	22.28	22.48	0-2	2
		3	1	22.32	22.33	22.44	0-2	2
		3	3	22.28	22.36	22.40	0-2	2
		6	0	21.19	21.33	21.29	0-3	3
	256QAM	1	0	19.31	19.28	19.36	0-5	5
		1	3	19.26	19.49	19.45	0-5	5
		1	5	19.31	19.52	19.33	0-5	5
		3	0	19.24	19.31	19.44	0-5	5
		3	1	19.28	19.40	19.51	0-5	5
		3	3	19.28	19.45	19.41	0-5	5
		6	0	19.18	19.38	19.30	0-5	5

LTE Band 12 _ 3 ㎒ Bandwidth

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	24.17	24.19	24.29	0	0
		1	7	24.10	24.20	24.23	0	0
		1	14	24.06	24.15	24.23	0	0
		8	0	23.35	23.32	23.37	0-1	1
		8	3	23.25	23.46	23.31	0-1	1
		8	7	23.20	23.39	23.37	0-1	1
		15	0	23.27	23.37	23.32	0-1	1
	16QAM	1	0	23.52	23.66	23.70	0-1	1
		1	7	23.34	23.50	23.63	0-1	1
		1	14	23.44	23.68	23.76	0-1	1
		8	0	22.38	22.44	22.47	0-2	2
		8	3	22.44	22.50	22.41	0-2	2
		8	7	22.28	22.39	22.48	0-2	2
		15	0	22.26	22.45	22.31	0-2	2
	64QAM	1	0	22.45	22.43	22.41	0-2	2
		1	7	22.39	22.51	22.58	0-2	2
		1	14	22.56	22.74	22.90	0-2	2
		8	0	21.28	21.32	21.38	0-3	3
		8	3	21.35	21.49	21.45	0-3	3
		8	7	21.32	21.44	21.45	0-3	3
		15	0	21.26	21.45	21.38	0-3	3
	256QAM	1	0	19.39	19.40	19.40	0-5	5
		1	7	19.29	19.52	19.44	0-5	5
		1	14	19.26	19.43	19.46	0-5	5
		8	0	19.27	19.31	19.38	0-5	5
		8	3	19.32	19.41	19.45	0-5	5
		8	7	19.31	19.46	19.38	0-5	5
		15	0	19.25	19.40	19.33	0-5	5

LTE Band 12 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23035 Ch. 701.5 ㎒	23095 Ch. 707.5 ㎒	23155 Ch. 713.5 ㎒		
5 ㎒	QPSK	1	0	24.04	24.20	24.24	0	0
		1	12	23.99	24.29	24.33	0	0
		1	24	24.08	24.26	24.14	0	0
		12	0	23.20	23.42	23.37	0-1	1
		12	6	23.27	23.42	23.38	0-1	1
		12	11	23.33	23.38	23.40	0-1	1
		25	0	23.28	23.27	23.34	0-1	1
	16QAM	1	0	23.56	23.62	23.68	0-1	1
		1	12	23.44	23.71	23.68	0-1	1
		1	24	23.62	23.73	23.82	0-1	1
		12	0	22.35	22.42	22.47	0-2	2
		12	6	22.41	22.57	22.44	0-2	2
		12	11	22.36	22.46	22.45	0-2	2
		25	0	22.32	22.34	22.35	0-2	2
	64QAM	1	0	22.39	22.45	22.53	0-2	2
		1	12	22.33	22.46	22.53	0-2	2
		1	24	22.39	22.60	22.66	0-2	2
		12	0	21.26	21.42	21.39	0-3	3
		12	6	21.37	21.43	21.46	0-3	3
		12	11	21.34	21.43	21.46	0-3	3
		25	0	21.33	21.38	21.36	0-3	3
	256QAM	1	0	19.38	19.39	19.46	0-5	5
		1	12	19.50	19.37	19.40	0-5	5
		1	24	19.33	19.41	19.41	0-5	5
		12	0	19.21	19.36	19.42	0-5	5
		12	6	19.24	19.50	19.34	0-5	5
		12	11	19.20	19.47	19.42	0-5	5
		25	0	19.28	19.37	19.34	0-5	5

LTE Band 12 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 23095 Ch. 707.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	24.12	0	0
		1	24	24.15	0	0
		1	49	24.26	0	0
		25	0	23.22	0-1	1
		25	12	23.38	0-1	1
		25	24	23.34	0-1	1
		50	0	23.32	0-1	1
	16QAM	1	0	23.79	0-1	1
		1	24	23.98	0-1	1
		1	49	23.73	0-1	1
		25	0	22.35	0-2	2
		25	12	22.37	0-2	2
		25	24	22.29	0-2	2
		50	0	22.25	0-2	2
	64QAM	1	0	22.55	0-2	2
		1	24	22.44	0-2	2
		1	49	22.61	0-2	2
		25	0	21.29	0-3	3
		25	12	21.38	0-3	3
		25	24	21.40	0-3	3
		50	0	21.33	0-3	3
	256QAM	1	0	19.05	0-5	5
		1	24	19.33	0-5	5
		1	49	19.42	0-5	5
		25	0	19.20	0-5	5
		25	12	19.34	0-5	5
		25	24	19.36	0-5	5
		50	0	19.34	0-5	5

[LTE Band 17 Conducted Power]

LTE Band 17 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
					23790 710 MHz			
5 ㎒	QPSK	1	0		24.18		0	0
		1	12		24.30		0	0
		1	24		24.19		0	0
		12	0		23.29		0-1	1
		12	6		23.35		0-1	1
		12	11		23.39		0-1	1
		25	0		23.28		0-1	1
	16QAM	1	0		23.68		0-1	1
		1	12		23.53		0-1	1
		1	24		23.62		0-1	1
		12	0		22.39		0-2	2
		12	6		22.40		0-2	2
		12	11		22.37		0-2	2
		25	0		22.36		0-2	2
	64QAM	1	0		22.38		0-2	2
		1	12		22.54		0-2	2
		1	24		22.45		0-2	2
		12	0		21.34		0-3	3
		12	6		21.35		0-3	3
		12	11		21.40		0-3	3
		25	0		21.31		0-3	3
	256QAM	1	0		19.33		0-5	5
		1	12		19.51		0-5	5
		1	24		19.45		0-5	5
		12	0		19.33		0-5	5
		12	6		19.43		0-5	5
		12	11		19.38		0-5	5
		25	0		19.32		0-5	5

LTE Band 17 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm] 23790 710 MHz	MPR Allowed Per 3GPP [dB]	MPR [dB]
10 ㎒	QPSK	1	0	24.19	0	0
		1	24	24.15	0	0
		1	49	24.02	0	0
		25	0	23.31	0-1	1
		25	12	23.22	0-1	1
		25	24	23.26	0-1	1
		50	0	23.27	0-1	1
	16QAM	1	0	23.85	0-1	1
		1	24	23.58	0-1	1
		1	49	23.92	0-1	1
		25	0	22.34	0-2	2
		25	12	22.33	0-2	2
		25	24	22.36	0-2	2
		50	0	22.25	0-2	2
	64QAM	1	0	22.35	0-2	2
		1	24	22.43	0-2	2
		1	49	22.62	0-2	2
		25	0	21.26	0-3	3
		25	12	21.30	0-3	3
		25	24	21.42	0-3	3
		50	0	21.34	0-3	3
	256QAM	1	0	19.35	0-5	5
		1	24	19.47	0-5	5
		1	49	19.47	0-5	5
		25	0	19.21	0-5	5
		25	12	19.29	0-5	5
		25	24	19.42	0-5	5
		50	0	19.37	0-5	5

[LTE Band 26 Conducted Power]

LTE Band 26 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26697 Ch. 814.7 ㎒	26865 Ch. 831.5 ㎒	27033 Ch. 848.3 ㎒		
1.4 ㎒	QPSK	1	0	24.19	24.24	24.28	0	0
		1	3	24.12	24.49	24.48	0	0
		1	5	24.16	24.31	24.24	0	0
		3	0	24.12	24.24	24.38	0	0
		3	1	24.20	24.33	24.33	0	0
		3	3	24.15	24.27	24.38	0	0
		6	0	23.19	23.36	23.43	0-1	1
	16QAM	1	0	22.90	22.85	23.02	0-1	1
		1	3	23.10	23.09	23.23	0-1	1
		1	5	22.85	23.05	23.07	0-1	1
		3	0	22.97	23.21	23.03	0-1	1
		3	1	22.93	23.10	23.15	0-1	1
		3	3	22.99	23.05	23.23	0-1	1
		6	0	21.89	21.94	22.18	0-2	2
	64QAM	1	0	21.83	22.46	22.11	0-2	2
		1	3	21.94	22.52	22.20	0-2	2
		1	5	21.88	22.16	22.23	0-2	2
		3	0	21.96	22.03	22.17	0-2	2
		3	1	21.75	21.89	22.05	0-2	2
		3	3	21.66	21.96	21.96	0-2	2
		6	0	20.70	20.91	20.91	0-3	3
	256QAM	1	0	18.88	18.91	19.03	0-5	5
		1	3	18.85	19.05	19.05	0-5	5
		1	5	18.80	18.90	18.94	0-5	5
		3	0	18.79	18.99	18.96	0-5	5
		3	1	18.95	19.10	19.07	0-5	5
		3	3	18.86	18.99	19.07	0-5	5
		6	0	18.72	18.86	18.95	0-5	5

LTE Band 26 _ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26705 Ch. 815.5 MHz	26865 Ch. 831.5 MHz	27025 Ch. 847.5 MHz		
3 MHz	QPSK	1	0	24.02	24.32	24.42	0	0
		1	7	24.20	24.29	24.44	0	0
		1	14	24.09	24.41	24.45	0	0
		8	0	23.30	23.48	23.49	0-1	1
		8	3	23.35	23.51	23.57	0-1	1
		8	7	23.33	23.51	23.59	0-1	1
		15	0	23.31	23.46	23.48	0-1	1
	16QAM	1	0	23.21	23.33	23.23	0-1	1
		1	7	23.05	23.29	23.09	0-1	1
		1	14	23.07	23.26	23.64	0-1	1
		8	0	21.84	22.00	22.05	0-2	2
		8	3	21.90	22.03	22.11	0-2	2
		8	7	21.85	22.05	22.11	0-2	2
		15	0	21.82	21.94	21.99	0-2	2
	64QAM	1	0	21.85	22.09	22.08	0-2	2
		1	7	22.10	22.17	22.12	0-2	2
		1	14	21.95	22.23	22.41	0-2	2
		8	0	20.79	20.92	20.90	0-3	3
		8	3	20.81	20.93	21.12	0-3	3
		8	7	20.91	21.04	21.08	0-3	3
		15	0	20.86	20.98	20.98	0-3	3
	256QAM	1	0	18.82	18.97	19.02	0-5	5
		1	7	18.79	19.02	19.03	0-5	5
		1	14	18.99	18.99	18.99	0-5	5
		8	0	18.78	18.94	18.93	0-5	5
		8	3	18.87	18.96	19.04	0-5	5
		8	7	18.78	18.96	19.02	0-5	5
		15	0	18.78	18.91	18.94	0-5	5

LTE Band 26 _ 5 ㎒ Bandwidth

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	23.93	24.42	24.38	0	0
		1	12	24.26	24.45	24.35	0	0
		1	24	24.24	24.47	24.46	0	0
		12	0	23.30	23.39	23.41	0-1	1
		12	6	23.28	23.46	23.44	0-1	1
		12	11	23.33	23.47	23.56	0-1	1
		25	0	23.28	23.35	23.43	0-1	1
	16QAM	1	0	23.06	23.14	23.27	0-1	1
		1	12	22.90	23.20	23.28	0-1	1
		1	24	23.04	23.47	23.65	0-1	1
		12	0	21.79	22.07	22.09	0-2	2
		12	6	21.86	22.11	22.07	0-2	2
		12	11	21.88	22.09	22.18	0-2	2
		25	0	21.86	21.98	22.03	0-2	2
	64QAM	1	0	21.75	22.05	22.12	0-2	2
		1	12	21.99	22.11	22.08	0-2	2
		1	24	22.01	22.20	22.27	0-2	2
		12	0	20.79	20.98	21.02	0-3	3
		12	6	20.85	21.02	21.00	0-3	3
		12	11	20.89	21.02	21.08	0-3	3
		25	0	20.77	20.88	20.93	0-3	3
	256QAM	1	0	18.77	18.90	18.96	0-5	5
		1	12	18.91	19.11	19.06	0-5	5
		1	24	18.87	18.93	19.12	0-5	5
		12	0	18.72	18.86	18.95	0-5	5
		12	6	18.82	18.98	19.01	0-5	5
		12	11	18.81	18.99	19.01	0-5	5
		25	0	18.82	18.90	18.96	0-5	5

LTE Band 26 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26740 Ch. 819 ㎒	26865 Ch. 831.5 ㎒	26990 Ch. 844 ㎒		
10 ㎒	QPSK	1	0	24.25	24.37	24.67	0	0
		1	24	24.25	24.39	24.15	0	0
		1	49	24.06	24.26	24.26	0	0
		25	0	23.16	23.35	23.37	0-1	1
		25	12	23.43	23.44	23.44	0-1	1
		25	24	23.36	23.45	23.49	0-1	1
		50	0	23.34	23.32	23.39	0-1	1
	16QAM	1	0	23.41	23.66	23.57	0-1	1
		1	24	23.33	23.67	23.53	0-1	1
		1	49	23.63	23.78	23.72	0-1	1
		25	0	21.72	21.84	21.90	0-2	2
		25	12	21.92	21.96	21.94	0-2	2
		25	24	21.82	21.96	21.85	0-2	2
		50	0	21.83	21.84	21.95	0-2	2
	64QAM	1	0	21.96	22.06	22.37	0-2	2
		1	24	22.02	22.12	22.04	0-2	2
		1	49	22.28	22.27	22.35	0-2	2
		25	0	20.70	20.87	20.95	0-3	3
		25	12	20.87	20.91	21.00	0-3	3
		25	24	20.92	20.95	20.99	0-3	3
		50	0	20.88	20.88	20.90	0-3	3
	256QAM	1	0	18.52	18.69	18.83	0-5	5
		1	24	19.13	18.84	18.98	0-5	5
		1	49	18.80	18.85	18.78	0-5	5
		25	0	18.75	18.71	18.91	0-5	5
		25	12	18.94	18.93	19.01	0-5	5
		25	24	18.92	18.92	18.96	0-5	5
		50	0	18.84	18.88	18.88	0-5	5

LTE Band 26 _ 15 ㎒ Bandwidth

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	24.36	0	0
		1	36	24.20	0	0
		1	74	24.17	0	0
		36	0	23.31	0-1	1
		36	18	23.49	0-1	1
		36	39	23.34	0-1	1
		75	0	23.27	0-1	1
	16QAM	1	0	23.58	0-1	1
		1	36	23.41	0-1	1
		1	74	23.31	0-1	1
		36	0	21.79	0-2	2
		36	18	21.82	0-2	2
		36	39	21.82	0-2	2
		75	0	21.76	0-2	2
	64QAM	1	0	22.18	0-2	2
		1	36	22.00	0-2	2
		1	74	21.92	0-2	2
		36	0	20.73	0-3	3
		36	18	20.87	0-3	3
		36	39	20.99	0-3	3
		75	0	20.84	0-3	3
	256QAM	1	0	18.68	0-5	5
		1	36	18.94	0-5	5
		1	74	18.86	0-5	5
		36	0	18.77	0-5	5
		36	18	18.86	0-5	5
		36	39	18.80	0-5	5
		75	0	18.85	0-5	5

[LTE Band 41 Conducted Power] - Power Class 3

LTE Band 41 _ 5 ㎒ Bandwidth - Power Class 3

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
5 ㎒	QPSK	1	0	23.55	23.38	23.95	23.89	23.69	0	0
		1	12	23.39	23.45	24.01	23.96	23.65	0	0
		1	24	23.40	23.44	23.98	23.93	23.53	0	0
		12	0	22.61	22.47	23.05	23.01	22.72	0-1	1
		12	6	22.63	22.59	23.02	23.02	22.68	0-1	1
		12	11	22.57	22.55	23.08	23.04	22.64	0-1	1
		25	0	22.58	22.56	23.06	23.00	22.67	0-1	1
	16QAM	1	0	22.61	22.52	23.04	23.06	22.77	0-1	1
		1	12	22.67	22.71	23.15	23.15	22.82	0-1	1
		1	24	22.52	22.59	23.06	23.04	22.61	0-1	1
		12	0	21.53	21.40	21.92	21.93	21.61	0-2	2
		12	6	21.53	21.49	21.98	21.91	21.58	0-2	2
		12	11	21.47	21.47	21.98	21.94	21.56	0-2	2
		25	0	21.59	21.57	22.07	22.02	21.72	0-2	2
	64QAM	1	0	21.23	20.96	21.61	21.58	21.36	0-2	2
		1	12	21.15	21.05	21.69	21.61	21.37	0-2	2
		1	24	21.11	21.05	21.63	21.60	21.22	0-2	2
		12	0	20.54	20.47	21.02	20.96	20.72	0-3	3
		12	6	20.56	20.51	21.01	21.01	20.70	0-3	3
		12	11	20.55	20.50	21.05	21.05	20.64	0-3	3
		25	0	20.57	20.56	21.02	20.99	20.70	0-3	3
	256QAM	1	0	18.37	18.11	18.76	18.76	18.57	0-5	5
		1	12	18.35	18.23	18.83	18.79	18.52	0-5	5
		1	24	18.25	18.14	18.77	18.76	18.37	0-5	5
		12	0	18.71	18.58	19.14	19.11	18.86	0-5	5
		12	6	18.74	18.71	19.16	19.13	18.81	0-5	5
		12	11	18.70	18.69	19.20	19.16	18.78	0-5	5
		25	0	18.62	18.64	19.07	19.06	18.73	0-5	5

LTE Band 41 _ 10 MHz Bandwidth - Power Class 3

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 MHz	40185 Ch. 2549.5 MHz	40620 Ch. 2593.0 MHz	41055 Ch. 2636.5 MHz	41490 Ch. 2680.0 MHz		
10 MHz	QPSK	1	0	23.49	23.28	23.79	23.77	23.53	0	0
		1	24	23.45	23.55	24.06	23.94	23.64	0	0
		1	49	23.39	23.28	23.76	23.67	23.29	0	0
		25	0	22.61	22.41	22.95	22.95	22.73	0-1	1
		25	12	22.60	22.58	23.04	23.04	22.70	0-1	1
		25	24	22.46	22.51	22.99	22.97	22.57	0-1	1
		50	0	22.50	22.50	22.97	22.94	22.63	0-1	1
	16QAM	1	0	22.64	22.27	22.81	22.86	22.59	0-1	1
		1	24	22.64	22.51	23.09	23.09	22.76	0-1	1
		1	49	22.54	22.28	22.83	22.80	22.39	0-1	1
		25	0	21.58	21.42	21.98	21.96	21.71	0-2	2
		25	12	21.61	21.59	22.07	22.03	21.70	0-2	2
		25	24	21.46	21.49	21.99	21.96	21.54	0-2	2
		50	0	21.58	21.52	21.99	21.98	21.64	0-2	2
	64QAM	1	0	21.28	20.76	21.38	21.39	21.21	0-2	2
		1	24	21.16	21.12	21.69	21.68	21.37	0-2	2
		1	49	21.12	20.86	21.40	21.39	20.93	0-2	2
		25	0	20.58	20.40	20.92	20.95	20.71	0-3	3
		25	12	20.61	20.56	21.03	20.98	20.70	0-3	3
		25	24	20.48	20.45	21.00	20.97	20.55	0-3	3
		50	0	20.61	20.54	21.02	21.00	20.70	0-3	3
	256QAM	1	0	18.19	17.97	18.53	18.58	18.39	0-5	5
		1	24	18.38	18.22	18.86	18.84	18.56	0-5	5
		1	49	18.05	18.00	18.60	18.59	18.18	0-5	5
		25	0	18.64	18.57	19.06	19.06	18.83	0-5	5
		25	12	18.68	18.73	19.12	19.06	18.79	0-5	5
		25	24	18.54	18.63	19.11	19.08	18.70	0-5	5
		50	0	18.66	18.59	19.06	19.04	18.69	0-5	5

LTE Band 41 _ 15 ㎒ Bandwidth- Power Class 3

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
15 ㎒	QPSK	1	0	23.45	23.25	23.79	23.86	23.43	0	0
		1	36	23.37	23.43	23.90	23.91	23.57	0	0
		1	74	23.39	23.28	23.73	23.64	23.49	0	0
		36	0	22.53	22.37	22.91	22.98	22.69	0-1	1
		36	18	22.55	22.47	22.99	22.98	22.65	0-1	1
		36	39	22.45	22.41	22.98	22.90	22.62	0-1	1
		75	0	22.52	22.41	22.93	22.89	22.61	0-1	1
	16QAM	1	0	22.56	22.06	22.68	22.89	22.52	0-1	1
		1	36	22.42	22.17	22.88	22.90	22.55	0-1	1
		1	74	22.43	22.16	22.77	22.69	22.49	0-1	1
		36	0	21.45	21.30	21.84	21.93	21.63	0-2	2
		36	18	21.53	21.40	21.95	21.92	21.62	0-2	2
		36	39	21.38	21.37	21.96	21.91	21.55	0-2	2
		75	0	21.50	21.43	21.94	21.92	21.60	0-2	2
	64QAM	1	0	21.23	20.85	21.44	21.58	21.21	0-2	2
		1	36	21.18	21.16	21.73	21.70	21.40	0-2	2
		1	74	21.06	20.98	21.47	21.42	21.20	0-2	2
		36	0	20.54	20.36	20.96	21.01	20.75	0-3	3
		36	18	20.61	20.50	20.99	20.99	20.67	0-3	3
		36	39	20.45	20.41	21.01	20.95	20.61	0-3	3
		75	0	20.57	20.47	20.97	20.96	20.68	0-3	3
	256QAM	1	0	18.33	18.06	18.66	18.79	18.47	0-5	5
		1	36	18.42	18.29	18.88	18.86	18.54	0-5	5
		1	74	18.25	18.19	18.72	18.61	18.41	0-5	5
		36	0	18.60	18.41	18.97	19.02	18.72	0-5	5
		36	18	18.66	18.57	19.04	19.04	18.71	0-5	5
		36	39	18.52	18.50	18.99	18.98	18.66	0-5	5
		75	0	18.60	18.53	19.01	18.96	18.65	0-5	5

LTE Band 41 _ 20 ㎒ Bandwidth - Power Class 3

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	23.46	23.50	23.61	23.77	23.43	0	0
		1	49	23.41	23.60	24.00	23.92	23.60	0	0
		1	99	23.29	23.70	23.64	23.43	23.37	0	0
		50	0	22.47	22.46	22.97	22.95	22.62	0-1	1
		50	25	22.52	22.64	23.06	22.96	22.66	0-1	1
		50	49	22.40	22.55	23.05	22.90	22.60	0-1	1
		100	0	22.47	22.53	23.01	22.90	22.68	0-1	1
	16QAM	1	0	22.53	22.37	22.63	22.71	22.43	0-1	1
		1	49	22.45	22.43	23.02	22.91	22.60	0-1	1
		1	99	22.34	22.50	22.68	22.47	22.33	0-1	1
		50	0	21.50	21.48	22.03	21.99	21.70	0-2	2
		50	25	21.61	21.65	22.13	22.02	21.66	0-2	2
		50	49	21.41	21.54	22.11	21.93	21.59	0-2	2
		100	0	21.53	21.56	22.08	21.90	21.70	0-2	2
	64QAM	1	0	21.24	21.09	21.26	21.46	21.17	0-2	2
		1	49	21.15	21.21	21.71	21.69	21.37	0-2	2
		1	99	21.05	21.26	21.42	21.20	21.08	0-2	2
		50	0	20.54	20.45	20.83	21.01	20.72	0-3	3
		50	25	20.65	20.59	21.03	21.04	20.72	0-3	3
		50	49	20.47	20.51	21.03	20.95	20.65	0-3	3
		100	0	20.54	20.50	20.90	20.94	20.71	0-3	3
	256QAM	1	0	18.17	17.94	18.60	18.66	18.37	0-5	5
		1	49	18.46	18.39	19.02	18.91	18.56	0-5	5
		1	99	18.06	18.09	18.65	18.40	18.32	0-5	5
		50	0	18.61	18.47	19.12	19.05	18.73	0-5	5
		50	25	18.68	18.66	19.23	19.09	18.78	0-5	5
		50	49	18.52	18.53	19.21	18.98	18.70	0-5	5
		100	0	18.55	18.48	19.05	18.92	18.74	0-5	5

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

[LTE Band 41 Conducted Power] - Power Class 2

LTE Band 41 _ 5 ㎒ Bandwidth - Power Class 2

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
5 ㎒	QPSK	1	0	25.01	25.01	25.04	25.09	25.08	0	0
		1	12	24.99	25.02	25.12	25.03	25.11	0	0
		1	24	24.91	25.01	25.08	25.10	25.02	0	0
		12	0	24.10	24.02	24.51	24.48	24.23	0-1	1
		12	6	24.12	24.10	24.57	24.49	24.18	0-1	1
		12	11	24.09	24.10	24.61	24.49	24.10	0-1	1
		25	0	24.08	24.09	24.52	24.46	24.15	0-1	1
	16QAM	1	0	24.40	24.30	24.78	24.66	24.45	0-1	1
		1	12	24.41	24.49	24.94	24.78	24.49	0-1	1
		1	24	24.27	24.40	24.80	24.68	24.30	0-1	1
		12	0	23.12	22.98	23.54	23.45	23.20	0-2	2
		12	6	23.10	23.05	23.52	23.48	23.15	0-2	2
		12	11	23.08	23.01	23.59	23.52	23.11	0-2	2
		25	0	23.19	23.12	23.62	23.53	23.18	0-2	2
	64QAM	1	0	23.07	22.80	23.37	23.40	23.17	0-2	2
		1	12	23.01	22.82	23.44	23.42	23.11	0-2	2
		1	24	22.98	22.85	23.48	23.40	22.99	0-2	2
		12	0	22.11	21.98	22.52	22.47	22.23	0-3	3
		12	6	22.11	22.05	22.56	22.51	22.17	0-3	3
		12	11	22.09	22.04	22.60	22.52	22.11	0-3	3
		25	0	22.09	22.10	22.59	22.52	22.15	0-3	3
	256QAM	1	0	20.12	19.91	20.53	20.50	20.26	0-5	5
		1	12	20.09	20.01	20.58	20.52	20.19	0-5	5
		1	24	19.98	19.97	20.53	20.48	20.09	0-5	5
		12	0	20.22	20.12	20.66	20.61	20.37	0-5	5
		12	6	20.27	20.25	20.73	20.65	20.35	0-5	5
		12	11	20.26	20.19	20.73	20.66	20.27	0-5	5
		25	0	20.16	20.15	20.64	20.57	20.25	0-5	5

LTE Band 41 _ 10 ㎒ Bandwidth - Power Class 2

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
10 ㎒	QPSK	1	0	25.00	25.01	25.11	25.04	25.01	0	0
		1	24	25.02	25.06	25.19	25.07	25.02	0	0
		1	49	24.98	24.88	25.01	25.19	24.78	0	0
		25	0	24.11	23.94	24.50	24.41	24.20	0-1	1
		25	12	24.13	24.12	24.57	24.48	24.15	0-1	1
		25	24	24.04	24.00	24.54	24.43	24.04	0-1	1
		50	0	24.02	24.02	24.45	24.40	24.08	0-1	1
	16QAM	1	0	24.43	24.03	24.60	24.53	24.27	0-1	1
		1	24	24.39	24.24	24.89	24.84	24.47	0-1	1
		1	49	24.34	24.10	24.60	24.50	24.12	0-1	1
		25	0	23.15	22.92	23.53	23.45	23.21	0-2	2
		25	12	23.16	23.10	23.59	23.54	23.19	0-2	2
		25	24	23.02	23.01	23.56	23.51	23.03	0-2	2
		50	0	23.13	23.04	23.51	23.44	23.13	0-2	2
	64QAM	1	0	23.15	22.59	23.19	23.19	23.04	0-2	2
		1	24	23.06	22.86	23.51	23.46	23.16	0-2	2
		1	49	22.97	22.62	23.24	23.10	22.70	0-2	2
		25	0	22.14	21.95	22.52	22.47	22.24	0-3	3
		25	12	22.17	22.12	22.62	22.51	22.21	0-3	3
		25	24	22.04	22.02	22.56	22.48	22.07	0-3	3
		50	0	22.13	22.10	22.57	22.48	22.18	0-3	3
	256QAM	1	0	19.92	19.87	20.42	20.32	20.04	0-5	5
		1	24	20.11	20.17	20.67	20.56	20.16	0-5	5
		1	49	19.78	19.89	20.29	20.27	19.80	0-5	5
		25	0	20.20	20.06	20.56	20.50	20.25	0-5	5
		25	12	20.23	20.22	20.67	20.59	20.23	0-5	5
		25	24	20.08	20.09	20.65	20.60	20.14	0-5	5
		50	0	20.14	20.16	20.60	20.53	20.21	0-5	5

LTE Band 41 _ 15 ㎒ Bandwidth- Power Class 2

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
15 ㎒	QPSK	1	0	25.02	24.72	25.04	25.04	25.01	0	0
		1	36	24.93	24.96	25.11	25.01	25.05	0	0
		1	74	24.95	24.78	25.08	25.12	25.02	0	0
		36	0	24.02	23.86	24.47	24.45	24.14	0-1	1
		36	18	24.11	24.03	24.52	24.45	24.13	0-1	1
		36	39	23.97	23.88	24.57	24.43	24.06	0-1	1
		75	0	24.03	23.92	24.44	24.38	24.07	0-1	1
	16QAM	1	0	24.33	23.81	24.48	24.65	24.27	0-1	1
		1	36	24.21	24.05	24.68	24.60	24.33	0-1	1
		1	74	24.21	23.95	24.53	24.45	24.21	0-1	1
		36	0	23.03	22.84	23.43	23.42	23.14	0-2	2
		36	18	23.05	22.94	23.50	23.42	23.11	0-2	2
		36	39	22.94	22.89	23.49	23.38	23.01	0-2	2
		75	0	23.05	22.95	23.47	23.41	23.07	0-2	2
	64QAM	1	0	23.08	22.57	23.22	23.34	23.00	0-2	2
		1	36	23.00	22.84	23.47	23.38	23.10	0-2	2
		1	74	22.90	22.70	23.32	23.16	22.90	0-2	2
		36	0	22.07	21.87	22.50	22.46	22.18	0-3	3
		36	18	22.11	22.03	22.58	22.48	22.17	0-3	3
		36	39	21.99	21.96	22.56	22.47	22.09	0-3	3
		75	0	22.12	22.00	22.54	22.44	22.15	0-3	3
	256QAM	1	0	19.96	19.75	20.30	20.42	20.01	0-5	5
		1	36	20.05	20.01	20.60	20.52	20.19	0-5	5
		1	74	19.85	19.92	20.42	20.25	20.03	0-5	5
		36	0	20.10	19.90	20.52	20.47	20.21	0-5	5
		36	18	20.14	20.05	20.57	20.49	20.16	0-5	5
		36	39	20.02	20.00	20.55	20.45	20.08	0-5	5
		75	0	20.11	20.02	20.48	20.44	20.15	0-5	5

LTE Band 41 _ 20 ㎒ Bandwidth - Power Class 2

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	25.05	24.86	25.07	25.10	24.85	0	0
		1	49	24.94	24.92	25.11	25.09	25.06	0	0
		1	99	24.82	24.98	25.07	24.93	24.81	0	0
		50	0	23.95	23.83	24.45	24.42	24.10	0-1	1
		50	25	24.05	24.00	24.52	24.44	24.13	0-1	1
		50	49	23.92	23.87	24.47	24.34	24.05	0-1	1
		100	0	23.98	23.91	24.44	24.35	24.18	0-1	1
	16QAM	1	0	24.32	24.06	24.24	24.50	24.15	0-1	1
		1	49	24.27	24.07	24.69	24.66	24.33	0-1	1
		1	99	24.13	24.12	24.33	24.15	24.07	0-1	1
		50	0	23.04	22.85	23.41	23.44	23.16	0-2	2
		50	25	23.11	23.03	23.53	23.47	23.14	0-2	2
		50	49	22.94	22.88	23.48	23.36	23.05	0-2	2
		100	0	23.04	22.93	23.47	23.39	23.20	0-2	2
	64QAM	1	0	23.08	22.76	23.04	23.18	22.95	0-2	2
		1	49	23.00	22.84	23.50	23.39	23.09	0-2	2
		1	99	22.89	22.92	23.13	22.91	22.77	0-2	2
		50	0	22.07	21.92	22.49	22.49	22.21	0-3	3
		50	25	22.15	22.10	22.62	22.53	22.22	0-3	3
		50	49	22.01	21.93	22.57	22.44	22.15	0-3	3
		100	0	22.07	21.94	22.45	22.42	22.18	0-3	3
	256QAM	1	0	19.80	19.61	20.25	20.32	20.00	0-5	5
		1	49	20.06	20.10	20.60	20.52	20.19	0-5	5
		1	99	19.71	19.77	20.17	20.03	19.93	0-5	5
		50	0	20.07	19.94	20.54	20.51	20.22	0-5	5
		50	25	20.23	20.13	20.62	20.53	20.23	0-5	5
		50	49	20.05	20.00	20.62	20.44	20.16	0-5	5
		100	0	20.11	19.96	20.46	20.40	20.16	0-5	5

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

[LTE Band 66 Conducted Power]

LTE Band 66 _ 1.4 ㎒ Bandwidth

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	23.80	23.30	23.29	0	0
		1	3	23.85	23.36	23.40	0	0
		1	5	23.73	23.28	23.22	0	0
		3	0	23.77	23.27	23.25	0	0
		3	1	23.81	23.40	23.37	0	0
		3	3	23.80	23.27	23.30	0	0
		6	0	22.88	22.34	22.36	0-1	1
	16QAM	1	0	23.18	22.68	22.66	0-1	1
		1	3	23.24	22.88	22.71	0-1	1
		1	5	23.14	22.73	22.56	0-1	1
		3	0	23.04	22.53	22.47	0-1	1
		3	1	23.10	22.53	22.54	0-1	1
		3	3	23.05	22.46	22.48	0-1	1
		6	0	21.94	21.45	21.45	0-2	2
	64QAM	1	0	21.86	21.58	21.52	0-2	2
		1	3	22.03	21.53	21.65	0-2	2
		1	5	21.91	21.51	21.56	0-2	2
		3	0	21.77	21.47	21.43	0-2	2
		3	1	21.83	21.53	21.50	0-2	2
		3	3	21.87	21.43	21.35	0-2	2
		6	0	20.75	20.38	20.35	0-3	3
	256QAM	1	0	19.04	18.46	18.49	0-5	5
		1	3	19.05	18.50	18.54	0-5	5
		1	5	18.93	18.53	18.46	0-5	5
		3	0	19.00	18.58	18.51	0-5	5
		3	1	19.04	18.61	18.53	0-5	5
		3	3	18.96	18.50	18.39	0-5	5
		6	0	18.92	18.39	18.40	0-5	5

LTE Band 66 _ 3 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131987 Ch. 1711.5 ㎒	132322 Ch. 1745 ㎒	132657 Ch. 1778.5 ㎒		
3 ㎒	QPSK	1	0	23.96	23.42	23.37	0	0
		1	7	23.78	23.52	23.34	0	0
		1	14	23.82	23.39	23.31	0	0
		8	0	22.97	22.52	22.46	0-1	1
		8	3	22.93	22.46	22.44	0-1	1
		8	7	22.93	22.44	22.45	0-1	1
		15	0	22.96	22.43	22.42	0-1	1
	16QAM	1	0	23.30	22.75	22.76	0-1	1
		1	7	23.21	22.74	22.65	0-1	1
		1	14	23.09	22.70	22.68	0-1	1
		8	0	22.06	21.53	21.62	0-2	2
		8	3	22.07	21.54	21.58	0-2	2
		8	7	22.07	21.55	21.51	0-2	2
		15	0	21.95	21.47	21.49	0-2	2
	64QAM	1	0	21.87	21.64	21.70	0-2	2
		1	7	22.05	21.58	21.62	0-2	2
		1	14	22.07	21.55	21.55	0-2	2
		8	0	20.82	20.48	20.52	0-3	3
		8	3	20.93	20.53	20.49	0-3	3
		8	7	20.92	20.40	20.48	0-3	3
		15	0	20.88	20.50	20.47	0-3	3
	256QAM	1	0	19.00	18.63	18.61	0-5	5
		1	7	19.04	18.60	18.48	0-5	5
		1	14	18.99	18.44	18.49	0-5	5
		8	0	19.01	18.54	18.50	0-5	5
		8	3	19.07	18.51	18.48	0-5	5
		8	7	18.98	18.48	18.40	0-5	5
		15	0	19.02	18.47	18.44	0-5	5

LTE Band 66 _ 5 ㎒ Bandwidth

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	23.83	23.37	23.32	0	0
		1	12	23.84	23.34	23.38	0	0
		1	24	23.76	23.23	23.30	0	0
		12	0	22.95	22.46	22.44	0-1	1
		12	6	22.95	22.48	22.47	0-1	1
		12	11	22.89	22.37	22.46	0-1	1
		25	0	22.97	22.41	22.40	0-1	1
	16QAM	1	0	23.26	22.80	22.67	0-1	1
		1	12	23.30	22.56	22.66	0-1	1
		1	24	23.27	22.62	22.51	0-1	1
		12	0	22.05	21.51	21.51	0-2	2
		12	6	22.02	21.54	21.56	0-2	2
		12	11	21.92	21.43	21.44	0-2	2
		25	0	21.99	21.42	21.45	0-2	2
	64QAM	1	0	21.95	21.66	21.61	0-2	2
		1	12	22.03	21.63	21.65	0-2	2
		1	24	22.01	21.43	21.54	0-2	2
		12	0	20.90	20.51	20.53	0-3	3
		12	6	21.01	20.54	20.49	0-3	3
		12	11	20.90	20.44	20.42	0-3	3
		25	0	20.90	20.44	20.50	0-3	3
	256QAM	1	0	19.04	18.56	18.54	0-5	5
		1	12	19.02	18.59	18.50	0-5	5
		1	24	18.96	18.34	18.43	0-5	5
		12	0	19.01	18.57	18.46	0-5	5
		12	6	19.02	18.50	18.56	0-5	5
		12	11	18.92	18.40	18.47	0-5	5
		25	0	18.92	18.43	18.47	0-5	5

LTE Band 66 _ 10 ㎒ Bandwidth

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	23.58	23.11	23.05	0	0
		1	24	23.75	23.33	23.38	0	0
		1	49	23.57	23.07	23.13	0	0
		25	0	22.88	22.46	22.37	0-1	1
		25	12	23.05	22.54	22.46	0-1	1
		25	24	22.91	22.41	22.41	0-1	1
		50	0	22.96	22.44	22.36	0-1	1
	16QAM	1	0	23.01	22.64	22.66	0-1	1
		1	24	23.29	22.95	22.79	0-1	1
		1	49	23.08	22.56	22.67	0-1	1
		25	0	21.94	21.49	21.37	0-2	2
		25	12	22.01	21.46	21.48	0-2	2
		25	24	21.94	21.42	21.31	0-2	2
		50	0	21.94	21.44	21.25	0-2	2
	64QAM	1	0	21.91	21.41	21.44	0-2	2
		1	24	22.09	21.51	21.68	0-2	2
		1	49	21.98	21.43	21.41	0-2	2
		25	0	20.87	20.41	20.40	0-3	3
		25	12	21.06	20.47	20.42	0-3	3
		25	24	20.86	20.35	20.42	0-3	3
		50	0	20.95	20.48	20.40	0-3	3
	256QAM	1	0	18.65	18.26	18.17	0-5	5
		1	24	18.98	18.52	18.69	0-5	5
		1	49	18.87	18.35	18.33	0-5	5
		25	0	18.97	18.47	18.40	0-5	5
		25	12	19.03	18.57	18.44	0-5	5
		25	24	18.83	18.43	18.41	0-5	5
		50	0	18.88	18.45	18.39	0-5	5

LTE Band 66 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132047 Ch. 1717.5 ㎒	132322 Ch. 1745 ㎒	132597 Ch. 1772.5 ㎒		
15 ㎒	QPSK	1	0	23.76	23.31	23.38	0	0
		1	36	23.69	23.35	23.35	0	0
		1	74	23.62	23.21	23.24	0	0
		36	0	22.93	22.53	22.35	0-1	1
		36	18	22.93	22.49	22.45	0-1	1
		36	39	22.81	22.46	22.46	0-1	1
		75	0	22.86	22.49	22.37	0-1	1
	16QAM	1	0	23.01	22.79	22.67	0-1	1
		1	36	23.14	22.67	22.74	0-1	1
		1	74	22.94	22.52	22.68	0-1	1
		36	0	22.00	21.46	21.36	0-2	2
		36	18	22.00	21.54	21.45	0-2	2
		36	39	21.91	21.41	21.39	0-2	2
		75	0	21.82	21.40	21.34	0-2	2
	64QAM	1	0	21.91	21.68	21.58	0-2	2
		1	36	22.18	21.63	21.59	0-2	2
		1	74	21.90	21.41	21.68	0-2	2
		36	0	20.96	20.58	20.38	0-3	3
		36	18	21.00	20.54	20.49	0-3	3
		36	39	20.91	20.35	20.44	0-3	3
		75	0	20.80	20.48	20.38	0-3	3
	256QAM	1	0	18.99	18.54	18.32	0-5	5
		1	36	19.09	18.59	18.67	0-5	5
		1	74	18.81	18.34	18.42	0-5	5
		36	0	18.95	18.56	18.38	0-5	5
		36	18	19.01	18.57	18.55	0-5	5
		36	39	18.82	18.44	18.46	0-5	5
		75	0	18.91	18.54	18.40	0-5	5

LTE Band 66 _ 20 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 ㎒	132322 Ch. 1745 ㎒	132572 Ch. 1770 ㎒		
20 ㎒	QPSK	1	0	23.58	23.22	23.35	0	0
		1	49	23.84	23.17	23.36	0	0
		1	99	23.38	23.14	23.24	0	0
		50	0	22.90	22.48	22.34	0-1	1
		50	25	22.83	22.50	22.37	0-1	1
		50	49	22.78	22.43	22.42	0-1	1
		100	0	22.78	22.39	22.34	0-1	1
	16QAM	1	0	22.97	22.52	22.67	0-1	1
		1	49	23.12	22.63	22.54	0-1	1
		1	99	22.77	22.40	22.75	0-1	1
		50	0	21.87	21.46	21.30	0-2	2
		50	25	21.81	21.51	21.38	0-2	2
		50	49	21.67	21.44	21.34	0-2	2
		100	0	21.83	21.44	21.26	0-2	2
	64QAM	1	0	21.74	21.55	21.55	0-2	2
		1	49	22.07	21.52	21.54	0-2	2
		1	99	21.74	21.36	21.69	0-2	2
		50	0	20.92	20.51	20.41	0-3	3
		50	25	20.92	20.53	20.42	0-3	3
		50	49	20.79	20.39	20.37	0-3	3
		100	0	20.80	20.51	20.33	0-3	3
	256QAM	1	0	18.77	18.43	18.24	0-5	5
		1	49	18.95	18.52	18.33	0-5	5
		1	99	18.60	18.39	18.30	0-5	5
		50	0	18.93	18.52	18.42	0-5	5
		50	25	18.90	18.51	18.40	0-5	5
		50	49	18.78	18.47	18.43	0-5	5
		100	0	18.84	18.42	18.34	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(Hotspot activated)

[LTE Band 2 Conducted Power]

LTE Band 2 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18607 Ch. 1850.7 ㎒	18900 Ch. 1880 ㎒	19193 Ch. 1909.3 ㎒		
1.4 ㎒	QPSK	1	0	17.94	17.86	18.07	0	0
		1	3	17.99	17.93	18.11	0	0
		1	5	17.90	17.86	18.09	0	0
		3	0	18.03	17.93	18.14	0	0
		3	1	18.01	17.88	18.18	0	0
		3	3	17.95	17.86	18.11	0	0
		6	0	18.01	17.92	18.24	0-1	0
	16QAM	1	0	18.10	18.29	18.20	0-1	0
		1	3	18.26	18.34	18.29	0-1	0
		1	5	18.25	18.30	18.24	0-1	0
		3	0	18.20	18.06	18.31	0-1	0
		3	1	18.22	18.22	18.20	0-1	0
		3	3	18.21	18.10	18.28	0-1	0
		6	0	18.08	18.07	18.31	0-2	0
	64QAM	1	0	18.28	18.13	18.17	0-2	0
		1	3	18.23	18.25	18.20	0-2	0
		1	5	18.22	18.14	18.28	0-2	0
		3	0	18.19	18.09	18.18	0-2	0
		3	1	18.17	18.10	18.20	0-2	0
		3	3	18.17	18.07	18.28	0-2	0
		6	0	18.06	18.04	18.28	0-3	0
	256QAM	1	0	17.17	17.10	17.30	0-5	1
		1	3	17.24	17.17	17.30	0-5	1
		1	5	17.17	17.03	17.25	0-5	1
		3	0	17.19	17.07	17.38	0-5	1
		3	1	17.26	17.13	17.43	0-5	1
		3	3	17.21	17.06	17.33	0-5	1
		6	0	17.12	17.04	17.28	0-5	1

LTE Band 2 _ 3 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18615 Ch. 1851.5 ㎒	18900 Ch. 1880 ㎒	19185 Ch. 1908.5 ㎒		
3 ㎒	QPSK	1	0	18.12	18.05	18.23	0	0
		1	7	18.05	18.05	18.19	0	0
		1	14	17.95	17.95	18.13	0	0
		8	0	18.15	18.04	18.33	0-1	0
		8	3	18.15	18.11	18.35	0-1	0
		8	7	18.07	17.98	18.27	0-1	0
		15	0	18.10	18.04	18.10	0-1	0
	16QAM	1	0	18.52	18.34	18.26	0-1	0
		1	7	18.25	18.53	18.57	0-1	0
		1	14	18.27	18.21	18.22	0-1	0
		8	0	18.26	18.13	18.24	0-2	0
		8	3	18.27	18.22	18.26	0-2	0
		8	7	18.23	18.18	18.20	0-2	0
		15	0	18.16	18.08	18.14	0-2	0
	64QAM	1	0	18.37	18.21	18.23	0-2	0
		1	7	18.26	18.25	18.25	0-2	0
		1	14	18.29	18.16	18.13	0-2	0
		8	0	18.25	18.11	18.20	0-3	0
		8	3	18.31	18.13	18.28	0-3	0
		8	7	18.18	18.10	18.25	0-3	0
		15	0	18.18	18.08	18.26	0-3	0
	256QAM	1	0	17.37	17.24	17.24	0-5	1
		1	7	17.34	17.27	17.31	0-5	1
		1	14	17.20	17.16	17.46	0-5	1
		8	0	17.16	17.11	17.39	0-5	1
		8	3	17.23	17.16	17.41	0-5	1
		8	7	17.13	17.11	17.35	0-5	1
		15	0	17.19	17.12	17.29	0-5	1

LTE Band 2 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18625 Ch. 1852.5 ㎒	18900 Ch. 1880 ㎒	19175 Ch. 1907.5 ㎒		
5 ㎒	QPSK	1	0	17.99	17.91	18.22	0	0
		1	12	18.00	18.09	18.22	0	0
		1	24	17.94	17.89	18.16	0	0
		12	0	18.15	18.08	18.31	0-1	0
		12	6	18.20	18.09	18.38	0-1	0
		12	11	18.12	18.07	18.32	0-1	0
		25	0	18.11	18.09	18.28	0-1	0
	16QAM	1	0	18.40	18.34	18.43	0-1	0
		1	12	18.37	18.45	18.51	0-1	0
		1	24	18.25	18.29	18.57	0-1	0
		12	0	18.20	18.16	18.39	0-2	0
		12	6	18.27	18.16	18.36	0-2	0
		12	11	18.18	18.15	18.39	0-2	0
		25	0	18.12	18.06	18.31	0-2	0
	64QAM	1	0	18.23	18.19	18.44	0-2	0
		1	12	18.25	18.32	18.45	0-2	0
		1	24	18.18	18.06	18.30	0-2	0
		12	0	18.21	18.12	18.39	0-3	0
		12	6	18.21	18.20	18.46	0-3	0
		12	11	18.14	18.12	18.31	0-3	0
		25	0	18.09	18.11	18.36	0-3	0
	256QAM	1	0	17.26	17.04	17.37	0-5	1
		1	12	17.41	17.23	17.46	0-5	1
		1	24	17.14	17.08	17.43	0-5	1
		12	0	17.21	17.14	17.35	0-5	1
		12	6	17.23	17.12	17.36	0-5	1
		12	11	17.05	17.07	17.27	0-5	1
		25	0	17.11	17.04	17.34	0-5	1

LTE Band 2 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18650 Ch. 1855 ㎒	18900 Ch. 1880 ㎒	19150 Ch. 1905 ㎒		
10 ㎒	QPSK	1	0	17.73	17.82	18.24	0	0
		1	24	18.08	17.84	18.10	0	0
		1	49	17.81	17.69	18.23	0	0
		25	0	18.02	17.91	18.14	0-1	0
		25	12	18.19	18.06	18.31	0-1	0
		25	24	18.00	18.00	18.26	0-1	0
		50	0	18.07	18.00	18.17	0-1	0
	16QAM	1	0	17.95	17.88	18.67	0-1	0
		1	24	18.45	18.25	18.52	0-1	0
		1	49	18.21	18.00	18.63	0-1	0
		25	0	18.10	17.85	18.16	0-2	0
		25	12	18.09	18.13	18.25	0-2	0
		25	24	17.97	17.98	18.29	0-2	0
		50	0	18.06	17.93	18.18	0-2	0
	64QAM	1	0	17.82	17.73	18.33	0-2	0
		1	24	18.04	18.26	18.54	0-2	0
		1	49	17.92	17.98	18.67	0-2	0
		25	0	18.00	17.93	18.16	0-3	0
		25	12	18.28	18.15	18.37	0-3	0
		25	24	18.04	18.00	18.30	0-3	0
		50	0	18.10	18.02	18.21	0-3	0
	256QAM	1	0	16.78	16.69	17.02	0-5	1
		1	24	17.23	17.38	17.44	0-5	1
		1	49	16.99	17.23	17.29	0-5	1
		25	0	17.06	16.95	17.18	0-5	1
		25	12	17.21	17.11	17.16	0-5	1
		25	24	17.10	17.03	17.30	0-5	1
		50	0	17.01	17.00	17.11	0-5	1

LTE Band 2 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18675 Ch. 1857.5 ㎒	18900 Ch. 1880 ㎒	19125 Ch. 1902.5 ㎒		
15 ㎒	QPSK	1	0	17.89	17.85	18.04	0	0
		1	36	17.78	17.87	18.04	0	0
		1	74	17.86	17.97	18.01	0	0
		36	0	17.93	17.87	18.09	0-1	0
		36	18	18.04	17.96	18.21	0-1	0
		36	39	18.06	17.98	18.24	0-1	0
		75	0	17.98	17.98	18.19	0-1	0
	16QAM	1	0	18.17	18.17	18.22	0-1	0
		1	36	18.19	18.09	18.21	0-1	0
		1	74	18.21	18.25	18.32	0-1	0
		36	0	17.95	17.84	18.11	0-2	0
		36	18	18.00	17.96	18.21	0-2	0
		36	39	18.12	18.09	18.27	0-2	0
		75	0	18.02	17.95	18.12	0-2	0
	64QAM	1	0	18.04	18.20	18.36	0-2	0
		1	36	18.11	18.25	18.28	0-2	0
		1	74	18.12	18.23	18.38	0-2	0
		36	0	18.08	17.87	18.16	0-3	0
		36	18	18.09	18.01	18.16	0-3	0
		36	39	18.03	18.03	18.33	0-3	0
		75	0	18.12	18.01	18.15	0-3	0
	256QAM	1	0	17.03	16.92	17.13	0-5	1
		1	36	17.29	17.12	17.31	0-5	1
		1	74	17.09	17.23	17.36	0-5	1
		36	0	17.02	16.86	17.09	0-5	1
		36	18	17.15	17.03	17.18	0-5	1
		36	39	17.10	17.06	17.32	0-5	1
		75	0	17.11	16.98	17.14	0-5	1

LTE Band 2 _ 20 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 ㎒	18900 Ch. 1880 ㎒	19100 Ch. 1900 ㎒		
20 ㎒	QPSK	1	0	17.91	17.81	17.94	0	0
		1	49	18.40	17.75	18.04	0	0
		1	99	17.97	17.93	18.18	0	0
		50	0	17.97	17.78	17.99	0-1	0
		50	25	18.44	17.94	18.22	0-1	0
		50	49	18.05	18.04	18.12	0-1	0
		100	0	18.06	17.93	18.03	0-1	0
	16QAM	1	0	18.19	18.23	18.27	0-1	0
		1	49	18.24	18.06	18.34	0-1	0
		1	99	18.15	18.42	18.48	0-1	0
		50	0	17.93	17.87	17.99	0-2	0
		50	25	18.07	18.03	18.25	0-2	0
		50	49	17.98	17.95	18.22	0-2	0
		100	0	17.98	18.05	18.06	0-2	0
	64QAM	1	0	18.21	18.12	18.31	0-2	0
		1	49	18.21	18.06	18.36	0-2	0
		1	99	18.22	18.31	18.31	0-2	0
		50	0	17.95	17.88	18.04	0-3	0
		50	25	18.06	18.06	18.32	0-3	0
		50	49	18.08	18.05	18.26	0-3	0
		100	0	18.03	17.95	18.03	0-3	0
	256QAM	1	0	16.63	16.67	16.70	0-5	1
		1	49	17.24	17.20	17.17	0-5	1
		1	99	17.02	17.10	17.00	0-5	1
		50	0	16.95	16.83	17.02	0-5	1
		50	25	17.05	17.08	17.23	0-5	1
		50	49	17.02	17.09	17.29	0-5	1
		100	0	17.04	16.91	17.08	0-5	1

[LTE Band 4 Conducted Power]

LTE Band 4 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19957 Ch. 1710.7 ㎒	20175 Ch. 1732.5 ㎒	20393 Ch. 1754.3 ㎒		
1.4 ㎒	QPSK	1	0	18.98	18.66	18.34	0	0
		1	3	19.09	18.76	18.31	0	0
		1	5	19.04	18.67	18.34	0	0
		3	0	19.09	18.70	18.35	0	0
		3	1	19.15	18.72	18.42	0	0
		3	3	19.02	18.71	18.25	0	0
		6	0	19.17	18.79	18.37	0-1	0
	16QAM	1	0	19.40	18.97	18.74	0-1	0
		1	3	19.48	19.11	18.56	0-1	0
		1	5	19.36	19.00	18.77	0-1	0
		3	0	19.27	18.91	18.58	0-1	0
		3	1	19.36	18.96	18.67	0-1	0
		3	3	19.28	18.93	18.48	0-1	0
		6	0	19.17	18.92	18.38	0-2	0
	64QAM	1	0	19.21	18.91	18.48	0-2	0
		1	3	19.40	19.09	18.71	0-2	0
		1	5	19.26	18.64	18.37	0-2	0
		3	0	19.32	18.96	18.47	0-2	0
		3	1	19.32	18.92	18.53	0-2	0
		3	3	19.23	18.94	18.60	0-2	0
		6	0	19.15	18.83	18.41	0-3	0
	256QAM	1	0	18.95	18.37	17.95	0-5	0
		1	3	18.80	18.37	18.15	0-5	0
		1	5	18.66	18.35	17.96	0-5	0
		3	0	18.72	18.41	18.02	0-5	0
		3	1	18.80	18.46	18.01	0-5	0
		3	3	18.75	18.40	18.32	0-5	0
		6	0	18.67	18.32	17.90	0-5	0

LTE Band 4 _ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19965 Ch. 1711.5 MHz	20175 Ch. 1732.5 MHz	20385 Ch. 1753.5 MHz		
3 MHz	QPSK	1	0	19.10	18.84	18.48	0	0
		1	7	19.15	18.80	18.41	0	0
		1	14	19.05	18.66	18.43	0	0
		8	0	19.25	18.92	18.51	0-1	0
		8	3	19.22	18.88	18.55	0-1	0
		8	7	19.23	18.76	18.43	0-1	0
		15	0	19.19	18.84	18.52	0-1	0
	16QAM	1	0	19.24	19.16	18.83	0-1	0
		1	7	19.23	19.20	18.66	0-1	0
		1	14	19.29	19.13	18.83	0-1	0
		8	0	19.38	19.01	18.65	0-2	0
		8	3	19.36	18.93	18.67	0-2	0
		8	7	19.29	18.85	18.53	0-2	0
		15	0	19.27	18.88	18.57	0-2	0
	64QAM	1	0	19.36	19.05	18.74	0-2	0
		1	7	19.41	19.02	18.64	0-2	0
		1	14	19.29	18.85	18.58	0-2	0
		8	0	19.24	18.98	18.52	0-3	0
		8	3	19.28	18.92	18.60	0-3	0
		8	7	19.23	18.81	18.43	0-3	0
		15	0	19.29	18.95	18.53	0-3	0
	256QAM	1	0	18.83	18.56	18.22	0-5	0
		1	7	18.67	18.38	18.24	0-5	0
		1	14	18.84	18.28	17.99	0-5	0
		8	0	18.70	18.42	17.98	0-5	0
		8	3	18.86	18.38	18.12	0-5	0
		8	7	18.75	18.45	18.09	0-5	0
		15	0	18.71	18.38	18.08	0-5	0

LTE Band 4 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced 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	19.10	18.84	18.36	0	0
		1	12	19.21	18.82	18.43	0	0
		1	24	19.02	18.58	18.30	0	0
		12	0	19.23	18.88	18.52	0-1	0
		12	6	19.25	18.98	18.50	0-1	0
		12	11	19.17	18.78	18.48	0-1	0
		25	0	19.18	18.91	18.52	0-1	0
	16QAM	1	0	19.24	19.31	18.73	0-1	0
		1	12	19.25	19.10	18.76	0-1	0
		1	24	19.25	19.02	18.75	0-1	0
		12	0	19.32	18.96	18.57	0-2	0
		12	6	19.25	18.99	18.56	0-2	0
		12	11	19.28	18.84	18.52	0-2	0
		25	0	19.22	18.92	18.44	0-2	0
	64QAM	1	0	19.28	19.08	18.68	0-2	0
		1	12	19.35	18.95	18.65	0-2	0
		1	24	19.00	18.91	18.33	0-2	0
		12	0	19.30	18.96	18.58	0-3	0
		12	6	19.33	19.01	18.61	0-3	0
		12	11	19.25	18.87	18.47	0-3	0
		25	0	19.21	18.90	18.58	0-3	0
	256QAM	1	0	18.66	18.35	18.11	0-5	0
		1	12	19.02	18.61	18.17	0-5	0
		1	24	18.67	18.41	18.11	0-5	0
		12	0	18.72	18.41	18.02	0-5	0
		12	6	18.75	18.38	18.00	0-5	0
		12	11	18.68	18.31	17.99	0-5	0
		25	0	18.68	18.37	18.04	0-5	0

LTE Band 4 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20000 Ch. 1715 ㎒	20175 Ch. 1732.5 ㎒	20350 Ch. 1750 ㎒		
10 ㎒	QPSK	1	0	19.06	18.48	18.05	0	0
		1	24	19.12	18.72	18.58	0	0
		1	49	18.99	18.58	18.19	0	0
		25	0	19.05	18.88	18.44	0-1	0
		25	12	19.25	18.88	18.58	0-1	0
		25	24	19.12	18.66	18.48	0-1	0
		50	0	19.15	18.84	18.44	0-1	0
	16QAM	1	0	19.19	18.87	18.47	0-1	0
		1	24	19.16	19.11	18.98	0-1	0
		1	49	19.20	18.74	18.44	0-1	0
		25	0	19.10	18.88	18.48	0-2	0
		25	12	19.16	18.89	18.57	0-2	0
		25	24	19.14	18.73	18.43	0-2	0
		50	0	19.10	18.76	18.47	0-2	0
	64QAM	1	0	19.04	18.78	18.27	0-2	0
		1	24	19.19	18.94	18.50	0-2	0
		1	49	19.02	18.52	18.27	0-2	0
		25	0	19.10	18.83	18.47	0-3	0
		25	12	19.21	18.96	18.60	0-3	0
		25	24	19.09	18.74	18.48	0-3	0
		50	0	19.13	18.81	18.45	0-3	0
	256QAM	1	0	18.50	18.09	17.82	0-5	0
		1	24	18.48	18.76	18.09	0-5	0
		1	49	18.88	18.24	17.77	0-5	0
		25	0	18.67	18.27	18.07	0-5	0
		25	12	18.78	18.44	18.01	0-5	0
		25	24	18.64	18.21	18.04	0-5	0
		50	0	18.58	18.33	17.94	0-5	0

LTE Band 4 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20025 Ch. 1717.5 ㎒	20175 Ch. 1732.5 ㎒	20325 Ch. 1747.5 ㎒		
15 ㎒	QPSK	1	0	18.96	18.65	18.40	0	0
		1	36	19.22	18.77	18.60	0	0
		1	74	18.96	18.53	18.32	0	0
		36	0	19.09	18.82	18.53	0-1	0
		36	18	19.21	18.87	18.57	0-1	0
		36	39	19.09	18.73	18.41	0-1	0
		75	0	19.05	18.75	18.50	0-1	0
	16QAM	1	0	19.10	18.77	18.42	0-1	0
		1	36	19.20	19.14	18.60	0-1	0
		1	74	19.25	18.84	18.54	0-1	0
		36	0	19.14	18.79	18.48	0-2	0
		36	18	19.14	18.85	18.60	0-2	0
		36	39	19.07	18.74	18.38	0-2	0
		75	0	19.09	18.82	18.51	0-2	0
	64QAM	1	0	19.08	18.91	18.44	0-2	0
		1	36	19.25	19.05	18.58	0-2	0
		1	74	19.15	18.65	18.64	0-2	0
		36	0	19.10	18.90	18.66	0-3	0
		36	18	19.18	18.95	18.58	0-3	0
		36	39	19.03	18.77	18.49	0-3	0
		75	0	19.04	18.84	18.58	0-3	0
	256QAM	1	0	18.55	18.21	17.88	0-5	0
		1	36	18.87	18.52	18.23	0-5	0
		1	74	18.55	18.27	18.06	0-5	0
		36	0	18.61	18.31	18.01	0-5	0
		36	18	18.73	18.40	18.10	0-5	0
		36	39	18.61	18.31	17.97	0-5	0
		75	0	18.58	18.33	18.02	0-5	0

LTE Band 4 _ 20 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm] 20175 Ch. 1732.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
20 ㎒	QPSK	1	0	18.61	0	0
		1	49	18.79	0	0
		1	99	18.33	0	0
		50	0	18.86	0-1	0
		50	25	18.83	0-1	0
		50	49	18.72	0-1	0
		100	0	18.77	0-1	0
	16QAM	1	0	18.90	0-1	0
		1	49	18.99	0-1	0
		1	99	18.50	0-1	0
		50	0	18.83	0-2	0
		50	25	18.85	0-2	0
		50	49	18.62	0-2	0
		100	0	18.82	0-2	0
	64QAM	1	0	18.94	0-2	0
		1	49	19.01	0-2	0
		1	99	18.43	0-2	0
		50	0	18.92	0-3	0
		50	25	18.91	0-3	0
		50	49	18.70	0-3	0
		100	0	18.81	0-3	0
	256QAM	1	0	18.24	0-5	0
		1	49	18.43	0-5	0
		1	99	17.92	0-5	0
		50	0	18.43	0-5	0
		50	25	18.37	0-5	0
		50	49	18.19	0-5	0
		100	0	18.31	0-5	0

[LTE Band 41 Conducted Power] - Power Class 3

LTE Band 41 _ 5 ㎒ Bandwidth - Power Class 3

Band width	Modulation	RB Size	RB Offset	Reduced Power [dBm]					MPR Allowed Per GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
5 ㎒	QPSK	1	0	20.82	20.65	20.45	20.46	20.45	0	0
		1	12	20.77	20.61	20.51	20.41	20.50	0	0
		1	24	20.78	20.50	20.45	20.43	20.47	0	0
		12	0	20.87	20.69	20.52	20.55	20.57	0-1	0
		12	6	20.89	20.72	20.60	20.55	20.60	0-1	0
		12	11	20.86	20.68	20.56	20.58	20.58	0-1	0
		25	0	20.85	20.73	20.56	20.47	20.58	0-1	0
	16QAM	1	0	20.92	20.71	20.58	20.57	20.56	0-1	0
		1	12	20.92	20.98	20.73	20.64	20.67	0-1	0
		1	24	20.86	20.69	20.57	20.55	20.58	0-1	0
		12	0	20.81	20.57	20.48	20.46	20.48	0-2	0
		12	6	20.87	20.64	20.55	20.46	20.51	0-2	0
		12	11	20.84	20.58	20.51	20.47	20.50	0-2	0
		25	0	20.94	20.75	20.67	20.57	20.58	0-2	0
	64QAM	1	0	20.52	20.22	20.14	20.17	20.12	0-2	0
		1	12	20.46	20.21	20.20	20.20	20.18	0-2	0
		1	24	20.49	20.20	20.18	20.16	20.18	0-2	0
		12	0	20.89	20.69	20.50	20.50	20.52	0-3	0
		12	6	20.90	20.71	20.59	20.50	20.54	0-3	0
		12	11	20.88	20.69	20.55	20.52	20.52	0-3	0
		25	0	20.89	20.70	20.62	20.52	20.58	0-3	0
	256QAM	1	0	18.67	18.43	18.32	18.36	18.35	0-5	2
		1	12	18.68	18.39	18.35	18.39	18.39	0-5	2
		1	24	18.63	18.30	18.28	18.33	18.34	0-5	2
		12	0	19.02	18.85	18.67	18.64	18.63	0-5	2
		12	6	19.03	18.87	18.76	18.65	18.75	0-5	2
		12	11	19.01	18.80	18.73	18.67	18.67	0-5	2
		25	0	18.93	18.76	18.67	18.60	18.66	0-5	2

LTE Band 41 _ 10 ㎒ Bandwidth - Power Class 3

Band width	Modulation	RB Size	RB Offset	Reduced Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
10 ㎒	QPSK	1	0	20.94	20.40	20.29	20.24	20.26	0	0
		1	24	20.85	20.58	20.50	20.42	20.48	0	0
		1	49	20.85	20.33	20.22	20.12	20.24	0	0
		25	0	20.90	20.67	20.51	20.44	20.49	0-1	0
		25	12	20.93	20.72	20.65	20.52	20.64	0-1	0
		25	24	20.89	20.62	20.52	20.45	20.52	0-1	0
		50	0	20.80	20.65	20.59	20.42	20.53	0-1	0
	16QAM	1	0	20.91	20.47	20.39	20.40	20.34	0-1	0
		1	24	20.92	20.69	20.63	20.64	20.60	0-1	0
		1	49	20.89	20.40	20.34	20.32	20.32	0-1	0
		25	0	20.95	20.66	20.51	20.45	20.45	0-2	0
		25	12	20.97	20.76	20.65	20.55	20.63	0-2	0
		25	24	20.92	20.61	20.53	20.51	20.50	0-2	0
		50	0	20.88	20.67	20.61	20.47	20.56	0-2	0
	64QAM	1	0	20.55	20.03	19.92	19.92	19.91	0-2	0
		1	24	20.49	20.27	20.16	20.16	20.19	0-2	0
		1	49	20.52	19.96	19.92	19.89	19.94	0-2	0
		25	0	20.91	20.68	20.46	20.42	20.44	0-3	0
		25	12	20.90	20.73	20.63	20.50	20.62	0-3	0
		25	24	20.87	20.61	20.52	20.47	20.50	0-3	0
		50	0	20.86	20.71	20.63	20.51	20.58	0-3	0
	256QAM	1	0	18.45	18.18	18.13	18.09	18.11	0-5	2
		1	24	18.69	18.40	18.41	18.42	18.39	0-5	2
		1	49	18.44	18.18	18.14	18.14	18.12	0-5	2
		25	0	18.95	18.79	18.58	18.54	18.57	0-5	2
		25	12	18.99	18.85	18.77	18.62	18.68	0-5	2
		25	24	18.94	18.75	18.63	18.61	18.62	0-5	2
		50	0	18.96	18.77	18.65	18.54	18.64	0-5	2

LTE Band 41 _ 15 ㎒ Bandwidth- Power Class 3

Band width	Modulation	RB Size	RB Offset	Reduced Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
15 ㎒	QPSK	1	0	20.83	20.40	20.33	20.37	20.25	0	0
		1	36	20.73	20.52	20.46	20.44	20.48	0	0
		1	74	20.77	20.32	20.34	20.13	20.46	0	0
		36	0	20.82	20.64	20.49	20.50	20.42	0-1	0
		36	18	20.89	20.70	20.64	20.48	20.60	0-1	0
		36	39	20.83	20.54	20.56	20.43	20.57	0-1	0
		75	0	20.82	20.59	20.55	20.43	20.50	0-1	0
	16QAM	1	0	20.86	20.43	20.35	20.50	20.30	0-1	0
		1	36	20.76	20.45	20.46	20.49	20.42	0-1	0
		1	74	20.78	20.25	20.38	20.23	20.44	0-1	0
		36	0	20.80	20.58	20.41	20.46	20.38	0-2	0
		36	18	20.90	20.61	20.59	20.48	20.53	0-2	0
		36	39	20.84	20.56	20.52	20.43	20.53	0-2	0
		75	0	20.86	20.62	20.59	20.47	20.56	0-2	0
	64QAM	1	0	20.56	20.10	20.02	20.07	19.93	0-2	0
		1	36	20.54	20.31	20.24	20.22	20.22	0-2	0
		1	74	20.50	20.02	20.06	19.87	20.16	0-2	0
		36	0	20.85	20.66	20.49	20.53	20.44	0-3	0
		36	18	20.88	20.66	20.65	20.50	20.61	0-3	0
		36	39	20.88	20.56	20.58	20.43	20.59	0-3	0
		75	0	20.87	20.63	20.59	20.46	20.60	0-3	0
	256QAM	1	0	18.61	18.36	18.29	18.34	18.13	0-5	2
		1	36	18.75	18.52	18.46	18.44	18.42	0-5	2
		1	74	18.66	18.26	18.31	18.13	18.37	0-5	2
		36	0	18.90	18.68	18.57	18.53	18.46	0-5	2
		36	18	18.97	18.70	18.69	18.55	18.62	0-5	2
		36	39	18.92	18.61	18.61	18.51	18.58	0-5	2
		75	0	18.92	18.70	18.62	18.48	18.59	0-5	2

LTE Band 41 _ 20 ㎒ Bandwidth - Power Class 3

Band width	Modulation	RB Size	RB Offset	Reduced Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	20.81	20.85	20.20	20.30	20.03	0	0
		1	49	20.75	20.51	20.51	20.45	20.45	0	0
		1	99	20.71	20.47	20.13	19.91	20.32	0	0
		50	0	20.79	20.60	20.46	20.49	20.37	0-1	0
		50	25	20.87	20.64	20.59	20.50	20.88	0-1	0
		50	49	20.82	20.52	20.51	20.40	20.55	0-1	0
		100	0	20.83	20.59	20.84	20.41	20.44	0-1	0
	16QAM	1	0	20.86	20.58	20.19	20.35	20.08	0-1	0
		1	49	20.77	20.47	20.50	20.51	20.47	0-1	0
		1	99	20.79	20.44	20.18	19.99	20.35	0-1	0
		50	0	20.82	20.66	20.48	20.52	20.40	0-2	0
		50	25	20.95	20.70	20.70	20.53	20.61	0-2	0
		50	49	20.86	20.54	20.55	20.43	20.59	0-2	0
		100	0	20.89	20.61	20.59	20.47	20.49	0-2	0
	64QAM	1	0	20.57	20.31	19.88	19.99	19.79	0-2	0
		1	49	20.49	20.28	20.19	20.18	20.19	0-2	0
		1	99	20.52	20.22	19.89	19.70	20.09	0-2	0
		50	0	20.83	20.66	20.54	20.55	20.43	0-3	0
		50	25	20.95	20.69	20.66	20.56	20.66	0-3	0
		50	49	20.88	20.57	20.57	20.46	20.62	0-3	0
		100	0	20.84	20.58	20.53	20.47	20.47	0-3	0
	256QAM	1	0	18.46	18.26	18.17	18.22	18.00	0-5	2
		1	49	18.76	18.49	18.46	18.44	18.41	0-5	2
		1	99	18.49	18.04	18.13	17.92	18.27	0-5	2
		50	0	18.93	18.75	18.59	18.62	18.48	0-5	2
		50	25	19.02	18.79	18.74	18.60	18.68	0-5	2
		50	49	18.99	18.64	18.68	18.52	18.68	0-5	2
		100	0	18.88	18.61	18.62	18.47	18.49	0-5	2

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

[LTE Band 41 Conducted Power] - Power Class 2

LTE Band 41 _ 5 ㎒ Bandwidth - Power Class 2

Band width	Modulation	RB Size	RB Offset	Reduced Power [dBm]					MPR Allowed Per GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
5 ㎒	QPSK	1	0	21.95	21.73	21.63	21.65	21.65	0	0
		1	12	21.90	21.80	21.67	21.69	21.67	0	0
		1	24	21.93	21.79	21.62	21.61	21.69	0	0
		12	0	22.03	21.90	21.70	21.73	21.70	0-1	0
		12	6	22.05	21.91	21.77	21.72	21.76	0-1	0
		12	11	22.05	21.88	21.75	21.72	21.74	0-1	0
		25	0	22.02	21.86	21.80	21.72	21.74	0-1	0
	16QAM	1	0	22.30	22.13	22.01	21.99	21.99	0-1	0
		1	12	22.36	22.21	22.14	22.06	22.15	0-1	0
		1	24	22.29	22.12	22.00	21.94	22.00	0-1	0
		12	0	22.00	21.84	21.69	21.68	21.70	0-2	0
		12	6	22.06	21.86	21.77	21.67	21.76	0-2	0
		12	11	22.04	21.83	21.73	21.76	21.73	0-2	0
		25	0	22.12	21.92	21.85	21.74	21.87	0-2	0
	64QAM	1	0	22.00	21.72	21.61	21.70	21.65	0-2	0
		1	12	21.91	21.67	21.63	21.69	21.65	0-2	0
		1	24	22.00	21.70	21.63	21.67	21.65	0-2	0
		12	0	21.56	21.11	21.75	21.76	21.73	0-3	0
		12	6	21.58	21.14	21.83	21.78	21.81	0-3	0
		12	11	21.56	21.13	21.80	21.79	21.79	0-3	0
		25	0	21.56	21.13	21.81	21.71	21.81	0-3	0
	256QAM	1	0	20.08	19.85	19.72	19.73	19.71	0-5	2
		1	12	20.04	19.82	19.74	19.77	19.76	0-5	2
		1	24	20.03	19.77	19.74	19.70	19.74	0-5	2
		12	0	20.20	20.01	19.88	19.87	19.88	0-5	2
		12	6	20.22	20.05	20.00	19.91	19.94	0-5	2
		12	11	20.18	20.02	19.93	19.91	19.92	0-5	2
		25	0	20.14	19.96	19.85	19.79	19.83	0-5	2

LTE Band 41 _ 10 ㎒ Bandwidth - Power Class 2

Band width	Modulation	RB Size	RB Offset	Reduced Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
10 ㎒	QPSK	1	0	22.03	21.79	21.68	21.44	21.64	0	0
		1	24	21.97	21.81	21.69	21.63	21.69	0	0
		1	49	22.03	21.55	21.44	21.35	21.46	0	0
		25	0	22.08	21.86	21.69	21.69	21.67	0-1	0
		25	12	22.10	21.93	21.84	21.75	21.79	0-1	0
		25	24	22.06	21.80	21.72	21.69	21.70	0-1	0
		50	0	22.01	21.81	21.76	21.64	21.72	0-1	0
	16QAM	1	0	22.36	21.92	21.83	21.92	21.84	0-1	0
		1	24	22.30	22.13	22.02	22.08	22.03	0-1	0
		1	49	22.32	21.86	21.79	21.77	21.75	0-1	0
		25	0	22.09	21.87	21.67	21.65	21.68	0-2	0
		25	12	22.12	21.96	21.83	21.76	21.86	0-2	0
		25	24	22.08	21.80	21.74	21.69	21.70	0-2	0
		50	0	22.07	21.85	21.81	21.69	21.75	0-2	0
	64QAM	1	0	21.98	21.49	21.41	21.44	21.40	0-2	0
		1	24	22.04	21.73	21.65	21.72	21.66	0-2	0
		1	49	22.03	21.53	21.47	21.48	21.48	0-2	0
		25	0	21.62	21.18	21.71	21.71	21.69	0-3	0
		25	12	21.63	21.21	21.89	21.75	21.85	0-3	0
		25	24	21.59	21.17	21.74	21.73	21.76	0-3	0
		50	0	21.64	21.22	21.83	21.74	21.83	0-3	0
	256QAM	1	0	19.86	19.70	19.55	19.49	19.54	0-5	2
		1	24	20.09	19.87	19.82	19.76	19.77	0-5	2
		1	49	19.79	19.61	19.52	19.48	19.53	0-5	2
		25	0	20.09	19.95	19.81	19.77	19.81	0-5	2
		25	12	20.20	20.00	19.93	19.81	19.93	0-5	2
		25	24	20.06	19.87	19.78	19.78	19.78	0-5	2
		50	0	20.10	19.96	19.81	19.72	19.86	0-5	2

LTE Band 41 _ 15 ㎒ Bandwidth- Power Class 2

Band width	Modulation	RB Size	RB Offset	Reduced Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
15 ㎒	QPSK	1	0	22.03	21.80	21.68	21.61	21.41	0	0
		1	36	21.97	21.82	21.70	21.68	21.66	0	0
		1	74	21.98	21.56	21.45	21.38	21.64	0	0
		36	0	22.01	21.86	21.69	21.68	21.62	0-1	0
		36	18	22.11	21.94	21.85	21.68	21.76	0-1	0
		36	39	22.05	21.80	21.73	21.65	21.79	0-1	0
		75	0	22.08	21.83	21.77	21.63	21.73	0-1	0
	16QAM	1	0	22.29	21.81	21.84	21.91	21.72	0-1	0
		1	36	22.21	21.89	22.02	21.89	21.90	0-1	0
		1	74	22.22	21.64	21.81	21.67	21.84	0-1	0
		36	0	21.98	21.77	21.68	21.67	21.57	0-2	0
		36	18	22.06	21.78	21.83	21.67	21.78	0-2	0
		36	39	22.01	21.69	21.75	21.58	21.74	0-2	0
		75	0	22.06	21.81	21.83	21.63	21.74	0-2	0
	64QAM	1	0	22.05	21.54	21.42	21.62	21.40	0-2	0
		1	36	22.00	21.70	21.67	21.72	21.70	0-2	0
		1	74	21.98	21.44	21.49	21.42	21.64	0-2	0
		36	0	21.95	21.35	21.73	21.74	21.68	0-3	0
		36	18	21.82	21.32	21.91	21.74	21.85	0-3	0
		36	39	21.83	21.30	21.75	21.75	21.80	0-3	0
		75	0	21.82	21.32	21.84	21.71	21.82	0-3	0
	256QAM	1	0	19.92	19.74	19.56	19.66	19.51	0-5	2
		1	36	20.05	19.86	19.83	19.74	19.78	0-5	2
		1	74	19.96	19.65	19.52	19.45	19.75	0-5	2
		36	0	20.03	19.86	19.82	19.75	19.68	0-5	2
		36	18	20.11	19.90	19.95	19.77	19.85	0-5	2
		36	39	20.11	19.77	19.79	19.72	19.83	0-5	2
		75	0	20.06	19.78	19.81	19.72	19.84	0-5	2

LTE Band 41 _ 20 ㎒ Bandwidth - Power Class 2

Band width	Modulation	RB Size	RB Offset	Reduced Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	22.02	21.95	21.90	21.67	21.70	0	0
		1	49	21.96	21.85	21.78	21.64	21.74	0	0
		1	99	21.94	21.73	21.36	21.15	21.55	0	0
		50	0	21.97	21.83	21.66	21.71	21.58	0-1	0
		50	25	22.10	21.84	21.81	21.70	21.78	0-1	0
		50	49	22.00	21.67	21.70	21.58	21.75	0-1	0
		100	0	22.04	21.76	21.74	21.60	21.64	0-1	0
	16QAM	1	0	22.28	22.01	21.60	21.78	21.52	0-1	0
		1	49	22.19	21.90	21.91	21.91	21.89	0-1	0
		1	99	22.20	21.84	21.59	21.40	21.73	0-1	0
		50	0	21.99	21.79	21.63	21.73	21.61	0-2	0
		50	25	22.08	21.85	21.83	21.73	21.79	0-2	0
		50	49	22.03	21.72	21.75	21.59	21.77	0-2	0
		100	0	22.03	21.78	21.76	21.63	21.71	0-2	0
	64QAM	1	0	22.05	21.77	21.34	21.47	21.29	0-2	0
		1	49	21.99	21.71	21.70	21.71	21.64	0-2	0
		1	99	22.00	21.66	21.34	21.20	21.55	0-2	0
		50	0	21.86	21.30	21.68	21.78	21.71	0-3	0
		50	25	21.82	21.34	21.87	21.79	21.91	0-3	0
		50	49	21.71	21.18	21.81	21.67	21.83	0-3	0
		100	0	21.77	21.21	21.74	21.65	21.67	0-3	0
	256QAM	1	0	19.77	19.62	19.50	19.58	19.37	0-5	2
		1	49	20.03	19.89	19.82	19.74	19.82	0-5	2
		1	99	19.79	19.43	19.43	19.23	19.66	0-5	2
		50	0	20.09	19.87	19.75	19.79	19.68	0-5	2
		50	25	20.17	19.94	19.88	19.79	19.91	0-5	2
		50	49	20.09	19.80	19.83	19.69	19.88	0-5	2
		100	0	20.04	19.80	19.76	19.65	19.67	0-5	2

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

[LTE Band 66 Conducted Power]

LTE Band 66 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131979Ch. 1710.7 ㎒	132322 Ch. 1745 ㎒	132665 Ch. 1779.3 ㎒		
1.4 ㎒	QPSK	1	0	19.57	19.04	18.96	0	0
		1	3	19.55	19.01	18.98	0	0
		1	5	19.42	18.94	18.89	0	0
		3	0	19.47	19.04	18.97	0	0
		3	1	19.54	19.08	18.99	0	0
		3	3	19.53	18.94	19.02	0	0
		6	0	19.57	19.12	19.10	0-1	0
	16QAM	1	0	19.55	19.39	19.29	0-1	0
		1	3	19.62	19.44	19.47	0-1	0
		1	5	19.48	19.39	19.20	0-1	0
		3	0	19.38	19.24	19.19	0-1	0
		3	1	19.41	19.27	19.30	0-1	0
		3	3	19.49	19.22	19.18	0-1	0
		6	0	19.37	19.13	19.23	0-2	0
	64QAM	1	0	19.52	19.30	19.28	0-2	0
		1	3	19.52	19.47	19.28	0-2	0
		1	5	19.41	19.30	19.17	0-2	0
		3	0	19.40	19.23	19.15	0-2	0
		3	1	19.47	19.24	19.21	0-2	0
		3	3	19.33	19.21	19.10	0-2	0
		6	0	19.37	19.12	19.07	0-3	0
	256QAM	1	0	18.87	18.66	18.69	0-5	0
		1	3	19.19	18.78	18.67	0-5	0
		1	5	19.17	18.60	18.66	0-5	0
		3	0	19.10	18.78	18.71	0-5	0
		3	1	19.18	18.64	18.75	0-5	0
		3	3	19.16	18.66	18.61	0-5	0
		6	0	19.15	18.57	18.60	0-5	0

LTE Band 66 _ 3 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131987 Ch. 1711.5 ㎒	132322 Ch. 1745 ㎒	132657 Ch. 1778.5 ㎒		
3 ㎒	QPSK	1	0	19.60	19.16	19.12	0	0
		1	7	19.49	19.05	19.06	0	0
		1	14	19.48	19.04	18.98	0	0
		8	0	19.63	19.18	19.21	0-1	0
		8	3	19.60	19.22	19.21	0-1	0
		8	7	19.60	19.09	19.11	0-1	0
		15	0	19.65	19.18	19.17	0-1	0
	16QAM	1	0	19.60	19.43	19.51	0-1	0
		1	7	19.60	19.33	19.39	0-1	0
		1	14	19.54	19.48	19.28	0-1	0
		8	0	19.55	19.31	19.28	0-2	0
		8	3	19.54	19.31	19.26	0-2	0
		8	7	19.41	19.26	19.18	0-2	0
		15	0	19.42	19.18	19.15	0-2	0
	64QAM	1	0	19.53	19.53	19.40	0-2	0
		1	7	19.49	19.36	19.33	0-2	0
		1	14	19.49	19.13	19.26	0-2	0
		8	0	19.43	19.23	19.20	0-3	0
		8	3	19.44	19.28	19.30	0-3	0
		8	7	19.41	19.13	19.19	0-3	0
		15	0	19.46	19.24	19.15	0-3	0
	256QAM	1	0	19.32	18.80	18.81	0-5	0
		1	7	19.22	18.74	18.70	0-5	0
		1	14	19.21	18.68	18.65	0-5	0
		8	0	19.22	18.71	18.72	0-5	0
		8	3	19.19	18.75	18.69	0-5	0
		8	7	19.13	18.72	18.61	0-5	0
		15	0	19.23	18.71	18.65	0-5	0

LTE Band 66 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131997 Ch. 1712.5 ㎒	132322Ch. 1745 ㎒	132647 Ch. 1777.5 ㎒		
5 ㎒	QPSK	1	0	19.53	19.09	19.09	0	0
		1	12	19.56	19.07	19.08	0	0
		1	24	19.46	19.01	18.99	0	0
		12	0	19.68	19.20	19.23	0-1	0
		12	6	19.68	19.22	19.20	0-1	0
		12	11	19.61	19.11	19.20	0-1	0
		25	0	19.69	19.15	19.13	0-1	0
	16QAM	1	0	19.59	19.49	19.41	0-1	0
		1	12	19.59	19.50	19.27	0-1	0
		1	24	19.47	19.46	19.27	0-1	0
		12	0	19.47	19.24	19.24	0-2	0
		12	6	19.47	19.26	19.24	0-2	0
		12	11	19.39	19.16	19.20	0-2	0
		25	0	19.37	19.14	19.19	0-2	0
	64QAM	1	0	19.52	19.43	19.35	0-2	0
		1	12	19.51	19.39	19.32	0-2	0
		1	24	19.42	19.33	19.29	0-2	0
		12	0	19.47	19.22	19.30	0-3	0
		12	6	19.48	19.26	19.29	0-3	0
		12	11	19.69	19.14	19.19	0-3	0
		25	0	19.63	19.14	19.16	0-3	0
	256QAM	1	0	19.14	18.78	18.82	0-5	0
		1	12	19.15	18.69	18.71	0-5	0
		1	24	19.18	18.66	18.60	0-5	0
		12	0	19.14	18.68	18.67	0-5	0
		12	6	19.18	18.73	18.73	0-5	0
		12	11	19.16	18.59	18.65	0-5	0
		25	0	19.16	18.65	18.67	0-5	0

LTE Band 66 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132022 Ch. 1715 ㎒	132322 Ch. 1745 ㎒	132622 Ch. 1775 ㎒		
10 ㎒	QPSK	1	0	19.21	18.87	19.02	0	0
		1	24	19.59	19.05	19.09	0	0
		1	49	19.29	18.77	18.89	0	0
		25	0	19.59	19.23	19.09	0-1	0
		25	12	19.67	19.19	19.17	0-1	0
		25	24	19.58	19.16	19.15	0-1	0
		50	0	19.58	19.08	19.07	0-1	0
	16QAM	1	0	19.49	19.14	19.40	0-1	0
		1	24	19.67	19.47	19.54	0-1	0
		1	49	19.59	19.25	19.33	0-1	0
		25	0	19.40	19.17	19.01	0-2	0
		25	12	19.47	19.16	19.13	0-2	0
		25	24	19.36	19.13	19.12	0-2	0
		50	0	19.43	19.13	19.05	0-2	0
	64QAM	1	0	19.40	19.10	18.98	0-2	0
		1	24	19.57	19.36	19.42	0-2	0
		1	49	19.36	19.12	19.02	0-2	0
		25	0	19.41	19.23	19.13	0-3	0
		25	12	19.49	19.28	19.16	0-3	0
		25	24	19.47	19.09	19.12	0-3	0
		50	0	19.46	19.13	19.06	0-3	0
	256QAM	1	0	19.05	18.50	18.25	0-5	0
		1	24	19.18	18.52	18.62	0-5	0
		1	49	19.02	18.54	18.51	0-5	0
		25	0	19.13	18.60	18.50	0-5	0
		25	12	19.19	18.70	18.65	0-5	0
		25	24	19.06	18.67	18.55	0-5	0
		50	0	19.09	18.65	18.54	0-5	0

LTE Band 66 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132047 Ch. 1717.5 ㎒	132322 Ch. 1745 ㎒	132597 Ch. 1772.5 ㎒		
15 ㎒	QPSK	1	0	19.40	19.14	18.99	0	0
		1	36	19.48	19.10	18.95	0	0
		1	74	19.36	18.97	19.02	0	0
		36	0	19.67	19.23	19.11	0-1	0
		36	18	19.65	19.20	19.26	0-1	0
		36	39	19.47	19.07	19.15	0-1	0
		75	0	19.57	19.21	19.10	0-1	0
	16QAM	1	0	19.63	19.42	19.42	0-1	0
		1	36	19.63	19.35	19.31	0-1	0
		1	74	19.51	19.29	19.42	0-1	0
		36	0	19.47	19.22	19.13	0-2	0
		36	18	19.51	19.19	19.25	0-2	0
		36	39	19.36	19.16	19.12	0-2	0
		75	0	19.41	19.24	19.12	0-2	0
	64QAM	1	0	19.59	19.31	19.27	0-2	0
		1	36	19.49	19.37	19.23	0-2	0
		1	74	19.41	19.17	19.16	0-2	0
		36	0	19.50	19.30	19.16	0-3	0
		36	18	19.54	19.23	19.21	0-3	0
		36	39	19.45	19.14	19.21	0-3	0
		75	0	19.40	19.19	19.08	0-3	0
	256QAM	1	0	19.18	18.72	18.59	0-5	0
		1	36	19.15	18.87	18.95	0-5	0
		1	74	19.05	18.53	18.67	0-5	0
		36	0	19.10	18.81	18.62	0-5	0
		36	18	19.11	18.81	18.78	0-5	0
		36	39	19.04	18.70	18.60	0-5	0
		75	0	19.07	18.71	18.62	0-5	0

LTE Band 66 _ 20 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 ㎒	132322 Ch. 1745 ㎒	132572 Ch. 1770 ㎒		
20 ㎒	QPSK	1	0	19.31	18.97	19.03	0	0
		1	49	19.44	18.99	18.76	0	0
		1	99	19.19	18.79	19.02	0	0
		50	0	19.68	19.15	19.12	0-1	0
		50	25	19.58	19.21	19.13	0-1	0
		50	49	19.55	19.12	19.14	0-1	0
		100	0	19.53	19.17	19.00	0-1	0
	16QAM	1	0	19.66	19.29	19.42	0-1	0
		1	49	19.63	19.46	19.17	0-1	0
		1	99	19.44	19.22	19.44	0-1	0
		50	0	19.57	19.21	19.07	0-2	0
		50	25	19.64	19.15	19.14	0-2	0
		50	49	19.40	18.99	19.11	0-2	0
		100	0	19.53	19.13	19.00	0-2	0
	64QAM	1	0	19.59	19.15	19.34	0-2	0
		1	49	19.67	19.32	19.18	0-2	0
		1	99	19.49	19.14	19.32	0-2	0
		50	0	19.60	19.17	19.04	0-3	0
		50	25	19.68	19.27	19.15	0-3	0
		50	49	19.55	19.04	19.13	0-3	0
		100	0	19.55	19.17	19.15	0-3	0
	256QAM	1	0	18.96	18.62	18.41	0-5	0
		1	49	19.15	18.81	18.69	0-5	0
		1	99	18.88	18.56	18.57	0-5	0
		50	0	19.10	18.65	18.57	0-5	0
		50	25	19.13	18.76	18.66	0-5	0
		50	49	19.03	18.62	18.61	0-5	0
		100	0	19.05	18.75	18.58	0-5	0

11.3.3 LTE Reduced Conducted Power(Grip Sensor on, Ear jack Activated)

[LTE Band 2 Conducted Power]

LTE Band 2 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18607 Ch. 1850.7 ㎒	18900 Ch. 1880 ㎒	19193 Ch. 1909.3 ㎒		
1.4 ㎒	QPSK	1	0	17.68	17.50	17.85	0	0
		1	3	17.73	17.60	17.92	0	0
		1	5	17.62	17.58	17.90	0	0
		3	0	17.72	17.64	17.90	0	0
		3	1	17.80	17.71	17.88	0	0
		3	3	17.68	17.56	17.82	0	0
		6	0	17.81	17.74	17.96	0-1	0
	16QAM	1	0	17.99	17.93	18.27	0-1	0
		1	3	18.19	18.07	18.32	0-1	0
		1	5	17.97	18.01	18.39	0-1	0
		3	0	17.91	17.85	18.04	0-1	0
		3	1	18.01	17.86	18.11	0-1	0
		3	3	17.80	17.74	18.16	0-1	0
		6	0	17.84	17.69	18.01	0-2	0
	64QAM	1	0	17.95	17.95	18.13	0-2	0
		1	3	18.12	17.92	18.30	0-2	0
		1	5	17.91	17.91	18.00	0-2	0
		3	0	17.95	17.81	18.03	0-2	0
		3	1	17.92	17.90	18.07	0-2	0
		3	3	17.92	17.77	18.12	0-2	0
		6	0	17.83	17.74	18.00	0-3	0
	256QAM	1	0	16.87	16.80	17.15	0-5	1
		1	3	16.99	16.91	17.16	0-5	1
		1	5	16.91	16.77	16.97	0-5	1
		3	0	16.93	16.82	17.11	0-5	1
		3	1	17.02	16.87	17.26	0-5	1
		3	3	16.90	16.91	17.13	0-5	1
		6	0	16.85	16.74	17.00	0-5	1

LTE Band 2 _ 3 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18615 Ch. 1851.5 ㎒	18900 Ch. 1880 ㎒	19185 Ch. 1908.5 ㎒		
3 ㎒	QPSK	1	0	17.79	17.74	18.09	0	0
		1	7	17.77	17.73	17.99	0	0
		1	14	17.68	17.63	17.93	0	0
		8	0	17.88	17.83	18.01	0-1	0
		8	3	17.88	17.78	18.12	0-1	0
		8	7	17.80	17.74	17.94	0-1	0
		15	0	17.85	17.81	18.07	0-1	0
	16QAM	1	0	18.17	18.03	18.23	0-1	0
		1	7	18.10	18.08	18.35	0-1	0
		1	14	18.09	18.06	18.31	0-1	0
		8	0	18.00	17.94	18.17	0-2	0
		8	3	18.02	17.87	18.16	0-2	0
		8	7	17.90	17.87	18.12	0-2	0
		15	0	17.90	17.86	18.12	0-2	0
	64QAM	1	0	18.08	18.04	18.20	0-2	0
		1	7	18.05	17.93	18.25	0-2	0
		1	14	17.95	17.81	18.23	0-2	0
		8	0	17.95	17.86	18.16	0-3	0
		8	3	17.92	17.82	18.14	0-3	0
		8	7	17.96	17.79	18.03	0-3	0
		15	0	17.91	17.76	18.07	0-3	0
	256QAM	1	0	17.00	16.92	17.17	0-5	1
		1	7	16.89	16.92	17.29	0-5	1
		1	14	16.99	16.85	17.10	0-5	1
		8	0	16.92	16.90	17.07	0-5	1
		8	3	17.00	16.86	17.20	0-5	1
		8	7	16.88	16.80	17.05	0-5	1
		15	0	16.93	16.82	17.06	0-5	1

LTE Band 2 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18625 Ch. 1852.5 ㎒	18900 Ch. 1880 ㎒	19175 Ch. 1907.5 ㎒		
5 ㎒	QPSK	1	0	17.73	17.61	17.92	0	0
		1	12	17.76	17.72	18.05	0	0
		1	24	17.63	17.61	17.90	0	0
		12	0	17.90	17.80	18.08	0-1	0
		12	6	17.88	17.80	18.07	0-1	0
		12	11	17.81	17.78	18.02	0-1	0
		25	0	17.80	17.80	17.98	0-1	0
	16QAM	1	0	18.13	18.00	18.18	0-1	0
		1	12	18.10	17.83	18.38	0-1	0
		1	24	18.04	17.98	18.23	0-1	0
		12	0	17.91	17.88	18.17	0-2	0
		12	6	17.93	17.87	18.13	0-2	0
		12	11	17.88	17.81	18.09	0-2	0
		25	0	17.84	17.72	18.08	0-2	0
	64QAM	1	0	18.00	17.99	18.12	0-2	0
		1	12	18.04	18.08	18.23	0-2	0
		1	24	17.86	17.88	18.16	0-2	0
		12	0	17.88	17.87	18.07	0-3	0
		12	6	17.95	17.89	18.17	0-3	0
		12	11	17.85	17.84	18.13	0-3	0
		25	0	17.90	17.82	18.12	0-3	0
	256QAM	1	0	16.90	16.85	17.04	0-5	1
		1	12	17.13	16.87	17.13	0-5	1
		1	24	16.77	16.97	17.18	0-5	1
		12	0	16.93	16.85	17.07	0-5	1
		12	6	16.97	16.87	17.11	0-5	1
		12	11	16.84	16.74	17.04	0-5	1
		25	0	16.87	16.77	17.05	0-5	1

LTE Band 2 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18650 Ch. 1855 ㎒	18900 Ch. 1880 ㎒	19150 Ch. 1905 ㎒		
10 ㎒	QPSK	1	0	17.37	17.71	18.00	0	0
		1	24	17.63	17.73	17.88	0	0
		1	49	17.45	17.48	17.98	0	0
		25	0	17.76	17.62	17.86	0-1	0
		25	12	17.86	17.81	18.05	0-1	0
		25	24	17.74	17.69	17.98	0-1	0
		50	0	17.82	17.68	17.90	0-1	0
	16QAM	1	0	17.86	17.77	18.32	0-1	0
		1	24	18.06	18.16	18.29	0-1	0
		1	49	17.87	17.86	18.34	0-1	0
		25	0	17.77	17.64	17.86	0-2	0
		25	12	17.87	17.77	17.98	0-2	0
		25	24	17.74	17.68	17.91	0-2	0
		50	0	17.83	17.73	17.90	0-2	0
	64QAM	1	0	17.63	17.57	18.18	0-2	0
		1	24	18.03	18.03	18.15	0-2	0
		1	49	17.67	17.69	18.18	0-2	0
		25	0	17.74	17.70	17.89	0-3	0
		25	12	17.88	17.82	18.03	0-3	0
		25	24	17.82	17.79	18.01	0-3	0
		50	0	17.82	17.78	17.94	0-3	0
	256QAM	1	0	16.56	16.64	16.72	0-5	1
		1	24	17.03	16.79	17.09	0-5	1
		1	49	16.92	16.82	17.09	0-5	1
		25	0	16.78	16.70	16.92	0-5	1
		25	12	16.90	16.85	17.00	0-5	1
		25	24	16.72	16.82	17.03	0-5	1
		50	0	16.77	16.69	16.95	0-5	1

LTE Band 2 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18675 Ch. 1857.5 ㎒	18900 Ch. 1880 ㎒	19125 Ch. 1902.5 ㎒		
15 ㎒	QPSK	1	0	17.45	17.62	17.75	0	0
		1	36	17.64	17.65	17.86	0	0
		1	74	17.66	17.65	17.77	0	0
		36	0	17.69	17.58	17.77	0-1	0
		36	18	17.81	17.71	17.88	0-1	0
		36	39	17.77	17.74	18.00	0-1	0
		75	0	17.75	17.73	17.93	0-1	0
	16QAM	1	0	17.94	18.02	18.08	0-1	0
		1	36	18.07	17.88	18.07	0-1	0
		1	74	17.79	18.03	18.11	0-1	0
		36	0	17.74	17.63	17.76	0-2	0
		36	18	17.82	17.72	17.94	0-2	0
		36	39	17.86	17.73	18.00	0-2	0
		75	0	17.80	17.74	17.92	0-2	0
	64QAM	1	0	17.82	17.86	18.01	0-2	0
		1	36	17.85	17.81	18.09	0-2	0
		1	74	17.92	17.90	18.13	0-2	0
		36	0	17.80	17.62	17.80	0-3	0
		36	18	17.77	17.82	17.96	0-3	0
		36	39	17.88	17.84	18.07	0-3	0
		75	0	17.78	17.69	17.90	0-3	0
	256QAM	1	0	16.82	16.66	16.85	0-5	1
		1	36	16.94	16.80	17.09	0-5	1
		1	74	16.86	16.90	17.09	0-5	1
		36	0	16.76	16.61	16.80	0-5	1
		36	18	16.83	16.78	16.94	0-5	1
		36	39	16.86	16.77	17.07	0-5	1
		75	0	16.77	16.72	16.83	0-5	1

LTE Band 2 _ 20 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 ㎒	18900 Ch. 1880 ㎒	19100 Ch. 1900 ㎒		
20 ㎒	QPSK	1	0	17.64	17.64	17.66	0	0
		1	49	17.65	17.63	17.76	0	0
		1	99	17.67	17.70	17.79	0	0
		50	0	17.65	17.54	17.73	0-1	0
		50	25	17.78	17.75	17.99	0-1	0
		50	49	17.77	17.80	17.89	0-1	0
		100	0	17.77	17.66	17.81	0-1	0
	16QAM	1	0	17.90	17.93	18.09	0-1	0
		1	49	17.90	17.93	18.02	0-1	0
		1	99	17.92	18.14	18.17	0-1	0
		50	0	17.58	17.58	17.75	0-2	0
		50	25	17.75	17.79	17.88	0-2	0
		50	49	17.80	17.70	17.95	0-2	0
		100	0	17.73	17.69	17.75	0-2	0
	64QAM	1	0	17.94	17.88	17.88	0-2	0
		1	49	17.92	17.81	18.05	0-2	0
		1	99	18.01	17.90	18.11	0-2	0
		50	0	17.70	17.57	17.77	0-3	0
		50	25	17.79	17.81	17.99	0-3	0
		50	49	17.78	17.81	17.97	0-3	0
		100	0	17.75	17.74	17.80	0-3	0
	256QAM	1	0	16.60	16.40	16.43	0-5	1
		1	49	16.85	16.91	17.05	0-5	1
		1	99	16.75	16.81	16.74	0-5	1
		50	0	16.65	16.58	16.82	0-5	1
		50	25	16.79	16.75	16.97	0-5	1
		50	49	16.79	16.65	16.95	0-5	1
		100	0	16.70	16.74	16.84	0-5	1

[LTE Band 4 Conducted Power]

LTE Band 4 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19957 Ch. 1710.7 ㎒	20175 Ch. 1732.5 ㎒	20393 Ch. 1754.3 ㎒		
1.4 ㎒	QPSK	1	0	18.96	18.65	18.32	0	0
		1	3	19.08	18.75	18.29	0	0
		1	5	19.02	18.66	18.33	0	0
		3	0	19.08	18.69	18.34	0-1	0
		3	1	19.14	18.70	18.40	0-1	0
		3	3	19.01	18.70	18.25	0-1	0
		6	0	19.17	18.79	18.35	0-1	0
	16QAM	1	0	19.18	18.97	18.72	0-1	0
		1	3	19.27	19.09	18.55	0-1	0
		1	5	19.26	18.99	18.76	0-1	0
		3	0	19.26	18.91	18.57	0-2	0
		3	1	19.26	18.95	18.66	0-2	0
		3	3	19.26	18.92	18.46	0-2	0
		6	0	19.17	18.91	18.36	0-2	0
	64QAM	1	0	19.19	18.90	18.47	0-2	0
		1	3	19.29	19.08	18.70	0-2	0
		1	5	19.25	18.64	18.36	0-2	0
		3	0	19.11	18.95	18.45	0-3	0
		3	1	19.11	18.91	18.52	0-3	0
		3	3	19.21	18.92	18.59	0-3	0
		6	0	19.14	18.82	18.39	0-3	0
	256QAM	1	0	18.95	18.36	17.95	0-5	0
		1	3	18.78	18.36	18.13	0-5	0
		1	5	18.65	18.33	17.94	0-5	0
		3	0	18.71	18.41	18.01	0-5	0
		3	1	18.80	18.44	17.99	0-5	0
		3	3	18.74	18.40	18.30	0-5	0
		6	0	18.66	18.31	17.89	0-5	0

LTE Band 4 _ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19965 Ch. 1711.5 MHz	20175 Ch. 1732.5 MHz	20385 Ch. 1753.5 MHz		
3 MHz	QPSK	1	0	19.09	18.84	18.46	0	0
		1	7	19.15	18.80	18.39	0	0
		1	14	19.03	18.64	18.42	0	0
		8	0	19.24	18.91	18.50	0-1	0
		8	3	19.21	18.86	18.53	0-1	0
		8	7	19.21	18.75	18.41	0-1	0
		15	0	19.19	18.83	18.51	0-1	0
	16QAM	1	0	19.22	19.15	18.82	0-1	0
		1	7	19.22	19.20	18.65	0-1	0
		1	14	19.29	19.11	18.82	0-1	0
		8	0	19.27	19.00	18.65	0-2	0
		8	3	19.16	18.92	18.66	0-2	0
		8	7	19.28	18.84	18.51	0-2	0
		15	0	19.25	18.87	18.56	0-2	0
	64QAM	1	0	19.26	19.04	18.73	0-2	0
		1	7	19.21	19.02	18.63	0-2	0
		1	14	19.27	18.84	18.56	0-2	0
		8	0	19.23	18.97	18.52	0-3	0
		8	3	19.26	18.92	18.59	0-3	0
		8	7	19.21	18.80	18.43	0-3	0
		15	0	19.22	18.95	18.51	0-3	0
	256QAM	1	0	18.81	18.56	18.22	0-5	0
		1	7	18.66	18.36	18.22	0-5	0
		1	14	18.83	18.28	17.97	0-5	0
		8	0	18.69	18.41	17.98	0-5	0
		8	3	18.86	18.37	18.11	0-5	0
		8	7	18.74	18.44	18.08	0-5	0
		15	0	18.69	18.37	18.06	0-5	0

LTE Band 4 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced 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	19.09	18.84	18.36	0	0
		1	12	19.21	18.81	18.42	0	0
		1	24	19.02	18.58	18.29	0	0
		12	0	19.22	18.88	18.51	0-1	0
		12	6	19.24	18.97	18.50	0-1	0
		12	11	19.16	18.76	18.48	0-1	0
		25	0	19.16	18.89	18.52	0-1	0
	16QAM	1	0	19.22	19.30	18.72	0-1	0
		1	12	19.23	19.08	18.75	0-1	0
		1	24	19.25	19.00	18.74	0-1	0
		12	0	19.30	18.95	18.55	0-2	0
		12	6	19.33	18.98	18.55	0-2	0
		12	11	19.27	18.84	18.52	0-2	0
		25	0	19.22	18.92	18.43	0-2	0
	64QAM	1	0	19.28	19.08	18.67	0-2	0
		1	12	19.25	18.95	18.64	0-2	0
		1	24	19.00	18.91	18.33	0-2	0
		12	0	19.29	18.96	18.57	0-3	0
		12	6	19.33	19.00	18.61	0-3	0
		12	11	19.24	18.87	18.46	0-3	0
		25	0	19.20	18.89	18.57	0-3	0
	256QAM	1	0	18.65	18.35	18.09	0-5	0
		1	12	19.00	18.60	18.15	0-5	0
		1	24	18.65	18.39	18.10	0-5	0
		12	0	18.70	18.39	18.02	0-5	0
		12	6	18.75	18.37	17.99	0-5	0
		12	11	18.67	18.29	17.98	0-5	0
		25	0	18.68	18.36	18.03	0-5	0

LTE Band 4 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20000 Ch. 1715 ㎒	20175 Ch. 1732.5 ㎒	20350 Ch. 1750 ㎒		
10 ㎒	QPSK	1	0	19.05	18.47	18.04	0	0
		1	24	19.11	18.72	18.56	0	0
		1	49	18.98	18.57	18.17	0	0
		25	0	19.04	18.88	18.43	0-1	0
		25	12	19.25	18.86	18.56	0-1	0
		25	24	19.11	18.65	18.46	0-1	0
		50	0	19.14	18.82	18.43	0-1	0
	16QAM	1	0	19.17	18.86	18.47	0-1	0
		1	24	19.24	19.10	18.98	0-1	0
		1	49	19.19	18.74	18.44	0-1	0
		25	0	19.10	18.87	18.47	0-2	0
		25	12	19.14	18.89	18.55	0-2	0
		25	24	19.13	18.71	18.41	0-2	0
		50	0	19.10	18.75	18.47	0-2	0
	64QAM	1	0	19.04	18.76	18.26	0-2	0
		1	24	19.28	18.92	18.48	0-2	0
		1	49	19.01	18.51	18.26	0-2	0
		25	0	19.09	18.83	18.46	0-3	0
		25	12	19.29	18.96	18.59	0-3	0
		25	24	19.07	18.73	18.48	0-3	0
		50	0	19.12	18.81	18.44	0-3	0
	256QAM	1	0	18.48	18.07	17.82	0-5	0
		1	24	18.47	18.75	18.08	0-5	0
		1	49	18.87	18.23	17.76	0-5	0
		25	0	18.65	18.26	18.07	0-5	0
		25	12	18.77	18.43	18.00	0-5	0
		25	24	18.63	18.20	18.04	0-5	0
		50	0	18.56	18.32	17.92	0-5	0

LTE Band 4 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20025 Ch. 1717.5 ㎒	20175 Ch. 1732.5 ㎒	20325 Ch. 1747.5 ㎒		
15 ㎒	QPSK	1	0	18.95	18.64	18.39	0	0
		1	36	19.21	18.75	18.60	0	0
		1	74	18.95	18.52	18.32	0	0
		36	0	19.08	18.80	18.51	0-1	0
		36	18	19.20	18.87	18.55	0-1	0
		36	39	19.07	18.72	18.40	0-1	0
		75	0	19.05	18.75	18.49	0-1	0
	16QAM	1	0	19.10	18.75	18.41	0-1	0
		1	36	19.29	19.14	18.59	0-1	0
		1	74	19.24	18.83	18.53	0-1	0
		36	0	19.12	18.77	18.47	0-2	0
		36	18	19.13	18.83	18.60	0-2	0
		36	39	19.05	18.73	18.36	0-2	0
		75	0	19.08	18.82	18.49	0-2	0
	64QAM	1	0	19.08	18.91	18.42	0-2	0
		1	36	19.25	19.05	18.57	0-2	0
		1	74	19.14	18.63	18.62	0-2	0
		36	0	19.08	18.90	18.65	0-3	0
		36	18	19.18	18.93	18.56	0-3	0
		36	39	19.03	18.76	18.47	0-3	0
		75	0	19.04	18.82	18.58	0-3	0
	256QAM	1	0	18.53	18.20	17.88	0-5	0
		1	36	18.86	18.52	18.22	0-5	0
		1	74	18.54	18.25	18.05	0-5	0
		36	0	18.60	18.29	18.01	0-5	0
		36	18	18.72	18.40	18.10	0-5	0
		36	39	18.60	18.29	17.96	0-5	0
		75	0	18.57	18.32	18.02	0-5	0

LTE Band 4 _ 20 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm] 20175 Ch. 1732.5 ㎒	MPR Allowed Per 3GPP [dB]	MPR [dB]
20 ㎒	QPSK	1	0	18.59	0	0
		1	49	18.79	0	0
		1	99	18.32	0	0
		50	0	18.85	0-1	0
		50	25	18.83	0-1	0
		50	49	18.72	0-1	0
		100	0	18.75	0-1	0
	16QAM	1	0	18.88	0-1	0
		1	49	18.98	0-1	0
		1	99	18.49	0-1	0
		50	0	18.83	0-2	0
		50	25	18.84	0-2	0
		50	49	18.61	0-2	0
		100	0	18.81	0-2	0
	64QAM	1	0	18.92	0-2	0
		1	49	19.00	0-2	0
		1	99	18.42	0-2	0
		50	0	18.90	0-3	0
		50	25	18.90	0-3	0
		50	49	18.68	0-3	0
		100	0	18.79	0-3	0
	256QAM	1	0	18.23	0-5	0
		1	49	18.43	0-5	0
		1	99	17.90	0-5	0
		50	0	18.42	0-5	0
		50	25	18.37	0-5	0
		50	49	18.17	0-5	0
		100	0	18.31	0-5	0

[LTE Band 41 Conducted Power] - Power Class 3

LTE Band 41 _ 5 ㎒ Bandwidth - Power Class 3

Band width	Modulation	RB Size	RB Offset	Reduced Power [dBm]					MPR Allowed Per GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
5 ㎒	QPSK	1	0	20.82	20.67	20.44	20.44	20.50	0	0
		1	12	20.76	20.66	20.50	20.50	20.52	0	0
		1	24	20.78	20.63	20.48	20.51	20.48	0	0
		12	0	20.90	20.71	20.57	20.60	20.58	0-1	0
		12	6	20.91	20.76	20.65	20.61	20.61	0-1	0
		12	11	20.89	20.70	20.65	20.62	20.63	0-1	0
		25	0	20.87	20.74	20.65	20.61	20.67	0-1	0
	16QAM	1	0	20.95	20.77	20.60	20.53	20.59	0-1	0
		1	12	20.98	20.88	20.74	20.63	20.66	0-1	0
		1	24	20.92	20.73	20.62	20.58	20.59	0-1	0
		12	0	20.84	20.64	20.52	20.50	20.49	0-2	0
		12	6	20.89	20.68	20.60	20.50	20.53	0-2	0
		12	11	20.86	20.60	20.55	20.51	20.53	0-2	0
		25	0	20.95	20.77	20.65	20.60	20.67	0-2	0
	64QAM	1	0	20.55	20.27	20.12	20.18	20.18	0-2	0
		1	12	20.52	20.25	20.19	20.22	20.23	0-2	0
		1	24	20.54	20.21	20.16	20.21	20.20	0-2	0
		12	0	20.90	20.70	20.53	20.53	20.51	0-3	0
		12	6	20.91	20.72	20.61	20.53	20.60	0-3	0
		12	11	20.88	20.69	20.57	20.53	20.62	0-3	0
		25	0	20.90	20.73	20.65	20.55	20.64	0-3	0
	256QAM	1	0	18.68	18.45	18.33	18.42	18.37	0-5	2
		1	12	18.71	18.40	18.36	18.44	18.41	0-5	2
		1	24	18.67	18.34	18.35	18.41	18.39	0-5	2
		12	0	19.02	18.86	18.67	18.67	18.65	0-5	2
		12	6	19.04	18.89	18.79	18.68	18.78	0-5	2
		12	11	19.02	18.85	18.73	18.70	18.74	0-5	2
		25	0	18.94	18.77	18.71	18.63	18.68	0-5	2

LTE Band 41 _ 10 ㎒ Bandwidth - Power Class 3

Band width	Modulation	RB Size	RB Offset	Reduced Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
10 ㎒	QPSK	1	0	20.83	20.68	20.46	20.33	20.39	0	0
		1	24	20.80	20.67	20.50	20.49	20.51	0	0
		1	49	20.78	20.66	20.51	20.19	20.25	0	0
		25	0	20.91	20.72	20.59	20.53	20.52	0-1	0
		25	12	20.96	20.78	20.67	20.59	20.67	0-1	0
		25	24	20.89	20.70	20.67	20.54	20.56	0-1	0
		50	0	20.84	20.75	20.67	20.49	20.62	0-1	0
	16QAM	1	0	20.95	20.77	20.61	20.41	20.40	0-1	0
		1	24	20.93	20.90	20.76	20.67	20.65	0-1	0
		1	49	20.90	20.73	20.62	20.34	20.35	0-1	0
		25	0	20.96	20.65	20.53	20.53	20.53	0-2	0
		25	12	20.96	20.68	20.60	20.56	20.67	0-2	0
		25	24	20.92	20.62	20.57	20.52	20.55	0-2	0
		50	0	20.88	20.80	20.67	20.53	20.62	0-2	0
	64QAM	1	0	20.56	20.50	20.95	19.96	19.95	0-2	0
		1	24	20.49	20.99	20.95	20.22	20.24	0-2	0
		1	49	20.51	20.98	20.96	19.93	19.94	0-2	0
		25	0	20.89	20.65	20.49	20.51	20.51	0-3	0
		25	12	20.93	20.73	20.67	20.55	20.67	0-3	0
		25	24	20.89	20.63	20.52	20.49	20.52	0-3	0
		50	0	20.87	20.73	20.62	20.55	20.65	0-3	0
	256QAM	1	0	18.50	18.21	18.16	18.17	18.16	0-5	2
		1	24	18.68	18.42	18.39	18.42	18.41	0-5	2
		1	49	18.48	18.20	18.14	18.16	18.17	0-5	2
		25	0	18.96	18.83	18.63	18.59	18.60	0-5	2
		25	12	19.04	18.88	18.77	18.62	18.71	0-5	2
		25	24	18.92	18.74	18.65	18.58	18.63	0-5	2
		50	0	18.96	18.78	18.67	18.60	18.66	0-5	2

LTE Band 41 _ 15 ㎒ Bandwidth- Power Class 3

Band width	Modulation	RB Size	RB Offset	Reduced Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
15 ㎒	QPSK	1	0	20.80	20.42	20.35	20.43	20.40	0	0
		1	36	20.76	20.41	20.56	20.43	20.51	0	0
		1	74	20.80	20.32	20.32	20.18	20.26	0	0
		36	0	20.86	20.66	20.51	20.53	20.54	0-1	0
		36	18	20.93	20.68	20.51	20.54	20.67	0-1	0
		36	39	20.86	20.55	20.55	20.48	20.57	0-1	0
		75	0	20.84	20.60	20.59	20.47	20.63	0-1	0
	16QAM	1	0	20.89	20.40	20.35	20.53	20.41	0-1	0
		1	36	20.78	20.45	20.47	20.55	20.65	0-1	0
		1	74	20.82	20.26	20.40	20.28	20.36	0-1	0
		36	0	20.82	20.63	20.46	20.50	20.53	0-2	0
		36	18	20.84	20.65	20.61	20.51	20.68	0-2	0
		36	39	20.87	20.54	20.58	20.43	20.56	0-2	0
		75	0	20.89	20.62	20.60	20.48	20.64	0-2	0
	64QAM	1	0	20.57	20.09	20.05	20.14	19.96	0-2	0
		1	36	20.51	20.31	20.26	20.25	20.26	0-2	0
		1	74	20.51	20.03	20.10	19.94	19.94	0-2	0
		36	0	20.86	20.68	20.54	20.58	20.52	0-3	0
		36	18	20.91	20.69	20.62	20.55	20.68	0-3	0
		36	39	20.90	20.56	20.62	20.50	20.53	0-3	0
		75	0	20.89	20.64	20.60	20.49	20.66	0-3	0
	256QAM	1	0	18.60	18.42	18.29	18.35	18.18	0-5	2
		1	36	18.77	18.53	18.47	18.47	18.42	0-5	2
		1	74	18.66	18.27	18.32	18.17	18.18	0-5	2
		36	0	18.91	18.70	18.54	18.59	18.62	0-5	2
		36	18	18.98	18.76	18.71	18.59	18.72	0-5	2
		36	39	18.92	18.62	18.62	18.51	18.65	0-5	2
		75	0	18.94	18.70	18.63	18.51	18.67	0-5	2

LTE Band 41 _ 20 ㎒ Bandwidth - Power Class 3

Band width	Modulation	RB Size	RB Offset	Reduced Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	20.83	20.61	20.23	20.35	20.38	0	0
		1	49	20.85	20.55	20.49	20.50	20.49	0	0
		1	99	20.74	20.47	20.17	19.96	20.37	0	0
		50	0	20.80	20.45	20.51	20.52	20.42	0-1	0
		50	25	20.90	20.70	20.64	20.52	20.62	0-1	0
		50	49	20.85	20.53	20.54	20.45	20.61	0-1	0
		100	0	20.84	20.59	20.53	20.42	20.47	0-1	0
	16QAM	1	0	20.86	20.62	20.21	20.38	20.12	0-1	0
		1	49	20.82	20.49	20.51	20.56	20.51	0-1	0
		1	99	20.80	20.47	20.21	20.03	20.41	0-1	0
		50	0	20.84	20.67	20.52	20.55	20.42	0-2	0
		50	25	20.96	20.73	20.70	20.57	20.64	0-2	0
		50	49	20.87	20.54	20.59	20.44	20.60	0-2	0
		100	0	20.90	20.61	20.62	20.48	20.53	0-2	0
	64QAM	1	0	20.57	20.33	19.90	20.01	19.82	0-2	0
		1	49	20.49	20.27	20.24	20.24	20.22	0-2	0
		1	99	20.51	20.24	19.92	19.73	20.11	0-2	0
		50	0	20.84	20.70	20.52	20.58	20.47	0-3	0
		50	25	20.98	20.73	20.69	20.62	20.71	0-3	0
		50	49	20.88	20.57	20.61	20.48	20.65	0-3	0
		100	0	20.85	20.60	20.57	20.46	20.52	0-3	0
	256QAM	1	0	18.47	18.24	18.16	18.25	18.05	0-5	2
		1	49	18.76	18.51	18.47	18.45	18.45	0-5	2
		1	99	18.51	18.05	18.17	17.96	18.32	0-5	2
		50	0	18.93	18.72	18.58	18.63	18.49	0-5	2
		50	25	19.06	18.79	18.76	18.65	18.73	0-5	2
		50	49	18.98	18.62	18.66	18.53	18.70	0-5	2
		100	0	18.92	18.63	18.63	18.52	18.52	0-5	2

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

[LTE Band 41 Conducted Power] - Power Class 2

LTE Band 41 _ 5 ㎒ Bandwidth - Power Class 2

Band width	Modulation	RB Size	RB Offset	Reduced Power [dBm]					MPR Allowed Per GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
5 ㎒	QPSK	1	0	22.22	21.96	21.79	21.83	21.77	0	0
		1	12	22.13	22.00	21.92	21.87	21.87	0	0
		1	24	22.14	21.97	21.78	21.83	21.81	0	0
		12	0	22.29	22.12	21.91	21.91	21.92	0-1	0
		12	6	22.33	22.14	22.03	21.91	22.01	0-1	0
		12	11	22.27	22.12	21.98	21.91	21.99	0-1	0
		25	0	22.29	22.11	21.98	21.91	21.98	0-1	0
	16QAM	1	0	22.55	22.37	21.96	22.18	22.17	0-1	0
		1	12	22.59	22.40	22.06	22.27	22.34	0-1	0
		1	24	22.50	22.33	21.95	22.16	22.23	0-1	0
		12	0	22.27	22.08	21.85	21.88	21.88	0-2	0
		12	6	22.29	22.07	21.95	21.89	21.99	0-2	0
		12	11	22.27	22.08	21.94	21.89	21.97	0-2	0
		25	0	22.32	22.14	21.98	21.96	22.02	0-2	0
	64QAM	1	0	22.19	21.94	21.72	21.85	21.80	0-2	0
		1	12	22.15	21.87	21.90	21.91	21.86	0-2	0
		1	24	22.24	21.90	21.78	21.88	21.88	0-2	0
		12	0	21.81	21.35	21.95	21.92	21.94	0-3	0
		12	6	21.84	21.38	22.10	21.93	22.00	0-3	0
		12	11	21.81	21.37	21.98	21.93	21.98	0-3	0
		25	0	21.81	21.36	22.03	21.93	21.99	0-3	0
	256QAM	1	0	20.28	20.07	19.80	19.93	19.93	0-5	2
		1	12	20.22	20.02	20.04	19.95	19.98	0-5	2
		1	24	20.22	20.05	19.95	19.92	19.95	0-5	2
		12	0	20.40	20.23	20.11	20.04	20.07	0-5	2
		12	6	20.43	20.28	20.16	20.05	20.15	0-5	2
		12	11	20.41	20.25	20.14	20.08	20.13	0-5	2
		25	0	20.32	20.15	20.09	19.97	20.04	0-5	2

LTE Band 41 _ 10 ㎒ Bandwidth - Power Class 2

Band width	Modulation	RB Size	RB Offset	Reduced Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
10 ㎒	QPSK	1	0	22.23	22.15	21.78	21.67	21.66	0	0
		1	24	22.18	22.05	21.91	21.82	21.90	0	0
		1	49	22.17	22.05	21.80	21.57	21.58	0	0
		25	0	22.31	22.06	21.91	21.84	21.84	0-1	0
		25	12	22.33	22.15	22.03	21.93	22.03	0-1	0
		25	24	22.29	21.99	21.98	21.88	21.89	0-1	0
		50	0	22.20	22.05	21.97	21.81	21.95	0-1	0
	16QAM	1	0	22.52	22.12	21.95	22.01	21.98	0-1	0
		1	24	22.52	22.31	22.06	22.27	22.18	0-1	0
		1	49	22.56	22.06	21.95	21.95	22.00	0-1	0
		25	0	22.33	22.08	21.84	21.86	21.84	0-2	0
		25	12	22.34	22.15	21.95	21.97	22.07	0-2	0
		25	24	22.29	21.99	21.94	21.91	21.93	0-2	0
		50	0	22.28	22.07	21.97	21.90	21.99	0-2	0
	64QAM	1	0	22.28	21.68	21.72	21.65	21.61	0-2	0
		1	24	22.15	21.89	21.88	21.96	21.93	0-2	0
		1	49	22.25	21.72	21.77	21.67	21.66	0-2	0
		25	0	21.85	21.38	21.96	21.89	21.90	0-3	0
		25	12	21.85	21.40	22.10	21.95	22.03	0-3	0
		25	24	21.82	21.36	21.98	21.91	21.94	0-3	0
		50	0	21.86	21.42	22.02	21.92	22.00	0-3	0
	256QAM	1	0	20.09	19.86	19.80	19.73	19.73	0-5	2
		1	24	20.29	20.13	20.03	19.94	19.97	0-5	2
		1	49	20.01	19.81	19.74	19.69	19.76	0-5	2
		25	0	20.38	20.18	19.98	19.93	19.98	0-5	2
		25	12	20.37	20.21	20.10	19.98	20.14	0-5	2
		25	24	20.27	20.09	19.98	19.98	19.98	0-5	2
		50	0	20.35	20.12	20.06	19.97	20.07	0-5	2

LTE Band 41 _ 15 ㎒ Bandwidth- Power Class 2

Band width	Modulation	RB Size	RB Offset	Reduced Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
15 ㎒	QPSK	1	0	22.24	21.90	21.78	21.83	21.61	0	0
		1	36	22.19	21.96	21.90	21.87	21.88	0	0
		1	74	22.18	21.73	21.78	21.54	21.87	0	0
		36	0	22.23	22.04	21.90	21.91	21.82	0-1	0
		36	18	22.26	22.06	22.02	21.89	21.96	0-1	0
		36	39	22.28	21.94	21.97	21.85	21.98	0-1	0
		75	0	22.24	21.99	21.97	21.83	21.94	0-1	0
	16QAM	1	0	22.47	22.02	21.95	22.08	21.91	0-1	0
		1	36	22.36	22.08	22.05	22.11	22.06	0-1	0
		1	74	22.44	21.85	21.94	21.83	22.04	0-1	0
		36	0	22.18	21.98	21.84	21.85	21.77	0-2	0
		36	18	22.22	22.01	21.95	21.87	21.97	0-2	0
		36	39	22.20	21.89	21.92	21.80	21.95	0-2	0
		75	0	22.24	21.99	21.97	21.87	21.95	0-2	0
	64QAM	1	0	22.22	21.75	21.71	21.80	21.63	0-2	0
		1	36	22.21	21.90	21.88	21.90	21.91	0-2	0
		1	74	22.21	21.65	21.76	21.63	21.84	0-2	0
		36	0	22.01	21.55	21.95	21.93	21.88	0-3	0
		36	18	21.88	21.52	22.09	21.95	22.06	0-3	0
		36	39	21.90	21.51	21.97	21.92	22.00	0-3	0
		75	0	21.88	21.53	22.02	21.89	22.01	0-3	0
	256QAM	1	0	20.09	19.88	19.79	19.86	19.71	0-5	2
		1	36	20.31	20.03	20.02	19.93	19.98	0-5	2
		1	74	20.17	19.80	19.81	19.62	19.90	0-5	2
		36	0	20.27	20.08	19.93	19.91	19.83	0-5	2
		36	18	20.36	20.11	20.06	19.96	20.05	0-5	2
		36	39	20.29	19.97	20.02	19.89	20.03	0-5	2
		75	0	20.31	20.05	20.00	19.91	19.99	0-5	2

LTE Band 41 _ 20 ㎒ Bandwidth - Power Class 2

Band width	Modulation	RB Size	RB Offset	Reduced Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39750 Ch. 2506.0 ㎒	40185 Ch. 2549.5 ㎒	40620 Ch. 2593.0 ㎒	41055 Ch. 2636.5 ㎒	41490 Ch. 2680.0 ㎒		
20 ㎒	QPSK	1	0	22.17	22.06	21.68	21.70	21.45	0	0
		1	49	22.31	21.97	21.87	21.91	21.93	0	0
		1	99	22.16	21.92	21.57	21.37	21.73	0	0
		50	0	22.20	22.02	21.81	21.88	21.78	0-1	0
		50	25	22.30	22.03	22.01	21.91	21.99	0-1	0
		50	49	22.21	21.87	21.89	21.80	21.95	0-1	0
		100	0	22.19	21.94	21.95	21.81	21.85	0-1	0
	16QAM	1	0	22.44	22.15	21.81	21.95	21.72	0-1	0
		1	49	22.38	22.05	22.06	22.11	22.10	0-1	0
		1	99	22.41	22.09	21.79	21.62	21.94	0-1	0
		50	0	22.20	21.99	21.84	21.88	21.80	0-2	0
		50	25	22.29	22.07	22.03	21.89	22.00	0-2	0
		50	49	22.20	21.89	21.91	21.80	21.99	0-2	0
		100	0	22.24	21.99	21.98	21.84	21.88	0-2	0
	64QAM	1	0	22.25	21.93	21.53	21.68	21.49	0-2	0
		1	49	22.16	21.86	21.85	21.88	21.86	0-2	0
		1	99	22.18	21.80	21.56	21.41	21.76	0-2	0
		50	0	21.94	21.45	21.89	21.98	21.87	0-3	0
		50	25	21.90	21.49	22.08	21.97	22.05	0-3	0
		50	49	21.80	21.33	21.99	21.86	22.05	0-3	0
		100	0	21.86	21.37	21.98	21.86	21.91	0-3	0
	256QAM	1	0	19.95	19.75	19.71	19.80	19.59	0-5	2
		1	49	20.28	20.04	19.99	19.95	19.98	0-5	2
		1	99	19.99	19.60	19.67	19.46	19.84	0-5	2
		50	0	20.29	20.08	19.95	19.99	19.88	0-5	2
		50	25	20.38	20.12	20.08	20.02	20.11	0-5	2
		50	49	20.28	19.96	20.02	19.91	20.06	0-5	2
		100	0	20.25	19.98	19.96	19.85	19.90	0-5	2

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

[LTE Band 66 Conducted Power]

LTE Band 66 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131979Ch. 1710.7 ㎒	132322 Ch. 1745 ㎒	132665 Ch. 1779.3 ㎒		
1.4 ㎒	QPSK	1	0	19.57	19.02	18.95	0	0
		1	3	19.54	19.00	18.98	0	0
		1	5	19.41	18.92	18.89	0	0
		3	0	19.46	19.02	18.96	0	0
		3	1	19.52	19.07	18.98	0	0
		3	3	19.51	18.92	19.02	0	0
		6	0	19.56	19.12	19.09	0-1	0
	16QAM	1	0	19.54	19.38	19.28	0-1	0
		1	3	19.60	19.42	19.46	0-1	0
		1	5	19.48	19.38	19.20	0-1	0
		3	0	19.37	19.23	19.19	0-1	0
		3	1	19.40	19.26	19.29	0-1	0
		3	3	19.48	19.20	19.16	0-1	0
		6	0	19.35	19.12	19.23	0-2	0
	64QAM	1	0	19.51	19.29	19.28	0-2	0
		1	3	19.51	19.47	19.26	0-2	0
		1	5	19.39	19.28	19.17	0-2	0
		3	0	19.39	19.23	19.14	0-2	0
		3	1	19.45	19.24	19.20	0-2	0
		3	3	19.32	19.20	19.08	0-2	0
		6	0	19.36	19.10	19.06	0-3	0
	256QAM	1	0	19.26	18.65	18.68	0-5	0
		1	3	19.18	18.78	18.66	0-5	0
		1	5	19.15	18.59	18.64	0-5	0
		3	0	19.19	18.77	18.71	0-5	0
		3	1	19.27	18.62	18.73	0-5	0
		3	3	19.15	18.65	18.60	0-5	0
		6	0	19.14	18.56	18.58	0-5	0

LTE Band 66 _ 3 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131987 Ch. 1711.5 ㎒	132322 Ch. 1745 ㎒	132657 Ch. 1778.5 ㎒		
3 ㎒	QPSK	1	0	19.59	19.15	19.11	0	0
		1	7	19.48	19.04	19.06	0	0
		1	14	19.47	19.03	18.97	0	0
		8	0	19.62	19.17	19.21	0-1	0
		8	3	19.69	19.20	19.20	0-1	0
		8	7	19.59	19.09	19.11	0-1	0
		15	0	19.65	19.17	19.17	0-1	0
	16QAM	1	0	19.59	19.41	19.49	0-1	0
		1	7	19.59	19.32	19.37	0-1	0
		1	14	19.52	19.47	19.27	0-1	0
		8	0	19.55	19.31	19.27	0-2	0
		8	3	19.52	19.30	19.24	0-2	0
		8	7	19.41	19.26	19.18	0-2	0
		15	0	19.42	19.17	19.15	0-2	0
	64QAM	1	0	19.52	19.51	19.39	0-2	0
		1	7	19.47	19.36	19.32	0-2	0
		1	14	19.47	19.13	19.24	0-2	0
		8	0	19.42	19.21	19.19	0-3	0
		8	3	19.43	19.26	19.29	0-3	0
		8	7	19.39	19.12	19.18	0-3	0
		15	0	19.45	19.24	19.14	0-3	0
	256QAM	1	0	19.31	18.80	18.79	0-5	0
		1	7	19.21	18.73	18.69	0-5	0
		1	14	19.20	18.66	18.63	0-5	0
		8	0	19.21	18.70	18.71	0-5	0
		8	3	19.18	18.73	18.67	0-5	0
		8	7	19.12	18.72	18.61	0-5	0
		15	0	19.22	18.69	18.63	0-5	0

LTE Band 66 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131997 Ch. 1712.5 ㎒	132322Ch. 1745 ㎒	132647 Ch. 1777.5 ㎒		
5 ㎒	QPSK	1	0	19.52	19.09	19.07	0	0
		1	12	19.54	19.06	19.07	0	0
		1	24	19.45	18.99	18.98	0	0
		12	0	19.68	19.19	19.22	0-1	0
		12	6	19.67	19.20	19.19	0-1	0
		12	11	19.60	19.10	19.18	0-1	0
		25	0	19.68	19.15	19.11	0-1	0
	16QAM	1	0	19.68	19.58	19.39	0-1	0
		1	12	19.59	19.48	19.27	0-1	0
		1	24	19.56	19.46	19.27	0-1	0
		12	0	19.55	19.24	19.24	0-2	0
		12	6	19.56	19.24	19.22	0-2	0
		12	11	19.48	19.16	19.19	0-2	0
		25	0	19.47	19.14	19.19	0-2	0
	64QAM	1	0	19.60	19.43	19.34	0-2	0
		1	12	19.60	19.38	19.32	0-2	0
		1	24	19.52	19.32	19.28	0-2	0
		12	0	19.57	19.21	19.29	0-3	0
		12	6	19.58	19.25	19.27	0-3	0
		12	11	19.48	19.14	19.19	0-3	0
		25	0	19.43	19.13	19.16	0-3	0
	256QAM	1	0	19.23	18.77	18.80	0-5	0
		1	12	19.24	18.69	18.70	0-5	0
		1	24	19.17	18.65	18.59	0-5	0
		12	0	19.23	18.67	18.67	0-5	0
		12	6	19.16	18.71	18.71	0-5	0
		12	11	19.14	18.59	18.63	0-5	0
		25	0	19.16	18.64	18.66	0-5	0

LTE Band 66 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132022 Ch. 1715 ㎒	132322 Ch. 1745 ㎒	132622 Ch. 1775 ㎒		
10 ㎒	QPSK	1	0	19.19	18.86	19.01	0	0
		1	24	19.58	19.04	19.08	0	0
		1	49	19.28	18.76	18.88	0	0
		25	0	19.58	19.21	19.08	0-1	0
		25	12	19.66	19.17	19.16	0-1	0
		25	24	19.58	19.16	19.13	0-1	0
		50	0	19.56	19.06	19.05	0-1	0
	16QAM	1	0	19.67	19.13	19.40	0-1	0
		1	24	19.65	19.46	19.53	0-1	0
		1	49	19.57	19.25	19.32	0-1	0
		25	0	19.59	19.17	19.00	0-2	0
		25	12	19.66	19.15	19.12	0-2	0
		25	24	19.55	19.12	19.12	0-2	0
		50	0	19.62	19.12	19.03	0-2	0
	64QAM	1	0	19.59	19.09	18.97	0-2	0
		1	24	19.57	19.35	19.41	0-2	0
		1	49	19.55	19.12	19.02	0-2	0
		25	0	19.59	19.22	19.12	0-3	0
		25	12	19.68	19.27	19.14	0-3	0
		25	24	19.66	19.07	19.11	0-3	0
		50	0	19.65	19.11	19.05	0-3	0
	256QAM	1	0	19.03	18.50	18.24	0-5	0
		1	24	19.17	18.52	18.61	0-5	0
		1	49	19.01	18.53	18.49	0-5	0
		25	0	19.13	18.59	18.49	0-5	0
		25	12	19.19	18.69	18.63	0-5	0
		25	24	19.05	18.67	18.53	0-5	0
		50	0	19.09	18.64	18.54	0-5	0

LTE Band 66 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132047 Ch. 1717.5 ㎒	132322 Ch. 1745 ㎒	132597 Ch. 1772.5 ㎒		
15 ㎒	QPSK	1	0	19.39	19.13	18.98	0	0
		1	36	19.47	19.08	18.94	0	0
		1	74	19.35	18.97	19.01	0	0
		36	0	19.65	19.21	19.11	0-1	0
		36	18	19.65	19.20	19.24	0-1	0
		36	39	19.47	19.06	19.14	0-1	0
		75	0	19.57	19.20	19.10	0-1	0
	16QAM	1	0	19.51	19.42	19.42	0-1	0
		1	36	19.61	19.34	19.30	0-1	0
		1	74	19.60	19.29	19.41	0-1	0
		36	0	19.67	19.21	19.11	0-2	0
		36	18	19.51	19.18	19.25	0-2	0
		36	39	19.55	19.16	19.12	0-2	0
		75	0	19.61	19.23	19.12	0-2	0
	64QAM	1	0	19.59	19.31	19.26	0-2	0
		1	36	19.67	19.35	19.22	0-2	0
		1	74	19.59	19.17	19.14	0-2	0
		36	0	19.68	19.28	19.16	0-3	0
		36	18	19.54	19.21	19.20	0-3	0
		36	39	19.64	19.13	19.19	0-3	0
		75	0	19.59	19.19	19.06	0-3	0
	256QAM	1	0	19.16	18.71	18.57	0-5	0
		1	36	19.24	18.86	18.93	0-5	0
		1	74	19.04	18.53	18.67	0-5	0
		36	0	19.10	18.80	18.60	0-5	0
		36	18	19.21	18.80	18.77	0-5	0
		36	39	19.03	18.70	18.59	0-5	0
		75	0	19.07	18.70	18.61	0-5	0

LTE Band 66 _ 20 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 ㎒	132322 Ch. 1745 ㎒	132572 Ch. 1770 ㎒		
20 ㎒	QPSK	1	0	19.31	18.95	19.01	0	0
		1	49	19.42	18.98	18.75	0	0
		1	99	19.18	18.79	19.01	0	0
		50	0	19.67	19.14	19.12	0-1	0
		50	25	19.58	19.21	19.13	0-1	0
		50	49	19.55	19.10	19.13	0-1	0
		100	0	19.53	19.16	18.98	0-1	0
	16QAM	1	0	19.64	19.28	19.40	0-1	0
		1	49	19.62	19.45	19.15	0-1	0
		1	99	19.42	19.22	19.44	0-1	0
		50	0	19.55	19.20	19.06	0-2	0
		50	25	19.62	19.15	19.13	0-2	0
		50	49	19.40	18.99	19.11	0-2	0
		100	0	19.52	19.13	18.98	0-2	0
	64QAM	1	0	19.58	19.15	19.32	0-2	0
		1	49	19.66	19.31	19.17	0-2	0
		1	99	19.49	19.14	19.32	0-2	0
		50	0	19.69	19.15	19.02	0-3	0
		50	25	19.66	19.25	19.13	0-3	0
		50	49	19.54	19.04	19.13	0-3	0
		100	0	19.54	19.16	19.15	0-3	0
	256QAM	1	0	18.94	18.60	18.41	0-5	0
		1	49	19.24	18.81	18.68	0-5	0
		1	99	18.87	18.55	18.56	0-5	0
		50	0	19.09	18.65	18.55	0-5	0
		50	25	19.13	18.74	18.65	0-5	0
		50	49	19.01	18.62	18.61	0-5	0
		100	0	19.04	18.75	18.56	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.

11.4 NR Maximum Output Power
11.4.1 NR Band Maximum Conducted Power
[NR Band n5Conducted Power]

NR Band n5_ 5 ㎒ Bandwidth

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	24.60	24.61	24.51	0
				1	13	24.49	24.62	24.41	0
				1	23	24.51	24.50	24.31	0
				12	0	24.23	24.28	24.15	0.5
				12	7	24.61	24.74	24.50	0
				12	13	24.21	24.22	24.01	0.5
				25	0	24.21	24.35	24.14	0.5
			QPSK	1	1	24.45	24.50	24.37	0
				1	13	24.39	24.53	24.29	0
				1	23	24.41	24.39	24.19	0
				12	0	23.75	23.79	23.65	1
				12	7	24.56	24.69	24.49	0
				12	13	23.75	23.74	23.54	1
				25	0	23.72	23.85	23.66	1
			16QAM	1	1	24.07	24.25	24.16	0
			64QAM	1	1	22.21	22.27	22.10	2.5
			256QAM	1	1	20.22	20.20	20.11	4.5
		CP	QPSK	1	1	23.18	23.31	23.14	1.5

NR Band n5_ 10 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
							167300		
							836.5 MHz		
10 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1		24.53		0
				1	26		24.63		0
				1	50		24.52		0
				25	0		24.35		0.5
				25	14		24.81		0
				25	27		24.34		0.5
				50	0		24.39		0.5
			QPSK	1	1		24.41		0
				1	26		24.53		0
				1	50		24.41		0
				25	0		23.93		1
				25	14		24.84		0
				25	27		23.89		1
				50	0		23.94		1
			16QAM	1	1		24.19		0
			64QAM	1	1		22.12		2.5
			256QAM	1	1		20.09		4.5
		CP	QPSK	1	1		23.19		1.5

NR Band n5_ 15 ㎒ Bandwidth

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		24.60		0
				1	40		24.64		0
				1	77		24.46		0
				36	0		24.41		0.5
				36	22		24.89		0
				36	43		24.39		0.5
				75	0		24.42		0.5
			QPSK	1	1		24.46		0
				1	40		24.55		0
				1	77		24.34		0
				36	0		23.92		1
				36	22		24.90		0
				36	43		23.89		1
				75	0		23.90		1
			16QAM	1	1		24.19		0
			64QAM	1	1		22.21		2.5
			256QAM	1	1		20.21		4.5
		CP	QPSK	1	1		23.29		1.5

NR Band n5_ 20 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR [dB]
							167300		
							836.5 ㎒		
20 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1		24.51		0
				1	53		24.67		0
				1	104		24.26		0
				50	0		24.40		0.5
				50	28		24.87		0
				50	56		24.32		0.5
				100	0		24.45		0.5
			QPSK	1	1		24.40		0
				1	53		24.78		0
				1	104		24.01		0
				50	0		23.96		1
				50	28		24.90		0
				50	56		23.83		1
				100	0		23.99		1
			16QAM	1	1		24.11		0
			64QAM	1	1		22.14		2.5
			256QAM	1	1		20.11		4.5
		CP	QPSK	1	1		23.24		1.5

[NR Band n66Conducted Power]

NR Band n66 _5 ㎒ Bandwidth

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	22.48	22.36	22.39	0
				1	13	22.57	22.30	22.48	0
				1	23	22.57	22.35	22.48	0
				12	0	22.17	21.99	22.13	0.5
				12	7	22.56	22.36	22.48	0
				12	13	22.20	22.02	22.18	0.5
				25	0	22.18	22.01	22.13	0.5
			QPSK	1	1	22.41	22.26	22.33	0
				1	13	22.47	22.23	22.36	0
				1	23	22.48	22.27	22.39	0
				12	0	21.68	21.54	21.61	1
				12	7	22.58	22.35	22.52	0
				12	13	21.74	21.50	21.70	1
				25	0	21.73	21.51	21.68	1
			16QAM	1	1	21.98	21.76	21.87	1
			64QAM	1	1	20.02	19.87	19.90	2.5
			256QAM	1	1	17.83	17.68	17.79	4.5
		CP	QPSK	1	1	21.07	20.86	20.97	1.5

NR Band n66 _ 10 ㎒ Bandwidth

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	22.65	22.41	22.51	0
				1	26	22.67	22.53	22.50	0
				1	50	22.70	22.29	22.54	0
				25	0	22.39	22.09	22.13	0.5
				25	14	22.69	22.40	22.56	0
				25	27	22.45	22.12	22.31	0.5
				50	0	22.43	22.12	22.25	0.5
			QPSK	1	1	22.54	22.28	22.41	0
				1	26	22.57	22.27	22.31	0
				1	50	22.57	22.27	22.39	0
				25	0	21.95	21.58	21.64	1
				25	14	22.75	22.43	22.54	0
				25	27	21.94	21.58	21.79	1
				50	0	21.90	21.58	21.77	1
			16QAM	1	1	22.16	21.90	21.86	1
			64QAM	1	1	20.26	19.97	19.93	2.5
			256QAM	1	1	18.07	17.82	17.81	4.5
		CP	QPSK	1	1	21.30	21.04	20.97	1.5

NR Band n66 _ 15 ㎒ Bandwidth

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	22.80	22.55	22.43	0
				1	40	22.74	22.42	22.51	0
				1	77	22.63	22.30	22.45	0
				36	0	22.47	22.25	22.16	0.5
				36	22	22.77	22.55	22.56	0
				36	43	22.38	22.14	22.07	0.5
				75	0	22.48	22.15	22.17	0.5
			QPSK	1	1	22.65	22.52	22.44	0
				1	40	22.63	22.36	22.38	0
				1	77	22.55	22.25	22.36	0
				36	0	22.02	21.76	21.65	1
				36	22	22.82	22.50	22.65	0
				36	43	21.88	21.63	21.62	1
				75	0	21.97	21.70	21.65	1
			16QAM	1	1	22.29	22.07	21.92	1
			64QAM	1	1	20.40	20.18	19.94	2.5
			256QAM	1	1	18.17	17.96	17.75	4.5
		CP	QPSK	1	1	21.40	21.23	21.07	1.5

NR Band n66 _ 20 ㎒ Bandwidth

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	22.70	22.58	22.22	0
				1	53	22.72	22.45	22.29	0
				1	104	22.55	22.33	22.32	0
				50	0	22.43	22.25	22.06	0.5
				50	28	22.71	22.49	22.29	0
				50	56	22.32	22.08	21.98	0.5
				100	0	22.41	22.20	22.02	0.5
			QPSK	1	1	22.60	22.49	22.23	0
				1	53	22.58	22.39	22.22	0
				1	104	22.48	22.22	22.32	0
				50	0	21.98	21.81	21.58	1
				50	28	22.77	22.50	22.36	0
				50	56	21.87	21.62	21.52	1
				100	0	21.95	21.70	21.56	1
			16QAM	1	1	22.20	22.06	21.79	1
			64QAM	1	1	20.31	20.16	20.00	2.5
			256QAM	1	1	18.10	17.89	17.67	4.5
		CP	QPSK	1	1	21.36	21.18	20.92	1.5

11.4.2 NR Band Reduced Conducted Power(Hotspot activated)

[NR Band n66Conducted Power]

NR Band n66 _5 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR [dB]
						342500	349000	355500	
						1712.5 ㎒	1745 ㎒	1777.5 ㎒	
5 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	19.30	19.04	19.14	0
				1	13	19.30	19.04	19.14	0
				1	23	19.34	19.08	19.23	0
				12	0	19.25	19.03	19.15	0
				12	7	19.34	19.13	19.21	0
				12	13	19.33	19.08	19.17	0
				25	0	19.28	19.02	19.17	0
			QPSK	1	1	19.18	18.98	19.07	0
				1	13	19.21	18.96	19.06	0
				1	23	19.19	18.95	19.07	0
				12	0	19.27	19.07	19.17	0
				12	7	19.34	19.12	19.24	0
				12	13	19.37	19.09	19.17	0
				25	0	19.26	19.09	19.12	0
			16QAM	1	1	19.50	19.28	19.31	0
			64QAM	1	1	19.10	18.87	18.93	0
			256QAM	1	1	17.94	17.69	17.78	1.5
		CP	QPSK	1	1	19.13	18.92	18.96	0

NR Band n66 _ 10 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR [dB]
						343000	349000	355000	
						1715 ㎒	1745 ㎒	1775 ㎒	
10 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	19.33	19.09	19.06	0
				1	26	19.37	18.99	19.24	0
				1	50	19.36	18.97	19.20	0
				25	0	19.38	19.11	19.03	0
				25	14	19.33	19.08	19.17	0
				25	27	19.39	19.05	19.21	0
				50	0	19.41	19.08	19.23	0
			QPSK	1	1	19.22	18.93	18.96	0
				1	26	19.25	18.90	19.08	0
				1	50	19.20	18.87	19.08	0
				25	0	19.39	19.07	19.10	0
				25	14	19.39	19.06	19.21	0
				25	27	19.41	19.10	19.27	0
				50	0	19.38	19.08	19.19	0
			16QAM	1	1	19.61	19.31	19.28	0
			64QAM	1	1	19.22	18.93	18.88	0
			256QAM	1	1	18.05	17.76	17.71	1.5
		CP	QPSK	1	1	19.28	19.01	18.96	0

NR Band n66 _ 15 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR [dB]
						343500	349000	354500	
						1717.5 ㎒	1745 ㎒	1772.5 ㎒	
15 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	19.40	19.21	19.18	0
				1	40	19.32	18.99	19.06	0
				1	77	19.26	18.92	19.02	0
				36	0	19.44	19.18	19.11	0
				36	22	19.41	19.12	19.09	0
				36	43	19.32	19.04	19.06	0
				75	0	19.39	19.09	19.03	0
			QPSK	1	1	19.28	19.11	18.99	0
				1	40	19.21	18.96	18.92	0
				1	77	19.14	18.84	18.91	0
				36	0	19.45	19.18	19.11	0
				36	22	19.42	19.09	19.09	0
				36	43	19.32	19.03	19.03	0
				75	0	19.43	19.11	19.04	0
			16QAM	1	1	19.73	19.48	19.34	0
			64QAM	1	1	19.30	19.10	18.98	0
			256QAM	1	1	18.11	17.88	17.70	1.5
		CP	QPSK	1	1	19.34	19.18	19.02	0

NR Band n66 _ 20 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR [dB]
						344000	349000	354000	
						1720 ㎒	1745 ㎒	1770 ㎒	
20 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	19.21	19.23	19.06	0
				1	53	19.22	19.03	19.13	0
				1	104	19.18	18.95	19.01	0
				50	0	19.33	19.21	19.07	0
				50	28	19.27	19.12	19.04	0
				50	56	19.21	19.01	19.00	0
				100	0	19.30	19.13	19.08	0
			QPSK	1	1	19.34	19.11	18.99	0
				1	53	19.17	18.94	18.96	0
				1	104	19.04	18.84	18.88	0
				50	0	19.42	19.24	19.11	0
				50	28	19.43	19.10	19.04	0
				50	56	19.25	19.06	19.05	0
				100	0	19.35	19.13	19.03	0
			16QAM	1	1	19.58	19.41	19.30	0
			64QAM	1	1	19.24	19.10	18.97	0
			256QAM	1	1	18.01	17.80	17.68	1.5
		CP	QPSK	1	1	19.28	19.09	18.92	0

11.4.3 NR Band Reduced Conducted Power(Grip-sensor on,Ear jack Activated)

[NR Band n66 Conducted Power]

NR Band n66 _5 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR [dB]
						342500	349000	355500	
						1712.5 ㎒	1745 ㎒	1777.5 ㎒	
5 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	19.50	19.15	19.18	0
				1	13	19.54	19.13	19.18	0
				1	23	19.55	19.14	19.25	0
				12	0	19.51	19.11	19.12	0
				12	7	19.56	19.18	19.23	0
				12	13	19.55	19.14	19.17	0
				25	0	19.51	19.09	19.16	0
			QPSK	1	1	19.34	18.98	18.99	0
				1	13	19.39	18.99	19.10	0
				1	23	19.38	19.04	19.10	0
				12	0	19.49	19.13	19.16	0
				12	7	19.51	19.13	19.21	0
				12	13	19.53	19.08	19.24	0
				25	0	19.43	19.11	19.14	0
			16QAM	1	1	19.64	19.32	19.32	0
			64QAM	1	1	19.21	18.90	18.91	0
			256QAM	1	1	18.08	17.78	17.80	1.5
		CP	QPSK	1	1	19.27	18.95	18.98	0

NR Band n66 _ 10 ㎒ Bandwidth

Bandwidth	SCS(㎑)	OFDM	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR [dB]
						343000	349000	355000	
						1715 ㎒	1745 ㎒	1775 ㎒	
10 ㎒	15	DFT-s OFDM	pi/2 BPSK	1	1	19.31	19.00	19.07	0
				1	26	19.37	18.92	19.15	0
				1	50	19.33	18.95	19.13	0
				25	0	19.36	18.99	19.06	0
				25	14	19.37	19.04	19.20	0
				25	27	19.41	19.01	19.19	0
				50	0	19.40	18.99	19.18	0
			QPSK	1	1	19.23	18.92	18.93	0
				1	26	19.23	18.85	19.00	0
				1	50	19.26	18.83	19.04	0
				25	0	19.40	19.05	19.02	0
				25	14	19.37	19.02	19.16	0
				25	27	19.45	19.04	19.18	0
				50	0	19.42	19.04	19.20	0
			16QAM	1	1	19.65	19.32	19.26	0
			64QAM	1	1	19.18	18.88	18.78	0
			256QAM	1	1	18.05	17.72	17.74	1.5
		CP	QPSK	1	1	19.32	18.99	18.92	0

NR Band n66 _ 15 MHz Bandwidth

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR [dB]
						343500	349000	354500	
						1717.5 MHz	1745 MHz	1772.5 MHz	
15 MHz	15	DFT-s OFDM	pi/2 BPSK	1	1	19.38	19.24	19.20	0
				1	40	19.29	19.03	19.06	0
				1	77	19.22	18.92	19.02	0
				36	0	19.40	19.20	19.12	0
				36	22	19.37	19.13	19.09	0
				36	43	19.28	19.03	19.07	0
				75	0	19.38	19.08	19.07	0
			QPSK	1	1	19.28	19.14	19.06	0
				1	40	19.18	18.91	18.96	0
				1	77	19.12	18.83	18.97	0
				36	0	19.39	19.17	19.09	0
				36	22	19.38	19.16	19.08	0
				36	43	19.30	19.06	19.02	0
				75	0	19.36	19.12	19.06	0
			16QAM	1	1	19.71	19.47	19.32	0
			64QAM	1	1	19.30	19.09	18.98	0
			256QAM	1	1	18.09	17.89	17.65	1.5
		CP	QPSK	1	1	19.36	19.19	18.98	0

NR Band n66 _ 20 MHz Bandwidth

Bandwidth	SCS(kHz)	OFDM	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR [dB]
						344000	349000	354000	
						1720 MHz	1745 MHz	1770 MHz	
20 MHz	15	DFT-s OFDM	pi/2 BPSK	1	1	19.22	19.21	18.98	0
				1	53	19.21	19.07	19.04	0
				1	104	19.15	18.93	18.94	0
				50	0	19.37	19.16	19.04	0
				50	28	19.29	19.07	18.98	0
				50	56	19.25	19.04	18.96	0
				100	0	19.33	19.06	18.94	0
			QPSK	1	1	19.25	19.12	18.93	0
				1	53	19.13	18.94	18.91	0
				1	104	19.09	18.86	18.84	0
				50	0	19.37	19.20	19.04	0
				50	28	19.35	19.09	18.99	0
				50	56	19.28	19.03	18.97	0
				100	0	19.35	19.11	18.96	0
			16QAM	1	1	19.62	19.39	19.18	0
			64QAM	1	1	19.17	19.12	18.89	0
			256QAM	1	1	18.01	17.81	17.59	1.5
		CP	QPSK	1	1	19.25	19.13	18.87	0

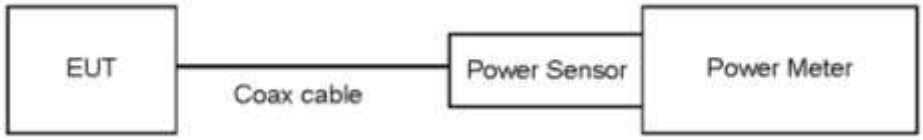
11.5 WIFI Conducted Power measurement method

Un-Licensed Bands (DTS Band)

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

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

Test setup

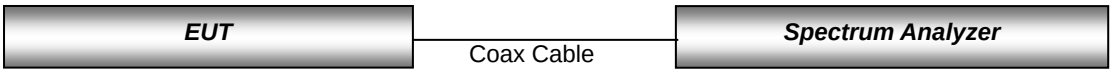


Un-Licensed Bands(NII Band)

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

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

Test setup



11.5.1 IEEE 802.11 (2.4 GHz) Maximum 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	18.26	18.01	
	2 437	6	17.71	17.71	
	2 462	11	17.77	17.86	
802.11g	2 412	1	14.37	14.29	17.34
	2417	2	15.41	15.28	18.36
	2 437	6	15.61	15.42	18.52
	2442	7	15.34	15.27	18.32
	2 462	11	12.22	12.59	15.42
802.11n (HT20)	2 412	1	13.39	13.33	16.37
	2417	2	14.23	14.09	17.17
	2 437	6	14.56	14.17	17.38
	2452	9	14.31	14.11	17.22
	2 462	11	11.35	11.40	14.38

11.5.2IEEE 802.11 (2.4 GHz) Reduced Conducted Power

Receiver activated (RCV- ON) or RSDB mode

Mode	Frequency [㎒]	Channel	IEEE 802.11 (2.4 ㎓) Average RF Conducted Power [dBm]		
			Ant.1	Ant.2	MIMO
802.11b	2 412	1	13.87	13.14	
	2 437	6	13.32	12.61	
	2 462	11	13.67	12.65	
802.11g	2 412	1	13.04	12.93	16.00
	2 437	6	13.22	12.52	15.89
	2 462	11	12.90	12.88	15.90
802.11n (HT20)	2 412	1	12.89	12.77	15.84
	2 437	6	13.17	12.50	15.86
	2 462	11	12.60	12.78	15.70

11.5.3 IEEE 802.11 (2.4 GHz) Reduced Conducted Power

(Receiver ON and RSDB)

Mode	Frequency [㎒]	Channel	IEEE 802.11 (2.4 ㎓) Average RF Conducted Power [dBm]		
			Ant.1	Ant.2	MIMO
802.11b	2 412	1	12.93	12.07	
	2 437	6	12.29	11.73	
	2 462	11	12.83	11.75	
802.11g	2 412	1	12.41	11.90	15.17
	2 437	6	12.39	11.67	15.05
	2 462	11	12.30	11.92	15.12
802.11n (HT20)	2 412	1	12.33	11.80	15.08
	2 437	6	12.21	11.53	14.89
	2 462	11	12.27	11.79	15.04

11.5.4 IEEE 802.11 (5 GHz) Maximum Conducted Power

Mode	Frequency [㎒]	Channel	IEEE 802.11 (5 ㎓) Average RF Conducted Power [dBm]		
			Ant. 1	Ant. 2	MIMO
802.11a (20 ㎒ BW)	5 180	36	15.75	15.71	18.74
	5 200	40	15.72	15.59	18.66
	5 220	44	15.70	15.59	18.65
	5 240	48	16.07	15.48	18.79
	5 260	52	15.96	15.80	18.89
	5 280	56	15.99	15.71	18.86
	5 300	60	16.15	15.62	18.90
	5 320	64	16.20	15.48	18.86
	5 500	100	15.67	15.21	18.46
	5 600	120	16.06	15.34	18.72
	5 620	124	16.09	15.59	18.83
	5 720	144	16.12	15.60	18.88
	5 745	149	15.94	15.03	18.51
	5 785	157	15.99	15.15	18.60
	5 825	165	16.01	15.38	18.72
802.11n (20 ㎒ BW)	5 180	36	15.78	15.68	18.74
	5 200	40	15.73	15.58	18.67
	5 220	44	15.72	15.54	18.64
	5 240	48	16.06	15.45	18.78
	5 260	52	16.05	15.82	18.95
	5 280	56	15.93	15.63	18.79
	5 300	60	16.24	15.67	18.97
	5 320	64	16.28	15.51	18.92
	5 500	100	15.73	15.22	18.49
	5 600	120	16.11	15.36	18.76
	5 620	124	16.07	15.43	18.77
	5 720	144	16.18	15.61	18.91
	5 745	149	15.93	15.07	18.53
	5 785	157	16.02	15.19	18.64
	5 825	165	16.03	15.41	18.74
802.11ac (20 ㎒ BW)	5 180	36	15.80	15.74	18.78
	5 200	40	15.76	15.63	18.71
	5 220	44	15.59	15.53	18.57
	5 240	48	16.13	15.50	18.84
	5 260	52	16.04	15.83	18.95
	5 280	56	15.80	15.78	18.80
	5 300	60	16.24	15.68	18.98
	5 320	64	16.30	15.53	18.94
	5 500	100	15.74	15.24	18.51
	5 600	120	16.12	15.38	18.78
	5 620	124	16.07	15.43	18.77
	5 720	144	16.20	15.63	18.93
	5 745	149	15.90	15.04	18.50
	5 785	157	16.02	15.21	18.64
	5 825	165	16.05	15.42	18.76

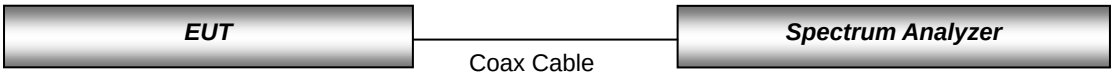
11.5.5 IEEE 802.11 (5 GHz) Reduced Conducted Power

(Receiver ON / Receiver ON and RSDB)

Mode	Frequency [㎒]	Channel	IEEE 802.11 (5 ㎓) Reduced Average Conducted Power [dBm]		
			Ant. 1	Ant. 2	MIMO
802.11ac (80 ㎒ BW)	5 210	42	12.25	12.23	15.25
	5 290	58	12.22	12.40	15.32
	5 530	106	12.19	12.14	15.18
	5 610	122	11.61	11.43	14.53
	5 690	138	12.41	12.53	15.48
	5 775	155	12.59	12.63	15.62

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

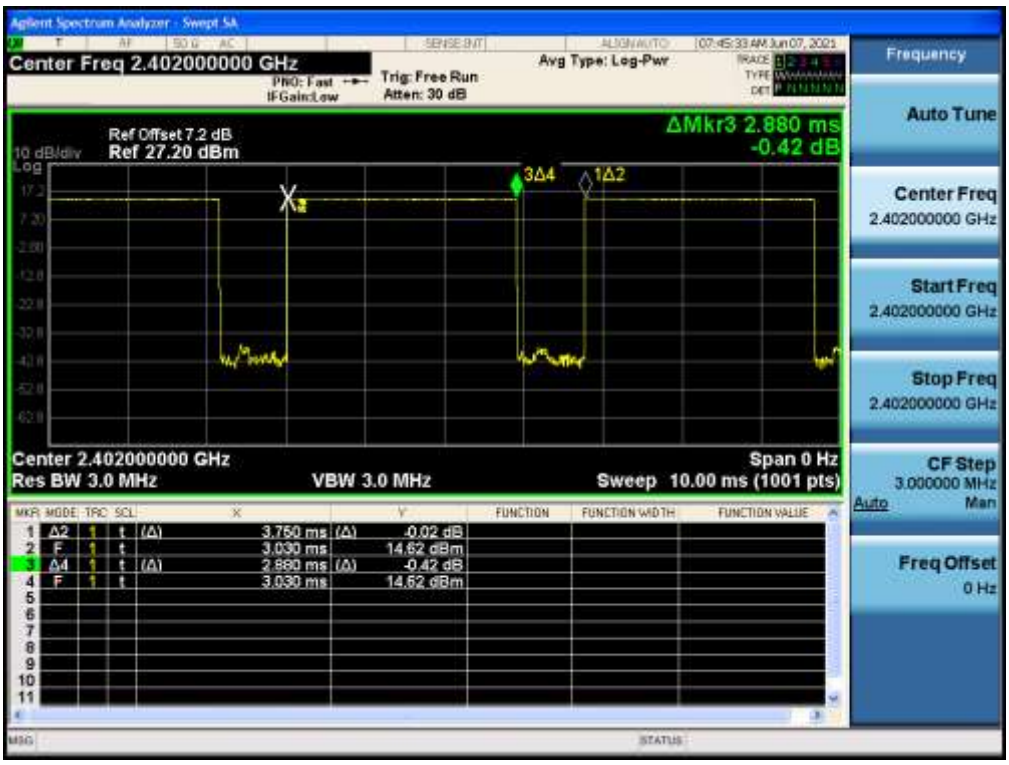


11.6 Bluetooth Maximum Conducted Power

The Burst averaged-conducted power

Mode	Channel	Bluetooth Power [dBm]
DH5	0	14.89
	39	14.50
	78	14.86
2-DH5	0	9.27
	39	11.21
	78	9.16
3-DH5	0	9.03
	39	11.27
	78	9.20

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 DH5 mode.



Bluetooth

Duty Cycle

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

Duty factor= 1/Duty cycle : 1.302

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. (㎒)	Measured Conductivity σ (S/m)	Measured Dielectric Constant, ε	Target Conductivity σ (S/m)	Target Dielectric Constant, ε	% dev σ	% dev ε
05/04/2021	22.1	750H	705	0.881	43.399	0.889	42.174	-0.90	2.90
			710	0.883	43.372	0.890	42.148	-0.79	2.90
			750	0.899	43.208	0.893	41.940	0.67	3.02
05/06/2021	22.7	835H	820	0.898	42.299	0.899	41.577	-0.11	1.74
			835	0.915	42.097	0.900	41.500	1.67	1.44
			850	0.930	41.922	0.916	41.500	1.53	1.02
05/05/2021	22.0	835H	820	0.898	42.199	0.899	41.577	-0.11	1.50
			835	0.914	42.029	0.900	41.500	1.56	1.27
			850	0.930	41.863	0.916	41.500	1.53	0.87
05/03/2021	21.3	835H	820	0.898	42.244	0.899	41.577	-0.11	1.60
			835	0.915	42.031	0.900	41.500	1.67	1.28
			850	0.928	41.893	0.916	41.500	1.31	0.95
05/11/2021	20.1	835H	820	0.899	42.268	0.899	41.577	0.00	1.66
			835	0.913	42.056	0.900	41.500	1.44	1.34
			850	0.928	41.934	0.916	41.500	1.31	1.05
06/03/2021	21.5	1800H	1710	1.325	41.551	1.348	40.144	-1.71	3.50
			1750	1.366	41.367	1.371	40.080	-0.36	3.21
			1800	1.415	41.102	1.400	40.000	1.07	2.76
06/01/2021	20.8	1800H	1710	1.325	41.548	1.348	40.144	-1.71	3.50
			1750	1.376	41.345	1.371	40.080	0.36	3.16
			1800	1.418	41.114	1.400	40.000	1.29	2.79
05/27/2021	20.8	1800H	1710	1.324	41.565	1.348	40.144	-1.78	3.54
			1750	1.365	41.374	1.371	40.080	-0.44	3.23
			1800	1.420	41.114	1.400	40.000	1.43	2.79
05/28/2021	21.0	1800H	1710	1.326	41.573	1.348	40.144	-1.63	3.56
			1750	1.365	41.382	1.371	40.080	-0.44	3.25
			1800	1.425	41.143	1.400	40.000	1.79	2.86
06/04/2021	21.4	1800H	1710	1.323	41.560	1.348	40.144	-1.85	3.53
			1750	1.367	41.389	1.371	40.080	-0.29	3.27
			1800	1.420	41.118	1.400	40.000	1.43	2.80
06/02/2021	21.1	1800H	1710	1.329	41.574	1.348	40.144	-1.41	3.56
			1750	1.371	41.403	1.371	40.080	0.00	3.30
			1800	1.415	41.141	1.400	40.000	1.07	2.85

Table for Head Tissue Verification									
	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
05/24/2021	21.8	1900H	1850	1.386	41.693	1.400	40.000	-1.00	4.23
			1900	1.450	41.462	1.400	40.000	3.57	3.66
			1910	1.450	41.415	1.400	40.000	3.57	3.54
05/25/2021	21.1	1900H	1850	1.343	41.067	1.400	40.000	-4.07	2.67
			1900	1.386	40.795	1.400	40.000	-1.00	1.99
			1910	1.392	40.769	1.400	40.000	-0.57	1.92
05/26/2021	21.3	1900H	1850	1.386	41.680	1.400	40.000	-1.00	4.20
			1900	1.448	41.450	1.400	40.000	3.43	3.63
			1910	1.446	41.460	1.400	40.000	3.29	3.65
05/28/2021	21.0	1900H	1850	1.384	41.720	1.400	40.000	-1.14	4.30
			1900	1.445	41.478	1.400	40.000	3.21	3.70
			1910	1.447	41.459	1.400	40.000	3.36	3.65
05/27/2021	20.8	1900H	1850	1.340	41.086	1.400	40.000	-4.29	2.72
			1900	1.384	40.870	1.400	40.000	-1.14	2.18
			1910	1.393	40.826	1.400	40.000	-0.50	2.07
05/31/2021	21.0	1900H	1850	1.342	41.027	1.400	40.000	-4.14	2.57
			1900	1.382	40.862	1.400	40.000	-1.29	2.16
			1910	1.393	40.802	1.400	40.000	-0.50	2.01
05/28/2021	20.4	2450H	2400	1.771	38.105	1.756	39.290	0.85	-3.02
			2450	1.820	37.884	1.800	39.200	1.11	-3.36
			2500	1.879	37.734	1.855	39.140	1.29	-3.59
06/04/2021	19.6	2450H	2400	1.758	39.088	1.756	39.290	0.11	-0.51
			2450	1.818	38.923	1.800	39.200	1.00	-0.71
			2500	1.878	38.741	1.855	39.140	1.24	-1.02
06/07/2021	22.2	2450H	2400	1.768	38.129	1.756	39.290	0.68	-2.95
			2450	1.822	39.879	1.800	39.200	1.22	1.73
			2500	1.881	37.749	1.855	39.140	1.40	-3.55
06/08/2021	21.3	2450H	2400	1.765	39.079	1.756	39.290	0.51	-0.54
			2450	1.820	38.862	1.800	39.200	1.11	-0.86
			2500	1.880	38.729	1.855	39.140	1.35	-1.05
05/28/2021	20.6	2450H	2400	1.753	38.072	1.756	39.290	-0.17	-3.10
			2450	1.820	37.900	1.800	39.200	1.11	-3.32
			2500	1.881	37.733	1.855	39.140	1.40	-3.59
05/21/2021	21.8	2600H	2500	1.891	37.650	1.855	39.140	1.94	-3.81
			2550	1.942	37.651	1.964	39.010	-1.12	-3.48
			2600	2.001	37.561	2.062	38.894	-2.96	-3.43
06/02/2021	21.0	2600H	2500	1.851	38.208	1.855	39.140	-0.22	-2.38
			2550	1.894	37.991	1.964	39.010	-3.56	-2.61
			2600	1.989	37.741	2.062	38.894	-3.54	-2.96

Table for Head Tissue Verification									
Date of Tests	Tissue Temp. (°C)	Tissue Type	Freq. (㎒)	Measured Conductivity σ (S/m)	Measured Dielectric Constant, ε	Target Conductivity σ (S/m)	Target Dielectric Constant, ε	% dev σ	% dev ε
06/01/2021	20.3	5180H-5280H	5180	4.613	36.265	4.635	36.010	-0.47	0.71
			5250	4.697	36.353	4.706	35.930	-0.19	1.18
			5280	4.722	36.255	4.737	35.894	-0.32	1.01
			5320	4.827	36.325	4.778	35.846	1.03	1.34
		5500H-5600H	5500	4.945	36.251	4.963	35.640	-0.36	1.71
			5600	5.026	35.949	5.065	35.530	-0.77	1.18
		5750H-5825H	5750	5.246	35.717	5.219	35.360	0.52	1.01
			5800	5.108	35.590	5.270	35.300	-3.07	0.82
			5825	5.147	35.844	5.296	35.270	-2.81	1.63
06/07/2021	21.3	5750H-5825H	5750	5.116	35.934	5.219	35.360	-1.97	1.62
			5800	5.044	36.031	5.270	35.300	-4.29	2.07
			5825	5.112	35.796	5.296	35.270	-3.47	1.49
05/26/2021	21.9	5180H-5280H	5180	4.538	37.300	4.635	36.010	-2.09	3.58
			5250	4.634	37.011	4.706	35.930	-1.53	3.01
			5280	4.653	36.926	4.737	35.894	-1.77	2.88
			5320	4.673	36.861	4.778	35.846	-2.20	2.83
05/27/2021	22.1	5500H-5600H	5500	5.110	36.068	4.963	35.640	2.96	1.20
			5600	5.192	35.969	5.065	35.530	2.51	1.24
05/28/2021	21.9	5750H-5825H	5750	5.27	36.005	5.219	35.360	0.98	1.82
			5800	5.100	36.250	5.270	35.300	-3.23	2.69
			5825	5.066	35.798	5.296	35.270	-4.34	1.50

12.2 System Verification

Input Power: 50 mW

Freq. [MHz]	Date	Probe (S/N)	Dipole (S/N)	Liquid	Amb. Temp. [°C]	Liquid Temp. [°C]	1 W Target SAR_{1g} (SPEAG) [W/kg]	50mW Measured SAR_{1g} [W/kg]	1 W Normalized SAR_{1g} [W/kg]	Deviation [%]	Limit [%]
750	05/04/2021	3903	1014	Head	22.2	22.1	8.39	0.418	8.36	- 0.36	± 10
835	05/06/2021	3903	4d266	Head	22.9	22.7	9.44	0.503	10.06	+ 6.57	± 10
835	05/05/2021	3903		Head	22.1	22.0	9.44	0.504	10.08	+ 6.78	± 10
835	05/03/2021	3903		Head	21.5	21.3	9.44	0.500	10.0	+ 5.93	± 10
835	05/11/2021	3903		Head	20.2	20.1	9.44	0.501	10.02	+ 6.14	± 10
1 800	06/03/2021	3968	2d007	Head	21.6	21.5	38.1	1.95	39.0	+ 2.36	± 10
1 800	06/01/2021	3968		Head	20.9	20.8	38.1	1.96	39.2	+ 2.89	± 10
1 800	05/27/2021	3968		Head	20.9	20.8	38.1	2.02	40.4	+ 6.04	± 10
1 900	05/24/2021	3968	5d032	Head	21.9	21.8	40.0	2.05	41.0	+ 2.50	± 10
1 900	05/26/2021	3968		Head	21.4	21.3	40.0	2.10	42.0	+ 5.00	± 10
1 900	05/28/2021	3968		Head	21.1	21.0	40.0	2.09	41.8	+ 4.50	± 10
2 450	05/28/2021	3797	1049	Head	20.5	20.4	51.4	2.54	50.8	- 1.17	± 10
2 450	06/04/2021	3797		Head	19.7	19.6	51.4	2.58	51.6	+ 0.39	± 10
2 450	06/07/2021	3968		Head	22.3	22.2	51.4	2.72	54.4	+ 5.84	± 10
2 450	06/08/2021	3968		Head	21.5	21.3	51.4	2.75	55.0	+ 7.00	± 10
2 450	05/28/2021	3903		Head	20.7	20.6	51.4	2.38	47.6	- 7.39	± 10
2 600	05/21/2021	3076	1015	Head	21.9	21.8	56.7	2.74	54.8	- 3.35	± 10
5 250	06/01/2021	7352	1253	Head	20.4	20.3	79.7	3.83	76.6	- 3.89	± 10
5 600	06/01/2021	7352		Head	20.4	20.3	82.2	3.76	75.2	- 8.52	± 10
5 750	06/01/2021	7352		Head	20.4	20.3	79.6	3.88	77.6	- 2.51	± 10
5 750	06/07/2021	7622		Head	21.4	21.3	79.6	3.99	79.8	+ 0.25	± 10
5 250	05/26/2021	7352		Head	22.0	21.9	79.7	4.17	83.4	+ 4.64	± 10
5 600	05/27/2021	7352		Head	22.2	22.1	82.2	3.9	78.0	- 5.11	± 10
5 750	05/28/2021	7352		Head	22.0	21.9	79.6	3.9	78.0	- 2.01	± 10

System Verification Results – Extremity SAR Input Power: 50 mW

Freq.	Date	Probe (S/N)	Dipole (S/N)	Liquid	Amb. Temp.	Liquid Temp.	1 W Target SAR_{10g} (SPEAG)	50mW Measured SAR_{10g}	1 W Normalized SAR_{10g}	Deviation	Limit
[㎒]					[°C]	[°C]	[W/kg]	[W/kg]	[W/kg]	[%]	[%]
1 800	06/04/2021	3968	2d007	Head	21.5	21.4	19.7	1.06	21.2	+ 7.61	± 10
1 800	05/28/2021	3968		Head	21.1	21.0	19.7	1.04	20.8	+ 5.58	± 10
1 800	06/02/2021	3968		Head	21.2	21.1	19.7	1.05	21.0	+ 6.60	± 10
1 900	05/25/2021	3968	5d032	Head	21.2	21.1	19.7	1.03	20.6	+ 4.57	± 10
1 900	05/27/2021	3968		Head	20.9	20.8	20.8	1.00	20.0	- 3.85	± 10
1 900	05/31/2021	3968		Head	21.1	21.0	20.8	1.00	20.0	- 3.85	± 10
2 600	06/02/2021	7622	1015	Head	21.1	21.0	25.4	1.20	24.0	- 5.51	± 10
5 250	06/01/2021	7352	1253	Head	20.4	20.3	22.8	1.08	21.6	- 5.26	± 10
5 600	06/01/2021	7352		Head	20.4	20.3	23.5	1.07	21.4	- 8.94	± 10
5 250	05/26/2021	7352		Head	22.0	21.9	22.8	1.15	23.0	+ 0.88	± 10
5 600	05/27/2021	7352		Head	22.2	22.1	23.5	1.11	22.2	- 5.53	± 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 Head SAR											
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)			(W/kg)		(W/kg)	
836.6	190	GSM	33.5	32.19	-0.15	Left Cheek	1:8.3	0.148	1.352	0.200	-
836.6	190	GSM	33.5	32.19	-0.09	Left Tilt	1:8.3	0.074	1.352	0.100	-
836.6	190	GSM	33.5	32.19	-0.15	Right Cheek	1:8.3	0.205	1.352	0.277	-
836.6	190	GSM	33.5	32.19	-0.16	Right Tilt	1:8.3	0.095	1.352	0.128	-
836.6	190	GPRS 2Tx	32.5	32.04	-0.11	Left Cheek	1:4.15	0.185	1.112	0.206	-
836.6	190	GPRS 2Tx	32.5	32.04	-0.18	Left Tilt	1:4.15	0.138	1.112	0.153	-
836.6	190	GPRS 2Tx	32.5	32.04	-0.19	Right Cheek	1:4.15	0.284	1.112	**0.316**	1
836.6	190	GPRS 2Tx	32.5	32.04	-0.16	Right Tilt	1:4.15	0.129	1.112	0.143	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Head 1.6 W/kg Averaged over 1 gram					

GSM 1900 Head SAR											
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)			(W/kg)		(W/kg)	
1 909.8	810	GSM	30.0	29.27	-0.19	Left Cheek	1:8.3	0.022	1.183	0.026	-
1 909.8	810	GSM	30.0	29.27	0.11	Left Tilt	1:8.3	0.018	1.183	0.021	-
1 909.8	810	GSM	30.0	29.27	0.03	Right Cheek	1:8.3	0.037	1.183	0.044	-
1 909.8	810	GSM	30.0	29.27	0.19	Right Tilt	1:8.3	0.017	1.183	0.020	-
1 880.0	661	GRPS 2Tx	29.0	27.88	-0.14	Left Cheek	1:4.15	0.033	1.294	0.043	-
1 880.0	661	GRPS 2Tx	29.0	27.88	0.06	Left Tilt	1:4.15	0.024	1.294	0.031	-
1 880.0	661	GRPS 2Tx	29.0	27.88	0.11	Right Cheek	1:4.15	0.060	1.294	**0.078**	2
1 880.0	661	GRPS 2Tx	29.0	27.88	0.07	Right Tilt	1:4.15	0.025	1.294	0.032	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Head 1.6 W/kg Averaged over 1 gram					

UMTS BAND 5 Head SAR												
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)				(W/kg)		**(W/kg)**	
836.6	4183	RMC	24.0	23.35	-0.12	Left Cheek	1:1	111	0.147	1.161	0.171	-
836.6	4183	RMC	24.0	23.35	-0.17	Left Tilt	1:1	111	0.100	1.161	0.116	-
836.6	4183	RMC	24.0	23.35	-0.12	Right Cheek	1:1	111	0.211	1.161	**0.245**	3
836.6	4183	RMC	24.0	23.35	-0.19	Right Tilt	1:1	111	0.087	1.161	0.101	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Head 1.6 W/kg (mW/g) Averaged over 1 gram						

UMTS BAND 4 Head SAR												
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)				(W/kg)		**(W/kg)**	
1 712.4	1312	RMC	23.0	22.45	0.11	Left Cheek	1:1	21	0.133	1.135	0.151	-
1 712.4	1312	RMC	23.0	22.45	0.01	Left Tilt	1:1	21	0.109	1.135	0.124	-
1 712.4	1312	RMC	23.0	22.45	-0.11	Right Cheek	1:1	21	0.157	1.135	**0.178**	4
1 712.4	1312	RMC	23.0	22.45	0.16	Right Tilt	1:1	21	0.105	1.135	0.119	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Head 1.6 W/kg (mW/g) Averaged over 1 gram						

UMTS BAND 2 Head SAR												
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)				(W/kg)		**(W/kg)**	
1 880	9400	RMC	23.0	22.22	-0.11	Left Cheek	1:1	4	0.099	1.197	0.119	-
1 880	9400	RMC	23.0	22.22	-0.12	Left Tilt	1:1	4	0.072	1.197	0.086	-
1 880	9400	RMC	23.0	22.22	0.17	Right Cheek	1:1	4	0.142	1.197	**0.170**	5
1 880	9400	RMC	23.0	22.22	-0.14	Right Tilt	1:1	4	0.065	1.197	0.078	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Head 1.6 W/kg (mW/g) Averaged over 1 gram						

LTE Band 2 Head SAR

Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
1 860	18700	QPSK	20	22.5	21.86	-0.12	Left Cheek	0	1	49	1:1	4	0.135	1.159	0.156	-
1 860	18700	QPSK	20	21.5	20.93	0.13	Left Cheek	1	50	25	1:1	4	0.108	1.140	0.123	-
1 860	18700	QPSK	20	22.5	21.86	-0.07	Left Tilt	0	1	49	1:1	4	0.061	1.159	0.071	-
1 860	18700	QPSK	20	21.5	20.93	0.10	Left Tilt	1	50	25	1:1	4	0.052	1.140	0.059	-
1 860	18700	QPSK	20	22.5	21.86	-0.19	Right Cheek	0	1	49	1:1	4	0.141	1.159	**0.163**	6
1 860	18700	QPSK	20	21.5	20.93	0.11	Right Cheek	1	50	25	1:1	4	0.115	1.140	0.131	-
1 860	18700	QPSK	20	22.5	21.86	0.03	Right Tilt	0	1	49	1:1	4	0.061	1.159	0.071	-
1 860	18700	QPSK	20	21.5	20.93	0.07	Right Tilt	1	50	25	1:1	4	0.049	1.140	0.056	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Head 1.6 W/kg Averaged over 1 gram									

LTE Band 12 Head SAR

Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
707.5	23095	QPSK	10	25.0	24.26	-0.6	Left Cheek	0	1	49	1:1	16	0.099	1.186	0.117	-
707.5	23095	QPSK	10	24.0	23.38	-0.8	Left Cheek	1	25	12	1:1	16	0.076	1.153	0.088	-
707.5	23095	QPSK	10	25.0	24.26	-0.11	Left Tilt	0	1	49	1:1	16	0.046	1.186	0.055	-
707.5	23095	QPSK	10	24.0	23.38	-0.08	Left Tilt	1	25	12	1:1	16	0.042	1.153	0.048	-
707.5	23095	QPSK	10	25.0	24.26	0.10	Right Cheek	0	1	49	1:1	16	0.121	1.186	**0.144**	7
707.5	23095	QPSK	10	24.0	23.38	-0.19	Right Cheek	1	25	12	1:1	16	0.102	1.153	0.118	-
707.5	23095	QPSK	10	25.0	24.26	-0.04	Right Tilt	0	1	49	1:1	16	0.042	1.186	0.050	-
707.5	23095	QPSK	10	24.0	23.38	-0.18	Right Tilt	1	25	12	1:1	16	0.035	1.153	0.040	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Head 1.6 W/kg Averaged over 1 gram									

LTE Band 26 Head SAR

Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
831.5	26865	QPSK	15	25.0	24.36	-0.17	Left Cheek	0	1	0	1:1	111	0.094	1.159	0.109	-
831.5	26865	QPSK	15	24.0	23.49	-0.19	Left Cheek	1	36	18	1:1	111	0.084	1.125	0.095	-
831.5	26865	QPSK	15	25.0	24.36	-0.19	Left Tilt	0	1	0	1:1	111	0.060	1.159	0.070	-
831.5	26865	QPSK	15	24.0	23.49	0.02	Left Tilt	1	36	18	1:1	111	0.039	1.125	0.044	-
831.5	26865	QPSK	15	25.0	24.36	-0.11	Right Cheek	0	1	0	1:1	111	0.140	1.159	**0.162**	8
831.5	26865	QPSK	15	24.0	23.49	-0.08	Right Cheek	1	36	18	1:1	111	0.125	1.125	0.141	-
831.5	26865	QPSK	15	25.0	24.36	0.10	Right Tilt	0	1	0	1:1	111	0.063	1.159	0.073	-
831.5	26865	QPSK	15	24.0	23.49	-0.04	Right Tilt	1	36	18	1:1	111	0.057	1.125	0.064	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Head 1.6 W/kg Averaged over 1 gram									

LTE TDD Band 41 Head SAR																
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
2 593	40620	QPSK	20	24.5	24.00	0.11	Left Cheek	0	1	49	1:1.58		0.111	1.122	**0.125**	9
2 593	40620	QPSK	20	23.5	23.06	0.17	Left Cheek	1	50	25	1:1.58		0.090	1.107	0.100	-
2 593	40620	QPSK	20	24.5	24.00	0.13	Left Tilt	0	1	49	1:1.58		0.059	1.122	0.066	-
2 593	40620	QPSK	20	23.5	23.06	0.13	Left Tilt	1	50	25	1:1.58		0.049	1.107	0.054	-
2 593	40620	QPSK	20	24.5	24.00	0.05	Right Cheek	0	1	49	1:1.58		0.081	1.122	0.091	-
2 593	40620	QPSK	20	23.5	23.06	0.15	Right Cheek	1	50	25	1:1.58		0.066	1.107	0.073	-
2 593	40620	QPSK	20	24.5	24.00	0.12	Right Tilt	0	1	49	1:1.58		0.099	1.122	0.111	-
2 593	40620	QPSK	20	23.5	23.06	0.16	Right Tilt	1	50	25	1:1.58		0.080	1.107	0.089	-
2 593	40620	QPSK	20	26.0	25.01	0.16	Left Cheek	0	1	49	1:2.31		0.094	1.256	0.118	**
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Head 1.6 W/kg Averaged over 1 gram									

Note: ** Data entry indicate LTE 41 Power Class 2(HPUE)

LTE Band 66 Head SAR																
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
1 720	132072	QPSK	20	24.5	23.84	-0.02	Left Cheek	0	1	49	1:1	13	0.103	1.164	**0.120**	10
1 720	132072	QPSK	20	23.5	22.90	-0.07	Left Cheek	1	50	0	1:1	13	0.088	1.148	0.101	-
1 720	132072	QPSK	20	24.5	23.84	0.07	Left Tilt	0	1	49	1:1	13	0.049	1.164	0.057	-
1 720	132072	QPSK	20	23.5	22.90	0.12	Left Tilt	1	50	0	1:1	13	0.043	1.148	0.049	-
1 720	132072	QPSK	20	24.5	23.84	0.11	Right Cheek	0	1	49	1:1	13	0.087	1.164	0.101	-
1 720	132072	QPSK	20	23.5	22.90	0.01	Right Cheek	1	50	0	1:1	13	0.071	1.148	0.082	-
1 720	132072	QPSK	20	24.5	23.84	-0.04	Right Tilt	0	1	49	1:1	13	0.047	1.164	0.055	-
1 720	132072	QPSK	20	23.5	22.90	0.11	Right Tilt	1	50	0	1:1	13	0.038	1.148	0.044	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Head 1.6 W/kg Averaged over 1 gram									

NR Band n5 (Cell) Head SAR																
Frequency		Modulation	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
836.5	167300	DFT-s OFDM QPSK	20	25.0	24.78	-0.10	Left Cheek	0	1	53	1:1	111	0.134	1.052	0.141	-
836.5	167300	DFT-s OFDM QPSK	20	25.0	24.90	-0.18	Left Cheek	0	50	28	1:1	111	0.139	1.023	0.142	-
836.5	167300	DFT-s OFDM QPSK	20	25.0	24.78	-0.14	Left Tilt	0	1	53	1:1	111	0.073	1.052	0.077	-
836.5	167300	DFT-s OFDM QPSK	20	25.0	24.90	-0.14	Left Tilt	0	50	28	1:1	111	0.083	1.023	0.085	-
836.5	167300	DFT-s OFDM QPSK	20	25.0	24.78	-0.13	Right Cheek	0	1	53	1:1	111	0.214	1.052	**0.225**	11
836.5	167300	DFT-s OFDM QPSK	20	25.0	24.90	-0.17	Right Cheek	0	50	28	1:1	111	0.213	1.023	0.218	-
836.5	167300	DFT-s OFDM QPSK	20	25.0	24.78	0.16	Right Tilt	0	1	53	1:1	111	0.081	1.052	0.085	-
836.5	167300	DFT-s OFDM QPSK	20	25.0	24.90	-0.12	Right Tilt	0	50	28	1:1	111	0.108	1.023	0.110	-
836.5	167300	CP QPSK	20	23.5	23.24	-0.13	Right Cheek	1.5	1	1	1:1	111	0.128	1.062	0.136	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Head 1.6 W/kg Averaged over 1 gram									

NR Band n66 Head SAR																
Frequency		Modulation	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)					(W/kg)		(W/kg)	
1 720	344000	DFT-s OFDM QPSK	20	23.5	22.60	-0.19	Left Cheek	0	1	1	1:1	13	0.168	1.230	**0.207**	12
1 720	344000	DFT-s OFDM QPSK	20	23.5	22.77	-0.09	Left Cheek	0	50	28	1:1	13	0.167	1.183	0.198	-
1 720	344000	DFT-s OFDM QPSK	20	23.5	22.60	0.01	Left Tilt	0	1	1	1:1	13	0.076	1.230	0.093	-
1 720	344000	DFT-s OFDM QPSK	20	23.5	22.77	0.09	Left Tilt	0	50	28	1:1	13	0.082	1.183	0.097	-
1 720	344000	DFT-s OFDM QPSK	20	23.5	22.60	-0.11	Right Cheek	0	1	1	1:1	13	0.148	1.230	0.182	-
1 720	344000	DFT-s OFDM QPSK	20	23.5	22.77	-0.14	Right Cheek	0	50	28	1:1	13	0.155	1.183	0.183	-
1 720	344000	DFT-s OFDM QPSK	20	23.5	22.60	0.08	Right Tilt	0	1	1	1:1	13	0.072	1.230	0.089	-
1 720	344000	DFT-s OFDM QPSK	20	23.5	22.77	0.14	Right Tilt	0	50	28	1:1	13	0.073	1.183	0.086	-
1 720	344000	CP QPSK	20	22.0	21.36	-0.17	Left Cheek	1.5	1	1	1:1	13	0.066	1.159	0.076	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Head 1.6 W/kg Averaged over 1 gram									

DTS Head SAR - RCV-ON																
Frequency		Mode	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Ant. Config.	Duty Cycle	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
MHz	Ch.															
2 412	1	802.11b	20	1	14.0	13.87	-0.04	Left Cheek	Ant1	98.8	0.392	0.229	1.030	1.012	0.239	-
2 412	1	802.11b	20	1	14.0	13.87	0.04	Left Tilt	Ant1	98.8	0.624	0.368	1.030	1.012	0.384	-
2 412	1	802.11b	20	1	14.0	13.87	-0.12	Right Cheek	Ant1	98.8	0.854	0.447	1.030	1.012	0.466	-
2 412	1	802.11b	20	1	14.0	13.87	0.05	Right Tilt	Ant1	98.8	0.843	**0.491**	1.030	1.012	0.512	13
2 412	1	802.11b	20	1	14.0	13.14	0.10	Left Cheek	Ant2	98.8	0.182	0.119	1.219	1.012	0.147	-
2 412	1	802.11b	20	1	14.0	13.14	0.06	Left Tilt	Ant2	98.8	0.0914	0.057	1.219	1.012	0.070	-
2 412	1	802.11b	20	1	14.0	13.14	0.01	Right Cheek	Ant2	98.8	1.22	0.488	1.219	1.012	**0.602**	-
2 412	1	802.11b	20	1	14.0	13.14	0.16	Right Tilt	Ant2	98.8	0.348	0.192	1.219	1.012	0.237	-
2 412	1	802.11g	20	6	17.0	16.00	-0.19	Left Cheek	MIMO	93.4	0.362	0.212	1.279	1.071	0.290	-
2 412	1	802.11g	20	6	17.0	16.00	0.09	Left Tilt	MIMO	93.4	0.495	0.271	1.279	1.071	0.371	-
2 412	1	802.11g	20	6	17.0	16.00	0.17	Right Cheek	MIMO	93.4	0.888	0.473	1.279	1.071	**0.648**	14
2 412	1	802.11g	20	6	17.0	16.00	0.11	Right Tilt	MIMO	93.4	0.806	0.377	1.279	1.071	0.516	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population											Head 1.6 W/kg Averaged over 1 gram					

- For the SAR measurement results of MIMO Ant Mode(802.11g), higher power scalling factor among each SISO ANT was applied.

DTS Head SAR – RSDB and RCV-ON																
Frequency		Mode	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Ant. Config.	Duty Cycle	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
MHz	Ch.															
2 412	1	802.11b	20	1	13.0	12.93	0.14	Left Cheek	Ant1	98.8	0.330	0.195	1.016	1.012	0.200	-
2 412	1	802.11b	20	1	13.0	12.93	0.03	Left Tilt	Ant1	98.8	0.481	0.254	1.016	1.012	0.261	-
2 412	1	802.11b	20	1	13.0	12.93	0.04	Right Cheek	Ant1	98.8	0.547	0.359	1.016	1.012	0.369	-
2 412	1	802.11b	20	1	13.0	12.93	-0.01	Right Tilt	Ant1	98.8	0.59	0.400	1.016	1.012	0.411	15
2 412	1	802.11b	20	1	13.0	12.07	-0.14	Left Cheek	Ant2	98.8	0.139	0.082	1.239	1.012	0.103	-
2 412	1	802.11b	20	1	13.0	12.07	0.11	Left Tilt	Ant2	98.8	0.0602	0.037	1.239	1.012	0.046	-
2 412	1	802.11b	20	1	13.0	12.07	0.06	Right Cheek	Ant2	98.8	0.481	0.348	1.239	1.012	0.436	-
2 412	1	802.11b	20	1	13.0	12.07	0.18	Right Tilt	Ant2	98.8	0.182	0.110	1.239	1.012	0.138	-
2 412	1	802.11g	20	6	16.0	15.17	0.04	Left Cheek	MIMO	93.4	0.272	0.160	1.288	1.071	0.221	-
2 412	1	802.11g	20	6	16.0	15.17	0.05	Left Tilt	MIMO	93.4	0.411	0.233	1.288	1.071	0.321	-
2 412	1	802.11g	20	6	16.0	15.17	0.03	Right Cheek	MIMO	93.4	0.903	0.385	1.288	1.071	0.531	-
2 412	1	802.11g	20	6	16.0	15.17	0.05	Right Tilt	MIMO	93.4	0.644	0.397	1.288	1.071	**0.548**	16
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population											Head 1.6 W/kg Averaged over 1 gram					

- For the SAR measurement results of MIMO Ant Mode(802.11g), higher power scalling factor among each SISO ANT was applied.

NII Head SAR - RCV-ON / RSDB & RCV-ON																
Frequency		Mode	Band width	Data Rate	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Ant Config.	Duty Cycle	Area Scan Peak SAR	Meas. SAR	Scaling Factor	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(Mbps)	(dBm)	(dBm)	(dB)				(W/kg)	(W/kg)		(Duty)	(W/kg)	
5 290	58	802.11ac	80	MCS0	13.0	12.22	0.18	Left Cheek	Ant1	85.9	0.176	0.072	1.197	1.164	0.100	-
5 290	58	802.11ac	80	MCS0	13.0	12.22	-0.04	Left Tilt	Ant1	85.9	0.18	0.069	1.197	1.164	0.096	-
5 290	58	802.11ac	80	MCS0	13.0	12.22	-0.08	Right Check	Ant1	85.9	0.700	0.242	1.197	1.164	0.337	-
5 290	58	802.11ac	80	MCS0	13.0	12.22	0.15	Right Tilt	Ant1	85.9	0.447	0.065	1.197	1.164	0.091	-
5 290	58	802.11ac	80	MCS0	13.0	12.40	-0.18	Left Cheek	Ant2	85.9	0.107	0.039	1.148	1.164	0.052	-
5 290	58	802.11ac	80	MCS0	13.0	12.40	0.02	Left Tilt	Ant2	85.9	0.0497	0.019	1.148	1.164	0.025	-
5 290	58	802.11ac	80	MCS0	13.0	12.40	0.12	Right Check	Ant2	85.9	0.538	0.233	1.148	1.164	0.311	-
5 290	58	802.11ac	80	MCS0	13.0	12.40	0.17	Right Tilt	Ant2	85.9	0.149	0.187	1.148	1.164	0.250	-
5 290	58	802.11ac	80	MCS0	16.0	15.25	-0.15	Left Cheek	MIMO	85.9	0.200	0.067	1.197	1.164	0.093	-
5 290	58	802.11ac	80	MCS0	16.0	15.25	0.10	Left Tilt	MIMO	85.9	0.174	0.064	1.197	1.164	0.089	-
5 290	58	802.11ac	80	MCS0	16.0	15.25	-0.01	Right Check	MIMO	85.9	0.858	0.430	1.197	1.164	**0.599**	17
5 290	58	802.11ac	80	MCS0	16.0	15.25	0.03	Right Tilt	MIMO	85.9	0.687	0.277	1.197	1.164	0.386	-
5 690	138	802.11ac	80	MCS0	13.0	12.41	0.16	Left Cheek	Ant1	85.9	0.127	0.047	1.146	1.164	0.063	-
5 690	138	802.11ac	80	MCS0	13.0	12.41	0.07	Left Tilt	Ant1	85.9	0.154	0.051	1.146	1.164	0.068	-
5 690	138	802.11ac	80	MCS0	13.0	12.41	-0.16	Right Cheek	Ant1	85.9	0.593	0.404	1.146	1.164	**0.539**	-
5 690	138	802.11ac	80	MCS0	13.0	12.41	-0.16	Right Tilt	Ant1	85.9	0.346	0.108	1.146	1.164	0.144	-
5 690	138	802.11ac	80	MCS0	13.0	12.53	-0.13	Left Cheek	Ant2	85.9	0.137	0.029	1.114	1.164	0.038	-
5 690	138	802.11ac	80	MCS0	13.0	12.53	-0.15	Left Tilt	Ant2	85.9	0.117	0.023	1.114	1.164	0.030	-
5 690	138	802.11ac	80	MCS0	13.0	12.53	-0.13	Right Cheek	Ant2	85.9	0.629	0.275	1.114	1.164	0.357	-
5 690	138	802.11ac	80	MCS0	13.0	12.53	0.16	Right Tilt	Ant2	85.9	0.143	0.055	1.114	1.164	0.071	-
5 690	138	802.11ac	80	MCS0	16.0	15.48	0.10	Left Cheek	MIMO	85.9	0.230	0.053	1.146	1.164	0.071	-
5 690	138	802.11ac	80	MCS0	16.0	15.48	0.17	Left Tilt	MIMO	85.9	0.133	0.054	1.146	1.164	0.072	-
5 690	138	802.11ac	80	MCS0	16.0	15.48	0.14	Right Check	MIMO	85.9	0.762	0.287	1.146	1.164	0.383	-
5 690	138	802.11ac	80	MCS0	16.0	15.48	-0.01	Right Tilt	MIMO	85.9	0.318	0.120	1.146	1.164	0.160	-
5 775	155	802.11ac	80	MCS0	13.0	12.59	-0.13	Left Cheek	Ant1	85.9	0.212	0.056	1.099	1.164	0.072	-
5 775	155	802.11ac	80	MCS0	13.0	12.59	0.19	Left Tilt	Ant1	85.9	0.108	0.035	1.099	1.164	0.045	-
5 775	155	802.11ac	80	MCS0	13.0	12.59	-0.02	Right Cheek	Ant1	85.9	0.442	0.148	1.099	1.164	0.189	-
5 775	155	802.11ac	80	MCS0	13.0	12.59	0.01	Right Tilt	Ant1	85.9	0.194	0.075	1.099	1.164	0.096	-
5 775	155	802.11ac	80	MCS0	13.0	12.63	-0.06	Left Cheek	Ant2	85.9	0.185	0.032	1.089	1.164	0.041	-
5 775	155	802.11ac	80	MCS0	13.0	12.63	0.16	Left Tilt	Ant2	85.9	0.065	0.012	1.089	1.164	0.015	-
5 775	155	802.11ac	80	MCS0	13.0	12.63	-0.10	Right Cheek	Ant2	85.9	0.699	0.252	1.089	1.164	0.319	-
5 775	155	802.11ac	80	MCS0	13.0	12.63	-0.13	Right Tilt	Ant2	85.9	0.133	0.049	1.089	1.164	0.062	-
5 775	155	802.11ac	80	MCS0	16.0	15.62	0.13	Left Cheek	MIMO	85.9	0.224	0.045	1.099	1.164	0.058	-
5 775	155	802.11ac	80	MCS0	16.0	15.62	0.14	Left Tilt	MIMO	85.9	0.115	0.041	1.099	1.164	0.052	-
5 775	155	802.11ac	80	MCS0	16.0	15.62	-0.03	Right Check	MIMO	85.9	0.651	0.272	1.099	1.164	**0.348**	-
5 775	155	802.11ac	80	MCS0	16.0	15.62	0.18	Right Tilt	MIMO	85.9	0.28	0.104	1.099	1.164	0.133	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Head 1.6 W/kg Averaged over 1 gram								

- For the SAR measurement results of MIMO Ant Mode(802.11ac 80MHz BW), higher power scalling factor among each SISO ANT was applied.

DSS Head SAR											
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Meas. SAR	Scaling Factor	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(dBm)	(dBm)	(dB)		(W/kg)		(Duty)	(W/kg)	
2 402	0	Bluetooth DH5	15.0	14.89	-0.19	Left Cheek	0.175	1.026	1.302	0.234	-
2 402	0	Bluetooth DH5	15.0	14.89	-0.17	Left Tilt	0.246	1.026	1.302	0.329	-
2 402	0	Bluetooth DH5	15.0	14.89	-0.11	Right Cheek	0.328	1.026	1.302	0.438	-
2 402	0	Bluetooth DH5	15.0	14.89	0.10	Right Tilt	0.344	1.026	1.302	**0.460**	18
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Head 1.6 W/kg (mW/g) Averaged over 1 gram					

13.2 Body-worn SAR Measurement Results

GSM/ UMTS Body-Worn SAR														
Frequency		Mode		Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.			(dB)	(dB)	(dB)				(mm)	(W/kg)		(W/kg)	
836.6	190	GSM 850 Voice		33.5	32.19	0.06	Rear	1:8.3		15	0.366	1.352	**0.495**	19
836.6	190	GSM 850 Voice		33.5	32.19	-0.07	Front	1:8.3		15	0.323	1.352	0.437	-
836.6	190	GSM 850 GPRS 2Tx		32.5	32.04	-0.09	Rear	1:4.15		15	0.442	1.112	0.492	20
836.6	190	GSM 850 GPRS 2Tx		32.5	32.04	-0.05	Front	1:4.15		15	0.435	1.112	0.484	-
1 909.8	810	GSM 1900 Voice		30.0	29.27	-0.10	Rear	1:8.3		15	0.136	1.183	0.161	-
1 909.8	810	GSM 1900 Voice		30.0	29.27	0.04	Front	1:8.3		15	0.138	1.183	0.163	-
1 880.0	661	GSM 1900 GPRS 2Tx		29.0	27.88	0.09	Rear	1:4.15		15	0.254	1.294	**0.329**	21
1 880.0	661	GSM 1900 GPRS 2Tx		29.0	27.88	0.10	Front	1:4.15		15	0.213	1.294	0.276	-
836.6	4183	UMTS BAND 5	RMC	24.0	23.35	0.01	Rear	1:1	111	15	0.386	1.161	**0.448**	22
836.6	4183	UMTS BAND 5	RMC	24.0	23.35	0.01	Front	1:1	111	15	0.313	1.161	0.363	-
1 712.4	1312	UMTS BAND 4	RMC	23.0	22.45	0.14	Rear	1:1	21	15	0.535	1.135	**0.607**	23
1 712.4	1312	UMTS BAND 4	RMC	23.0	22.45	0.04	Front	1:1	21	15	0.532	1.135	0.604	-
1 880	9400	UMTS BAND 2	RMC	23.0	22.22	-0.05	Rear	1:1	4	15	0.296	1.197	**0.354**	24
1 880	9400	UMTS BAND 2	RMC	23.0	22.22	0.03	Front	1:1	4	15	0.262	1.197	0.314	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg Averaged over 1 gram							

LTE Body-Worn SAR

Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	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	LTE 2 QPSK	20	22.5	21.86	-0.06	Rear	0	1	49	1:1	4	15	0.312	1.159	**0.362**	25
1 860	18700		20	21.5	20.93	-0.05	Rear	1	50	25	1:1	4	15	0.259	1.140	0.295	-
1 860	18700		20	22.5	21.86	0.12	Front	0	1	49	1:1	4	15	0.244	1.159	0.283	-
1 860	18700		20	21.5	20.93	-0.13	Front	1	50	25	1:1	4	15	0.202	1.140	0.230	-
707.5	23095	LTE 12 QPSK	10	25.0	24.26	-0.04	Rear	0	1	49	1:1	16	15	0.170	1.186	0.202	-
707.5	23095		10	24.0	23.38	-0.02	Rear	1	25	12	1:1	16	15	0.136	1.153	0.157	-
707.5	23095		10	25.0	24.26	-0.01	Front	0	1	49	1:1	16	15	0.183	1.186	**0.217**	26
707.5	23095		10	24.0	23.38	-0.02	Front	1	25	12	1:1	16	15	0.148	1.153	0.171	-
831.5	26865	LTE 26 QPSK	15	25.0	24.36	0.02	Rear	0	1	0	1:1	111	15	0.204	1.159	**0.236**	27
831.5	26865		15	24.0	23.49	0.01	Rear	1	36	18	1:1	111	15	0.185	1.125	0.208	-
831.5	26865		15	25.0	24.36	0.03	Front	0	1	0	1:1	111	15	0.195	1.159	0.226	-
831.5	26865		15	24.0	23.49	-0.03	Front	1	36	18	1:1	111	15	0.173	1.125	0.195	-
2 593	40620	LTE TDD 41 QPSK	20	24.5	24.00	0.11	Rear	0	1	49	1:1.58		15	0.254	1.122	**0.285**	28
2 593	40620		20	23.5	23.06	0.15	Rear	1	50	25	1:1.58		15	0.209	1.107	0.231	-
2 593	40620		20	24.5	24.00	0.02	Front	0	1	49	1:1.58		15	0.250	1.122	0.281	-
2 593	40620		20	23.5	23.06	0.10	Front	1	50	25	1:1.58		15	0.199	1.107	0.220	
2 593	40620		20	26.0	25.01	0.17	Rear	0	1	49	1:2.31		15	0.204	1.256	0.256	**
1 720	132072	LTE 66 QPSK	20	24.5	23.84	-0.01	Rear	0	1	49	1:1	13	15	0.438	1.164	**0.510**	29
1 720	132072		20	23.5	22.90	0.04	Rear	1	50	0	1:1	13	15	0.372	1.148	0.427	-
1 720	132072		20	24.5	23.84	0.13	Front	0	1	49	1:1	13	15	0.335	1.164	0.390	-
1 720	132072		20	23.5	22.90	0.15	Front	1	50	0	1:1	13	15	0.284	1.148	0.326	-
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 LTE 41 Power Class 2(HPUE).

NR Body-Worn SAR

Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
836.5	167300	NR n5 DFT-s OFDM QPSK	20	25.0	24.78	0.04	Rear	0	1	53	1:1	111	15	0.371	1.052	**0.390**	30
836.5	167300		20	25.0	24.90	0.02	Rear	0	50	28	1:1	111	15	0.340	1.023	0.348	-
836.5	167300		20	25.0	24.78	-0.11	Front	0	1	53	1:1	111	15	0.335	1.052	0.352	-
836.5	167300		20	25.0	24.90	-0.08	Front	0	50	28	1:1	111	15	0.295	1.023	0.302	-
836.5	167300	CP QPSK	20	23.5	23.24	-0.02	Rear	1.5	1	1	1:1	111	15	0.214	1.062	0.227	-
1 720	344000	NR n66 DFT-s OFDM QPSK	20	23.5	22.60	-0.06	Rear	0	1	1	1:1	13	15	0.296	1.230	**0.364**	31
1 720	344000		20	23.5	22.77	0.05	Rear	0	50	28	1:1	13	15	0.264	1.183	0.312	-
1 720	344000		20	23.5	22.60	0.04	Front	0	1	1	1:1	13	15	0.251	1.230	0.309	-
1 720	344000		20	23.5	22.77	0.03	Front	0	50	28	1:1	13	15	0.232	1.183	0.274	-
1 720	344000	CP QPSK	20	22.0	21.36	0.11	Rear	1.5	1	1	1:1	13	15	0.189	1.159	0.219	-
ANSI/ IEEE C95.1 –2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg Averaged over 1 gram										

DTS Body-Worn SAR																	
Frequency		Mode	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Ant. Config.	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
MHz	Ch.																
2412	1	802.11b	20	1	19.0	18.26	0.13	Rear	Ant1	98.8	15	0.423	0.275	1.186	1.012	**0.330**	32
2412	1	802.11b	20	1	19.0	18.26	0.19	Front	Ant1	98.8	15	0.295	0.188	1.186	1.012	0.226	-
2412	1	802.11b	20	1	19.0	18.01	0.10	Rear	Ant2	98.8	15	0.301	0.187	1.256	1.012	0.238	-
2412	1	802.11b	20	1	19.0	18.01	0.13	Front	Ant2	98.8	15	0.229	0.146	1.256	1.012	0.186	-
2437	6	802.11g	20	6	20.0	18.52	0.17	Rear	MIMO	93.4	15	0.115	0.080	1.439	1.071	0.123	-
2437	6	802.11g	20	6	20.0	18.52	0.19	Front	MIMO	93.4	15	0.0962	0.061	1.439	1.071	0.094	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population											Body 1.6 W/kg Averaged over 1 gram						

- For the SAR measurement results of MIMO Ant Mode(802.11g), higher power scalling factor among each SISO ANT was applied.

DTS Body-Worn SAR - RSDB																	
Frequency		Mode	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Ant. Config.	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
MHz	Ch.																
2412	1	802.11b	20	1	14.0	13.87	0.19	Rear	Ant1	98.8	15	0.0856	0.056	1.030	1.012	0.058	-
2412	1	802.11b	20	1	14.0	13.87	0.00	Front	Ant1	98.8	15	0.063	0.000	1.030	1.012	0.000	-
2412	1	802.11b	20	1	14.0	13.14	-0.07	Rear	Ant2	98.8	15	0.0803	0.050	1.219	1.012	0.062	-
2412	1	802.11b	20	1	14.0	13.14	0.13	Front	Ant2	98.8	15	0.0837	0.052	1.219	1.012	0.064	-
2412	1	802.11g	20	6	17.0	16.00	0.15	Rear	MIMO	93.4	15	0.102	0.065	1.279	1.071	**0.089**	33
2412	1	802.11g	20	6	17.0	16.00	0.14	Front	MIMO	93.4	15	0.0696	0.046	1.279	1.071	0.063	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population											Body 1.6 W/kg Averaged over 1 gram						

For the SAR measurement results of MIMO Ant Mode(802.11g), higher power scalling factor among each SISO ANT was applied

NII Body-Worn SAR																	
Frequency		Mode	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Ant. Config.	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
MHz	Ch.																
5 320	64	802.11a	20	6	17.0	16.20	-0.13	Rear	Ant1	93.7	15	0.171	0.077	1.202	1.067	0.099	-
5 320	64	802.11a	20	6	17.0	16.20	0.19	Front	Ant1	93.7	15	0.136	0.059	1.202	1.067	0.076	-
5 720	144	802.11a	20	6	17.0	16.12	-0.18	Rear	Ant1	93.7	15	0.194	0.084	1.225	1.067	0.110	-
5 720	144	802.11a	20	6	17.0	16.12	0.01	Front	Ant1	93.7	15	0.0952	0.042	1.225	1.067	0.055	-
5 825	165	802.11a	20	6	17.0	16.01	-0.17	Rear	Ant1	93.7	15	0.22	0.094	1.256	1.067	**0.126**	34
5 825	165	802.11a	20	6	17.0	16.01	0.10	Front	Ant1	93.7	15	0.103	0.044	1.256	1.067	0.059	-
5 260	52	802.11a	20	6	17.0	15.80	-0.17	Rear	Ant2	93.7	15	0.0714	0.029	1.318	1.067	0.041	-
5 260	52	802.11a	20	6	17.0	15.80	0.10	Front	Ant2	93.7	15	0.113	0.046	1.318	1.067	0.065	-
5600	120	802.11a	20	6	17.0	15.34	0.10	Rear	Ant2	93.7	15	0.115	0.047	1.466	1.067	0.074	-
5600	120	802.11a	20	6	17.0	15.34	0.10	Front	Ant2	93.7	15	0.0802	0.036	1.466	1.067	0.056	-
5 825	165	802.11a	20	6	17.0	15.38	-0.12	Rear	Ant2	93.7	15	0.0899	0.035	1.452	1.067	0.054	-
5 825	165	802.11a	20	6	17.0	15.38	0.10	Front	Ant2	93.7	15	0.112	0.047	1.452	1.067	0.073	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population											Body 1.6 W/kg Averaged over 1 gram						

DSS Body-Worn SAR												
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Distance	Meas. SAR	Scaling Factor	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(dBm)	(dBm)	(dB)		(mm)	(W/kg)		(Duty)	(W/kg)	
2 402	0	Bluetooth DH5	15.0	14.89	0.17	Rear	15	0.038	1.026	1.302	**0.051**	35
2 402	0	Bluetooth DH5	15.0	14.89	0.10	Front	15	0.022	1.026	1.302	0.029	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg Averaged over 1 gram					

13.3 Hotspot SAR Measurement Results

GSM 850 Hotspot SAR												
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	1g Meas. SAR	Scaling Factor	1g Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)			(mm)	(W/kg)		(W/kg)	
836.6	190	GRPS 2Tx	32.5	32.04	-0.06	Rear	1:4.15	10	**0.860**	1.112	0.956	36
824.2	128	GRPS 2Tx	32.5	31.10	0.01	Rear	1:4.15	10	0.714	1.380	**0.985**	37
848.8	251	GRPS 2Tx	32.5	31.96	-0.08	Rear	1:4.15	10	0.443	1.132	0.501	-
836.6	190	GRPS 2Tx	32.5	32.04	0.03	Front	1:4.15	10	0.602	1.112	0.669	-
836.6	190	GRPS 2Tx	32.5	32.04	0.01	Left	1:4.15	10	0.096	1.112	0.107	-
836.6	190	GRPS 2Tx	32.5	32.04	0.02	Right	1:4.15	10	0.515	1.112	0.573	-
836.6	190	GRPS 2Tx	32.5	32.04	0.12	Bottom	1:4.15	10	0.516	1.112	0.574	-
836.6	190	GRPS 2Tx	32.5	32.04	-0.12	Rear	1:4.15	10	0.800	1.112	0.890	*
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg Averaged over 1 gram					

Note: * Data entry indicate Variability measurement.

GSM 1900 Hotspot SAR												
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	1g Meas. SAR	Scaling Factor	1g Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)			(mm)	(W/kg)		(W/kg)	
1 909.8	810	GRPS 3Tx	23.5	23.35	-0.11	Rear	1:2.77	10	0.621	1.035	0.643	-
1 909.8	810	GRPS 3Tx	23.5	23.35	0.15	Front	1:2.77	10	0.536	1.035	0.555	-
1 909.8	810	GRPS 3Tx	23.5	23.35	0.10	Left	1:2.77	10	0.016	1.035	0.017	-
1 909.8	810	GRPS 3Tx	23.5	23.35	0.12	Right	1:2.77	10	0.114	1.035	0.118	-
1 909.8	810	GRPS 3Tx	23.5	23.35	0.17	Bottom	1:2.77	10	0.632	1.035	**0.654**	38
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg Averaged over 1 gram					

UMTS BAND 5 Hotspot SAR													
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Ant. State	Distance	1g Meas. SAR	Scaling Factor	1g Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)				(mm)	(W/kg)		(W/kg)	
836.6	4183	RMC	24.0	23.35	0.08	Rear	1:1	111	10	0.665	1.161	**0.772**	39
836.6	4183	RMC	24.0	23.35	-0.07	Front	1:1	111	10	0.450	1.161	0.522	-
836.6	4183	RMC	24.0	23.35	0.19	Left	1:1	111	10	0.100	1.161	0.116	-
836.6	4183	RMC	24.0	23.35	-0.12	Right	1:1	111	10	0.377	1.161	0.438	
836.6	4183	RMC	24.0	23.35	0.14	Bottom	1:1	111	10	0.390	1.161	0.453	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg Averaged over 1 gram						

UMTS BAND 4 Hotspot SAR

Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Ant. State	Distance	1g Meas. SAR	Scaling Factor	1g Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)				(mm)	(W/kg)		(W/kg)	
1 712.4	1312	RMC	20.0	19.84	-0.07	Rear	1:1	21	10	0.506	1.038	0.525	-
1 712.4	1312	RMC	20.0	19.84	-0.02	Front	1:1	21	10	0.627	1.038	0.651	-
1 712.4	1312	RMC	20.0	19.84	-0.20	Left	1:1	21	10	0.118	1.038	0.122	-
1 712.4	1312	RMC	20.0	19.84	0.06	Right	1:1	21	10	0.102	1.038	0.106	-
1 712.4	1312	RMC	20.0	19.84	-0.07	Bottom	1:1	21	10	0.857	1.038	0.890	-
1 732.4	1412	RMC	20.0	19.43	-0.09	Bottom	1:1	21	10	0.966	1.140	1.101	40
1 752.6	1513	RMC	20.0	19.05	-0.07	Bottom	1:1	21	10	0.955	1.245	**1.189**	41
1 732.4	1412	RMC	20.0	19.43	-0.09	Bottom	1:1	21	10	0.960	1.140	1.094	*
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg Averaged over 1 gram						

Note: * Data entry indicate Variability measurement.

UMTS BAND 2 Hotspot SAR

Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Ant. State	Distance	1g Meas. SAR	Scaling Factor	1g Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)				(mm)	(W/kg)		(W/kg)	
1 880	9400	RMC	19.5	18.70	0.08	Rear	1:1	4	10	0.323	1.202	0.388	-
1 880	9400	RMC	19.5	18.70	0.13	Front	1:1	4	10	0.341	1.202	0.410	-
1 880	9400	RMC	19.5	18.70	-0.17	Left	1:1	4	10	0.016	1.202	0.019	-
1 880	9400	RMC	19.5	18.70	0.15	Right	1:1	4	10	0.064	1.202	0.077	-
1 880	9400	RMC	19.5	18.70	0.13	Bottom	1:1	4	10	0.641	1.202	**0.770**	42
ANSI/ IEEE C95.1 –2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg Averaged over 1 gram						

LTE Band 2 Hotspot SAR

Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	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	19.0	18.40	-0.16	Rear	0	1	49	1:1	4	10	0.334	1.148	0.383	-
1 860	18700	QPSK	20	19.0	18.44	0.12	Rear	0	50	25	1:1	4	10	0.348	1.138	0.396	-
1 860	18700	QPSK	20	19.0	18.40	-0.1	Front	0	1	49	1:1	4	10	0.291	1.148	0.334	-
1 860	18700	QPSK	20	19.0	18.44	0.11	Front	0	50	25	1:1	4	10	0.300	1.138	0.341	-
1 860	18700	QPSK	20	19.0	18.40	0.11	Left	0	1	49	1:1	4	10	0.019	1.148	0.022	-
1 860	18700	QPSK	20	19.0	18.44	0.07	Left	0	50	25	1:1	4	10	0.020	1.138	0.023	-
1 860	18700	QPSK	20	19.0	18.40	0.05	Right	0	1	49	1:1	4	10	0.054	1.148	0.062	-
1 860	18700	QPSK	20	19.0	18.44	0.04	Right	0	50	25	1:1	4	10	0.056	1.138	0.064	-
1 860	18700	QPSK	20	19.0	18.40	-0.07	Bottom	0	1	49	1:1	4	10	0.598	1.148	0.687	-
1 860	18700	QPSK	20	19.0	18.44	-0.04	Bottom	0	50	25	1:1	4	10	0.623	1.138	**0.709**	43
ANSI/ IEEE C95.1 –2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg Averaged over 1 gram										

LTE Band 12 Hotspot SAR

Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	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	25.0	24.26	-0.01	Rear	0	1	49	1:1	16	10	0.374	1.186	**0.444**	44
707.5	23095	QPSK	10	24.0	23.38	0.02	Rear	1	25	12	1:1	16	10	0.297	1.153	0.342	-
707.5	23095	QPSK	10	25.0	24.26	-0.06	Rear	0	1	49	1:1	16	10	0.254	1.186	0.301	-
707.5	23095	QPSK	10	24.0	23.38	0.01	Rear	1	25	12	1:1	16	10	0.205	1.153	0.236	-
707.5	23095	QPSK	10	25.0	24.26	-0.03	Left	0	1	49	1:1	16	10	0.094	1.186	0.111	-
707.5	23095	QPSK	10	24.0	23.38	-0.02	Left	1	25	12	1:1	16	10	0.081	1.153	0.093	-
707.5	23095	QPSK	10	25.0	24.26	0.01	Right	0	1	49	1:1	16	10	0.158	1.186	0.187	-
707.5	23095	QPSK	10	24.0	23.38	0.03	Right	1	25	12	1:1	16	10	0.156	1.153	0.180	-
707.5	23095	QPSK	10	25.0	24.26	0.01	Bottom	0	1	49	1:1	16	10	0.240	1.186	0.285	-
707.5	23095	QPSK	10	24.0	23.38	-0.01	Bottom	1	25	12	1:1	16	10	0.196	1.153	0.226	-
ANSI/ IEEE C95.1 –2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg Averaged over 1 gram										

LTE Band 26 Hotspot SAR.																	
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	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	25.0	24.36	0.10	Rear	0	1	0	1:1	111	10	0.382	1.159	**0.443**	45
831.5	26865	QPSK	15	24.0	23.49	0.04	Rear	1	36	18	1:1	111	10	0.360	1.125	0.405	-
831.5	26865	QPSK	15	25.0	24.36	-0.01	Front	0	1	0	1:1	111	10	0.275	1.159	0.319	-
831.5	26865	QPSK	15	24.0	23.49	-0.07	Front	1	36	18	1:1	111	10	0.258	1.125	0.290	-
831.5	26865	QPSK	15	25.0	24.36	-0.02	Left	0	1	0	1:1	111	10	0.072	1.159	0.083	-
831.5	26865	QPSK	15	24.0	23.49	0.06	Left	1	36	18	1:1	111	10	0.056	1.125	0.063	-
831.5	26865	QPSK	15	25.0	24.36	-0.03	Right	0	1	0	1:1	111	10	0.103	1.159	0.119	-
831.5	26865	QPSK	15	24.0	23.49	0.01	Right	1	36	18	1:1	111	10	0.104	1.125	0.117	-
831.5	26865	QPSK	15	25.0	24.36	-0.02	Bottom	0	1	0	1:1	111	10	0.232	1.159	0.269	-
831.5	26865	QPSK	15	24.0	23.49	0.04	Bottom	1	36	18	1:1	111	10	0.201	1.125	0.226	-
ANSI/ IEEE C95.1 –2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg Averaged over 1 gram										

LTE TDD Band 41 Hotspot SAR																
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)				(mm)	(W/kg)		(W/kg)	
2 549.5	40185	QPSK	20	21.5	20.85	0.19	Rear	0	1	0	1:1.58	10	0.404	1.161	0.469	-
2 680.0	41490	QPSK	20	21.5	20.88	0.12	Rear	0	50	25	1:1.58	10	0.246	1.153	0.284	-
2 549.5	40185	QPSK	20	21.5	20.85	0.16	Front	0	1	0	1:1.58	10	0.344	1.161	0.399	-
2 680.0	41490	QPSK	20	21.5	20.88	0.11	Front	0	50	25	1:1.58	10	0.274	1.153	0.316	-
2 549.5	40185	QPSK	20	21.5	20.85	0.06	Left	0	1	0	1:1.58	10	0.198	1.161	0.230	-
2 680.0	41490	QPSK	20	21.5	20.88	-0.01	Left	0	50	25	1:1.58	10	0.147	1.153	0.169	-
2 506.0	39750	QPSK	20	21.5	20.81	0.01	Bottom	0	1	0	1:1.58	10	0.662	1.172	**0.776**	46
2 549.5	40185	QPSK	20	21.5	20.85	0.04	Bottom	0	1	0	1:1.58	10	0.615	1.161	0.714	-
2 593.0	40620	QPSK	20	21.5	20.51	0.09	Bottom	0	1	49	1:1.58	10	0.611	1.256	0.767	-
2 636.5	41055	QPSK	20	21.5	20.45	0.07	Bottom	0	1	49	1:1.58	10	0.536	1.274	0.683	-
2 680.0	41490	QPSK	20	21.5	20.45	0.12	Bottom	0	1	49	1:1.58	10	0.543	1.274	0.692	-
2 506.0	39750	QPSK	20	21.5	20.87	0.02	Bottom	0	50	25	1:1.58	10	0.658	1.156	0.761	-
2 549.5	40185	QPSK	20	21.5	20.64	0.09	Bottom	0	50	25	1:1.58	10	0.504	1.219	0.614	-
2 593.0	40620	QPSK	20	21.5	20.59	0.08	Bottom	0	50	25	1:1.58	10	0.621	1.233	0.766	-
2 636.5	41055	QPSK	20	21.5	20.50	0.02	Bottom	0	50	25	1:1.58	10	0.551	1.259	0.694	-
2 680.0	41490	QPSK	20	21.5	20.88	0.07	Bottom	0	50	25	1:1.58	10	0.557	1.153	0.642	-
2 593.0	40620	QPSK	20	21.5	20.83	0.08	Bottom	0	100	0	1:1.58	10	0.606	1.167	0.707	-
2 506.0	39750	QPSK	20	23.0	22.02	0.09	Bottom	0	1	0	1:2.31	10	0.554	1.253	0.694	**
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 LTE 41 Power Class 2 (HPUE).

LTE Band 66 Hotspot SAR																	
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
1 720	132072	QPSK	20	20.0	19.44	0.17	Rear	0	1	49	1:1	13	10	0.353	1.138	0.402	-
1 720	132072	QPSK	20	20.0	19.68	0.06	Rear	0	50	0	1:1	13	10	0.370	1.076	0.398	-
1 720	132072	QPSK	20	20.0	19.44	0.15	Front	0	1	49	1:1	13	10	0.285	1.138	0.324	-
1 720	132072	QPSK	20	20.0	19.68	0.01	Front	0	50	0	1:1	13	10	0.304	1.076	0.327	-
1 720	132072	QPSK	20	20.0	19.44	-0.18	Left	0	1	49	1:1	13	10	0.016	1.138	0.018	-
1 720	132072	QPSK	20	20.0	19.68	-0.25	Left	0	50	0	1:1	13	10	0.019	1.076	0.020	-
1 720	132072	QPSK	20	20.0	19.44	0.03	Right	0	1	49	1:1	13	10	0.056	1.138	0.064	-
1 720	132072	QPSK	20	20.0	19.68	0.17	Right	0	50	0	1:1	13	10	0.061	1.076	0.066	-
1 720	132072	QPSK	20	20.0	19.44	-0.02	Bottom	0	1	49	1:1	13	10	0.427	1.138	0.486	-
1 720	132072	QPSK	20	20.0	19.68	-0.06	Bottom	0	50	0	1:1	13	10	0.459	1.076	**0.494**	47
ANSI/ IEEE C95.1 –2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg Averaged over 1 gram										

NR Band n5 (Cell) Hotspot SAR																	
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
836.5	167300	DFT-s OFDM QPSK	20	25.0	24.78	0.03	Rear	0	1	53	1:1	111	10	0.655	1.052	**0.689**	48
836.5	167300	DFT-s OFDM QPSK	20	25.0	24.90	-0.04	Rear	0	50	28	1:1	111	10	0.628	1.023	0.642	-
836.5	167300	DFT-s OFDM QPSK	20	25.0	24.78	-0.04	Front	0	1	53	1:1	111	10	0.499	1.052	0.525	-
836.5	167300	DFT-s OFDM QPSK	20	25.0	24.90	-0.08	Front	0	50	28	1:1	111	10	0.450	1.023	0.460	-
836.5	167300	DFT-s OFDM QPSK	20	25.0	24.78	-0.12	Left	0	1	53	1:1	111	10	0.124	1.052	0.130	-
836.5	167300	DFT-s OFDM QPSK	20	25.0	24.90	0.07	Left	0	50	28	1:1	111	10	0.102	1.023	0.104	-
836.5	167300	DFT-s OFDM QPSK	20	25.0	24.78	0.02	Right	0	1	53	1:1	111	10	0.377	1.052	0.397	-
836.5	167300	DFT-s OFDM QPSK	20	25.0	24.90	-0.04	Right	0	50	28	1:1	111	10	0.346	1.023	0.354	-
836.5	167300	DFT-s OFDM QPSK	20	25.0	24.78	-0.06	Bottom	0	1	53	1:1	111	10	0.433	1.052	0.456	-
836.5	167300	DFT-s OFDM QPSK	20	25.0	24.90	-0.10	Bottom	0	50	28	1:1	111	10	0.389	1.023	0.398	-
836.5	167300	CP OFDM QPSK	20	23.5	23.24	0.03	Rear	1.5	1	1	1:1	111	10	0.363	1.062	0.386	-
ANSI/ IEEE C95.1 –2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg Averaged over 1 gram										

NR Band n66 (Cell) Hotspot SAR																	
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Ant. State	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)					(mm)	(W/kg)		(W/kg)	
1720	344000	DFT-s OFDM QPSK	20	20.0	19.34	0.08	Rear	0	1	1	1:1	13	10	0.331	1.164	0.385	-
1720	344000	DFT-s OFDM QPSK	20	20.0	19.43	0.02	Rear	0	50	28	1:1	13	10	0.291	1.140	0.332	-
1720	344000	DFT-s OFDM QPSK	20	20.0	19.34	-0.14	Front	0	1	1	1:1	13	10	0.288	1.164	0.335	-
1720	344000	DFT-s OFDM QPSK	20	20.0	19.43	0.08	Front	0	50	28	1:1	13	10	0.258	1.140	0.294	-
1720	344000	DFT-s OFDM QPSK	20	20.0	19.34	0.19	Left	0	1	1	1:1	13	10	0.056	1.164	0.065	-
1720	344000	DFT-s OFDM QPSK	20	20.0	19.43	0.17	Left	0	50	28	1:1	13	10	0.053	1.140	0.060	-
1720	344000	DFT-s OFDM QPSK	20	20.0	19.34	0.14	Right	0	1	1	1:1	13	10	0.043	1.164	0.050	-
1720	344000	DFT-s OFDM QPSK	20	20.0	19.43	-0.18	Right	0	50	28	1:1	13	10	0.042	1.140	0.048	-
1720	344000	DFT-s OFDM QPSK	20	20.0	19.34	0.08	Bottom	0	1	1	1:1	13	10	0.678	1.164	**0.789**	49
1720	344000	DFT-s OFDM QPSK	20	20.0	19.43	0.11	Bottom	0	50	28	1:1	13	10	0.639	1.140	0.728	-
1720	344000	CP OFDM QPSK	20	20.0	19.28	-0.10	Bottom	0	1	1	1:1	13	10	0.571	1.180	0.674	-
ANSI/ IEEE C95.1 –2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram									

DTS Hotspot SAR																	
Frequency		Mode	Band width	Data Rate	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Ant Config.	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Reported SAR (W/kg)	Plot No.
MHz	Ch.		(MHz)	(Mbps)	(dBm)	(dBm)	(dB)										
2 412	1	802.11b	20	1	19.0	18.26	0.11	Rear	Ant1	98.8	10	0.653	0.416	1.186	1.012	0.499	-
2 412	1	802.11b	20	1	19.0	18.26	-0.04	Front	Ant1	98.8	10	0.504	0.317	1.186	1.012	0.380	-
2 412	1	802.11b	20	1	19.0	18.26	0.10	Left	Ant1	98.8	10	0.128	0.079	1.186	1.012	0.095	-
2 412	1	802.11b	20	1	19.0	18.26	0.19	Top	Ant1	98.8	10	1.03	0.613	1.186	1.012	**0.736**	50
2 412	1	802.11b	20	1	19.0	18.01	0.11	Rear	Ant2	98.8	10	0.151	0.099	1.256	1.012	0.126	-
2 412	1	802.11b	20	1	19.0	18.01	0.09	Front	Ant2	98.8	10	0.32	0.199	1.256	1.012	0.253	-
2 412	1	802.11b	20	1	19.0	18.01	0.12	Left	Ant2	98.8	10	0.878	0.528	1.256	1.012	0.671	
2 412	1	802.11b	20	1	19.0	18.01	0.12	Top	Ant2	98.8	10	0.164	0.102	1.256	1.012	0.130	-
2 437	6	802.11g	20	6	20.0	18.52	0.14	Rear	MIMO	93.4	10	0.265	0.163	1.439	1.071	0.251	-
2 437	6	802.11g	20	6	20.0	18.52	0.11	Front	MIMO	93.4	10	0.172	0.108	1.439	1.071	0.166	-
2 437	6	802.11g	20	6	20.0	18.52	0.10	Left	MIMO	93.4	10	0.302	0.177	1.439	1.071	0.273	-
2 437	6	802.11g	20	6	20.0	18.52	0.13	Top	MIMO	93.4	10	0.326	0.200	1.439	1.071	0.308	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population												Body 1.6 W/kg Averaged over 1 gram					

- For the SAR measurement results of MIMO Ant Mode(802.11g), higher power scalling factor among each SISO ANT was applied.

DTS Hotspot SAR - RSDB																	
Frequency		Mode	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Ant Config.	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Reported SAR (W/kg)	Plot No.
MHz	Ch.																
2 412	1	802.11b	20	1	14.0	13.87	0.09	Rear	Ant1	98.8	10	0.183	0.109	1.030	1.012	0.114	-
2 412	1	802.11b	20	1	14.0	13.87	-0.17	Front	Ant1	98.8	10	0.122	0.078	1.030	1.012	0.081	-
2 412	1	802.11b	20	1	14.0	13.87	0.00	Left	Ant1	98.8	10	0.028	0.000	1.030	1.012	0.000	-
2 412	1	802.11b	20	1	14.0	13.87	-0.12	Top	Ant1	98.8	10	0.337	**0.203**	1.030	1.012	0.212	51
2 412	1	802.11b	20	1	14.0	13.14	0.02	Rear	Ant2	98.8	10	0.19	0.118	1.219	1.012	0.146	-
2 412	1	802.11b	20	1	14.0	13.14	-0.01	Front	Ant2	98.8	10	0.15	0.000	1.219	1.012	0.000	-
2 412	1	802.11b	20	1	14.0	13.14	-0.01	Left	Ant2	98.8	10	0.231	0.139	1.219	1.012	0.171	
2 412	1	802.11b	20	1	14.0	13.14	-0.16	Top	Ant2	98.8	10	0.0528	0.033	1.219	1.012	0.041	-
2 412	1	802.11g	20	6	17.0	16.00	0.08	Rear	MIMO	93.4	10	0.184	0.115	1.279	1.071	0.158	-
2 412	1	802.11g	20	6	17.0	16.00	0.01	Front	MIMO	93.4	10	0.189	0.111	1.279	1.071	0.152	-
2 412	1	802.11g	20	6	17.0	16.00	-0.02	Left	MIMO	93.4	10	0.218	0.137	1.279	1.071	0.188	-
2 412	1	802.11g	20	6	17.0	16.00	-0.01	Top	MIMO	93.4	10	0.272	0.162	1.279	1.071	**0.222**	52
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population												Body 1.6 W/kg Averaged over 1 gram					

- For the SAR measurement results of MIMO Ant Mode(802.11g), higher power scalling factor among each SISO ANT was applied

5 GHz WLAN Hotspot SAR																	
Frequency		Mode	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Ant Config.	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Reported SAR (W/kg)	Plot No.
MHz	Ch.																
5 825	165	802.11a	20	6	17.0	16.01	0.10	Rear	Ant1	93.7	10	0.388	0.150	1.256	1.067	0.201	-
5 825	165	802.11a	20	6	17.0	16.01	0.10	Front	Ant1	93.7	10	0.112	0.044	1.256	1.067	0.059	-
5 825	165	802.11a	20	6	17.0	16.01	0.17	Left	Ant1	93.7	10	0.391	0.159	1.256	1.067	**0.213**	53
5 825	165	802.11a	20	6	17.0	16.01	-0.02	Top	Ant1	93.7	10	0.119	0.046	1.256	1.067	0.062	-
5 825	165	802.11a	20	6	17.0	15.38	-0.00	Rear	Ant2	93.7	10	0.104	0.043	1.452	1.067	0.067	-
5 825	165	802.11a	20	6	17.0	15.38	-0.10	Front	Ant2	93.7	10	0.168	0.073	1.452	1.067	0.113	-
5 825	165	802.11a	20	6	17.0	15.38	0.14	Left	Ant2	93.7	10	0.0959	0.040	1.452	1.067	0.062	-
5 825	165	802.11a	20	6	17.0	15.38	0.16	Top	Ant2	93.7	10	0.0209	0.00783	1.452	1.067	0.012	
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population												Body 1.6 W/kg Averaged over 1 gram					

5 GHz WLAN Hotspot SAR_ - RSDB mode																	
Frequency		Mode	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Ant Config.	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Reported SAR (W/kg)	Plot No.
MHz	Ch.																
5 775	155	802.11ac	80	MCS0	13.0	12.59	-0.16	Rear	Ant1	85.9	10	0.257	0.056	1.099	1.164	0.072	-
5 775	155	802.11ac	80	MCS0	13.0	12.59	0.01	Front	Ant1	85.9	10	0.113	0.019	1.099	1.164	0.024	
5 775	155	802.11ac	80	MCS0	13.0	12.59	0.16	Left	Ant1	85.9	10	0.177	0.069	1.099	1.164	**0.088**	54
5 775	155	802.11ac	80	MCS0	13.0	12.59	0.01	Top	Ant1	85.9	10	0.103	0.000	1.099	1.164	0.000	-
5 775	155	802.11ac	80	MCS0	13.0	12.63	0.01	Rear	Ant2	85.9	10	0.0506	0.013	1.089	1.164	0.016	-
5 775	155	802.11ac	80	MCS0	13.0	12.63	0.10	Front	Ant2	85.9	10	0.164	0.020	1.089	1.164	0.025	-
5 775	155	802.11ac	80	MCS0	13.0	12.63	0.16	Left	Ant2	85.9	10	0.0346	0.00701	1.089	1.164	0.009	-
5 775	155	802.11ac	80	MCS0	13.0	12.63	0.01	Top	Ant2	85.9	10	0.000926	0.000	1.089	1.164	0.000	-
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population												Body 1.6 W/kg Averaged over 1 gram					

DSS Tethering SAR												
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Distance	Meas. SAR	Scaling Factor	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(dBm)	(dBm)	(dB)		(mm)	(W/kg)		(Duty)	(W/kg)	
2 402	0	Bluetooth DH5	15.0	14.89	-0.13	Rear	10	0.064	1.026	1.302	0.085	-
2 402	0	Bluetooth DH5	15.0	14.89	0.10	Front	10	0.042	1.026	1.302	0.056	-
2 402	0	Bluetooth DH5	15.0	14.89	0.10	Left	10	0.00704	1.026	1.302	0.009	-
2 402	0	Bluetooth DH5	15.0	14.89	0.11	Top	10	0.113	1.026	1.302	**0.151**	55
ANSI/ IEEE C95.1 - 2005– Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Body 1.6 W/kg Averaged over 1 gram						

13.4 Phablet SAR Measurement Considerations

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

13.5 Phablet SAR Measurement Results

GSM 1900 Phablet SAR 10g													
Frequency		Mode	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.												
1 880	661	GRPS 3Tx	23.5	23.08	0.02	Rear	ON	1:2.77	0	0.563	1.102	0.620	-
1 880	661	GRPS 3Tx	23.5	23.08	0.12	Front	ON	1:2.77	0	0.644	1.102	0.710	-
1 880	661	GRPS 2Tx	29.0	27.88	0.13	Left	N/A	1:4.15	0	0.038	1.294	0.049	-
1 880	661	GRPS 2Tx	29.0	27.88	-0.15	Right	N/A	1:4.15	0	0.219	1.294	0.283	-
1 880	661	GRPS 3Tx	23.5	23.08	0.01	Bottom	ON	1:2.77	0	0.952	1.102	**1.049**	56
1 880	661	GRPS 2Tx	29.0	27.88	-0.18	Rear	OFF	1:4.15	8	0.493	1.294	0.638	-
1 880	661	GRPS 2Tx	29.0	27.88	0.14	Front	OFF	1:4.15	6	0.498	1.294	0.644	-
1 880	661	GRPS 2Tx	29.0	27.88	0.01	Bottom	OFF	1:4.15	13	0.434	1.294	0.562	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Hand 4.0 W/kg Averaged over 10 gram						

UMTS1700 Phablet SAR 10g													
Frequency		Mode	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	Duty Cycle	Ant. State	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.													
1 712.4	1312	RMC	20.0	19.86	-0.15	Rear	ON	1:1	21	0	1.63	1.033	1.684	-
1 712.4	1312	RMC	20.0	19.86	0.10	Front	ON	1:1	21	0	1.74	1.033	1.797	-
1 712.4	1312	RMC	23.0	22.45	0.18	Left	N/A	1:1	21	0	0.386	1.135	0.438	-
1 712.4	1312	RMC	23.0	22.45	0.14	Right	N/A	1:1	21	0	0.402	1.135	0.456	-
1 712.4	1312	RMC	20.0	19.86	0.01	Bottom	ON	1:1	21	0	2.41	1.033	**2.490**	57
1 732.4	1412	RMC	20.0	19.86	-0.11	Bottom	ON	1:1	21	0	1.89	1.033	1.952	-
1 752.6	1513	RMC	20.0	19.86	-0.13	Bottom	ON	1:1	21	0	1.71	1.033	1.766	-
1 712.4	1312	RMC	23.0	22.45	-0.03	Rear	OFF	1:1	21	8	0.802	1.135	0.910	-
1 712.4	1312	RMC	23.0	22.45	-0.03	Front	OFF	1:1	21	6	1.02	1.135	1.158	-
1 712.4	1312	RMC	23.0	22.45	0.04	Bottom	OFF	1:1	21	13	0.778	1.135	0.883	-
1 712.4	1312	RMC	20.0	19.86	-0.10	Bottom	ON	1:1	21	0	2.14	1.033	2.211	*
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Hand 4.0 W/kg Averaged over 10 gram							

Note: * Data entry indicate Variability measurement.

UMTS BAND 2 Phablet SAR 10g														
Frequency		Mode	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	Duty Cycle	Ant. State	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.													
1 880.0	9400	RMC	19.5	18.71	-0.11	Rear	ON	1:1	4	0	0.678	1.199	0.813	-
1 880.0	9400	RMC	19.5	18.71	0.01	Front	ON	1:1	4	0	0.724	1.199	0.868	
1 880.0	9400	RMC	23.0	22.22	0.17	Left	N/A	1:1	4	0	0.033	1.197	0.040	-
1 880.0	9400	RMC	23.0	22.22	0.11	Right	N/A	1:1	4	0	0.255	1.197	0.305	-
1 880.0	9400	RMC	19.5	18.71	-0.13	Bottom	ON	1:1	4	0	1.03	1.199	**1.235**	58
1 880.0	9400	RMC	23.0	22.22	-0.04	Rear	OFF	1:1	4	8	0.492	1.197	0.589	-
1 880.0	9400	RMC	23.0	22.22	0.08	Front	OFF	1:1	4	6	0.596	1.197	0.713	-
1 880.0	9400	RMC	23.0	22.22	-0.11	Bottom	OFF	1:1	4	13	0.423	1.197	0.506	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Hand 4.0 W/kg Averaged over 10 gram							

LTE Band 2 Phablet SAR 10g																	
Frequency		Mode	Band Width	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	MPR (dB)	RB Size	RB Offset	Duty Cycle	Ant. State	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.																	
1 900	19100	QPSK	20	19.0	17.79	0.11	Rear	ON	0	1	99	1:1	4	0	0.574	1.321	0.758	-
1 900	19100	QPSK	20	19.0	17.99	0.14	Rear	ON	0	50	25	1:1	4	0	0.636	1.262	0.803	
1 900	19100	QPSK	20	19.0	17.79	0.01	Front	ON	0	1	99	1:1	4	0	0.600	1.321	0.793	
1 900	19100	QPSK	20	19.0	17.99	0.01	Front	ON	0	50	25	1:1	4	0	0.686	1.262	0.866	-
1 860	18700	QPSK	20	22.5	21.86	0.05	Left	N/A	0	1	49	1:1	4	0	0.027	1.159	0.031	-
1 860	18700	QPSK	20	21.5	20.93	0.14	Left	N/A	1	50	25	1:1	4	0	0.021	1.140	0.024	-
1 860	18700	QPSK	20	22.5	21.86	0.13	Right	N/A	0	1	49	1:1	4	0	0.229	1.159	0.265	-
1 860	18700	QPSK	20	21.5	20.93	0.16	Right	N/A	1	50	25	1:1	4	0	0.196	1.140	0.223	-
1 900	19100	QPSK	20	19.0	17.79	0.17	Bottom	ON	0	1	99	1:1	4	0	0.824	1.321	**1.089**	59
1 900	19100	QPSK	20	19.0	17.99	0.15	Bottom	ON	0	50	25	1:1	4	0	**0.853**	1.262	1.076	60
1 860	18700	QPSK	20	22.5	21.86	-0.15	Rear	OFF	0	1	49	1:1	4	8	0.309	1.159	0.358	-
1 860	18700	QPSK	20	21.5	20.93	-0.04	Rear	OFF	1	50	25	1:1	4	8	0.321	1.140	0.366	-
1 860	18700	QPSK	20	22.5	21.86	0.17	Front	OFF	0	1	49	1:1	4	6	0.395	1.159	0.458	-
1 860	18700	QPSK	20	21.5	20.93	-0.17	Front	OFF	1	50	25	1:1	4	6	0.380	1.140	0.433	-
1 860	18700	QPSK	20	22.5	21.86	0.07	Bottom	OFF	0	1	49	1:1	4	13	0.243	1.159	0.282	-
1 860	18700	QPSK	20	21.5	20.93	0.13	Bottom	OFF	1	50	25	1:1	4	13	0.230	1.140	0.262	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Hand 4.0 W/kg Averaged over 10 gram										

LTE Band TDD 41 Phablet SAR 10g																	
Frequency		Mode	Band Width	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	MPR (dB)	RB Size	RB Offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.																
2 506	39750	QPSK	20	21.5	20.85	-0.17	Rear	ON	0	1	49	1:1.58	0	1.29	1.161	1.498	-
2 506	39750	QPSK	20	21.5	20.90	0.14	Rear	ON	0	50	25	1:1.58	0	1.33	1.148	**1.527**	61
2 506	39750	QPSK	20	21.5	20.85	0.13	Front	ON	0	1	49	1:1.58	0	1.14	1.161	1.324	-
2 506	39750	QPSK	20	21.5	20.90	0.17	Front	ON	0	50	25	1:1.58	0	1.18	1.148	1.355	-
2 593	40620	QPSK	20	24.5	24.00	-0.14	Left	N/A	0	1	49	1:1.58	0	0.608	1.122	0.682	-
2 593	40620	QPSK	20	23.5	23.06	-0.05	Left	N/A	1	50	25	1:1.58	0	0.493	1.107	0.546	-
2 506	39750	QPSK	20	21.5	20.85	-0.03	Bottom	ON	0	1	49	1:1.58	0	0.969	1.161	1.125	-
2 506	39750	QPSK	20	21.5	20.90	0.04	Bottom	ON	0	50	25	1:1.58	0	1.01	1.148	1.159	-
2 593	40620	QPSK	20	24.5	24.00	0.11	Rear	OFF	0	1	49	1:1.58	8	0.416	1.122	0.467	-
2 593	40620	QPSK	20	23.5	23.06	-0.10	Rear	OFF	1	50	25	1:1.58	8	0.335	1.107	0.371	-
2 593	40620	QPSK	20	24.5	24.00	0.10	Front	OFF	0	1	49	1:1.58	6	0.383	1.122	0.430	-
2 593	40620	QPSK	20	23.5	23.06	0.10	Front	OFF	1	50	25	1:1.58	6	0.329	1.107	0.364	-
2 593	40620	QPSK	20	24.5	24.00	0.11	Bottom	OFF	0	1	49	1:1.58	13	0.393	1.122	0.441	-
2 593	40620	QPSK	20	23.5	23.06	0.11	Bottom	OFF	1	50	25	1:1.58	13	0.302	1.107	0.334	-
2 506	39750	QPSK	20	23.0	22.31	0.12	Rear	ON	0	1	49	1:2.31	0	1.17	1.172	1.371	**
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population												Hand 4.0 W/kg Averaged over 10 gram					

Note: ** Data entry indicate LTE 41 Power Class 2 (HPUE).

LTE Band 66 Phablet SAR 10g																		
Frequency		Mode	Band Width	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	MPR (dB)	RB Size	RB Offset	Duty Cycle	Ant. State	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.																	
1 720	132072	QPSK	20	20.0	19.42	0.13	Rear	ON	0	1	49	1:1	13	0	0.943	1.143	1.078	-
1 720	132072	QPSK	20	20.0	19.67	0.16	Rear	ON	0	50	0	1:1	13	0	1.01	1.079	**1.090**	62
1 720	132072	QPSK	20	20.0	19.42	0.01	Front	ON	0	1	49	1:1	13	0	0.906	1.143	1.035	-
1 720	132072	QPSK	20	20.0	19.67	0.01	Front	ON	0	50	0	1:1	13	0	1.00	1.079	1.079	-
1 720	132072	QPSK	20	24.5	23.84	-0.09	Left	N/A	0	1	49	1:1	13	0	0.093	1.164	0.108	-
1 720	132072	QPSK	20	23.5	22.9	0.05	Left	N/A	1	50	0	1:1	13	0	0.075	1.148	0.086	-
1 720	132072	QPSK	20	24.5	23.84	0.14	Right	N/A	0	1	49	1:1	13	0	0.280	1.164	0.326	-
1 720	132072	QPSK	20	23.5	22.9	0.01	Right	N/A	1	50	0	1:1	13	0	0.230	1.148	0.264	-
1 720	132072	QPSK	20	20.0	19.42	0.16	Bottom	ON	0	1	49	1:1	13	0	0.704	1.143	0.805	-
1 720	132072	QPSK	20	20.0	19.67	0.18	Bottom	ON	0	50	0	1:1	13	0	0.762	1.079	0.822	-
1 720	132072	QPSK	20	24.5	23.84	0.01	Rear	OFF	0	1	49	1:1	13	8	0.647	1.164	0.753	-
1 720	132072	QPSK	20	23.5	22.9	-0.11	Rear	OFF	1	50	0	1:1	13	8	0.530	1.148	0.609	-
1 720	132072	QPSK	20	24.5	23.84	-0.13	Front	OFF	0	1	49	1:1	13	6	0.743	1.164	0.865	-
1 720	132072	QPSK	20	23.5	22.9	0.04	Front	OFF	1	50	0	1:1	13	6	0.615	1.148	0.706	-
1 720	132072	QPSK	20	24.5	23.84	0.16	Bottom	OFF	0	1	49	1:1	13	13	0.460	1.164	0.535	-
1 720	132072	QPSK	20	23.5	22.9	0.10	Bottom	OFF	1	50	0	1:1	13	13	0.397	1.148	0.456	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Hand 4.0 W/kg Averaged over 10 gram										

NR Band n66 (PCS) Phablet SAR 10g																		
Frequency		Mode	Band Width	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	MPR (dB)	RB Size	RB Offset	Duty Cycle	Ant. State	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.																	
1 720	344000	DFT-s OFDM QPSK	20	20.0	19.25	-0.13	Rear	ON	0	1	1	1:1	13	0	0.833	1.189	0.990	-
1 720	344000	DFT-s OFDM QPSK	20	20.0	19.37	0.13	Rear	ON	0	50	0	1:1	13	0	0.830	1.156	0.959	-
1 720	344000	DFT-s OFDM QPSK	20	20.0	19.25	0.01	Front	ON	0	1	1	1:1	13	0	0.908	1.189	1.080	-
1 720	344000	DFT-s OFDM QPSK	20	20.0	19.37	0.01	Front	ON	0	50	0	1:1	13	0	0.896	1.156	1.036	-
1720	344000	DFT-s OFDM QPSK	20	23.5	22.60	0.13	Left	N/A	0	1	1	1:1	13	0	0.225	1.230	0.277	-
1720	344000	DFT-s OFDM QPSK	20	23.5	22.77	0.13	Left	N/A	0	50	28	1:1	13	0	0.217	1.183	0.257	-
1720	344000	DFT-s OFDM QPSK	20	23.5	22.60	0.13	Right	N/A	0	1	1	1:1	13	0	0.159	1.230	0.196	-
1720	344000	DFT-s OFDM QPSK	20	23.5	22.77	0.14	Right	N/A	0	50	28	1:1	13	0	0.153	1.183	0.181	-
1 720	344000	DFT-s OFDM QPSK	20	20.0	19.25	-0.06	Bottom	ON	0	1	1	1:1	13	0	1.13	1.189	1.344	-
1 720	344000	DFT-s OFDM QPSK	20	20.0	19.37	0.11	Bottom	ON	0	50	0	1:1	13	0	1.12	1.156	1.295	-
1720	344000	DFT-s OFDM QPSK	20	23.5	22.60	-0.03	Rear	OFF	0	1	1	1:1	13	8	0.539	1.230	0.663	-
1720	344000	DFT-s OFDM QPSK	20	23.5	22.77	-0.10	Rear	OFF	0	50	28	1:1	13	8	0.497	1.183	0.588	-
1720	344000	DFT-s OFDM QPSK	20	23.5	22.60	-0.16	Front	OFF	0	1	1	1:1	13	6	0.709	1.230	0.872	-
1720	344000	DFT-s OFDM QPSK	20	23.5	22.77	0.01	Front	OFF	0	50	28	1:1	13	6	0.667	1.183	0.789	-
1720	344000	DFT-s OFDM QPSK	20	23.5	22.60	0.12	Bottom	OFF	0	1	1	1:1	13	13	0.464	1.230	0.571	-
1720	344000	DFT-s OFDM QPSK	20	23.5	22.77	0.12	Bottom	OFF	0	50	28	1:1	13	13	0.433	1.183	0.512	-
1720	344000	CP QPSK	20	20.0	19.25	0.11	Bottom	ON	0	1	1	1:1	13	0	1.18	1.189	**1.403**	63
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Hand 4.0 W/kg Averaged over 10 gram										

5 GHz WLAN Phablet SAR _10g																	
Frequency		Mode	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Ant. Config.	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
MHz	Ch.																
5320	64	802.11a	20	6	17.0	16.19	-0.10	Rear	Ant1	93.7	0	4.24	0.418	1.205	1.067	0.537	-
5320	64	802.11a	20	6	17.0	16.19	0.01	Front	Ant1	93.7	0	4.55	0.673	1.205	1.067	0.865	-
5320	64	802.11a	20	6	17.0	16.19	0.11	Left	Ant1	93.7	0	11.1	0.945	1.205	1.067	1.215	-
5320	64	802.11a	20	6	17.0	16.19	0.09	Top	Ant1	93.7	0	3.88	0.239	1.205	1.067	0.307	-
5 720	144	802.11a	20	6	17.0	16.12	0.11	Rear	Ant1	93.7	0	4.46	0.382	1.225	1.067	0.499	-
5 720	144	802.11a	20	6	17.0	16.12	0.01	Front	Ant1	93.7	0	2.09	0.306	1.225	1.067	0.400	-
5 720	144	802.11a	20	6	17.0	16.12	0.13	Left	Ant1	93.7	0	11.5	0.955	1.225	1.067	**1.248**	64
5 720	144	802.11a	20	6	17.0	16.12	0.18	Top	Ant1	93.7	0	2.68	0.164	1.225	1.067	0.214	-
5 260	52	802.11a	20	6	17.0	15.80	0.16	Rear	Ant2	93.7	0	2.29	0.239	1.318	1.067	0.336	-
5 260	52	802.11a	20	6	17.0	15.80	0.01	Front	Ant2	93.7	0	6.9	0.619	1.318	1.067	0.871	-
5 260	52	802.11a	20	6	17.0	15.80	0.18	Left	Ant2	93.7	0	2.27	0.290	1.318	1.067	0.408	-
5 260	52	802.11a	20	6	17.0	15.80	0.10	Top	Ant2	93.7	0	0.165	0.015	1.318	1.067	0.021	-
5 600	120	802.11a	20	6	17.0	15.62	0.10	Rear	Ant2	93.7	0	2.06	0.235	1.374	1.067	0.345	-
5 600	120	802.11a	20	6	17.0	15.62	0.01	Front	Ant2	93.7	0	3.94	0.439	1.374	1.067	0.644	-
5 600	120	802.11a	20	6	17.0	15.62	-0.15	Left	Ant2	93.7	0	2.59	0.222	1.374	1.067	0.325	-
5 600	120	802.11a	20	6	17.0	15.62	0.12	Top	Ant2	93.7	0	0.0706	0.00509	1.374	1.067	0.007	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population												Hand 4.0 W/kg Averaged over 10 gram					

13.6 SAR Test Notes

General Notes:

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

GSM/GPRS Test Notes:

1. This EUT’S GSM and GPRS device class is B.
2. This device supports GPRS VOIP in the head and the body-worn configurations therefore GPRS was additionally evaluated for head and body-worn compliance.
3. Justification for reduced test configurations per KDB 941225 D01v03r01: The source-based time-averaged output power was evaluated for all multi-slot operations. The multi-slot configuration with the highest frame averaged output power including tolerance was evaluated for SAR.
4. Per FCC KDB 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is 0.8 W/kg then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is 1/2 dB, instead of the middle channel, the highest output power channel must be used.

UMTS Notes:

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

is not required for such test configuration(s). When the maximum output power variation across the channel highest output power channel was used.

LTE Notes:

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

NR Notes:

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

WLAN Notes:

1. For held-to-ear and hotspot operations, the initial test position procedures were applied. For initial test position, the highest extrapolated peak SAR will be used. When reported SAR for the initial test position is ≤ 0.4 W/kg for 1g SAR and ≤ 1.0 W/kg for 10g SAR, no additional testing for the remaining test positions was required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR results is ≤ 0.8 W/kg for 1g SAR and ≤ 2.0 W/kg for 10g SAR or all test position are measured.

2. Per KDB 2482227 D01v02r02 justification for test configurations of 2.4 GHzWiFi Single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11 g/n) was not required due to the maximum allowed powers and the highest reported DSSS SAR

.

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

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

5. The device was configured to transmit continuously at the required data rated, channel Bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance. Procedures used to measure the duty factor are identical to that in the associated WLAN test reports.

Bluetooth Notes:

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

14. Simultaneous SAR Analysis

This device is containing transmitters that may operate simultaneously. Therefore, simultaneous transmission analysis is required. Per KDB Publication 447498 D01v06 4.3.2, simultaneous transmission SAR test exclusion may be applied when the sum of 1g SAR and 10g SAR for all the simultaneous transmitting antennas in a specific a physical test configuration is ≤1.6W/kg for 1g SAR and ≤4 W/kg for 10g SAR. The different test positions in an exposure condition may be considered collectively to determine SAR exclusion according to the sum of 1g or 10g SAR.

14.1 Head SAR Simultaneous Transmission Analysis.

Simultaneous Transmission Summation Scenario with 2.4 GHz Ant WLAN									
Exposure condition	Band	WWAN SAR	2.4 GHz WLAN Ant.1 SAR	2.4 GHz WLAN Ant.2 SAR	2.4 GHz WLAN MIMO 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)	(Yes/No)
		1	2	3	4	1+2	1+3	1+4	
Head SAR	GSM 850	0.277	0.512	0.602	0.648	0.789	0.879	0.925	No
	GPRS 850	0.316	0.512	0.602	0.648	0.828	0.918	0.964	No
	GSM 1900	0.044	0.512	0.602	0.648	0.556	0.646	0.692	No
	GPRS 1900	0.078	0.512	0.602	0.648	0.590	0.68	0.726	No
	UMTS Band 5	0.245	0.512	0.602	0.648	0.757	0.847	0.893	No
	UMTS Band 4	0.178	0.512	0.602	0.648	0.690	0.78	0.826	No
	UMTS Band 2	0.170	0.512	0.602	0.648	0.682	0.772	0.818	No
	LTE Band 2	0.163	0.512	0.602	0.648	0.675	0.765	0.811	No
	LTE Band 12	0.144	0.512	0.602	0.648	0.656	0.746	0.792	No
	LTE Band 26	0.162	0.512	0.602	0.648	0.674	0.764	0.81	No
	LTE Band 41	0.125	0.512	0.602	0.648	0.637	0.727	0.773	No
	LTE Band 66	0.120	0.512	0.602	0.648	0.632	0.722	0.768	No

Simultaneous Transmission Summation Scenario with 2.4 GHz Ant WLAN											
Exposure condition	Band	EN-DC Band	NR Band SAR	EN-DC LTE Band SAR	2.4 GHz WLAN Ant.1 SAR	2.4 GHz WLAN Ant.2 SAR	2.4 GHz WLAN MIMO 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)	(Yes/No)
			1	2	3	4	5	1+2+3	1+2+4	1+2+5	
Head SAR	NR Band n5	LTE Band 2	0.225	0.163	0.512	0.602	0.648	0.900	0.990	1.036	No
		LTE Band 66	0.225	0.120	0.512	0.602	0.648	0.857	0.947	0.993	No
	NR Band n66	LTE Band 26(5)	0.207	0.162	0.512	0.602	0.648	0.881	0.971	1.017	No
		LTE Band 12	0.207	0.144	0.512	0.602	0.648	0.863	0.953	0.999	No

Simultaneous Transmission Summation Scenario with 5 GHz Ant WLAN									
Exposure condition	Band	WWAN SAR (W/kg) 1	5 GHz WLAN Ant.1 SAR (W/kg) 2	5 GHz WLAN Ant.2 SAR (W/kg) 3	5 GHz WLAN MIMO SAR (W/kg) 4	∑ 1-g SAR (W/kg) 1+2	∑ 1-g SAR (W/kg) 1+3	∑ 1-g SAR (W/kg) 1+4	SPLSR (Yes/No)
Head SAR	GSM 850	0.277	0.539	0.357	0.599	0.816	0.634	0.876	No
	GPRS 850	0.316	0.539	0.357	0.599	0.855	0.673	0.915	No
	GSM 1900	0.044	0.539	0.357	0.599	0.583	0.401	0.643	No
	GPRS 1900	0.078	0.539	0.357	0.599	0.617	0.435	0.677	No
	UMTS Band 5	0.245	0.539	0.357	0.599	0.784	0.602	0.844	No
	UMTS Band 4	0.178	0.539	0.357	0.599	0.717	0.535	0.777	No
	UMTS Band 2	0.170	0.539	0.357	0.599	0.709	0.527	0.769	No
	LTE Band 2	0.163	0.539	0.357	0.599	0.702	0.52	0.762	No
	LTE Band 12	0.144	0.539	0.357	0.599	0.683	0.501	0.743	No
	LTE Band 26	0.162	0.539	0.357	0.599	0.701	0.519	0.761	No
	LTE Band 41	0.125	0.539	0.357	0.599	0.664	0.482	0.724	No
	LTE Band 66	0.120	0.539	0.357	0.599	0.659	0.477	0.719	No

Simultaneous Transmission Summation Scenario with 5 GHz Ant WLAN											
Exposure condition	Band	EN-DC Band	NR Band SAR (W/kg) 1	EN-DC LTE Band SAR (W/kg) 2	5 GHz WLAN Ant.1 SAR (W/kg) 3	5 GHz WLAN Ant.2 SAR (W/kg) 4	5 GHz WLAN MIMO SAR (W/kg) 5	∑ 1-g SAR (W/kg) 1+2+3	∑ 1-g SAR (W/kg) 1+2+4	∑ 1-g SAR (W/kg) 1+2+5	SPLSR (Yes/No)
Head SAR	NR Band n5	LTE Band 2	0.225	0.163	0.539	0.357	0.599	0.927	0.745	0.987	No
		LTE Band 66	0.225	0.120	0.539	0.357	0.599	0.884	0.702	0.944	No
	NR Band n66	LTE Band 26(5)	0.207	0.162	0.539	0.357	0.599	0.908	0.726	0.968	No
		LTE Band 12	0.207	0.144	0.539	0.357	0.599	0.890	0.708	0.950	No

Simultaneous Transmission Summation Scenario with 5 GHz WLAN&Bluetooth						
Exposure condition	Band	WWAN SAR	5 GHz WLAN MIMO SAR	Bluetooth SAR	∑ 1-g SAR	SPLSR
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(Yes/No)
		1	2	3	1+2+3	
Head SAR	GSM 850	0.277	0.599	0.460	1.336	No
	GPRS 850	0.316	0.599	0.460	1.375	No
	GSM 1900	0.044	0.599	0.460	1.103	No
	GPRS 1900	0.078	0.599	0.460	1.137	No
	UMTS Band 5	0.245	0.599	0.460	1.304	No
	UMTS Band 4	0.178	0.599	0.460	1.237	No
	UMTS Band 2	0.170	0.599	0.460	1.229	No
	LTE Band 2	0.163	0.599	0.460	1.222	No
	LTE Band 12	0.144	0.599	0.460	1.203	No
	LTE Band 26	0.162	0.599	0.460	1.221	No
	LTE Band 41	0.125	0.599	0.460	1.184	No
	LTE Band 66	0.120	0.599	0.460	1.179	No

Simultaneous Transmission Summation Scenario with 5 GHz WLAN&Bluetooth								
Exposure condition	Band	EN-DC Band	NR Band SAR	EN-DC LTE Band SAR	5 GHz WLAN MIMO RSDB SAR	Bluetooth SAR	∑ 1-g SAR	SPLSR
			(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(Yes/No)
			1	2	3	4	1+2+3+4	
Head SAR	NR Band n5	LTE Band 2	0.225	0.163	0.599	0.460	1.447	No
		LTE Band 66	0.225	0.120	0.599	0.460	1.404	No
	NR Band n66	LTE Band 26(5)	0.207	0.162	0.599	0.460	1.428	No
		LTE Band 12	0.207	0.144	0.599	0.460	1.410	No

Simultaneous Transmission Summation Scenario with 2.4 GHz WLAN RSDB & 5 GHz WLAN MIMO										
Exposure condition	EN-DC Band	WWAN SAR	2.4 GHz WLAN Ant1 RSDB SAR	2.4 GHz WLAN Ant2 RSDB SAR	2.4 GHz WLAN MIMO RSDB SAR	5 GHz WLAN MIMO RSDB 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)	(Yes/No)
		1	2	3	4	5	1+2+5	1+3+5	1+4+5	
Head SAR	GSM 850	0.277	0.411	0.436	0.548	0.599	1.287	1.312	1.424	No
	GPRS 850	0.316	0.411	0.436	0.548	0.599	1.326	1.351	1.463	No
	GSM 1900	0.044	0.411	0.436	0.548	0.599	1.054	1.079	1.191	No
	GPRS 1900	0.078	0.411	0.436	0.548	0.599	1.088	1.113	1.225	No
	UMTS Band 5	0.245	0.411	0.436	0.548	0.599	1.255	1.280	1.392	No
	UMTS Band 4	0.178	0.411	0.436	0.548	0.599	1.188	1.213	1.325	No
	UMTS Band 2	0.170	0.411	0.436	0.548	0.599	1.180	1.205	1.317	No
	LTE Band 2	0.163	0.411	0.436	0.548	0.599	1.173	1.198	1.310	No
	LTE Band 12	0.144	0.411	0.436	0.548	0.599	1.154	1.179	1.291	No
	LTE Band 26	0.162	0.411	0.436	0.548	0.599	1.172	1.197	1.309	No
	LTE Band 41	0.125	0.411	0.436	0.548	0.599	1.135	1.160	1.272	No
	LTE Band 66	0.133	0.411	0.436	0.548	0.599	1.143	1.168	1.280	No

Simultaneous Transmission Summation Scenario with 2.4 GHz WLAN RSDB & 5 GHz WLAN MIMO											
Exposure condition	Band	EN-DC Band	NR Band SAR	EN-DC LTE Band SAR	2.4 GHz WLAN Ant.1 SAR	2.4 GHz WLAN Ant.2 SAR	2.4 GHz WLAN MIMO SAR	5 GHz WLAN MIMO RSDB SAR	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
			(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(Yes/No)
			1	2	3	4	5	6	1+2+3+6	1+2+4+6	1+2+5+6	
Head SAR	NR Band n5	LTE Band 2	0.225	0.163	0.411	0.436	0.548	0.599	1.398	1.423	**1.535**	No
		LTE Band 66	0.225	0.120	0.411	0.436	0.548	0.599	1.355	1.380	1.492	No
	NR Band n66	LTE Band 26(5)	0.207	0.162	0.411	0.436	0.548	0.599	1.379	1.404	1.516	No
		LTE Band 12	0.207	0.144	0.411	0.436	0.548	0.599	1.361	1.386	1.498	No

14.2 Body-Worn SAR Simultaneous Transmission Analysis.

Simultaneous Transmission Summation Scenario with 2.4 GHz Ant WLAN (Distance: 15 mm)									
Exposure condition	Band	WWAN SAR	2.4 GHz WLAN Ant.1 SAR	2.4 GHz WLAN Ant.2 SAR	2.4 GHz WLAN MIMO 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)	(Yes/No)
		1	2	3	4	1+2	1+3	1+4	
Body -worn	GSM 850	0.495	0.33	0.238	0.123	0.825	0.733	0.618	No
	GPRS 850	0.492	0.330	0.238	0.123	0.822	0.730	0.615	No
	GSM 1900	0.163	0.330	0.238	0.123	0.493	0.401	0.286	No
	GPRS 1900	0.329	0.330	0.238	0.123	0.659	0.567	0.452	No
	UMTS Band 5	0.448	0.330	0.238	0.123	0.778	0.686	0.571	No
	UMTS Band 4	0.607	0.330	0.238	0.123	0.937	0.845	0.730	No
	UMTS Band 2	0.354	0.330	0.238	0.123	0.684	0.592	0.477	No
	LTE Band 2	0.362	0.330	0.238	0.123	0.692	0.600	0.485	No
	LTE Band 12	0.217	0.330	0.238	0.123	0.547	0.455	0.340	No
	LTE Band 26	0.236	0.330	0.238	0.123	0.566	0.474	0.359	No
	LTE Band 41	0.285	0.330	0.238	0.123	0.615	0.523	0.408	No
	LTE Band 66	0.510	0.330	0.238	0.123	0.840	0.748	0.633	No

Simultaneous Transmission Summation Scenario with 2.4 GHz Ant WLAN (Distance: 15 mm)											
Exposure condition	Band	EN-DC Band	NR Band SAR	EN-DC LTE Band SAR	2.4 GHz WLAN Ant.1 SAR	2.4 GHz WLAN Ant.2 SAR	2.4 GHz WLAN MIMO 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)	(Yes/No)
			1	2	3	4	5	1+2+3	1+2+4	1+2+5	
Body -worn	NR Band n5	LTE Band 2	0.390	0.362	0.330	0.238	0.123	1.082	0.990	0.875	No
		LTE Band 66	0.390	0.510	0.330	0.238	0.123	**1.230**	1.138	1.023	No
	NR Band n66	LTE Band 26(5)	0.364	0.236	0.330	0.238	0.123	0.930	0.838	0.723	No
		LTE Band 12	0.364	0.217	0.330	0.238	0.123	0.911	0.819	0.704	No

Simultaneous Transmission Summation Scenario with 5 GHz Ant WLAN (Distance: 15 mm)									
Exposure condition	Band	WWAN SAR	5 GHz WLAN Ant.1 SAR	5 GHz WLAN Ant.2 SAR	5 GHz WLAN Ant 1+Ant 2 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)	(Yes/No)
		1	2	3	2+3	1+2	1+3	1+2+3	
Body -worn	GSM 850	0.495	0.126	0.074	0.200	0.621	0.569	0.695	No
	GPRS 850	0.492	0.126	0.074	0.200	0.618	0.566	0.692	No
	GSM 1900	0.163	0.126	0.074	0.200	0.289	0.237	0.363	No
	GPRS 1900	0.329	0.126	0.074	0.200	0.455	0.403	0.529	No
	UMTS Band 5	0.448	0.126	0.074	0.200	0.574	0.522	0.648	No
	UMTS Band 4	0.607	0.126	0.074	0.200	0.733	0.681	0.807	No
	UMTS Band 2	0.354	0.126	0.074	0.200	0.480	0.428	0.554	No
	LTE Band 2	0.362	0.126	0.074	0.200	0.488	0.436	0.562	No
	LTE Band 12	0.217	0.126	0.074	0.200	0.343	0.291	0.417	No
	LTE Band 26	0.236	0.126	0.074	0.200	0.362	0.310	0.436	No
	LTE Band 41	0.285	0.126	0.074	0.200	0.411	0.359	0.485	No
	LTE Band 66	0.510	0.126	0.074	0.200	0.636	0.584	0.710	No

Simultaneous Transmission Summation Scenario with 5 GHz Ant WLAN (Distance: 15 mm)											
Exposure condition	Band	EN-DC Band	NR Band SAR	EN-DC LTE Band SAR	5 GHz WLAN Ant.1 SAR	5 GHz WLAN Ant.2 SAR	5 GHz WLAN Ant 1+Ant 2 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)	(Yes/No)
			1	2	3	4	3+4	1+2+3	1+2+4	1+2+3+4	
Body -worn	NR Band n5	LTE Band 2	0.390	0.362	0.126	0.074	0.200	0.878	0.826	0.952	No
		LTE Band 66	0.390	0.510	0.126	0.074	0.200	1.026	0.974	1.100	No
	NR Band n66	LTE Band 26(5)	0.364	0.236	0.126	0.074	0.200	0.726	0.674	0.800	No
		LTE Band 12	0.364	0.217	0.126	0.074	0.200	0.707	0.655	0.781	No

Simultaneous Transmission Summation Scenario with 5 GHz Ant WLAN MIMO &Bluetooth(Distance: 15 mm)						
Exposure condition	Band	WWAN SAR	5 GHz WLAN Ant 1+Ant 2 SAR	Bluetooth SAR	∑ 1-g SAR	SPLSR
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(Yes/No)
		1	2	3	1+2+3	
Body -worn	GSM 850	0.495	0.200	0.051	0.695	No
	GPRS 850	0.492	0.200	0.051	0.743	No
	GSM 1900	0.163	0.200	0.051	0.414	No
	GPRS 1900	0.329	0.200	0.051	0.580	No
	UMTS Band 5	0.448	0.200	0.051	0.699	No
	UMTS Band 4	0.607	0.200	0.051	0.858	No
	UMTS Band 2	0.354	0.200	0.051	0.605	No
	LTE Band 2	0.362	0.200	0.051	0.613	No
	LTE Band 12	0.217	0.200	0.051	0.468	No
	LTE Band 26	0.236	0.200	0.051	0.487	No
	LTE Band 41	0.285	0.200	0.051	0.536	No
	LTE Band 66	0.510	0.200	0.051	0.761	No

Simultaneous Transmission Summation Scenario with 5 GHz Ant WLAN MIMO &Bluetooth(Distance: 15 mm)								
Exposure condition	Band	EN-DC Band	NR Band SAR	EN-DC LTE Band SAR	5 GHz WLAN Ant 1+Ant 2 SAR	Bluetooth SAR	∑ 1-g SAR	SPLSR
			(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(Yes/No)
			1	2	3	4	1+2+3+4	
Body -worn	NR Band n5	LTE Band 2	0.390	0.362	0.200	0.051	1.066	No
		LTE Band 66	0.390	0.510	0.200	0.051	1.108	No
	NR Band n66	LTE Band 26(5)	0.364	0.236	0.200	0.051	0.988	No
		LTE Band 12	0.364	0.217	0.200	0.051	0.832	No

Simultaneous Transmission Summation Scenario with 2.4 GHz WLAN RSDB & 5 GHz WLAN MIMO(Distance: 15 mm)											
Exposure condition	EN-DC Band	WWAN SAR	2.4 GHz WLAN Ant1 RSDB SAR	2.4 GHz WLAN Ant2 RSDB SAR	2.4 GHz WLAN MIMO RSDB SAR	5 GHz WLAN Ant 1+Ant 2 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)	(Yes/No)
		1	2	3	4	5	1+2+5	1+3+5	1+4+5	
Body -worn	GSM 850	0.495	0.058	0.064	0.089	0.200	0.753	0.759	0.784	No
	GPRS 850	0.492	0.058	0.064	0.089	0.200	0.750	0.756	0.781	No
	GSM 1900	0.163	0.058	0.064	0.089	0.200	0.421	0.427	0.452	No
	GPRS 1900	0.329	0.058	0.064	0.089	0.200	0.587	0.593	0.618	No
	UMTS Band 5	0.448	0.058	0.064	0.089	0.200	0.706	0.712	0.737	No
	UMTS Band 4	0.607	0.058	0.064	0.089	0.200	0.865	0.871	0.896	No
	UMTS Band 2	0.354	0.058	0.064	0.089	0.200	0.612	0.618	0.643	No
	LTE Band 2	0.362	0.058	0.064	0.089	0.200	0.620	0.626	0.651	No
	LTE Band 12	0.217	0.058	0.064	0.089	0.200	0.475	0.481	0.506	No
	LTE Band 26	0.236	0.058	0.064	0.089	0.200	0.494	0.500	0.525	No
	LTE Band 41	0.285	0.058	0.064	0.089	0.200	0.543	0.549	0.574	No
	LTE Band 66	0.510	0.058	0.064	0.089	0.200	0.768	0.774	0.799	No

- For the analysis of SAR simultaneous transmission, the SAR test result of the body worn of RSDB mode of 5GHz WLAN was evaluated by replacing it with the test result of max Power mode of 5GHz WLAN with higher output.

Simultaneous Transmission Summation Scenario with 2.4 GHz WLAN RSDB & 5 GHz WLAN MIMO(Distance: 15 mm)												
Exposure condition	Band	EN-DC Band	NR Band SAR	EN-DC LTE Band SAR	2.4 GHz WLAN Ant.1 SAR	2.4 GHz WLAN Ant.2 SAR	2.4 GHz WLAN MIMO SAR	5 GHz WLAN Ant 1+Ant 2 SAR	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
			(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(Yes/No)
			1	2	3	4	5	6	1+2+3+6	1+2+4+6	1+2+5+6	
Body -worn	NR Band n5	LTE Band 2	0.390	0.362	0.058	0.064	0.089	0.200	1.010	1.016	1.041	No
		LTE Band 66	0.390	0.510	0.058	0.064	0.089	0.200	1.158	1.164	1.189	No
	NR Band n66	LTE Band 26(5)	0.364	0.236	0.058	0.064	0.089	0.200	0.858	0.864	0.889	No
		LTE Band 12	0.364	0.217	0.058	0.064	0.089	0.200	0.839	0.845	0.870	No

- For the analysis of SAR simultaneous transmission, the SAR test result of the body worn of RSDB mode of 5GHz WLAN was evaluated by replacing it with the test result of max Power mode of 5GHz WLAN with higher output.

14.3 Hotspot SAR Simultaneous Transmission Analysis.

Simultaneous Transmission Scenario with 2.4 GHz WLAN(10mm)									
Band		WWAN SAR (W/kg)	2.4 GHz WLAN Ant.1 SAR (W/kg)	2.4 GHz WLAN Ant.2 SAR (W/kg)	2.4 GHz WLAN MIMO (W/kg)	∑ 1-g SAR (W/kg)	∑ 1-g SAR (W/kg)	∑ 1-g SAR (W/kg)	SPLSR (Yes/No)
		1	2	3	4	1+2	1+3	1+4	
GPRS 850	Rear	0.985	0.499	0.126	0.251	1.484	1.111	1.236	No
	Front	0.669	0.380	0.253	0.166	1.049	0.922	0.835	No
	Left	0.107	0.095	0.671	0.273	0.202	0.778	0.380	No
	Right	0.573				0.573	0.573	0.573	No
	Top		0.736	0.13	0.308	0.736	0.130	0.308	No
	Bottom	0.574				0.574	0.574	0.574	No
GPRS 1900	Rear	0.643	0.499	0.126	0.251	1.142	0.769	0.894	No
	Front	0.555	0.380	0.253	0.166	0.935	0.808	0.721	No
	Left	0.017	0.095	0.671	0.273	0.112	0.688	0.290	No
	Right	0.118				0.118	0.118	0.118	No
	Top		0.736	0.13	0.308	0.736	0.130	0.308	No
	Bottom	0.654				0.654	0.654	0.654	No
UMTS Band 5	Rear	0.772	0.499	0.126	0.251	1.271	0.898	1.023	No
	Front	0.522	0.380	0.253	0.166	0.902	0.775	0.688	No
	Left	0.116	0.095	0.671	0.273	0.211	0.787	0.389	No
	Right	0.438				0.438	0.438	0.438	No
	Top		0.736	0.13	0.308	0.736	0.130	0.308	No
	Bottom	0.453				0.453	0.453	0.453	No
UMTS Band 4	Rear	0.525	0.499	0.126	0.251	1.024	0.651	0.776	No
	Front	0.651	0.380	0.253	0.166	1.031	0.904	0.817	No
	Left	0.122	0.095	0.671	0.273	0.217	0.793	0.395	No
	Right	0.106				0.106	0.106	0.106	No
	Top		0.736	0.13	0.308	0.736	0.130	0.308	No
	Bottom	1.189				1.189	1.189	1.189	No
UMTS Band 2	Rear	0.388	0.499	0.126	0.251	0.887	0.514	0.639	No
	Front	0.410	0.380	0.253	0.166	0.790	0.663	0.576	No
	Left	0.019	0.095	0.671	0.273	0.114	0.690	0.292	No
	Right	0.077				0.077	0.077	0.077	No
	Top		0.736	0.13	0.308	0.736	0.130	0.308	No
	Bottom	0.770				0.770	0.770	0.770	No
LTE Band 2	Rear	0.396	0.499	0.126	0.251	0.895	0.522	0.647	No
	Front	0.341	0.380	0.253	0.166	0.721	0.594	0.507	No
	Left	0.023	0.095	0.671	0.273	0.118	0.694	0.296	No
	Right	0.064				0.064	0.064	0.064	No
	Top		0.736	0.13	0.308	0.736	0.130	0.308	No
	Bottom	0.709				0.709	0.709	0.709	No
LTE Band 12	Rear	0.444	0.499	0.126	0.251	0.943	0.570	0.695	No
	Front	0.301	0.380	0.253	0.166	0.681	0.554	0.467	No
	Left	0.111	0.095	0.671	0.273	0.206	0.782	0.384	No
	Right	0.187				0.187	0.187	0.187	No
	Top		0.736	0.13	0.308	0.736	0.130	0.308	No
	Bottom	0.285				0.285	0.285	0.285	No

Simultaneous Transmission Scenario with2.4 GHz WLAN(10mm)									
Band		WWAN SAR	2.4 GHz WLAN Ant.1 SAR	2.4 GHz WLAN Ant.2 SAR	2.4 GHz WLAN MIMO	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(Yes/No)
		1	2	3	4	1+2	1+3	1+4	
LTE Band 26	Rear	0.443	0.499	0.126	0.251	0.942	0.569	0.694	No
	Front	0.319	0.380	0.253	0.166	0.699	0.572	0.485	No
	Left	0.083	0.095	0.671	0.273	0.178	0.754	0.356	No
	Right	0.119				0.119	0.119	0.119	No
	Top		0.736	0.130	0.308	0.736	0.130	0.308	No
	Bottom	0.269				0.269	0.269	0.269	No
LTE Band 41	Rear	0.469	0.499	0.126	0.251	0.968	0.595	0.720	No
	Front	0.399	0.380	0.253	0.166	0.779	0.652	0.565	No
	Left	0.230	0.095	0.671	0.273	0.325	0.901	0.503	No
	Right								No
	Top		0.736	0.130	0.308	0.736	0.130	0.308	No
	Bottom	0.776				0.776	0.776	0.776	No
LTE Band 66	Rear	0.402	0.499	0.126	0.251	0.901	0.528	0.653	No
	Front	0.324	0.380	0.253	0.166	0.704	0.577	0.490	No
	Left	0.02	0.095	0.671	0.273	0.115	0.691	0.293	No
	Right	0.066				0.066	0.066	0.066	No
	Top		0.781	0.130	0.308	0.781	0.13	0.308	No
	Bottom	0.494				0.494	0.494	0.494	No

Simultaneous Transmission Scenario with2.4 GHz WLAN(10mm)											
Band	EN-DC Band		NR Band SAR	EN-DC LTE Band SAR	2.4 GHz WLAN Ant.1 SAR	2.4 GHz WLAN Ant.2 SAR	2.4 GHz WLAN MIMO	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
			(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(Yes/No)
			1	2	3	4	5	1+2+3	1+2+4	1+2+5	
NR Band n5	LTE Band 2	Rear	0.689	0.396	0.499	0.126	0.251	1.584	1.211	1.336	No
		Front	0.525	0.341	0.380	0.253	0.166	1.246	1.119	1.032	No
		Left	0.130	0.023	0.095	0.671	0.273	0.248	0.824	0.426	No
		Right	0.397	0.064				0.461	0.461	0.461	No
		Top			0.736	0.130	0.308	0.736	0.130	0.308	No
		Bottom	0.456	0.709				1.165	1.165	1.165	No
	LTE Band 66	Rear	0.689	0.402	0.499	0.126	0.251	**1.590**	1.217	1.342	No
		Front	0.525	0.324	0.380	0.253	0.166	1.229	1.102	1.015	No
		Left	0.130	0.020	0.095	0.671	0.273	0.245	0.821	0.423	No
		Right	0.397	0.066				0.463	0.463	0.463	No
		Top			0.781	0.130	0.308	0.781	0.130	0.308	No
		Bottom	0.455	0.494				0.949	0.949	0.949	No
NR Band n66	LTE Band 26(5)	Rear	0.385	0.443	0.499	0.126	0.251	1.327	0.954	1.079	No
		Front	0.335	0.319	0.380	0.253	0.166	1.034	0.907	0.82	No
		Left	0.065	0.083	0.095	0.671	0.273	0.243	0.819	0.421	No
		Right	0.050	0.119				0.169	0.169	0.169	No
		Top			0.736	0.130	0.308	0.736	0.13	0.308	No
		Bottom	0.789	0.269				1.058	1.058	1.058	No
	LTE Band 12	Rear	0.385	0.444	0.499	0.126	0.251	1.328	0.955	1.08	No
		Front	0.335	0.301	0.380	0.253	0.166	1.016	0.889	0.802	No
		Left	0.065	0.111	0.095	0.671	0.273	0.271	0.847	0.449	No
		Right	0.05	0.187				0.237	0.237	0.237	No
		Top			0.736	0.130	0.308	0.736	0.13	0.308	No
		Bottom	0.789	0.285				1.074	1.074	1.074	No

Simultaneous Transmission Scenario with 5 GHz WLAN(10mm)									
Band		WWAN SAR (W/kg)	5 GHz WLAN Ant.1 SAR (W/kg)	5 GHz WLAN Ant.2 SAR (W/kg)	5 GHz WLAN Ant 1+Ant 2 SAR (W/kg)	∑ 1-g SAR (W/kg)	∑ 1-g SAR (W/kg)	∑ 1-g SAR (W/kg)	SPLSR (Yes/No)
		1	2	3	2+3	1+2	1+3	1+2+3	
GPRS 850	Rear	0.985	0.201	0.067	0.268	1.186	1.052	1.253	No
	Front	0.669	0.059	0.113	0.172	0.728	0.782	0.841	No
	Left	0.107	0.213	0.062	0.275	0.32	0.169	0.382	No
	Right	0.573				0.573	0.573	0.573	No
	Top		0.062	0.012	0.074	0.062	0.012	0.074	No
	Bottom	0.574				0.574	0.574	0.574	No
GPRS 1900	Rear	0.643	0.201	0.067	0.268	0.844	0.710	0.911	No
	Front	0.555	0.059	0.113	0.172	0.614	0.668	0.727	No
	Left	0.017	0.213	0.062	0.275	0.23	0.079	0.292	No
	Right	0.118				0.118	0.118	0.118	No
	Top		0.062	0.012	0.074	0.062	0.012	0.074	No
	Bottom	0.654				0.654	0.654	0.654	No
UMTS Band 5	Rear	0.772	0.201	0.067	0.268	0.973	0.839	1.040	No
	Front	0.522	0.059	0.113	0.172	0.581	0.635	0.694	No
	Left	0.116	0.213	0.062	0.275	0.329	0.178	0.391	No
	Right	0.438				0.438	0.438	0.438	No
	Top		0.062	0.012	0.074	0.062	0.012	0.074	No
	Bottom	0.453				0.453	0.453	0.453	No
UMTS Band 4	Rear	0.525	0.201	0.067	0.268	0.726	0.592	0.793	No
	Front	0.651	0.059	0.113	0.172	0.710	0.764	0.823	No
	Left	0.122	0.213	0.062	0.275	0.335	0.184	0.397	No
	Right	0.106				0.106	0.106	0.106	No
	Top		0.062	0.012	0.074	0.062	0.012	0.074	No
	Bottom	1.189				1.189	1.189	1.189	No
UMTS Band 2	Rear	0.388	0.201	0.067	0.268	0.589	0.455	0.656	No
	Front	0.410	0.059	0.113	0.172	0.469	0.523	0.582	No
	Left	0.019	0.213	0.062	0.275	0.232	0.081	0.294	No
	Right	0.077				0.077	0.077	0.077	No
	Top		0.062	0.012	0.074	0.062	0.012	0.074	No
	Bottom	0.770				0.770	0.770	0.770	No
LTE Band 2	Rear	0.396	0.201	0.067	0.268	0.597	0.463	0.664	No
	Front	0.341	0.059	0.113	0.172	0.400	0.454	0.513	No
	Left	0.023	0.213	0.062	0.275	0.236	0.085	0.298	No
	Right	0.064				0.064	0.064	0.064	No
	Top		0.062	0.012	0.074	0.062	0.012	0.074	No
	Bottom	0.709				0.709	0.709	0.709	No
LTE Band 12	Rear	0.444	0.201	0.067	0.268	0.645	0.511	0.712	No
	Front	0.301	0.059	0.113	0.172	0.360	0.414	0.473	No
	Left	0.111	0.213	0.062	0.275	0.324	0.173	0.386	No
	Right	0.187				0.187	0.187	0.187	No
	Top		0.062	0.012	0.074	0.062	0.012	0.074	No
	Bottom	0.285				0.285	0.285	0.285	No

Simultaneous Transmission Scenario with 5 GHz WLAN(10mm)									
Band		WWAN SAR	5 GHz WLAN Ant.1 SAR	5 GHz WLAN Ant.2 SAR	5 GHz WLAN Ant 1+Ant 2 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)	(Yes/No)
		1	2	3	2+3	1+2	1+3	1+2+3	
LTE Band 26	Rear	0.443	0.201	0.067	0.268	0.644	0.51	0.711	No
	Front	0.319	0.059	0.113	0.172	0.378	0.432	0.491	No
	Left	0.083	0.213	0.062	0.275	0.296	0.145	0.358	No
	Right	0.119				0.119	0.119	0.119	No
	Top		0.062	0.012	0.074	0.062	0.012	0.074	No
	Bottom	0.269				0.269	0.269	0.269	No
LTE Band 41	Rear	0.469	0.201	0.067	0.268	0.67	0.536	0.737	No
	Front	0.399	0.059	0.113	0.172	0.458	0.512	0.571	No
	Left	0.230	0.213	0.062	0.275	0.443	0.292	0.505	No
	Right								No
	Top		0.062	0.012	0.074	0.062	0.012	0.074	No
	Bottom	0.776				0.776	0.776	0.776	No
LTE Band 66	Rear	0.402	0.201	0.067	0.268	0.603	0.469	0.670	No
	Front	0.324	0.059	0.113	0.172	0.383	0.437	0.496	No
	Left	0.02	0.213	0.062	0.275	0.233	0.082	0.295	No
	Right	0.066				0.066	0.066	0.066	No
	Top		0.062	0.012	0.074	0.062	0.012	0.074	No
	Bottom	0.494				0.494	0.494	0.494	No

Simultaneous Transmission Scenario with 5 GHz WLAN(10mm)											
Band	EN-DC Band		NR Band SAR	EN-DC LTE Band SAR	5 GHz WLAN Ant.1 SAR	5 GHz WLAN Ant.2 SAR	5 GHz WLAN Ant 1+Ant 2 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)	(Yes/No)
			1	2	3	4	3+4	1+2+3	1+2+4	1+2+3+4	
NR Band n5	LTE Band 2	Rear	0.689	0.396	0.201	0.067	0.268	1.286	1.152	1.353	No
		Front	0.525	0.341	0.059	0.113	0.172	0.925	0.979	1.038	No
		Left	0.130	0.023	0.213	0.062	0.275	0.366	0.215	0.428	No
		Right	0.397	0.064				0.461	0.461	0.461	No
		Top			0.062	0.012	0.074	0.062	0.012	0.074	No
		Bottom	0.456	0.709				1.165	1.165	1.165	No
	LTE Band 66	Rear	0.689	0.402	0.201	0.067	0.268	1.292	1.158	1.359	No
		Front	0.525	0.324	0.059	0.113	0.172	0.908	0.962	1.021	No
		Left	0.13	0.02	0.213	0.062	0.275	0.363	0.212	0.425	No
		Right	0.397	0.066				0.463	0.463	0.463	No
		Top			0.062	0.012	0.074	0.062	0.012	0.074	No
		Bottom	0.455	0.494				0.949	0.949	0.949	No
NR Band n66	LTE Band 26(5)	Rear	0.385	0.443	0.201	0.067	0.268	1.029	0.895	1.096	No
		Front	0.335	0.319	0.059	0.113	0.172	0.713	0.767	0.826	No
		Left	0.065	0.083	0.213	0.062	0.275	0.361	0.210	0.423	No
		Right	0.050	0.119				0.169	0.169	0.169	No
		Top			0.062	0.012	0.074	0.062	0.012	0.074	No
		Bottom	0.789	0.269				1.058	1.058	1.058	No
	LTE Band 12	Rear	0.385	0.444	0.201	0.067	0.268	1.030	0.896	1.097	No
		Front	0.335	0.301	0.059	0.113	0.172	0.695	0.749	0.808	No
		Left	0.065	0.111	0.213	0.062	0.275	0.389	0.238	0.451	No
		Right	0.05	0.187				0.237	0.237	0.237	No
		Top			0.062	0.012	0.074	0.062	0.012	0.074	No
		Bottom	0.789	0.285				1.074	1.074	1.074	No

Simultaneous Transmission Scenario with5 GHz WLAN MIMO&Bluetooth(10mm)						
Band		WWAN SAR (W/kg) 1	5 GHz WLAN Ant 1+Ant 2 SAR (W/kg) 2	Bluetooth SAR (W/kg) 3	∑ 1-g SAR (W/kg) 1+2+3	SPLSR (Yes/No)
GPRS 850	Rear	0.985	0.268	0.085	1.338	No
	Front	0.669	0.172	0.056	0.897	No
	Left	0.107	0.275	0.009	0.391	No
	Right	0.573			0.573	No
	Top		0.074	0.151	0.225	No
	Bottom	0.574			0.574	No
GPRS 1900	Rear	0.643	0.268	0.085	0.996	No
	Front	0.555	0.172	0.056	0.783	No
	Left	0.017	0.275	0.009	0.301	No
	Right	0.118			0.118	No
	Top		0.074	0.151	0.225	No
	Bottom	0.654			0.654	No
UMTS Band 5	Rear	0.772	0.268	0.085	1.125	No
	Front	0.522	0.172	0.056	0.75	No
	Left	0.116	0.275	0.009	0.4	No
	Right	0.438			0.438	No
	Top		0.074	0.151	0.225	No
	Bottom	0.453			0.453	No
UMTS Band 4	Rear	0.525	0.268	0.085	0.878	No
	Front	0.651	0.172	0.056	0.879	No
	Left	0.122	0.275	0.009	0.406	No
	Right	0.106			0.106	No
	Top		0.074	0.151	0.225	No
	Bottom	1.189			1.189	No
UMTS Band 2	Rear	0.388	0.268	0.085	0.741	No
	Front	0.410	0.172	0.056	0.638	No
	Left	0.019	0.275	0.009	0.303	No
	Right	0.077			0.077	No
	Top		0.074	0.151	0.225	No
	Bottom	0.770			0.77	No
LTE Band 2	Rear	0.396	0.268	0.085	0.749	No
	Front	0.341	0.172	0.056	0.569	No
	Left	0.023	0.275	0.009	0.307	No
	Right	0.064			0.064	No
	Top		0.074	0.151	0.225	No
	Bottom	0.709			0.709	No
LTE Band 12	Rear	0.444	0.268	0.085	0.797	No
	Front	0.301	0.172	0.056	0.529	No
	Left	0.111	0.275	0.009	0.395	No
	Right	0.187			0.187	No
	Top		0.074	0.151	0.225	No
	Bottom	0.285			0.285	No

Simultaneous Transmission Scenario with5 GHz WLAN MIMO&Bluetooth(10mm)						
Band		WWAN SAR (W/kg) 1	5 GHz WLAN Ant 1+Ant 2 SAR (W/kg) 2	Bluetooth SAR (W/kg) 3	∑ 1-g SAR (W/kg) 1+2+3	SPLSR (Yes/No)
LTE Band 26	Rear	0.443	0.268	0.085	0.796	No
	Front	0.319	0.172	0.056	0.547	No
	Left	0.083	0.275	0.009	0.367	No
	Right	0.119			0.119	No
	Top		0.074	0.151	0.225	No
	Bottom	0.269			0.269	No
LTE Band 41	Rear	0.469	0.268	0.085	0.822	No
	Front	0.399	0.172	0.056	0.627	No
	Left	0.230	0.275	0.009	0.514	No
	Right					No
	Top		0.074	0.151	0.225	No
	Bottom	0.776			0.776	No
LTE Band 66	Rear	0.402	0.268	0.085	0.755	No
	Front	0.324	0.172	0.056	0.552	No
	Left	0.020	0.275	0.009	0.304	No
	Right	0.066			0.066	No
	Top		0.074	0.151	0.225	No
	Bottom	0.494			0.494	No

Simultaneous Transmission Scenario with5 GHz WLAN MIMO&Bluetooth(10mm)								
Band	EN-DC Band		NR Band SAR	EN-DC LTE Band SAR	5 GHz WLAN Ant 1+Ant 2 SAR	Bluetooth SAR	∑ 1-g SAR	SPLSR
			(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(Yes/No)
			1	2	3	4	1+2+3+4	
NR Band n5	LTE Band 2	Rear	0.689	0.396	0.268	0.085	1.438	No
		Front	0.525	0.341	0.172	0.056	1.094	No
		Left	0.130	0.023	0.275	0.009	0.437	No
		Right	0.397	0.064			0.461	No
		Top			0.074	0.151	0.225	No
		Bottom	0.456	0.709			1.165	No
	LTE Band 66	Rear	0.689	0.402	0.268	0.085	1.444	No
		Front	0.525	0.324	0.172	0.056	1.077	No
		Left	0.130	0.020	0.275	0.009	0.434	No
		Right	0.397	0.066			0.463	No
		Top			0.074	0.151	0.225	No
		Bottom	0.455	0.494			0.949	No
NR Band n66	LTE Band 26(5)	Rear	0.385	0.443	0.268	0.085	1.181	No
		Front	0.335	0.319	0.172	0.056	0.882	No
		Left	0.065	0.083	0.275	0.009	0.432	No
		Right	0.050	0.119			0.169	No
		Top			0.074	0.151	0.225	No
		Bottom	0.789	0.269			1.058	No
	LTE Band 12	Rear	0.385	0.444	0.268	0.085	1.182	No
		Front	0.335	0.301	0.172	0.056	0.864	No
		Left	0.065	0.111	0.275	0.009	0.46	No
		Right	0.05	0.187			0.237	No
		Top			0.074	0.151	0.225	No
		Bottom	0.789	0.285			1.074	No

Simultaneous Transmission Summation Scenario with 2.4 GHz WLAN & 5 GHz WLAN MIMO(10mm)										
Band		WWAN SAR	2.4 GHz WLAN Ant1 RSDB SAR	2.4 GHz WLAN Ant2 RSDB SAR	2.4 GHz WLAN MIMO RSDB SAR	5 GHz WLAN Ant 1+Ant 2 RSDBSAR	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(Yes/No)
		1	2	3	4	5	1+2+5	1+3+5	1+4+5	
GPRS 850	Rear	0.985	0.114	0.146	0.158	0.088	1.187	1.219	1.231	No
	Front	0.669	0.081	0.000	0.152	0.049	0.799	0.718	0.870	No
	Left	0.107	0.000	0.171	0.188	0.097	0.204	0.375	0.392	No
	Right	0.573					0.573	0.573	0.573	No
	Top		0.212	0.041	0.222	0.000	0.212	0.041	0.222	No
	Bottom	0.574					0.574	0.574	0.574	No
GPRS 1900	Rear	0.643	0.114	0.146	0.158	0.088	0.845	0.877	0.889	No
	Front	0.555	0.081	0.000	0.152	0.049	0.685	0.604	0.756	No
	Left	0.017	0.000	0.171	0.188	0.097	0.114	0.285	0.302	No
	Right	0.118					0.118	0.118	0.118	No
	Top		0.212	0.041	0.222	0.000	0.212	0.041	0.222	No
	Bottom	0.654					0.654	0.654	0.654	No
UMTS Band 5	Rear	0.772	0.114	0.146	0.158	0.088	0.974	1.006	1.018	No
	Front	0.522	0.081	0.000	0.152	0.049	0.652	0.571	0.723	No
	Left	0.116	0.000	0.171	0.188	0.097	0.213	0.384	0.401	No
	Right	0.438					0.438	0.438	0.438	No
	Top		0.212	0.041	0.222	0.000	0.212	0.041	0.222	No
	Bottom	0.453					0.453	0.453	0.453	No
UMTS Band 4	Rear	0.525	0.114	0.146	0.158	0.088	0.727	0.759	0.771	No
	Front	0.651	0.081	0.000	0.152	0.049	0.781	0.700	0.852	No
	Left	0.122	0.000	0.171	0.188	0.097	0.219	0.39	0.407	No
	Right	0.106					0.106	0.106	0.106	No
	Top		0.212	0.041	0.222	0.000	0.212	0.041	0.222	No
	Bottom	1.189					1.189	1.189	1.189	No
UMTS Band 2	Rear	0.388	0.114	0.146	0.158	0.088	0.59	0.622	0.634	No
	Front	0.410	0.081	0.000	0.152	0.049	0.54	0.459	0.611	No
	Left	0.019	0.000	0.171	0.188	0.097	0.116	0.287	0.304	No
	Right	0.077					0.077	0.077	0.077	No
	Top		0.212	0.041	0.222	0.000	0.212	0.041	0.222	No
	Bottom	0.770					0.770	0.770	0.770	No
LTE Band 2	Rear	0.396	0.114	0.146	0.158	0.088	0.598	0.630	0.642	No
	Front	0.341	0.081	0.000	0.152	0.049	0.471	0.390	0.542	No
	Left	0.023	0.000	0.171	0.188	0.097	0.12	0.291	0.308	No
	Right	0.064					0.064	0.064	0.064	No
	Top		0.212	0.041	0.222	0.000	0.212	0.041	0.222	No
	Bottom	0.709					0.709	0.709	0.709	No
LTE Band 12	Rear	0.444	0.114	0.146	0.158	0.088	0.646	0.678	0.690	No
	Front	0.301	0.081	0.000	0.152	0.049	0.431	0.350	0.502	No
	Left	0.111	0.000	0.171	0.188	0.097	0.208	0.379	0.396	No
	Right	0.187					0.187	0.187	0.187	No
	Top		0.212	0.041	0.222	0.000	0.212	0.041	0.222	No
	Bottom	0.285					0.285	0.285	0.285	No

Simultaneous Transmission Summation Scenario with 2.4 GHz WLAN & 5 GHz WLAN MIMO(10mm)										
Band		WWAN SAR	2.4 GHz WLAN Ant1 RSDB SAR	2.4 GHz WLAN Ant2 RSDB SAR	2.4 GHz WLAN MIMO RSDB SAR	5 GHz WLAN Ant 1+Ant 2 RSDB SAR	∑ 1-g SAR (W/kg)	∑ 1-g SAR (W/kg)	∑ 1-g SAR (W/kg)	SPLSR (Yes/No)
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	
		1	2	3	4	5	1+2+5	1+3+5	1+4+5	
LTE Band 26	Rear	0.443	0.114	0.146	0.158	0.088	0.645	0.677	0.689	No
	Front	0.319	0.081	0.000	0.152	0.049	0.449	0.368	0.52	No
	Left	0.083	0.000	0.171	0.188	0.097	0.18	0.351	0.368	No
	Right	0.119					0.119	0.119	0.119	No
	Top		0.212	0.041	0.222	0.000	0.212	0.041	0.222	No
	Bottom	0.269					0.269	0.269	0.269	No
LTE Band 41	Rear	0.469	0.114	0.146	0.158	0.088	0.671	0.703	0.715	No
	Front	0.399	0.081	0.000	0.152	0.049	0.529	0.448	0.600	No
	Left	0.230	0.000	0.171	0.188	0.097	0.327	0.498	0.515	No
	Right									No
	Top		0.212	0.041	0.222	0.000	0.212	0.041	0.222	No
	Bottom	0.776					0.776	0.776	0.776	No
LTE Band 66	Rear	0.402	0.114	0.146	0.158	0.088	0.604	0.636	0.648	No
	Front	0.324	0.081	0.000	0.152	0.049	0.454	0.373	0.525	No
	Left	0.020	0.000	0.171	0.188	0.097	0.117	0.288	0.305	No
	Right	0.066					0.066	0.066	0.066	No
	Top		0.212	0.041	0.222	0.000	0.212	0.041	0.222	No
	Bottom	0.494					0.494	0.494	0.494	No

Simultaneous Transmission Summation Scenario with 2.4 GHz WLAN & 5 GHz WLAN MIMO(10mm)													
Band	EN-DC Band		NR Band SAR	EN-DC LTE Band SAR	2.4 GHz WLAN Ant.1 SAR	2.4 GHz WLAN Ant.2 SAR	2.4 GHz WLAN MIMO	5 GHz WLAN Ant 1+Ant 2 RSDB SAR	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
			(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(Yes/No)
			1	2	3	4	5	6	1+2+3+6	1+2+4+6	1+2+5+6	
NR Band n5	LTE Band 2	Rear	0.689	0.396	0.114	0.146	0.158	0.088	1.287	1.331	1.331	No
		Front	0.525	0.341	0.081	0.000	0.152	0.049	0.996	1.067	1.067	No
		Left	0.130	0.023	0.000	0.171	0.188	0.097	0.250	0.438	0.438	No
		Right	0.397	0.064					0.461	0.461	0.461	No
		Top			0.212	0.041	0.222	0.000	0.212	0.222	0.222	No
		Bottom	0.456	0.709					1.165	1.165	1.165	No
	LTE Band 66	Rear	0.689	0.402	0.114	0.146	0.158	0.088	1.293	1.325	1.337	No
		Front	0.525	0.324	0.081	0.000	0.152	0.049	0.979	0.898	1.05	No
		Left	0.130	0.020	0.000	0.171	0.188	0.097	0.247	0.418	0.435	No
		Right	0.397	0.066					0.463	0.463	0.463	No
		Top			0.212	0.041	0.222	0.000	0.212	0.041	0.222	No
		Bottom	0.455	0.494					0.949	0.949	0.949	No
NR Band n66	LTE Band 26(5)	Rear	0.385	0.443	0.114	0.146	0.158	0.088	1.03	1.062	1.074	No
		Front	0.335	0.319	0.081	0.000	0.152	0.049	0.784	0.703	0.855	No
		Left	0.065	0.083	0.000	0.171	0.188	0.097	0.245	0.416	0.433	No
		Right	0.050	0.119					0.169	0.169	0.169	No
		Top			0.212	0.041	0.222	0.000	0.212	0.041	0.222	No
		Bottom	0.789	0.269					1.058	1.058	1.058	No
	LTE Band 12	Rear	0.385	0.444	0.114	0.146	0.158	0.088	1.031	1.063	1.075	No
		Front	0.335	0.301	0.081	0.000	0.152	0.049	0.766	0.685	0.837	No
		Left	0.065	0.111	0.000	0.171	0.188	0.097	0.273	0.444	0.461	No
		Right	0.05	0.187					0.237	0.237	0.237	No
		Top			0.212	0.041	0.222	0.000	0.212	0.041	0.222	No
		Bottom	0.789	0.285					1.074	1.074	1.074	No

14.4 Phablet SAR Simultaneous Transmission Analysis

Simultaneous Transmission Scenario with 5G WLAN Phablet									
Band		WWAN SAR (W/kg) 1	5 GHz WLAN Ant.1 SAR (W/kg) 2	5 GHz WLAN Ant.2 SAR (W/kg) 3	5 GHz WLAN Ant 1+Ant 2 SAR (W/kg) 2+3	∑ 10-g SAR (W/kg) 1+2	∑ 10-g SAR (W/kg) 1+3	∑ 10-g SAR (W/kg) 1+2+3	SPLSR (Yes/No)
GPRS 1900	Rear	0.638	0.537	0.345	0.882	1.175	0.983	1.520	No
	Front	0.710	0.865	0.871	1.736	1.575	1.581	2.446	No
	Left	0.049	1.248	0.408	1.656	1.297	0.457	1.705	No
	Right	0.283				0.283	0.283	0.283	No
	Top		0.307	0.021	0.328	0.307	0.021	0.328	No
	Bottom	1.049				1.049	1.049	1.049	No
UMTS Band 4	Rear	1.684	0.537	0.345	0.882	2.221	2.029	2.566	No
	Front	1.797	0.865	0.871	1.736	2.662	2.668	**3.533**	No
	Left	0.438	1.248	0.408	1.656	1.686	0.846	2.094	No
	Right	0.456				0.456	0.456	0.456	No
	Top		0.307	0.021	0.328	0.307	0.021	0.328	No
	Bottom	2.490				2.490	2.490	2.490	No
UMTS Band 2	Rear	0.813	0.537	0.345	0.882	1.35	1.158	1.695	No
	Front	0.868	0.865	0.871	1.736	1.733	1.739	2.604	No
	Left	0.040	1.248	0.408	1.656	1.288	0.448	1.696	No
	Right	0.305				0.305	0.305	0.305	No
	Top		0.307	0.021	0.328	0.307	0.021	0.328	No
	Bottom	1.235				1.235	1.235	1.235	No
LTE Band 2	Rear	0.803	0.537	0.345	0.882	1.340	1.148	1.685	No
	Front	0.866	0.865	0.871	1.736	1.731	1.737	2.602	No
	Left	0.031	1.248	0.408	1.656	1.279	0.439	1.687	No
	Right	0.265				0.265	0.265	0.265	No
	Top		0.307	0.021	0.328	0.307	0.021	0.328	No
	Bottom	1.089				1.089	1.089	1.089	No
LTE Band 41	Rear	**1.527**	0.537	0.345	0.882	2.064	1.872	2.409	No
	Front	1.355	0.865	0.871	1.736	2.220	2.226	3.091	No
	Left	0.682	1.248	0.408	1.656	1.930	1.090	2.338	No
	Right								No
	Top		0.307	0.021	0.328	0.307	0.021	0.328	No
	Bottom	1.159				1.159	1.159	1.159	No
LTE Band 66	Rear	1.090	0.537	0.345	0.882	1.627	1.435	1.972	No
	Front	1.079	0.865	0.871	1.736	1.944	1.95	2.815	No
	Left	0.108	1.248	0.408	1.656	1.356	0.516	1.764	No
	Right	0.326				0.326	0.326	0.326	No
	Top		0.307	0.021	0.328	0.307	0.021	0.328	No
	Bottom	0.822				0.822	0.822	0.822	No
NR Band n66	Rear	0.990	0.537	0.345	0.882	1.527	1.335	1.872	No
	Front	1.080	0.865	0.871	1.736	1.945	1.951	2.816	No
	Left	0.277	1.248	0.408	1.656	1.525	0.685	1.933	No
	Right	0.196				0.196	0.196	0.196	No
	Top		0.307	0.021	0.328	0.307	0.021	0.328	No
	Bottom	1.403				1.403	1.403	1.403	No

14.5 Simultaneous Transmission Conclusion

The above numerical summed SAR Results are sufficient to determine that simultaneous transmission cases will not exceed the SAR Limit and therefore no measured volumetric simultaneous SAR summation is required per FCC KDB Publication 447498 D01v06 and 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. 1.08

Hotspot SAR measurement variability Results

Frequency		Mode/Band	Configuration	Measured SAR (W/kg)	Repeated SAR (W/kg)	SAR Ratio
㎒	Channel					
836.6	190	GSM 850 GPRS 2Tx	Rear	0.860	0.800	1.08
1 732.4	1412	UMTS Band 4	Bottom	0.966	0.960	1.04

Phablet SAR measurement variability Results

Frequency		Mode/Band	Configuration	Measured SAR (W/kg)	Repeated SAR (W/kg)	SAR Ratio
㎒	Channel					
1 712.4	1312	UMTS Band 4	Bottom	2.41	2.14	1.13

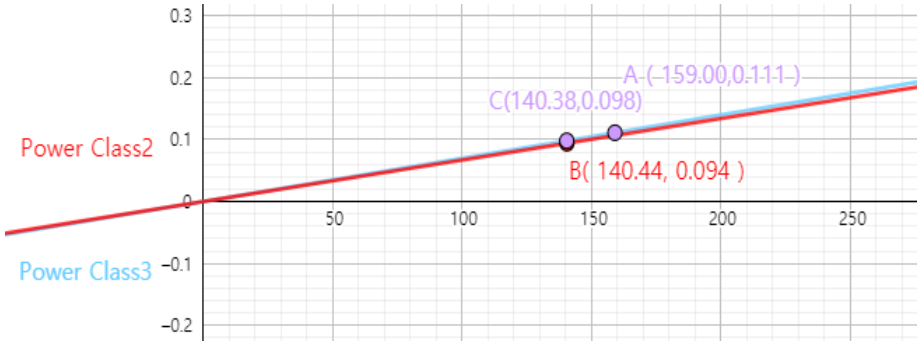
16. LTE Band 41 Power Class 2 and Power class 3 Linearity

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

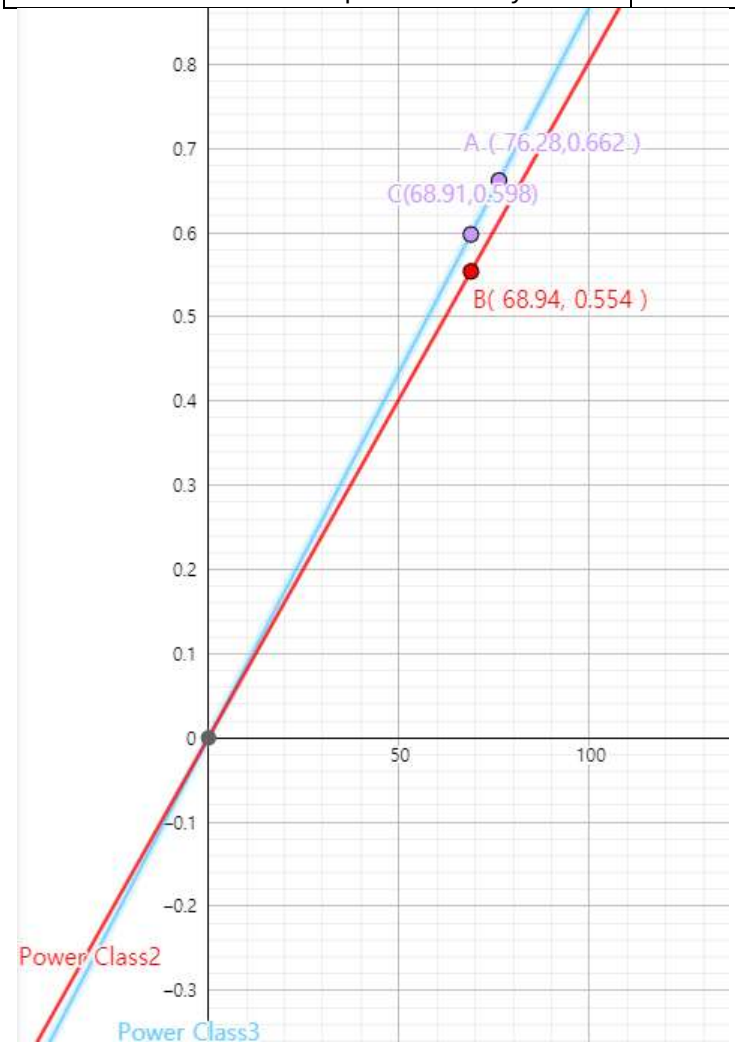
The linearity between the power class 3and Power class 2 SAR Results and the respective frame averaged powers was calculated to determine the results were linear.

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

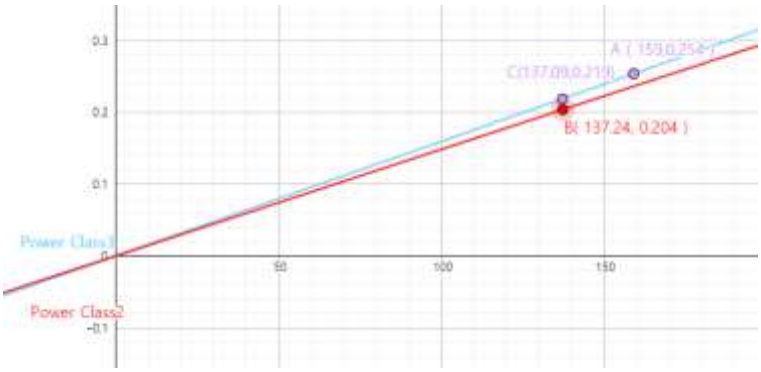
LTE Band 41 Head Left Touch Linearity Data Table		
Configurations	LTE Band41 PC3	LTE Band41 PC2
Maximum Allowed Output Power[dBm]	24.5	26.0
Measured Output Power[dBm]	24.0	25.01
Measured SAR[W/kg]	0.111	0.094
Measured Power[mW]	251.19	324.34
Duty Cycle	63.30%	43.30%
Frame Averaged Output Power[mW]	159	140.44
	0.000698113	0.000669325
% deviation from expected linearity		4.301083902



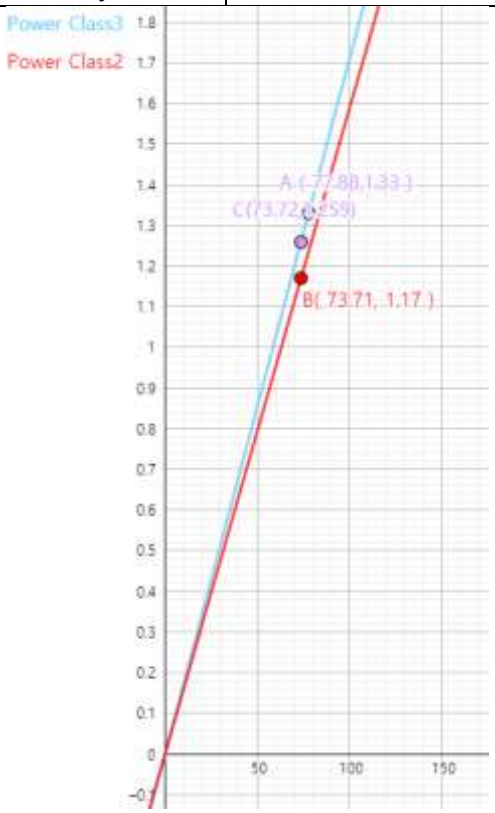
LTE Band 41 Body Bottom Linearity Data Table		
Configurations	LTE Band41 PC3	LTE Band41 PC2
Maximum Allowed Output Power[dBm]	21.5	23.0
Measured Output Power[dBm]	20.81	22.02
Measured SAR[W/kg]	0.662	0.554
Measured Power[mW]	120.5	159.22
Duty Cycle	63.30%	43.30%
Frame Averaged Output Power[mW]	76.28	68.94
	0.008678553	0.008035973
% deviation from expected linearity		7.996285772



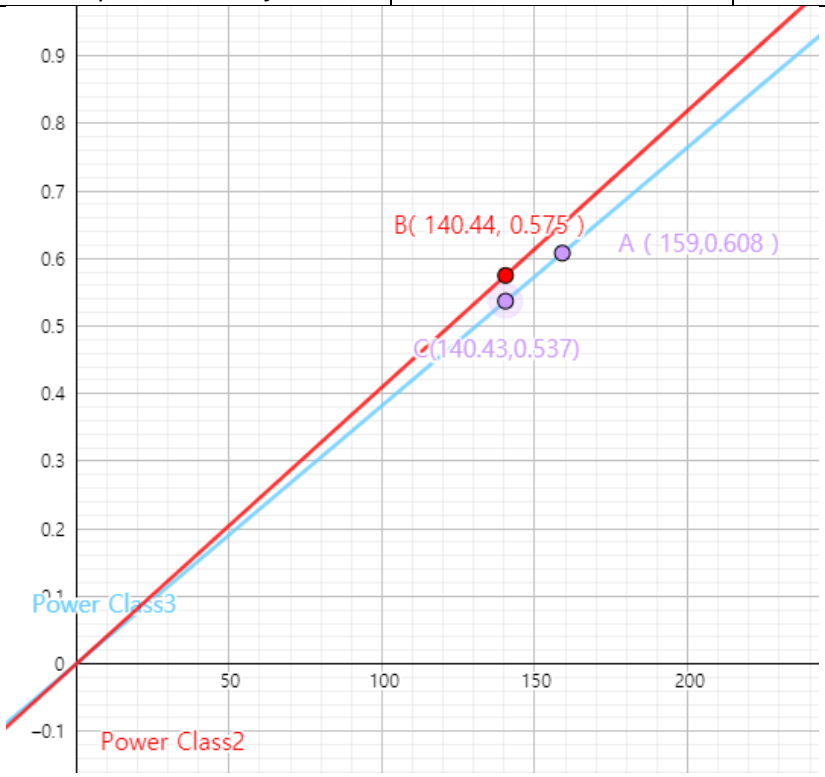
LTE Band 41 Body-Worn Rear Linearity Data Table		
Configurations	LTE Band41 PC3	LTE Band41 PC2
Maximum Allowed Output Power[dBm]	24.5	26.0
Measured Output Power[dBm]	24.00	25.01
Measured SAR[W/kg]	0.254	0.204
Measured Power[mW]	251.19	324.34
Duty Cycle	63.30%	43.30%
Frame Averaged Output Power[mW]	159	140.44
	0.001597484	0.001459698
% deviation from expected linearity		9.439361865



LTE Band 41 Phablet Reduced Rear Linearity Data Table		
Configurations	LTE Band41 PC3	LTE Band41 PC2
Maximum Allowed Output Power[dBm]	21.0	24.0
Measured Output Power[dBm]	20.9	22.31
Measured SAR[W/kg]	1.33	1.17
Measured Power[mW]	123.03	170.22
Duty Cycle	63.30%	43.30%
Frame Averaged Output Power[mW]	77.88	73.71
	0.017077555	0.015873016
% deviation from expected linearity		7.588597843



LTE Band 41 Phablet Max Bottom Rear Linearity Data Table		
Configurations	LTE Band41 PC3	LTE Band41 PC2
Maximum Allowed Output Power[dBm]	25.0	26.0
Measured Output Power[dBm]	24	25.01
Measured SAR[W/kg]	0.608	0.575
Measured Power[mW]	251.19	324.34
Duty Cycle	63.30%	43.30%
Frame Averaged Output Power[mW]	159	140.44
	0.003823899	0.004094275
% deviation from expected linearity		-6.603751709



17. Antenna Tuning Test

Per April 2019 TCB Workshop Notes, the following test procedures were followed to demonstrate that the SAR results in Section 11 represented the appropriate SAR test conditions. For Bands with dynamic tuning implemented, SAR was measured according to the required FCC SAR test procedures with the dynamic tuner active to allow the device to automatically tune to the antenna state for the respective RF exposure test configurations. Per April 2019 TCB Workshop, during NR testing the device was configured with the tuner state selected by the device in LTE mode with auto-tune active at the same frequency. Additional single point SAR time-sweep measurements were evaluated for other tuner states to determine that the other tuner configurations would result in equivalent or lower SAR values. The additional tuner hardware has no influence on the antenna characteristics, other than impedance matching.

To evaluate all the tuner states, the 120 tuner states were divided among the aggregate Band, mode and exposure combinations. Single point time-sweep measurements were performed at the peak SAR location determined by the zoom scan of the configuration with the highest reported SAR for each combination. The tuner state was able to be established remotely so that the device was not moved for the entire series of single point SAR for the tuner states in each combination. The SAR probe remained stationary at the same position throughout the entire series of single point measurements for each combination. When the single point SAR or 1g SAR was > 1.2 W/kg for a particular Band/mode/exposure condition, point SAR measurements were made for all 120 states.
The operational description contains more information about the design and implementation of the dynamic antenna tuning.

17.1 Head SAR Configuration

UMTS B5		UMTS B4	
RMC		RMC	
Test Position	Right Cheek	Test Position	Right Cheek
Frequency (MHz)	836.6	Frequency (MHz)	1 712.4
Channel	4183	Channel	1312
Measured 1g SAR(W/kg)	0.211	Measured 1g SAR(W/kg)	0.157
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 111)	0.253	Auto-tune (State 21)	0.202
Default (State 0)	0.240	Default (State 0)	0.142
State 2	0.235	State 4	0.179
State 9	0.133	State 18	0.105
State 20	0.101	State 22	0.111
State 50	0.098	State 33	0.103
State 66	0.073	State 40	0.106
State 83	0.186	State 63	0.108
State 103	0.135	State 82	0.138
State 119	0.204	State 112	0.051

UMTS B2		LTE B12/17		LTE B5/26		LTE B66/4	
RMC		QPSK, 10 MHz, 1 RB, 49 RB Offset		QPSK, 15 MHz Bandwidth, 1 RB, 0 RB Offset		QPSK, 20 MHz, 1 RB, 49 RB Offset	
Test Position	Right Cheek	Test Position	Right Cheek	Test Position	Right Cheek	Test Position	Left Cheek
Frequency (MHz)	1880	Frequency (MHz)	707.5	Frequency (MHz)	831.5	Frequency (MHz)	1720
Channel	9400	Channel	23095	Channel	26865	Channel	132072
Measured 1g SAR(W/kg)	0.142	Measured 1g SAR(W/kg)	0.121	Measured 1g SAR(W/kg)	0.140	Measured 1g SAR(W/kg)	0.103
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 4)	0.247	Auto-tune (State 16)	0.209	Auto-tune (State 111)	0.258	Auto-tune (State 13)	0.254
Default (State 0)	0.211	Default (State 0)	0.202	Default (State 0)	0.240	Default (State 0)	0.188
State 23	0.108	State 5	0.208	State 19	0.224	State 3	0.192
State 41	0.063	State 35	0.070	State 30	0.108	State 7	0.151
State 69	0.148	State 37	0.026	State 38	0.021	State 16	0.105
State 87	0.098	Sate 41	0.102	State 45	0.098	State 22	0.112
State 95	0.053	State 54	0.156	State 62	0.143	State 34	0.142
State 109	0.183	State 84	0.125	State 82	0.153	State 37	0.125
State 114	0.233	State 101	0.180	State 94	0.184	State 49	0.251
State 115	0.207	State 118	0.200	State 112	0.211	State 109	0.114

LTE B2		NR Band n5		NR Band n66	
QPSK, 20 MHz, 1 RB, 49 RB Offset		DFT-s-OFDM QPSK, 20 MHz, 1 RB, 53 RB Offset		DFT-s-OFDM QPSK, 20 MHz, 1RB, 1 RB Offset	
Test Position	Right Cheek	Test Position	Right Cheek	Test Position	Left Cheek
Frequency (MHz)	1860	Frequency (MHz)	836.5	Frequency (MHz)	1720
Channel	18700	Channel	167300	Channel	344000
Measured 1g SAR(W/kg)	0.141	Measured 1g SAR(W/kg)	0.214	Measured 1g SAR(W/kg)	0.168
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 4)	0.282	Auto-tune (State 111)	0.232	Auto-tune (State 13)	0.151
Default (State 0)	0.228	Default (State 0)	0.226	Default (State 0)	0.137
State 1	0.173	State 11	0.158	State 7	0.113
State 11	0.134	State 21	0.160	State 12	0.109
State 50	0.044	State 62	0.108	State 27	0.127
State 51	0.067	State 66	0.190	State 45	0.149
State 71	0.133	State 81	0.111	State 54	0.127
State 100	0.052	State 92	0.174	State 66	0.102
State 107	0.193	State 108	0.212	State 78	0.098
State 112	0.241	State 116	0.129	State 87	0.114

17.2 Body SAR Configuration

UMTS B2		LTE B2		LTE B66/4		UMTS B5	
RMC		QPSK, 20MHzBandwidth, 50RB, 25 RB Offset		QPSK, 20 MHz Bandwidth, 1 RB, 49 RB Offset		RMC	
TestPosition	Bottom	TestPosition	Bottom	Test Position	Bottom	Test Position	Rear Side
Spacing	10mm	Spacing	10mm	Spacing	10 mm	Spacing	10 mm
Frequency (MHz)	1880	Frequency (MHz)	1860	Frequency (MHz)	1720	Frequency (MHz)	836.6
Channel	9400	Channel	18700	Channel	132072	Channel	4183
Measured1gSAR	0.641	Measured1gSAR	0.623	Measured 1g SAR	0.459	Measured 1g SAR	0.665
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune(State4)	1.150	Auto-tune(State4)	1.180	Auto-tune (State 13)	0.849	Auto-tune (State 111)	0.970
Default(State0)	1.138	Default(State0)	1.080	Default (State 0)	0.812	Default (State 0)	0.94
State 3	0.189	State0	1.100	State 7	0.301	State 1	0.858
State 12	0.738	State1	1.022	State 19	0.822	State 6	0.591
State 28	0.612	State10	0.966	State 37	0.686	State 17	0.828
State 40	0.482	State 32	0.922	State 69	0.408	State 44	0.816
State 57	0.313	State 38	0.784	State 70	0.598	State 50	0.741
State 81	0.458	State 49	0.888	State 75	0.621	State 62	0.552
State 99	0.188	State 54	1.166	State 86	0.786	State 112	0.967
State 114	0.973	State 75	1.039	State 108	0.775	State 117	0.897

LTE B12		LTE B26		NR Band n5		NR Band n66	
QPSK, 10 MHz Bandwidth, 1 RB, 49 RB offset		QPSK, 15 MHz Bandwidth, 1 RB, 0 RB offset		DFT-s-OFDM QPSK, 20 MHz Bandwidth, 1RB 53RB offset		DFT-s-OFDM QPSK, 20 MHz BW , 1RB 1 offset	
Test Position	Rear Side	Test Position	Rear Side	Test Position	Rear Side	Test Position	Bottom
Spacing	10 mm	Spacing	10 mm	Spacing	10 mm	Spacing	10mm
Frequency (MHz)	707.5	Frequency (MHz)	831.5	Frequency (MHz)	836.5	Frequency (MHz)	1720
Channel	23095	Channel	26865	Channel	167300	Channel	344000
Measured 1g SAR	0.374	Measured 1g SAR	0.382	Measured 1g SAR	0.655	Measured 1g SAR (W/kg)	0.678
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 16)	0.721	Auto-tune (State111)	0.719	Auto-tune (State 111)	0.792	Auto-tune (State 13)	1.11
Default (State 0)	0.602	Default (State 0)	0.743	Default (State 0)	0.536	Default (State 0)	0.889
State 5	0.599	State 18	0.653	State 5	0.063	State 7	0.03
State 13	0.599	State 26	0.531	State 15	0.565	State 25	0.53
State 30	0.538	State 36	0.111	State 24	0.094	State 34	0.819
State 47	0.458	State 44	0.626	State 29	0.551	State 60	0.755
State 53	0.621	State 60	0.457	State 33	0.251	State 88	0.679
State 59	0.321	State 69	0.362	State 38	0.233	State 91	0.759
State 95	0.309	State 89	0.785	State 58	0.056	State 105	0.982
State 109	0.261	State 75	0.062	State 66	0.567	State 119	0.913

UMTS B4	
RMC	
TestPosition	Bottom
Spacing	10mm
Frequency (MHz)	1 732.4
Channel	1412
Measured 1g SAR (W/kg)	0.966
Average Value of Time Sweep (W/kg)	
Auto-tune(State21)	1.69
Default(State0)	1.018
State0	1.018
State1	0.892
State2	0.886
State3	0.782
State4	0.905
State5	0.97
State6	1.046
State7	0.959
State8	0.777
State9	0.782
State10	0.588
State11	0.489
State12	0.522
State13	0.392
State14	1.13
State15	1.048
State16	1.119
State17	1.253
State18	1.024
State19	1.036
State20	0.866
State21	1.69
State22	0.809
State23	0.685
State24	0.543
State25	0.46
State26	0.305
State27	1.16
State28	1.03
State29	1.24
State30	1.19
State31	1.16
State32	1.189
State33	1.137
State34	0.919
State35	0.657
State36	0.683
State37	0.465

State38	0.541
State39	0.601
State40	0.481
State41	0.254
State42	0.204
State43	0.331
State44	0.341
State45	0.253
State46	0.504
State47	0.406
State48	0.114
State49	0.335
State50	0.434
State51	1.69
State52	1.18
State53	1.13
State54	1.19
State55	1.01
State56	1.11
State57	0.98
State58	1.08
State59	0.965
State60	1.005
State61	0.985
State62	0.933
State63	0.686
State64	0.461
State65	0.644
State66	0.666
State67	0.557
State68	0.703
State69	0.623
State70	0.589
State71	0.274
State72	0.352
State73	0.286
State74	0.441
State75	0.271
State76	0.511
State77	0.285
State78	0.8
State79	0.903
State80	0.887
State81	1.02
State82	0.895
State83	0.684
State84	0.771
State85	0.725
State86	0.525
State87	0.361
State88	0.529
State89	0.335

State90	0.458
State91	0.824
State92	0.894
State93	0.978
State94	0.942
State95	0.829
State96	1.055
State97	0.769
State98	0.906
State99	0.946
State100	0.897
State101	0.57
State102	0.372
State103	0.446
State104	0.937
State105	1.17
State106	1.17
State107	0.774
State108	1.24
State109	0.786
State110	0.845
State111	0.949
State112	0.945
State113	0.949
State114	1.14
State115	0.505
State116	1.15
State117	0.816
State118	0.948
State119	0.937

18. 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.

19. SAR Test Equipment

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
SPEAG	Triple Modular Phantom	-	N/A	N/A	N/A
SPEAG	SAM Phantom	-	N/A	N/A	N/A
HP	SAR System Control PC	-	N/A	N/A	N/A
Staubli	CS8Cspeag-TX60	F10/ 5D1CA1/ C/ 01	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F12/ 5K9GA1/ C/ 01	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F17/ 59CHA1/ C/ 01	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F17/ 59RAA1/ C/ 01	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	TX60 Lspeag	F10/ 5D1CA1/ A/ 01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F12/ 5K9GA1/ A/ 01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F17/ 59CHA1/ A/ 01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F17/ 59RAA1/ A/ 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-0123	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	S-1206 0513	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	010963	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	011578	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	S-1203 0309	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	SE UKS 030 AA	N/A	N/A	N/A
SPEAG	DAE4	868	09/29/2020	Annual	09/29/2021
SPEAG	DAE3	504	02/19/2021	Annual	02/19/2022
SPEAG	DAE4	1225	08/07/2020	Annual	08/07/2021
SPEAG	DAE4	446	07/29/2020	Annual	07/29/2021
SPEAG	DAE4	648	05/25/2020	Annual	05/25/2021
SPEAG	DAE4	911	03/22/2021	Annual	03/22/2022
SPEAG	DAE4	1629	08/11/2020	Annual	08/11/2021
SPEAG	E-Field Probe EX3DV4	3797	11/25/2020	Annual	11/25/2021
SPEAG	E-Field Probe EX3DV4	3903	03/24/2021	Annual	03/24/2022
SPEAG	E-Field Probe ES3DV3	3076	07/31/2020	Annual	07/31/2021
SPEAG	E-Field Probe EX3DV4	7352	10/28/2021	Annual	10/28/2022
SPEAG	E-Field Probe EX3DV4	7622	11/06/2020	Annual	11/06/2021
SPEAG	E-Field Probe EX3DV4	3968	09/28/2020	Annual	09/28/2021
SPEAG	Dipole D750V3	1014	05/19/2020	Annual	05/19/2021
SPEAG	Dipole D835V2	4d266	08/27/2020	Annual	08/27/2021
SPEAG	Dipole D1800V2	2d007	08/26/2020	Annual	08/26/2021
SPEAG	Dipole D1900V2	5d032	01/28/2021	Annual	01/28/2022
SPEAG	Dipole D2450V2	1049	08/26/2020	Annual	08/26/2021
SPEAG	Dipole D2600V2	1015	08/26/2020	Annual	08/26/2021
SPEAG	Dipole D5GHzV2	1253	08/31/2020	Annual	08/31/2021

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
Agilent	Power Meter E4419B	MY41291386	10/23/2020	Annual	10/23/2021
Agilent	Power Meter N1911A	MY45101406	08/31/2020	Annual	08/31/2021
Agilent	Power Sensor 8481A	SG1091286	10/05/2020	Annual	10/05/2021
Agilent	Power Sensor 8481A	MY41090873	10/05/2020	Annual	10/05/2021
Agilent	Power Sensor N1921A	MY55220026	08/31/2020	Annual	08/31/2021
Agilent	Power Divider	11636B	02/26/2021	Annual	02/26/2022
SPEAG	DAKS 3.5	1038	03/17/2021	Annual	03/17/2022
ROHDE&SCHWARZ	Signal Generator	SMB100A	07/13/2020	Annual	07/13/2021
H.P	Network Analyzer /8753ES	JP39240221	01/11/2021	Annual	01/11/2022
Agilent	WIRELESS COMMUNICATION E5515C	MY48361100	10/06/2020	Annual	10/06/2021
Agilent	WIRELESS COMMUNICATION E5515C	MY48360252	08/06/2020	Annual	08/06/2021
Agilent	Signal Generator N5182A	MY47070230	01/26/2021	Annual	01/26/2022
TESTO	175-H1/Thermometer	40331936309	01/26/2021	Annual	01/26/2022
TESTO	175-H1/Thermometer	40331953309	01/26/2021	Annual	01/26/2022
TESTO	175-H1/Thermometer	40331915309	01/26/2021	Annual	01/26/2022
TESTO	175-H1/Thermometer	40331922309	01/26/2021	Annual	01/26/2022
TESTO	175-H1/Thermometer	40331949309	01/26/2021	Annual	01/26/2022
TESTO	175-H1/Thermometer	83348029	01/26/2021	Annual	01/26/2022
EMPOWER	RF Power Amplifier	1084	07/01/2020	Annual	07/01/2021
EMPOWER	RF Power Amplifier	1011	07/30/2020	Annual	07/30/2021
MICRO LAB	LP Filter / LA-15N	10453	10/05/2020	Annual	10/05/2021
MICRO LAB	LP Filter / LA-30N	-	10/05/2020	Annual	10/05/2021
MICRO LAB	LP Filter / LA-60N	32011	10/05/2020	Annual	10/05/2021
Agilent	Attenuator (3dB) 8693B	MY39260298	09/18/2020	Annual	09/18/2021
HP	Attenuator (20dB) 8493C	09271	09/18/2020	Annual	09/18/2021
Agilent	Directional Bridge	3140A03878	06/08/2020	Annual	06/08/2021
Agilent	Power Divider	10	07/15/2020	Annual	07/15/2021
Agilent	Power Divider	4	07/13/2020	Annual	07/13/2021
Agilent	Power Divider	2	07/13/2020	Annual	07/13/2021
Agilent	Power Divider	11	07/15/2020	Annual	07/15/2021
Agilent	MXA Signal Analyzer N9020A	MY50510407	10/23/2020	Annual	10/23/2021
HP	Dual Directional Coupler	16072	10/05/2020	Annual	10/05/2021
Anritsu	Radio Communication Test Station MT8000A	6262036812	12/22/2020	Annual	12/22/2021
Anritsu	Radio Communication Tester MT8820C	6201074225	02/26/2021	Annual	02/26/2022
Anritsu	Radio Communication Tester MT8820C	6200695605	04/15/2021	Annual	04/15/2022
Anritsu	Radio Communication Tester MT8820C	6200628628	09/18/2020	Annual	09/18/2021
Anritsu	Radio Communication Tester MT8821C	6201502997	08/06/2020	Annual	08/06/2021
Anritsu	Radio Communication Tester MT8821C	6262044720	12/22/2020	Annual	12/22/2021
ROHDE&SCHWARZ	BLUETOOTH TESTER CBT	100272	02/26/2021	Annual	02/26/2022

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

20. 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.

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

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

Report No.
HCT-SR-2106-FC004-P

Appendix B. – SAR Test Plots

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 22.7℃
Ambient Temperature: 22.9℃
Test Date: 05/06/2021
Plot No.: 1

DUT: SM-G990B/DS; Type: Bar;

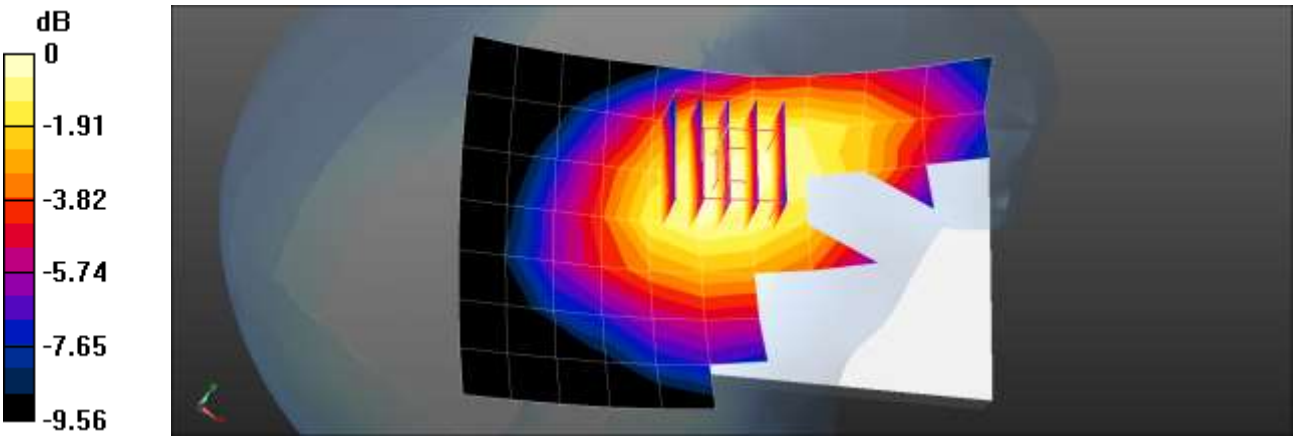
Communication System: UID 0, GSM850 GPRS 2TX (0); Frequency: 836.6 MHz;Duty Cycle: 1:4.14954
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.916 S/m; ε_r = 42.077; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(9.75, 9.75, 9.75) @ 836.6 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

GSM 850 Head Right Touch 2Tx 190ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.333 W/kg

GSM 850 Head Right Touch 2Tx 190ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.229 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 0.371 W/kg
SAR(1 g) = 0.284 W/kg; SAR(10 g) = 0.217 W/kg
Maximum value of SAR (measured) = 0.334 W/kg



0 dB = 0.334 W/kg = −4.76 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.8℃
Ambient Temperature: 21.9℃
Test Date: 05/24/2021
Plot No.: 2

DUT: SM-G990B/DS; Type: Bar;

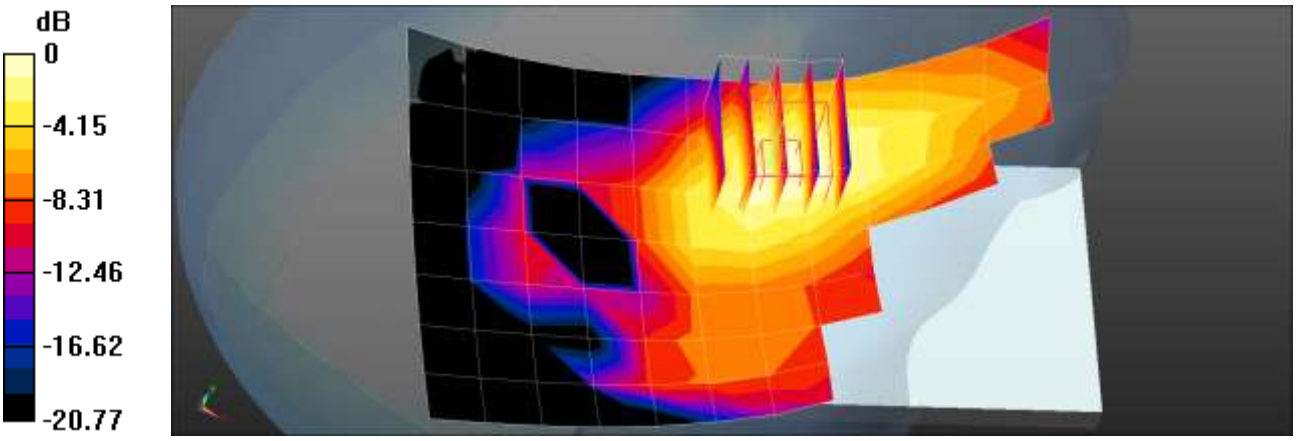
Communication System: UID 0, GSM 1900 2TX (0); Frequency: 1880 MHz; Duty Cycle: 1:4.14954
Medium parameters used: f = 1880 MHz; σ = 1.419 S/m; ε_r = 41.499; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.19, 8.19, 8.19) @ 1880 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

GSM1900 Head Right Touch 2Tx 661ch/Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.0703 W/kg

GSM1900 Head Right Touch 2Tx 661ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.273 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.0950 W/kg
SAR(1 g) = 0.060 W/kg; SAR(10 g) = 0.036 W/kg
Maximum value of SAR (measured) = 0.0820 W/kg



0 dB = 0.0820 W/kg = −10.86 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.3℃
Ambient Temperature: 21.5℃
Test Date: 05/03/2021
Plot No.: 3
DUT: SM-G990B/DS; Type: Bar;

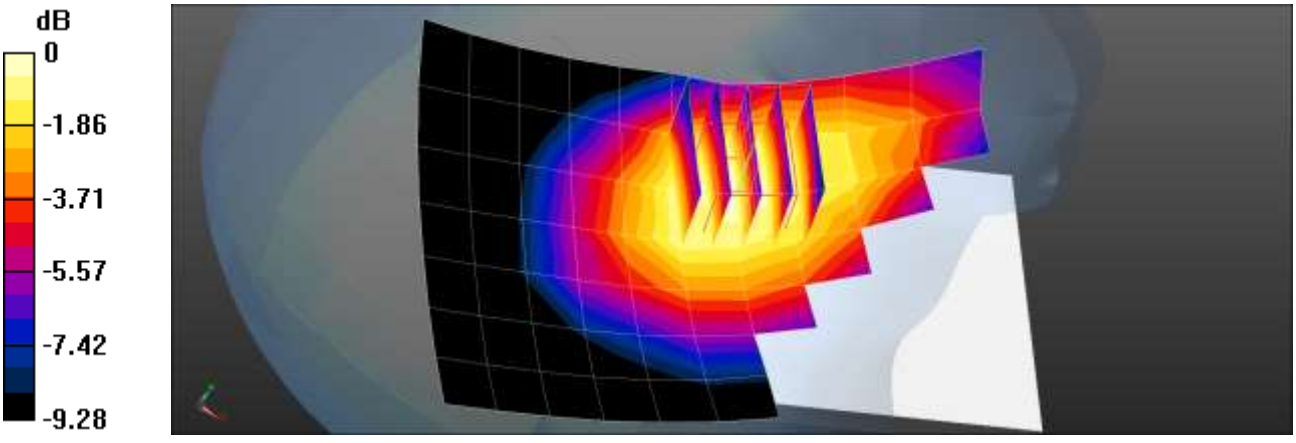
Communication System: UID 0, WCDMA850 (0); Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.916 S/m; ε_r = 42.014; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(9.75, 9.75, 9.75) @ 836.6 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

UMTS Band 5 Head Right Touch 4183ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.249 W/kg

UMTS Band 5 Head Right Touch 4183ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.652 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 0.276 W/kg
SAR(1 g) = 0.211 W/kg; SAR(10 g) = 0.158 W/kg
Maximum value of SAR (measured) = 0.249 W/kg



0 dB = 0.249 W/kg = −6.04 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.5℃
Ambient Temperature: 21.6℃
Test Date: 06/03/2021
Plot No.: 4

DUT: SM-G990B/DS; Type: Bar;

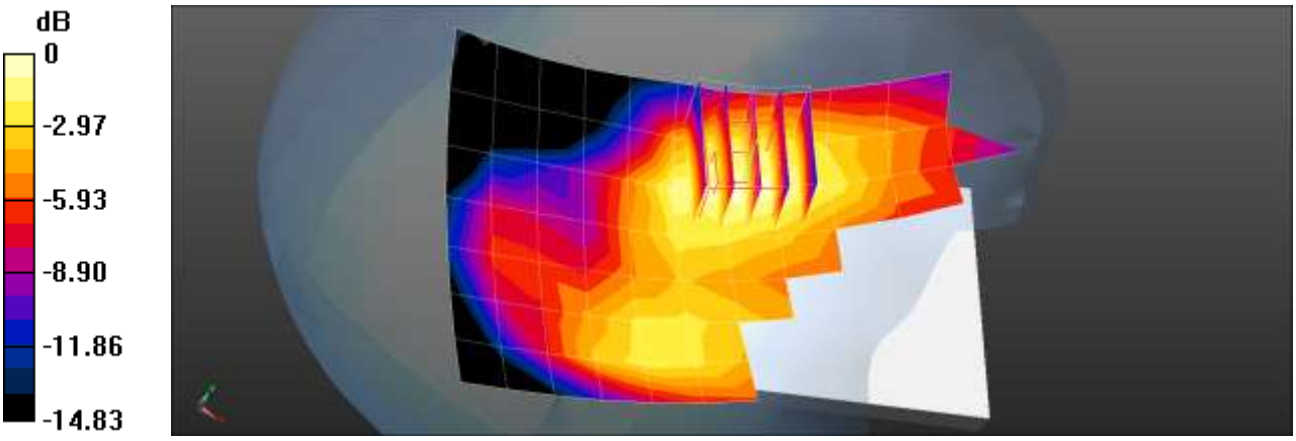
Communication System: UID 0, UMTSIV (0); Frequency: 1712.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1712.4 MHz; σ = 1.33 S/m; ε_r = 41.536; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.56, 8.56, 8.56) @ 1712.4 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

UMTS BAND 4 Head Right Touch 1312ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.191 W/kg

UMTS BAND 4 Head Right Touch 1312ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.382 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.229 W/kg
SAR(1 g) = 0.157 W/kg; SAR(10 g) = 0.105 W/kg
Maximum value of SAR (measured) = 0.201 W/kg



0 dB = 0.201 W/kg = −6.97 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.3℃
Ambient Temperature: 21.4℃
Test Date: 05/26/2021
Plot No.: 5

DUT: SM-G990B/DS; Type: Bar;

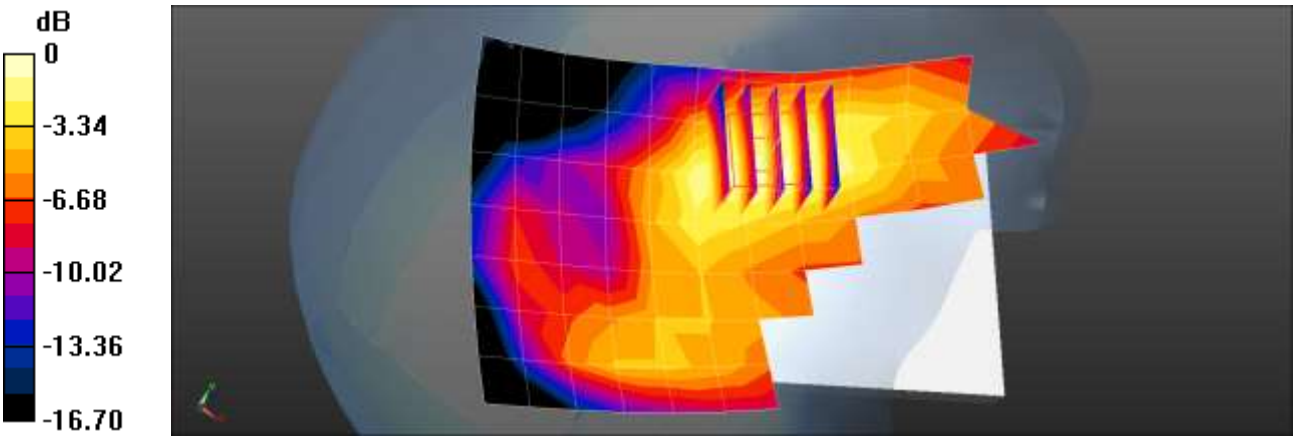
Communication System: UID 0, WCDMA1900 (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.419 S/m; ε_r = 41.515; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.19, 8.19, 8.19) @ 1880 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

UMTS BAND 2 Head Right Touch 9400ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.181 W/kg

UMTS BAND 2 Head Right Touch 9400ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.185 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 0.219 W/kg
SAR(1 g) = 0.142 W/kg; SAR(10 g) = 0.088 W/kg
Maximum value of SAR (measured) = 0.190 W/kg



0 dB = 0.190 W/kg = −7.21 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.0℃
Ambient Temperature: 21.1℃
Test Date: 05/28/2021
Plot No.: 6

DUT: SM-G990B/DS; Type: Bar;

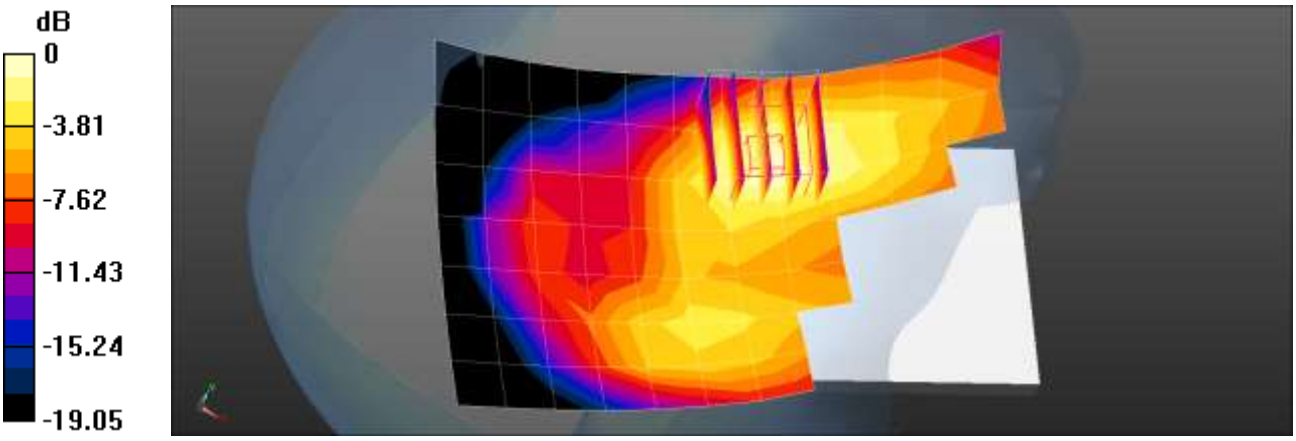
Communication System: UID 0, LTE Band 2 (0); Frequency: 1860 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1860 MHz; σ = 1.397 S/m; ε_r = 41.653; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.19, 8.19, 8.19) @ 1860 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

LTE Band 2 Head Right Touch QPSK 20MHz 1RB 49offset 18700ch/Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.164 W/kg

LTE Band 2 Head Right Touch QPSK 20MHz 1RB 49offset 18700ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.362 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 0.222 W/kg
SAR(1 g) = 0.141 W/kg; SAR(10 g) = 0.087 W/kg
Maximum value of SAR (measured) = 0.190 W/kg



0 dB = 0.190 W/kg = −7.21 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 22.1℃
Ambient Temperature: 22.2℃
Test Date: 05/04/2021
Plot No.: 7

DUT: SM-G990B/DS; Type: Bar;

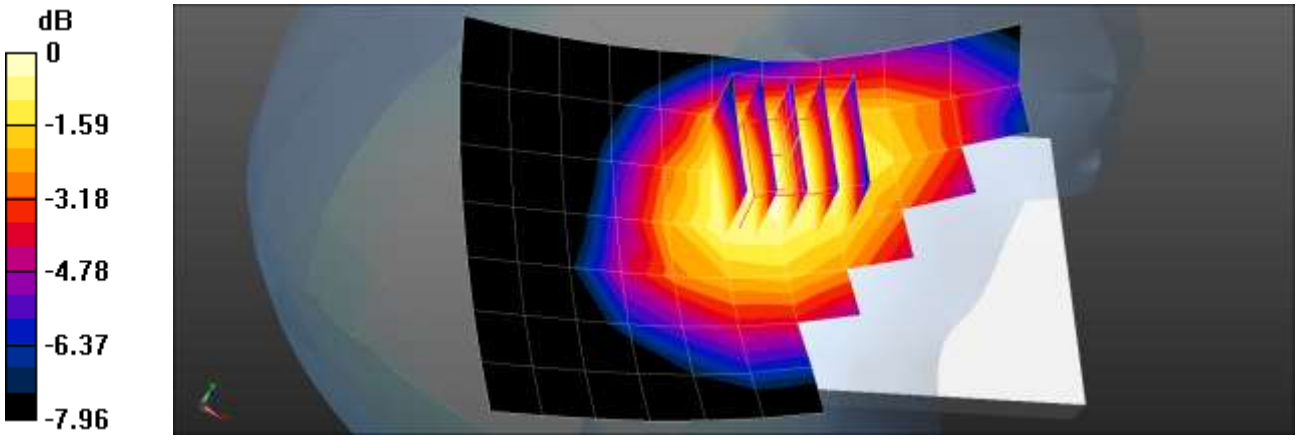
Communication System: UID 0, LTE 12 (0); Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 707.5 MHz; σ = 0.883 S/m; ε_r = 43.385; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(9.95, 9.95, 9.95) @ 707.5 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

LTE Band 12 Head Right Touch 10MHz QPSK 1RB 49offset 23095ch/Area Scan (8x13x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.137 W/kg

LTE Band 12 Head Right Touch 10MHz QPSK 1RB 49offset 23095ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.256 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.144 W/kg
SAR(1 g) = 0.121 W/kg; SAR(10 g) = 0.097 W/kg
Maximum value of SAR (measured) = 0.138 W/kg



0 dB = 0.138 W/kg = −8.60 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 22.0℃
Ambient Temperature: 22.1℃
Test Date: 05/05/2021
Plot No.: 8

DUT: SM-G990B/DS; Type: Bar;

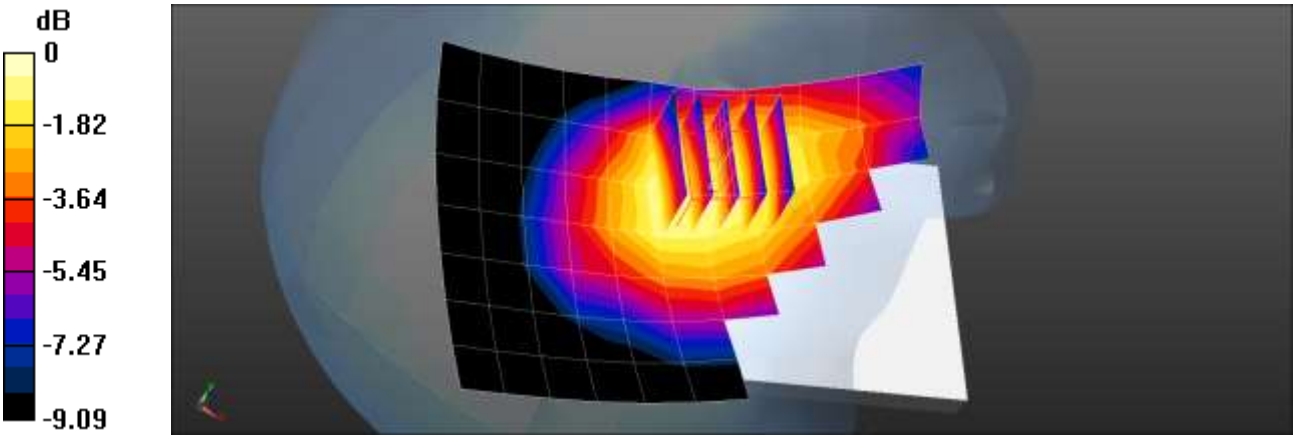
Communication System: UID 0, LTE Band 26 (0); Frequency: 831.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 831.5 MHz; σ = 0.91 S/m; ε_r = 42.076; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(9.75, 9.75, 9.75) @ 831.5 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

LTE Band 26 Head Right Touch 15MHz QPSK 1RB 0offset 26865ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.166 W/kg

LTE Band 26 Head Right Touch 15MHz QPSK 1RB 0offset 26865ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.566 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.181 W/kg
SAR(1 g) = 0.140 W/kg; SAR(10 g) = 0.107 W/kg
Maximum value of SAR (measured) = 0.166 W/kg



0 dB = 0.166 W/kg = −7.80 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.8℃
Ambient Temperature: 21.9℃
Test Date: 05/21/2021
Plot No.: 9

DUT: SM-G990B/DS; Type: Bar;

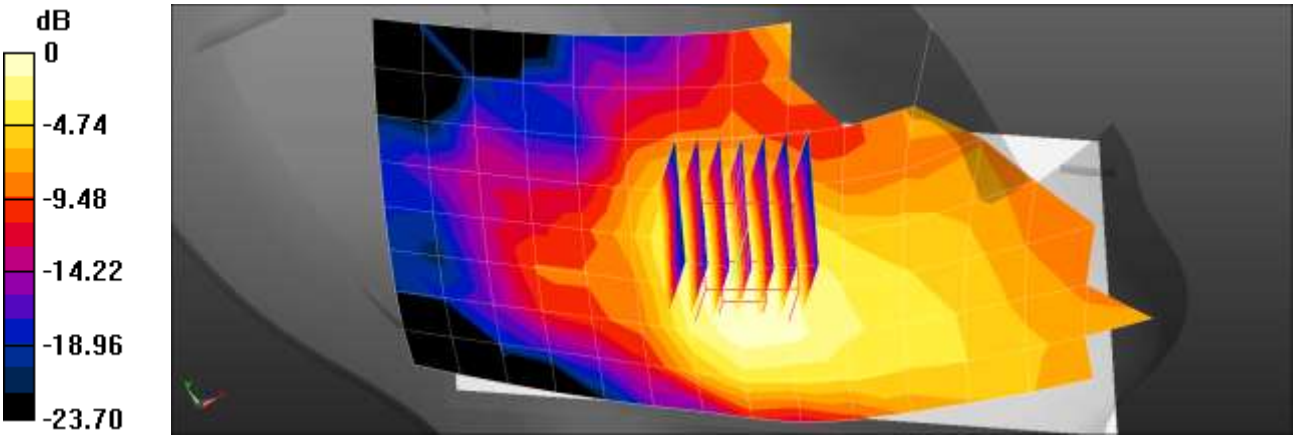
Communication System: UID 0, LTE Band41 (0); Frequency: 2593 MHz;Duty Cycle: 1:1.58052
Medium parameters used (interpolated): f = 2593 MHz; σ = 1.993 S/m; ε_r = 37.538; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3076; ConvF(4.5, 4.5, 4.5) @ 2593 MHz; Calibrated: 2020-07-31
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn648; Calibrated: 2020-05-25
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

LTE Band 41 Head Left Touch QPSK 20MHz 1RB 49offset 40620ch/Area Scan (9x16x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.135 W/kg

LTE Band 41 Head Left Touch QPSK 20MHz 1RB 49offset 40620ch/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.651 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.191 W/kg
SAR(1 g) = 0.111 W/kg; SAR(10 g) = 0.060 W/kg
Maximum value of SAR (measured) = 0.136 W/kg



0 dB = 0.136 W/kg = −8.66 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.8℃
Ambient Temperature: 20.9℃
Test Date: 06/01/2021
Plot No.: 10
DUT: SM-G990B/DS; Type: Bar;

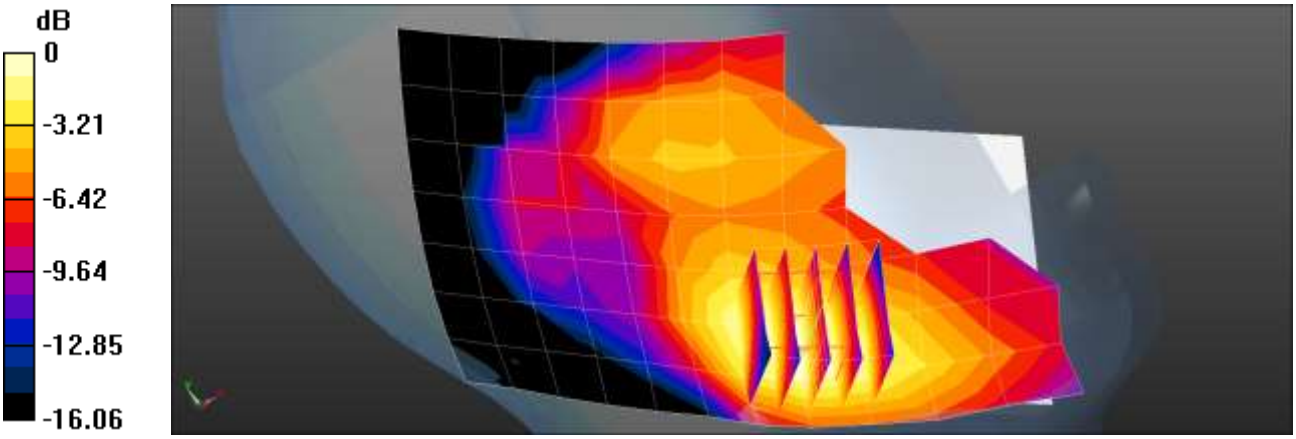
Communication System: UID 0, LTE Band 66 (0); Frequency: 1720 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1720 MHz; σ = 1.248 S/m; ε_r = 41.52; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.56, 8.56, 8.56) @ 1720 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

LTE Band 66 Head Left Touch QPSK 20MHz 1RB 49offset 132072ch/Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.115 W/kg

LTE Band 66 Head Left Touch QPSK 20MHz 1RB 49offset 132072ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.284 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.154 W/kg
SAR(1 g) = 0.103 W/kg; SAR(10 g) = 0.067 W/kg
Maximum value of SAR (measured) = 0.136 W/kg



0 dB = 0.136 W/kg = −8.66 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.1℃
Ambient Temperature: 20.2℃
Test Date: 05/11/2021
Plot No.: 11
DUT: SM-G990B/DS; Type: Bar;

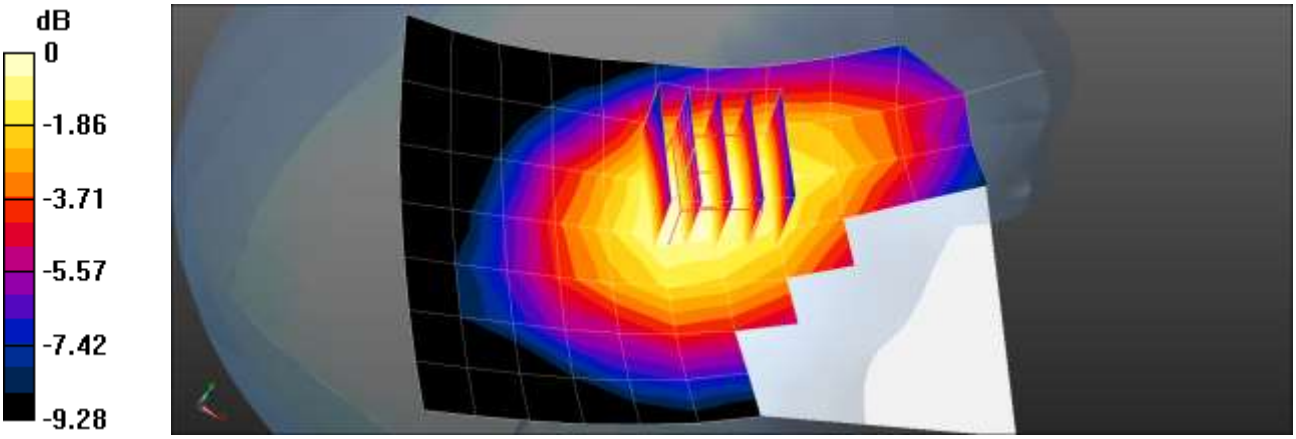
Communication System: UID 0, NR n5 (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.914 S/m; ε_r = 42.039; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(9.75, 9.75, 9.75) @ 836.5 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

NR Band 5 Head Right Touch DFT-s 20MHz QPSK 1RB 53offset 167300ch/Area Scan (8x13x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.248 W/kg

NR Band 5 Head Right Touch DFT-s 20MHz QPSK 1RB 53offset 167300ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.588 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.275 W/kg
SAR(1 g) = 0.214 W/kg; SAR(10 g) = 0.163 W/kg
Maximum value of SAR (measured) = 0.251 W/kg



0 dB = 0.251 W/kg = −6.00 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.8℃
Ambient Temperature: 20.9℃
Test Date: 05/27/2021
Plot No.: 12
DUT: SM-G990B/DS; Type: Bar;

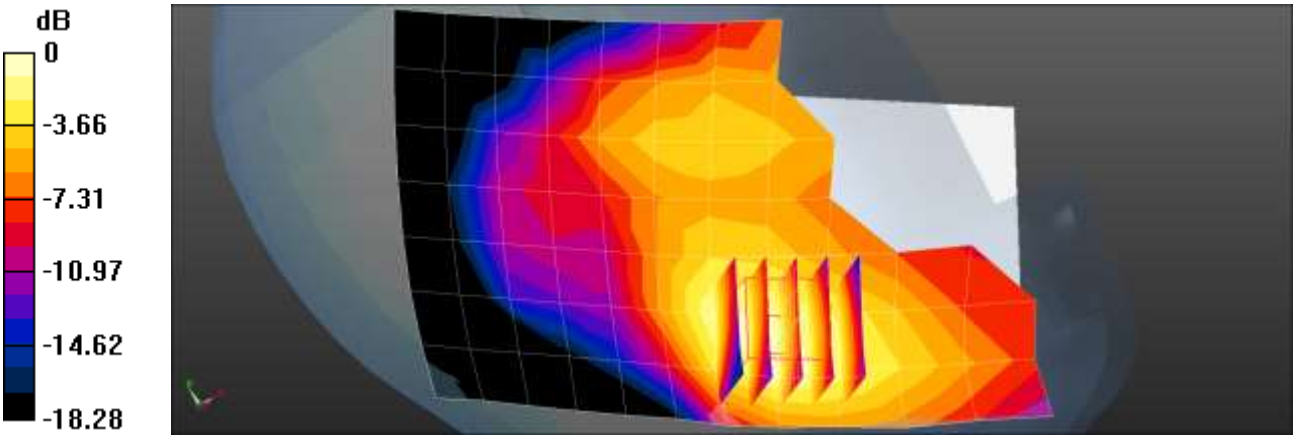
Communication System: UID 0, NR Band 66 (0); Frequency: 1720 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1720 MHz; σ = 1.341 S/m; ε_r = 41.516; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.56, 8.56, 8.56) @ 1720 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

NR Band n66 Head Left Touch DFT-s QPSK 20MHz 1RB 1offset 344000ch/Area Scan (8x14x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.187 W/kg

NR Band n66 Head Left Touch DFT-s QPSK 20MHz 1RB 1offset 344000ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.567 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 0.246 W/kg
SAR(1 g) = 0.168 W/kg; SAR(10 g) = 0.109 W/kg
Maximum value of SAR (measured) = 0.220 W/kg



0 dB = 0.220 W/kg = −6.58 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.4℃
Ambient Temperature: 20.5℃
Test Date: 05/28/2021
Plot No.: 13

DUT: SM-G990B/DS; Type: Bar;

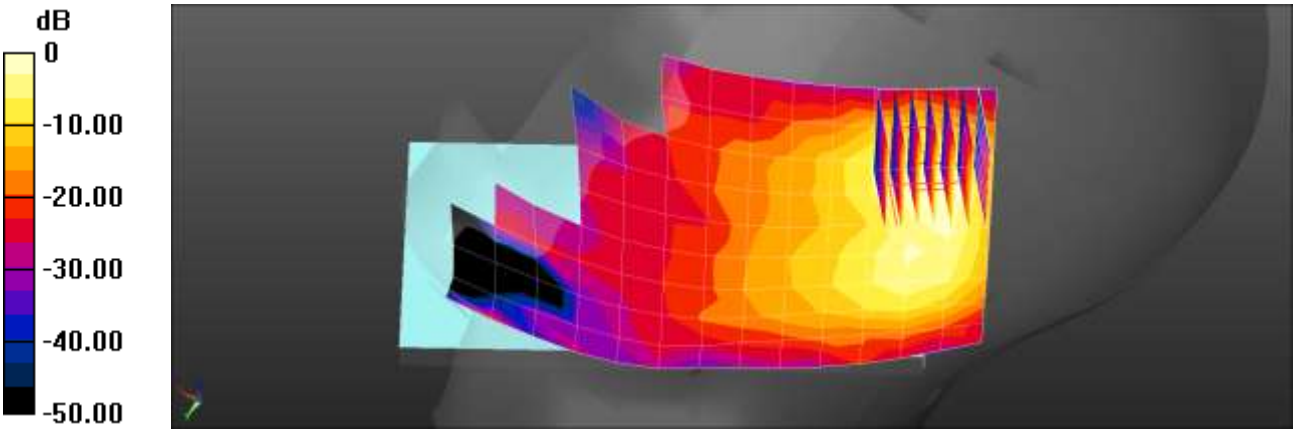
Communication System: UID 0, 2450MHz FCC (0); Frequency: 2412 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2412 MHz; σ = 1.775 S/m; ε_r = 38.056; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.34, 7.34, 7.34) @ 2412 MHz; Calibrated: 2020-11-25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn446; Calibrated: 2020-07-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

802.11b Head Right Tilt 1Mbps 1ch/Area Scan (10x17x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.694 W/kg

802.11b Head Right Tilt 1Mbps 1ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.24 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.30 W/kg
SAR(1 g) = 0.491 W/kg; SAR(10 g) = 0.191 W/kg
Maximum value of SAR (measured) = 0.965 W/kg



0 dB = 0.694 W/kg = −1.58 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 19.6℃
Ambient Temperature: 19.7℃
Test Date: 06/04/2021
Plot No.: 14

DUT: SM-G990B/DS; Type: Bar;

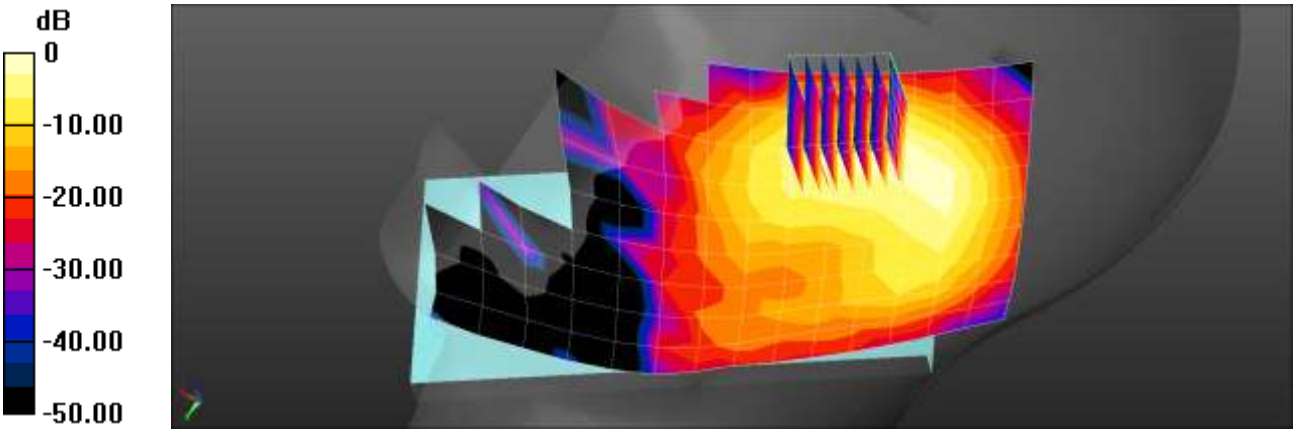
Communication System: UID 0, 2450MHz FCC (0); Frequency: 2412 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2412 MHz; σ = 1.782 S/m; ε_r = 37.994; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.34, 7.34, 7.34) @ 2412 MHz; Calibrated: 2020-11-25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn446; Calibrated: 2020-07-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

802.11g Head Right Touch 6Mbps 1ch/Area Scan (10x17x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.823 W/kg

802.11g Head Right Touch 6Mbps 1ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.51 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 1.43 W/kg
SAR(1 g) = 0.473 W/kg; SAR(10 g) = 0.194 W/kg
Maximum value of SAR (measured) = 1.02 W/kg



0 dB = 0.823 W/kg = −0.85 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	22.2℃
Ambient Temperature:	22.3℃
Test Date:	06/07/2021
Plot No.:	15

DUT: SM-G990B/DS; Type: Bar;

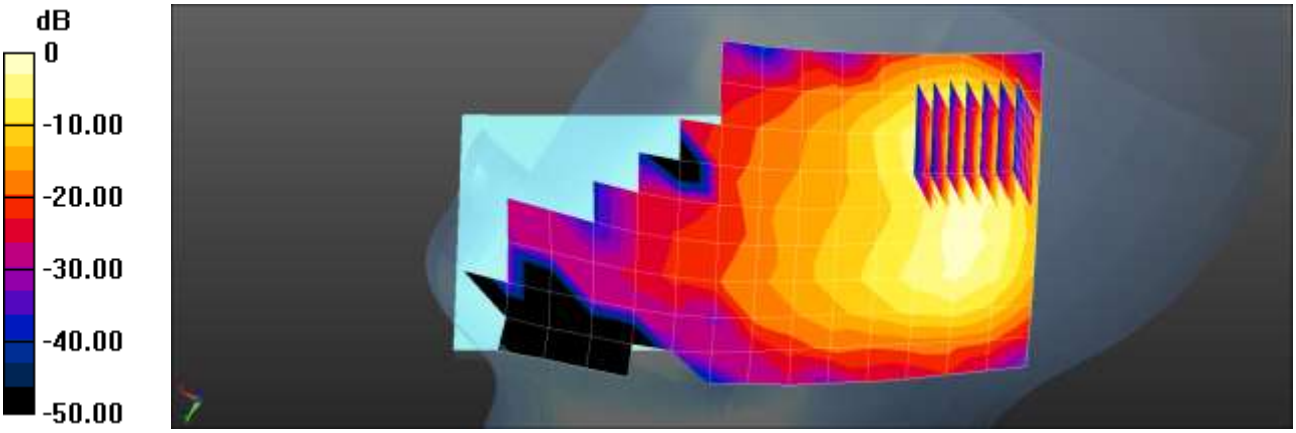
Communication System: UID 0, 2450MHz FCC (0); Frequency: 2412 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2412 MHz; σ = 1.775 S/m; ε_r = 38.046; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(7.47, 7.47, 7.47) @ 2412 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

802.11b Head Right Tilt 1Mbps 1ch/Area Scan (10x16x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.436 W/kg

802.11b Head Right Tilt 1Mbps 1ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.81 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.07 W/kg
SAR(1 g) = 0.400 W/kg; SAR(10 g) = 0.153 W/kg
Maximum value of SAR (measured) = 0.769 W/kg



0 dB = 0.436 W/kg = −3.61 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	21.3℃
Ambient Temperature:	21.5℃
Test Date:	06/08/2021
Plot No.:	16

DUT: SM-G990B/DS; Type: Bar;

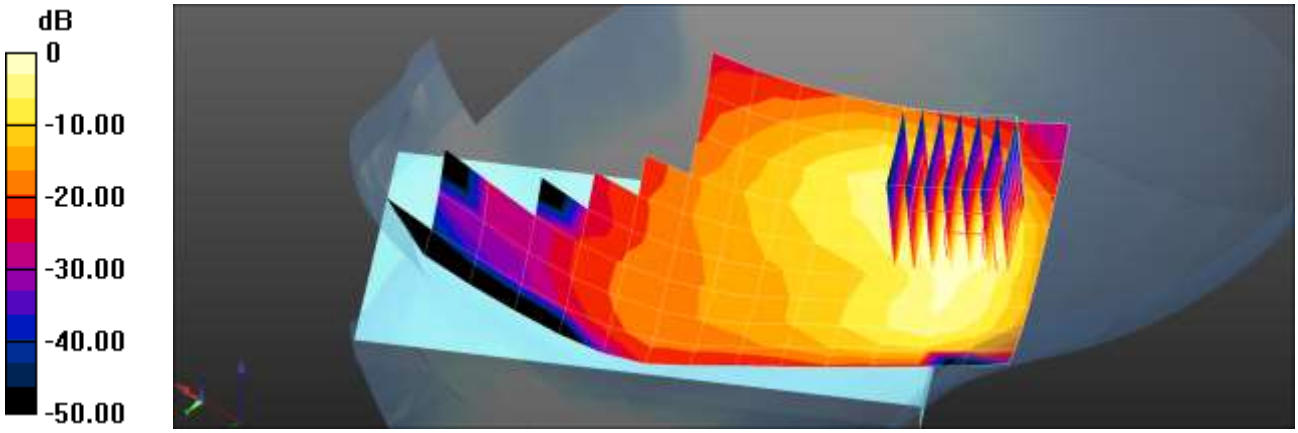
Communication System: UID 0, 2450MHz FCC (0); Frequency: 2412 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2412 MHz; σ = 1.781 S/m; ε_r = 39.017; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(7.47, 7.47, 7.47) @ 2412 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

802.11g Head Right Tilt 6Mbps 1ch/Area Scan (10x16x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.556 W/kg

802.11g Head Right Tilt 6Mbps 1ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.43 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.02 W/kg
SAR(1 g) = 0.397 W/kg; SAR(10 g) = 0.163 W/kg
Maximum value of SAR (measured) = 0.711 W/kg



0 dB = 0.556 W/kg = −2.55 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.3℃
Ambient Temperature: 20.4℃
Test Date: 06/01/2021
Plot No.: 17

DUT: SM-G990B/DS; Type: Bar;

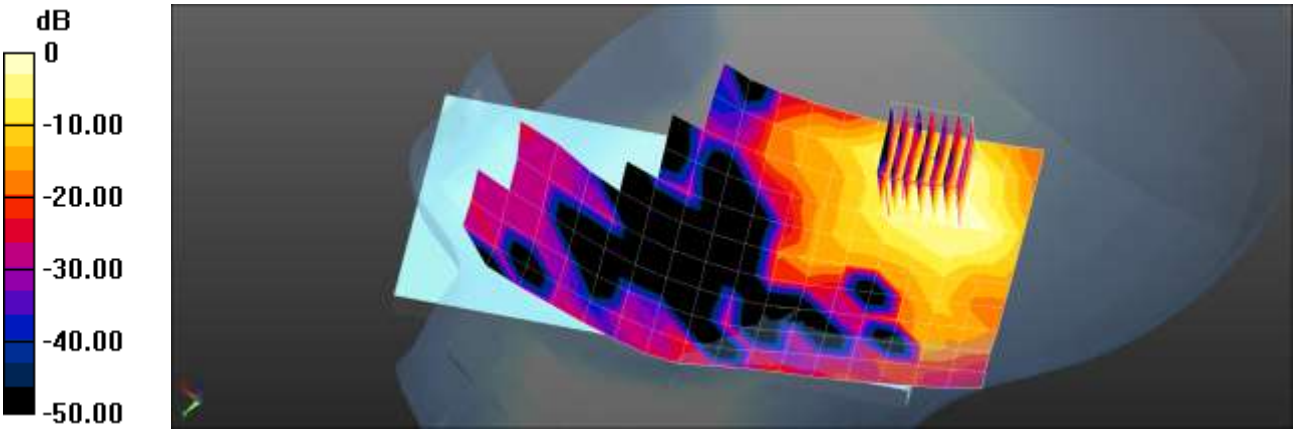
Communication System: UID 0, WiFI5GHz ac80 (0); Frequency: 5290 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5290 MHz; σ = 4.798 S/m; ε_r = 36.293; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7352; ConvF(5.53, 5.53, 5.53) @ 5290 MHz; Calibrated: 2020-10-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2020-08-07
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

802.11ac80 Head Right Touch MCS0 58ch/Area Scan (11x19x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.920 W/kg

802.11ac80 Head Right Touch MCS0 58ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 4.441 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.83 W/kg
SAR(1 g) = 0.430 W/kg; SAR(10 g) = 0.146 W/kg
Maximum value of SAR (measured) = 1.11 W/kg



0 dB = 0.920 W/kg = −0.36 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	20.6℃
Ambient Temperature:	20.7℃
Test Date:	05/28/2021
Plot No.:	18

DUT: SM-G990B/DS; Type: Bar;

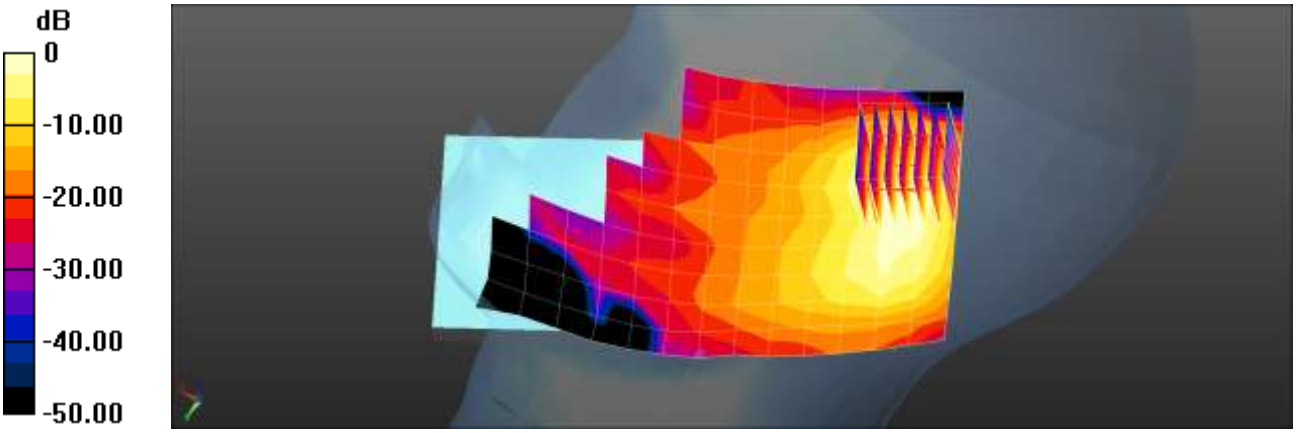
Communication System: UID 0, Bluetooth (0); Frequency: 2402 MHz;Duty Cycle: 1:1.302
Medium parameters used (interpolated): f = 2402 MHz; σ = 1.76 S/m; ε_r = 38.064; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(7.78, 7.78, 7.78) @ 2402 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.8 (7)

Bluetooth Head Right Tilt DH-5 0ch/Area Scan (10x16x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.427 W/kg

Bluetooth Head Right Tilt DH-5 0ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.50 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.865 W/kg
SAR(1 g) = 0.344 W/kg; SAR(10 g) = 0.135 W/kg
Maximum value of SAR (measured) = 0.667 W/kg



0 dB = 0.427 W/kg = −3.69 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	22.7℃
Ambient Temperature:	22.9℃
Test Date:	05/06/2021
Plot No.:	19

DUT: SM-G990B/DS; Type: Bar;

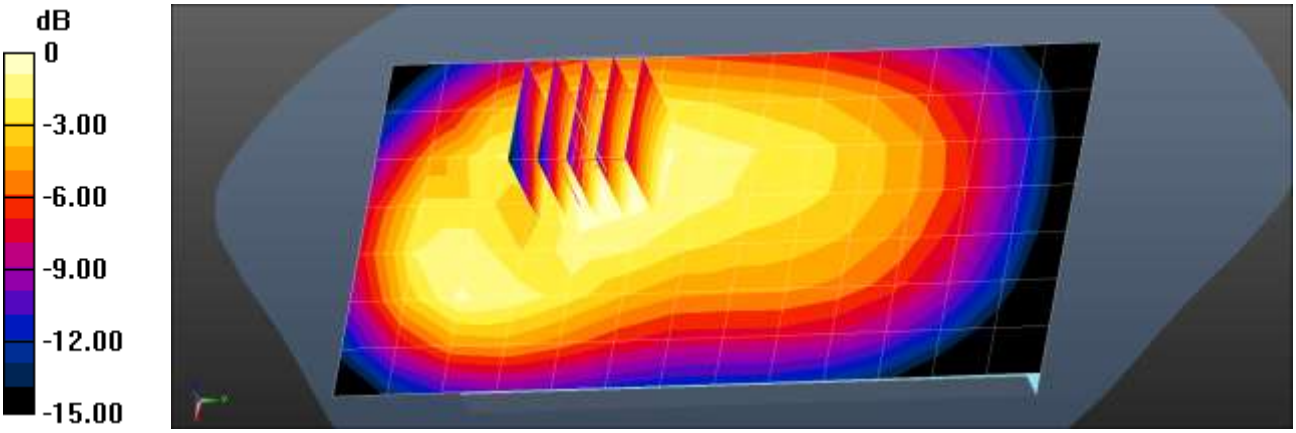
Communication System: UID 0, GSM 850 (0); Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.916 S/m; ε_r = 42.077; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(9.75, 9.75, 9.75) @ 836.6 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

GSM 850 BodyWorn Rear 190ch/Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.446 W/kg

GSM 850 BodyWorn Rear 190ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.10 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.517 W/kg
SAR(1 g) = 0.366 W/kg; SAR(10 g) = 0.258 W/kg
Maximum value of SAR (measured) = 0.466 W/kg



0 dB = 0.466 W/kg = −3.32 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	22.7℃
Ambient Temperature:	22.9℃
Test Date:	05/06/2021
Plot No.:	20

DUT: SM-G990B/DS; Type: Bar;

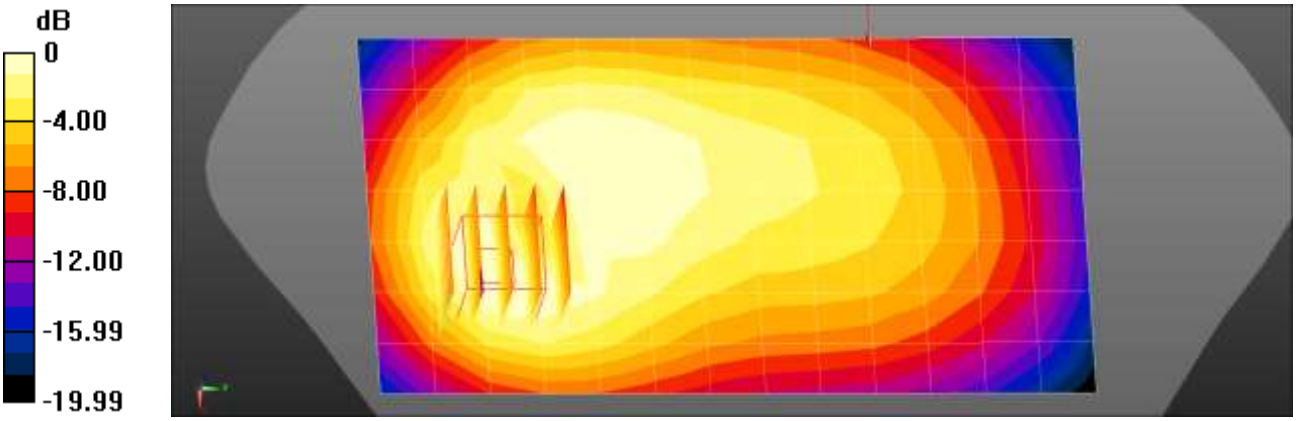
Communication System: UID 0, GSM850 GPRS 2TX (0); Frequency: 836.6 MHz;Duty Cycle: 1:4.14954
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.916 S/m; ε_r = 42.077; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(9.75, 9.75, 9.75) @ 836.6 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

GSM 850 BodyWorn Rear 2Tx 190ch/Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.586 W/kg

GSM 850 BodyWorn Rear 2Tx 190ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.48 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 0.746 W/kg
SAR(1 g) = 0.442 W/kg; SAR(10 g) = 0.265 W/kg
Maximum value of SAR (measured) = 0.637 W/kg



0 dB = 0.586 W/kg = −2.32 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.8℃
Ambient Temperature: 21.9℃
Test Date: 05/24/2021
Plot No.: 21

DUT: SM-G990B/DS; Type: Bar;

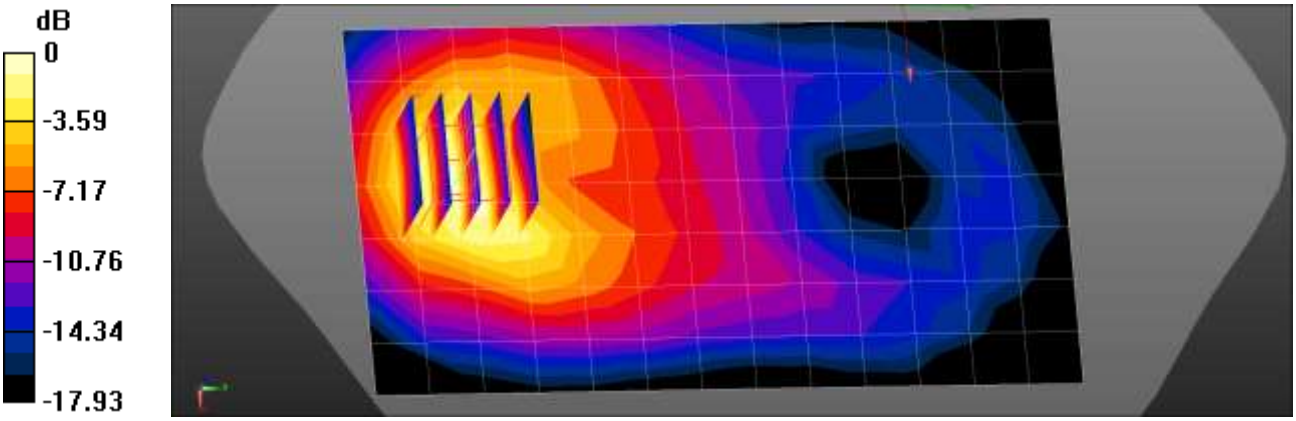
Communication System: UID 0, GSM 1900 2TX (0); Frequency: 1880 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 1880 MHz; σ = 1.419 S/m; ε_r = 41.499; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.19, 8.19, 8.19) @ 1880 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

GSM1900 BodyWorn Rear 2Tx 661ch/Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.354 W/kg

GSM1900 BodyWorn Rear 2Tx 661ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.662 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.432 W/kg
SAR(1 g) = 0.254 W/kg; SAR(10 g) = 0.142 W/kg
Maximum value of SAR (measured) = 0.368 W/kg



0 dB = 0.368 W/kg = −4.34 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	21.3℃
Ambient Temperature:	21.5℃
Test Date:	05/03/2021
Plot No.:	22

DUT: SM-G990B/DS; Type: Bar;

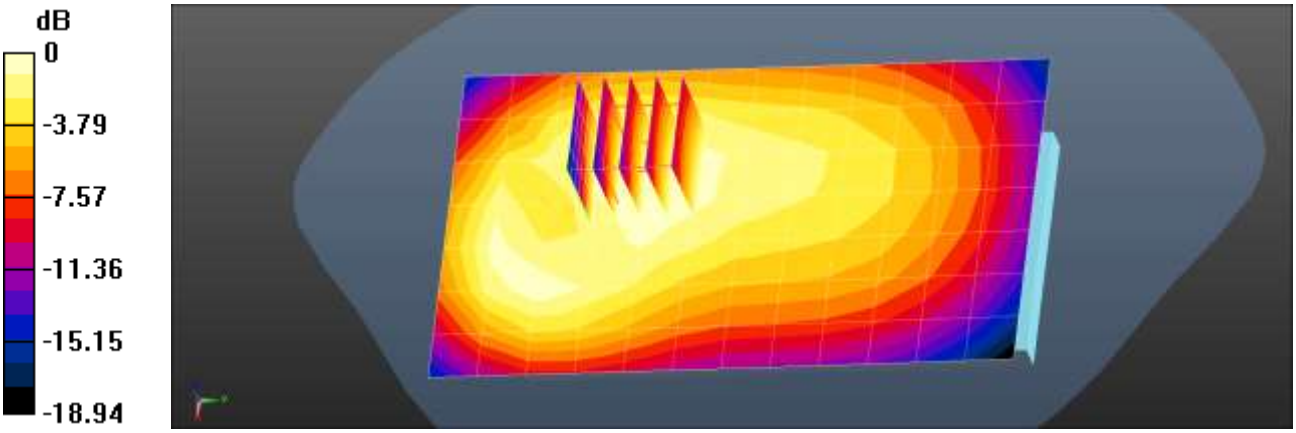
Communication System: UID 0, WCDMA850 (0); Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.916 S/m; ε_r = 42.014; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(9.75, 9.75, 9.75) @ 836.6 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

UMTS Band 5 Body Worn Rear 4183ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.467 W/kg

UMTS Band 5 BodyWorn Rear 4183ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.50 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.548 W/kg
SAR(1 g) = 0.386 W/kg; SAR(10 g) = 0.270 W/kg
Maximum value of SAR (measured) = 0.489 W/kg



0 dB = 0.467 W/kg = −3.31 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	21.5℃
Ambient Temperature:	21.6℃
Test Date:	06/03/2021
Plot No.:	23

DUT: SM-G990B/DS; Type: Bar;

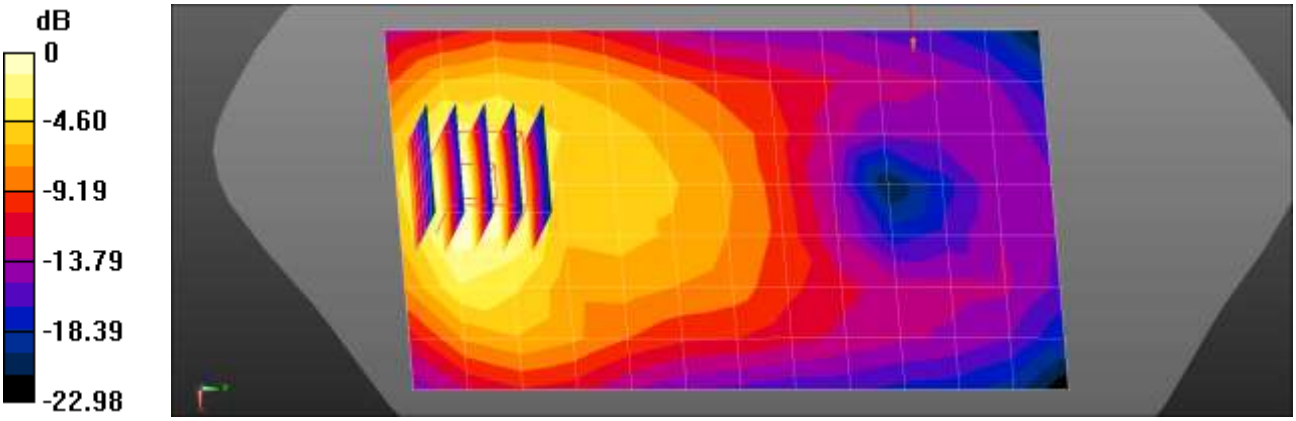
Communication System: UID 0, UMTSIV (0); Frequency: 1712.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1712.4 MHz; σ = 1.33 S/m; ε_r = 41.536; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.56, 8.56, 8.56) @ 1712.4 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

UMTS BAND 4 BodyWorn Rear 1312ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.680 W/kg

UMTS BAND 4 BodyWorn Rear 1312ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.065 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.884 W/kg
SAR(1 g) = 0.535 W/kg; SAR(10 g) = 0.313 W/kg
Maximum value of SAR (measured) = 0.765 W/kg



0 dB = 0.680 W/kg = −1.68 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.3℃
Ambient Temperature: 21.4℃
Test Date: 05/26/2021
Plot No.: 24

DUT: SM-G990B/DS; Type: Bar;

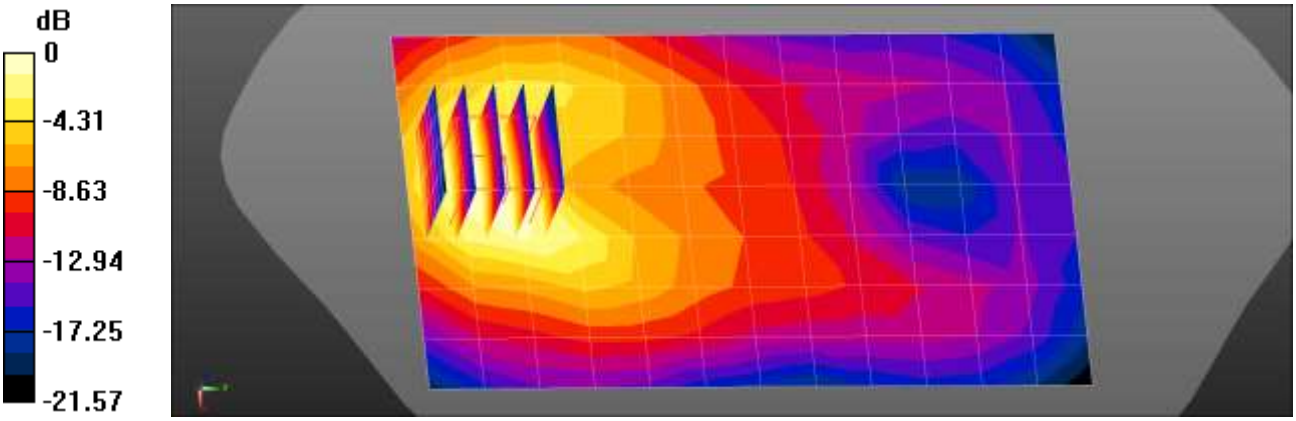
Communication System: UID 0, WCDMA1900 (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.419 S/m; ε_r = 41.515; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.19, 8.19, 8.19) @ 1880 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

UMTSB2 BodyWorn Rear 9400ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.382 W/kg

UMTSB2 BodyWorn Rear 9400ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.835 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.511 W/kg
SAR(1 g) = 0.296 W/kg; SAR(10 g) = 0.167 W/kg
Maximum value of SAR (measured) = 0.432 W/kg



0 dB = 0.382 W/kg = −4.18 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.0℃
Ambient Temperature: 21.1℃
Test Date: 05/28/2021
Plot No.: 25

DUT: SM-G990B/DS; Type: Bar;

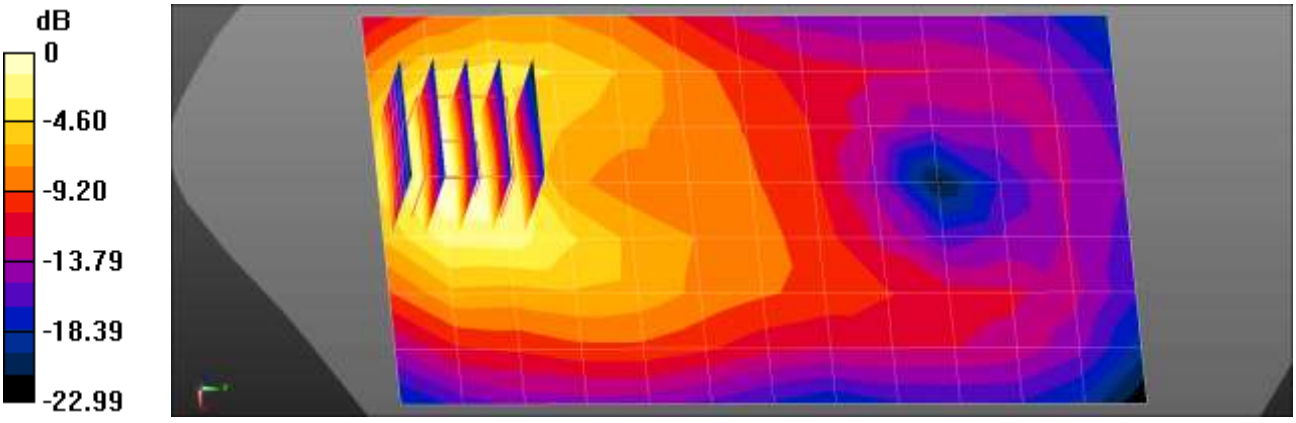
Communication System: UID 0, LTE Band 2 (0); Frequency: 1860 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1860 MHz; σ = 1.397 S/m; ε_r = 41.653; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.19, 8.19, 8.19) @ 1860 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

LTE Band 2 BodyWorn Rear QPSK 20MHz 1RB 49offset 18700ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.435 W/kg

LTE Band 2 BodyWorn Rear QPSK 20MHz 1RB 49offset 18700ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.088 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.530 W/kg
SAR(1 g) = 0.312 W/kg; SAR(10 g) = 0.178 W/kg
Maximum value of SAR (measured) = 0.452 W/kg



0 dB = 0.435 W/kg = −3.61 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	22.1℃
Ambient Temperature:	22.2℃
Test Date:	05/04/2021
Plot No.:	26

DUT: SM-G990B/DS; Type: Bar;

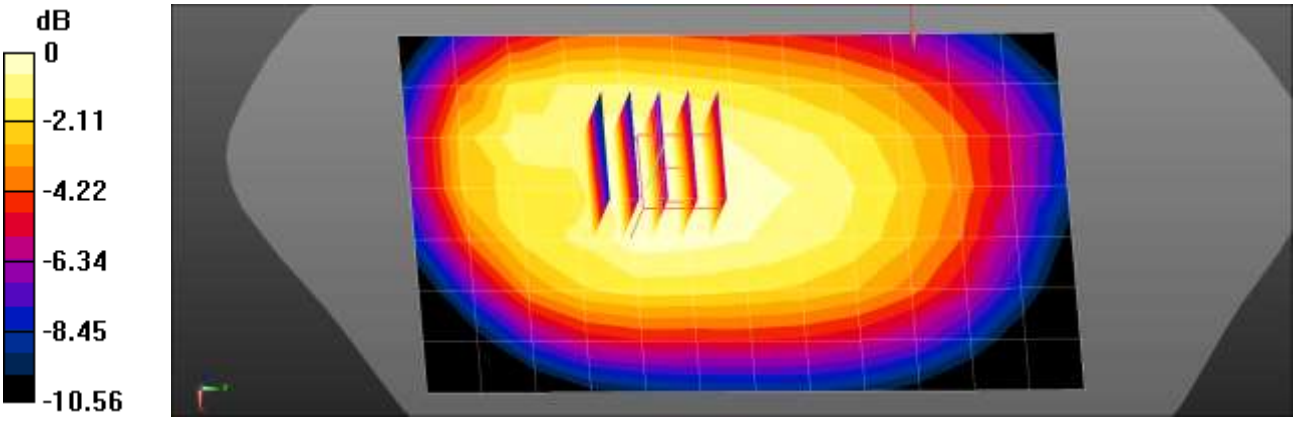
Communication System: UID 0, LTE 12 (0); Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 707.5 MHz; σ = 0.883 S/m; ε_r = 43.385; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(9.95, 9.95, 9.95) @ 707.5 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

LTE Band 12 BodyWorn Front 10MHz QPSK 1RB 49offset 23095ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.212 W/kg

LTE Band 12 BodyWorn Front 10MHz QPSK 1RB 49offset 23095ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.44 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.232 W/kg
SAR(1 g) = 0.183 W/kg; SAR(10 g) = 0.140 W/kg
Maximum value of SAR (measured) = 0.216 W/kg



0 dB = 0.216 W/kg = −6.66 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	22.0℃
Ambient Temperature:	22.1℃
Test Date:	05/05/2021
Plot No.:	27

DUT: SM-G990B/DS; Type: Bar;

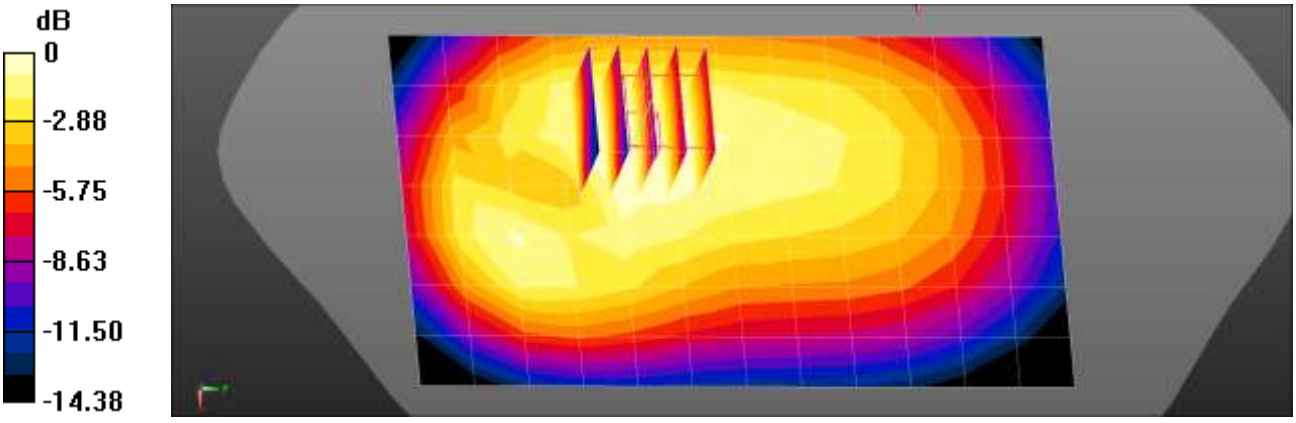
Communication System: UID 0, LTE Band 26 (0); Frequency: 831.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 831.5 MHz; σ = 0.91 S/m; ε_r = 42.076; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(9.75, 9.75, 9.75) @ 831.5 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

LTE Band 26 BodyWorn Rear 15MHz QPSK 1RB 0offset 26865ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.255 W/kg

LTE Band 26 BodyWorn Rear 15MHz QPSK 1RB 0offset 26865ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.90 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.286 W/kg
SAR(1 g) = 0.204 W/kg; SAR(10 g) = 0.146 W/kg
Maximum value of SAR (measured) = 0.257 W/kg



0 dB = 0.257 W/kg = −5.90 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.8℃
Ambient Temperature: 21.9℃
Test Date: 05/21/2021
Plot No.: 28

DUT: SM-G990B/DS; Type: Bar;

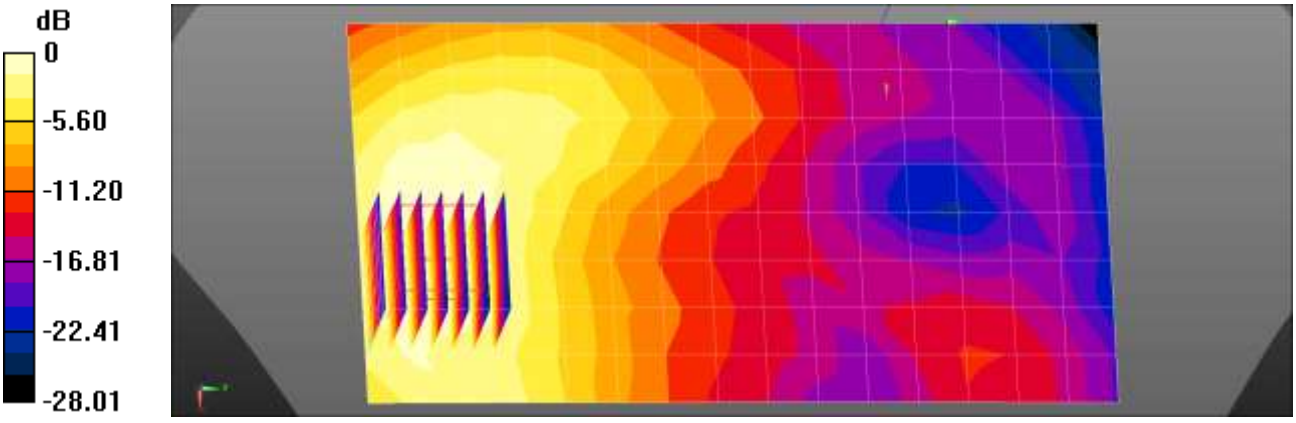
Communication System: UID 0, LTE Band41 (0); Frequency: 2593 MHz;Duty Cycle: 1:1.58052
Medium parameters used (interpolated): f = 2593 MHz; σ = 1.993 S/m; ε_r = 37.538; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3076; ConvF(4.5, 4.5, 4.5) @ 2593 MHz; Calibrated: 2020-07-31
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn648; Calibrated: 2020-05-25
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

LTE Band 41 BodyWorn Rear QPSK 20MHz 1RB 49offset 40620ch/Area Scan (9x16x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.297 W/kg

LTE Band 41 BodyWorn Rear QPSK 20MHz 1RB 49offset 40620ch/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.667 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.492 W/kg
SAR(1 g) = 0.254 W/kg; SAR(10 g) = 0.139 W/kg
Maximum value of SAR (measured) = 0.318 W/kg



0 dB = 0.297 W/kg = −5.28 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	20.8℃
Ambient Temperature:	20.9℃
Test Date:	06/01/2021
Plot No.:	29

DUT: SM-G990B/DS; Type: Bar;

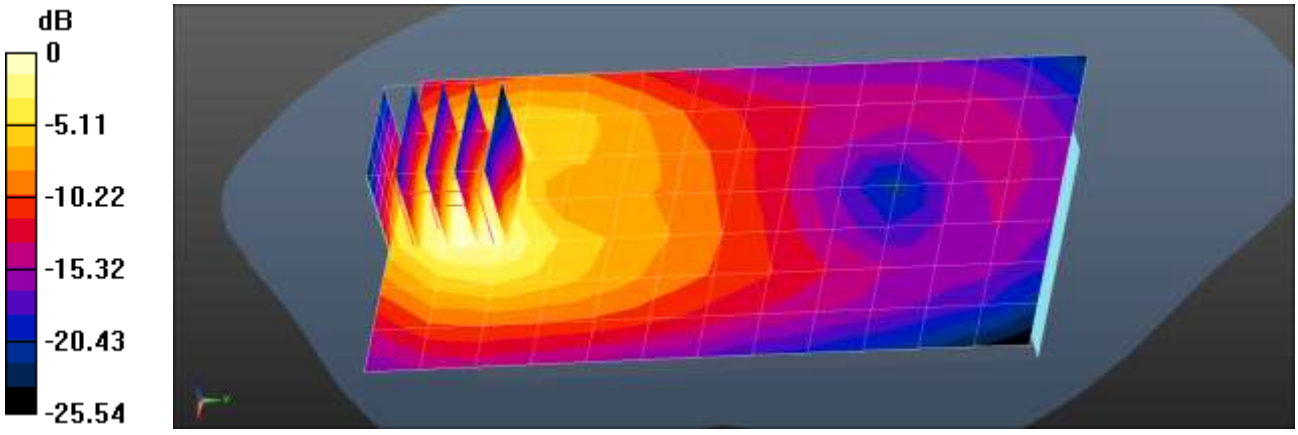
Communication System: UID 0, LTE Band 66(20MHz FCC) (0); Frequency: 1720 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1720 MHz; σ = 1.248 S/m; ε_r = 41.52; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.56, 8.56, 8.56) @ 1720 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

LTE Band 66 BodyWorn Rear QPSK 20MHz 1RB 49offset 132072ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.604 W/kg

LTE Band 66 BodyWorn Rear QPSK 20MHz 1RB 49offset 132072ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.712 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.727 W/kg
SAR(1 g) = 0.438 W/kg; SAR(10 g) = 0.250 W/kg
Maximum value of SAR (measured) = 0.618 W/kg



0 dB = 0.604 W/kg = −2.19 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.1℃
Ambient Temperature: 20.2℃
Test Date: 05/11/2021
Plot No.: 30

DUT: SM-G990B/DS; Type: Bar;

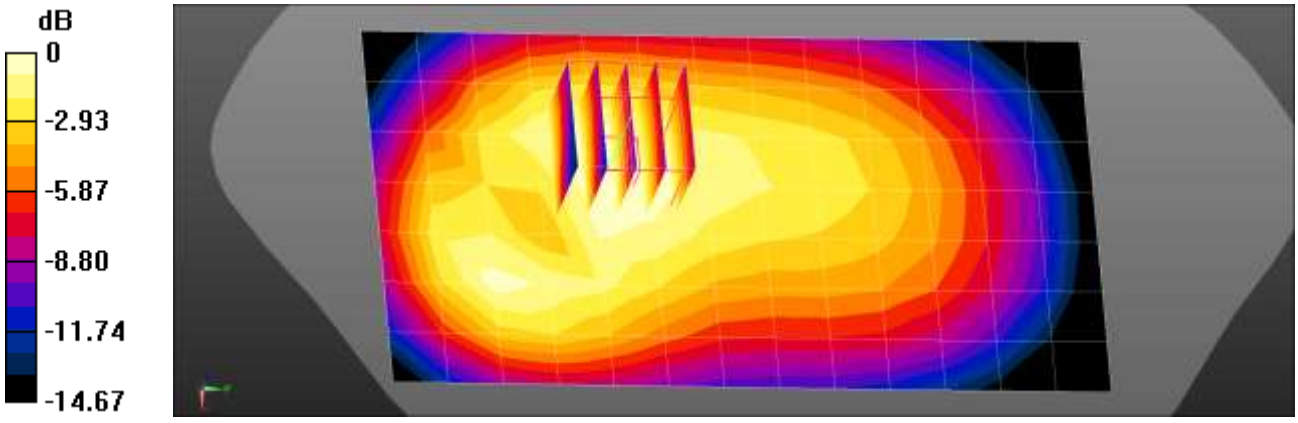
Communication System: UID 0, NR n5 (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.914 S/m; ε_r = 42.039; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(9.75, 9.75, 9.75) @ 836.5 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

NR Band 5 BodyWorn Rear DFT-s 20MHz QPSK 1RB 53offset 167300ch/Area Scan (8x14x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.454 W/kg

NR Band 5 BodyWorn Rear DFT-s 20MHz QPSK 1RB 53offset 167300ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.45 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.529 W/kg
SAR(1 g) = 0.371 W/kg; SAR(10 g) = 0.261 W/kg
Maximum value of SAR (measured) = 0.472 W/kg



0 dB = 0.472 W/kg = −3.26 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.8℃
Ambient Temperature: 20.9℃
Test Date: 05/27/2021
Plot No.: 31

DUT: SM-G990B/DS; Type: Bar;

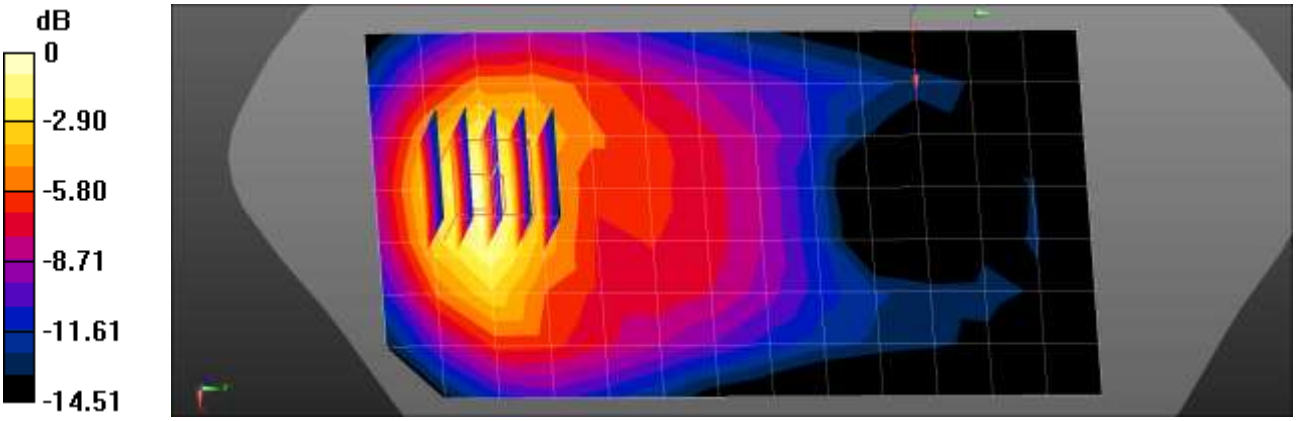
Communication System: UID 0, NR Band 66 (0); Frequency: 1720 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1720 MHz; σ = 1.341 S/m; ε_r = 41.516; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.56, 8.56, 8.56) @ 1720 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

NR Band n66 BodyWorn Rear DFT-s QPSK 20MHz 1RB 1offset 344000ch/Area Scan (8x14x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.411 W/kg

NR Band n66 BodyWorn Rear DFT-s QPSK 20MHz 1RB 1offset 344000ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.265 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.480 W/kg
SAR(1 g) = 0.296 W/kg; SAR(10 g) = 0.177 W/kg
Maximum value of SAR (measured) = 0.416 W/kg



0 dB = 0.416 W/kg = −3.81 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	20.4℃
Ambient Temperature:	20.5℃
Test Date:	05/28/2021
Plot No.:	32

DUT: SM-G990B/DS; Type: Bar;

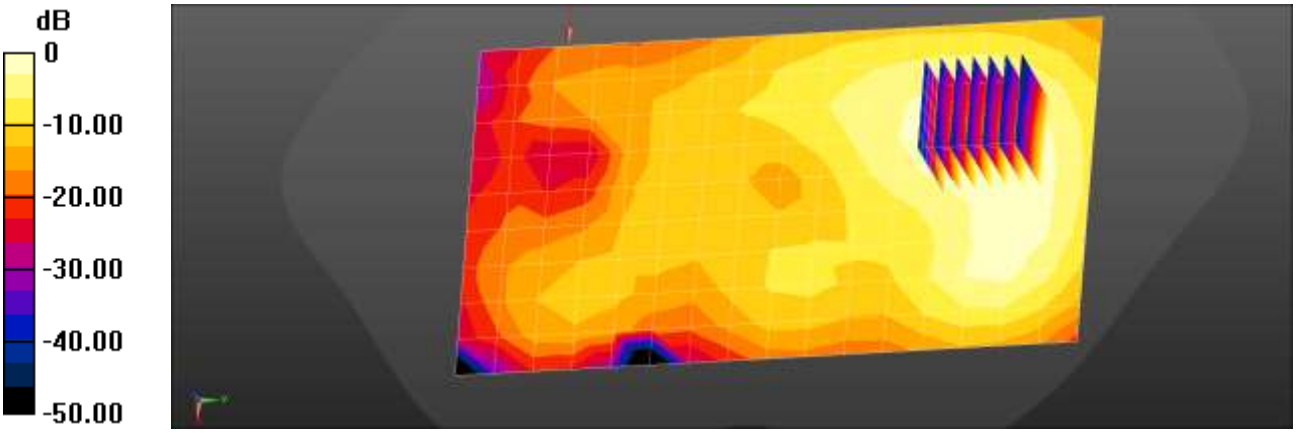
Communication System: UID 0, 2450MHz FCC (0); Frequency: 2412 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2412 MHz; σ = 1.775 S/m; ε_r = 38.056; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.34, 7.34, 7.34) @ 2412 MHz; Calibrated: 2020-11-25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn446; Calibrated: 2020-07-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

802.11b BodyWorn Rear 1Mbps 1ch/Area Scan (10x17x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.397 W/kg

802.11b BodyWorn Rear 1Mbps 1ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.860 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.509 W/kg
SAR(1 g) = 0.275 W/kg; SAR(10 g) = 0.152 W/kg
Maximum value of SAR (measured) = 0.418 W/kg



0 dB = 0.397 W/kg = −4.02 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	21.3℃
Ambient Temperature:	21.5℃
Test Date:	06/08/2021
Plot No.:	33

DUT: SM-G990B/DS; Type: Bar;

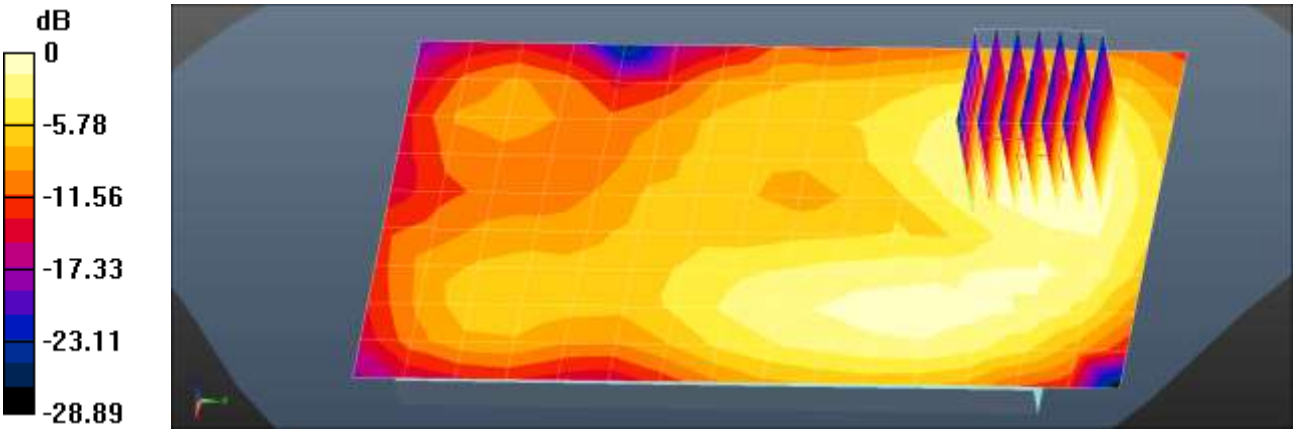
Communication System: UID 0, 2450MHz FCC (0); Frequency: 2412 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2412 MHz; σ = 1.781 S/m; ε_r = 39.017; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(7.47, 7.47, 7.47) @ 2412 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

802.11g BodyWorn Rear 6Mbps 1ch/Area Scan (10x16x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.0980 W/kg

802.11g BodyWorn Rear 6Mbps 1ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.437 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.127 W/kg
SAR(1 g) = 0.065 W/kg; SAR(10 g) = 0.035 W/kg
Maximum value of SAR (measured) = 0.103 W/kg



0 dB = 0.0980 W/kg = −10.09 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	21.9℃
Ambient Temperature:	22.0℃
Test Date:	05/28/2021
Plot No.:	34

DUT: SM-G990B/DS; Type: Bar;

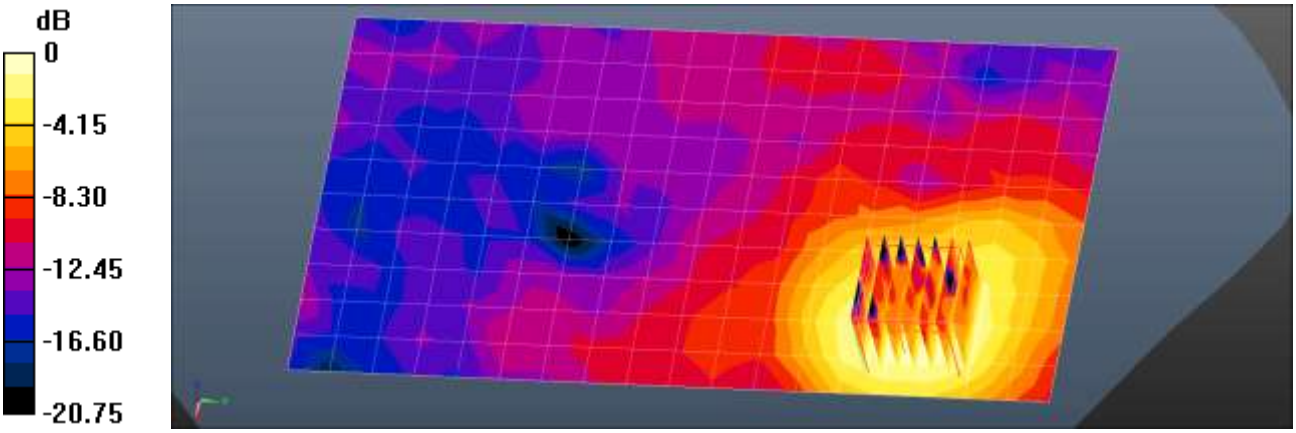
Communication System: UID 0, WIFI 5GHz (0); Frequency: 5825 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5825 MHz; σ = 5.073 S/m; ε_r = 35.798; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7352; ConvF(5.05, 5.05, 5.05) @ 5825 MHz; Calibrated: 2020-10-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2020-08-07
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

802.11a BodyWorn Rear 6Mbps 165ch/Area Scan (11x19x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.214 W/kg

802.11a BodyWorn Rear 6Mbps 165ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 1.117 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 0.371 W/kg
SAR(1 g) = 0.094 W/kg; SAR(10 g) = 0.038 W/kg
Maximum value of SAR (measured) = 0.213 W/kg



0 dB = 0.214 W/kg = −6.69 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	20.6℃
Ambient Temperature:	20.7℃
Test Date:	05/28/2021
Plot No.:	35

DUT: SM-G990B/DS; Type: Bar;

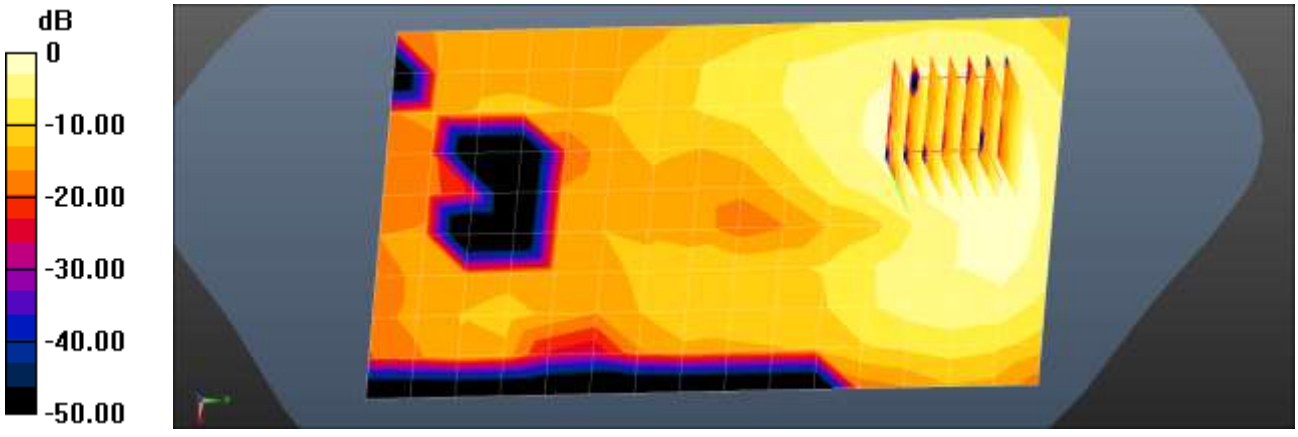
Communication System: UID 0, Bluetooth (0); Frequency: 2402 MHz;Duty Cycle: 1:1.302
Medium parameters used (interpolated): f = 2402 MHz; σ = 1.76 S/m; ε_r = 38.064; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(7.78, 7.78, 7.78) @ 2402 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.8 (7)

Bluetooth Body Worn Rear DH-5 0ch body worn/Area Scan (10x16x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.0574 W/kg

Bluetooth Body Worn Rear DH-5 0ch body worn/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.2610 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 0.0710 W/kg
SAR(1 g) = 0.038 W/kg; SAR(10 g) = 0.021 W/kg
Maximum value of SAR (measured) = 0.0579 W/kg



0 dB = 0.0574 W/kg = −12.41 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	22.7℃
Ambient Temperature:	22.9℃
Test Date:	05/06/2021
Plot No.:	36

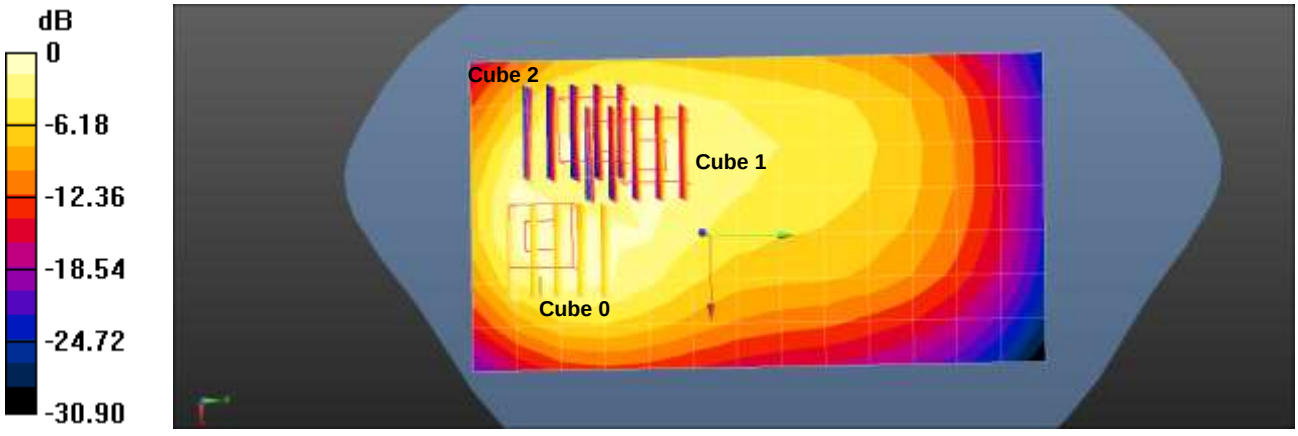
DUT: SM-G990B/DS; Type: Bar;

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 = 0.916 S/m; ε_r = 42.077; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(9.75, 9.75, 9.75) @ 836.6 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

GSM 850 Body Rear 2Tx 190ch/Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.12 W/kg
GSM 850 Body Rear 2Tx 190ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.59 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.52 W/kg
SAR(1 g) = 0.860 W/kg; SAR(10 g) = 0.462 W/kg
Maximum value of SAR (measured) = 1.26 W/kg
GSM 850 Body Rear 2Tx 190ch/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.59 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.07 W/kg
SAR(1 g) = 0.698 W/kg; SAR(10 g) = 0.480 W/kg
Maximum value of SAR (measured) = 0.919 W/kg
GSM 850 Body Rear 2Tx 190ch/Zoom Scan (5x5x7)/Cube 2: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.59 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.12 W/kg
SAR(1 g) = 0.658 W/kg; SAR(10 g) = 0.408 W/kg
Maximum value of SAR (measured) = 0.944 W/kg



0 dB = 1.12 W/kg = 0.50 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	22.7℃
Ambient Temperature:	22.9℃
Test Date:	05/06/2021
Plot No.:	37

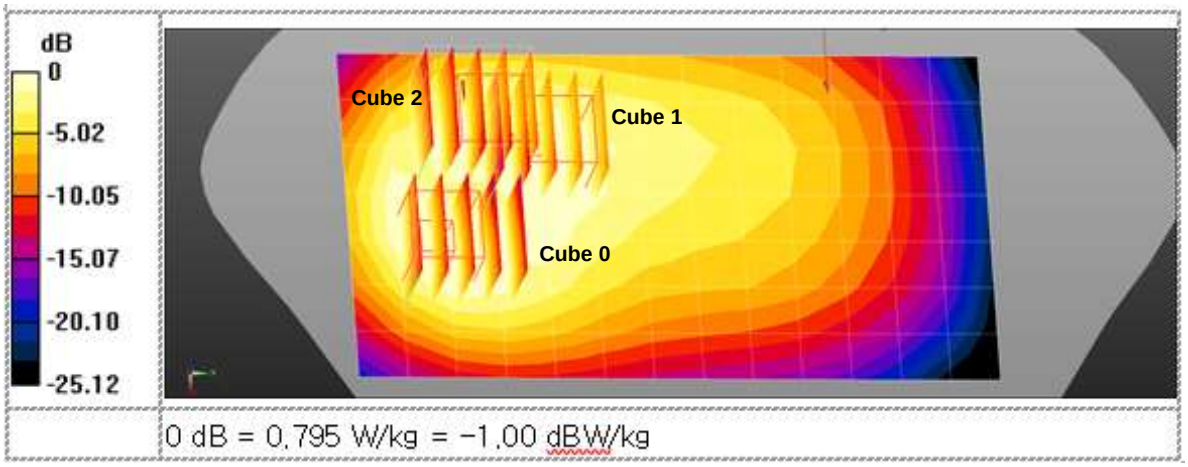
DUT: SM-G990B/DS; Type: Bar;

Communication System: UID 0, GSM850 GPRS 2TX (0); Frequency: 824.2 MHz;Duty Cycle: 1:4.14954
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.904 S/m; ε_r = 42.239; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(9.75, 9.75, 9.75) @ 824.2 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

GSM 850 Body Rear 2Tx 128ch/Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.956 W/kg
GSM 850 Body Rear 2Tx 128ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.11 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 1.29 W/kg
SAR(1 g) = 0.714 W/kg; SAR(10 g) = 0.400 W/kg
Maximum value of SAR (measured) = 1.05 W/kg
GSM 850 Body Rear 2Tx 128ch/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.11 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.965 W/kg
SAR(1 g) = 0.646 W/kg; SAR(10 g) = 0.439 W/kg
Maximum value of SAR (measured) = 0.806 W/kg
GSM 850 Body Rear 2Tx 128ch/Zoom Scan (5x5x7)/Cube 2: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.11 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.937 W/kg
SAR(1 g) = 0.587 W/kg; SAR(10 g) = 0.363 W/kg
Maximum value of SAR (measured) = 0.795 W/kg



Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.8℃
Ambient Temperature: 21.9℃
Test Date: 05/24/2021
Plot No.: 38

DUT: SM-G990B/DS; Type: Bar;

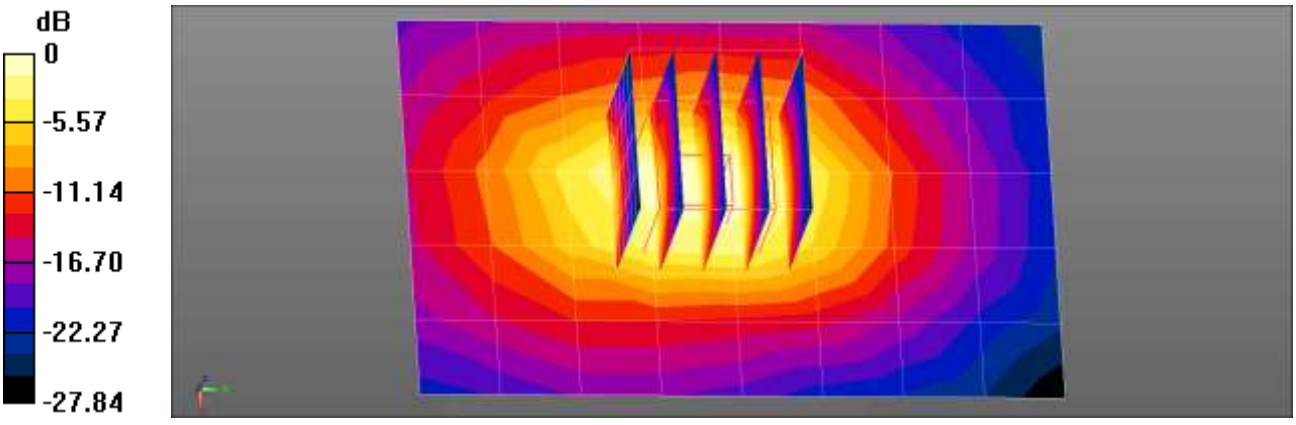
Communication System: UID 0, GSM 1900 3TX (0); Frequency: 1909.8 MHz;Duty Cycle: 1:2.77013
Medium parameters used: f = 1910 MHz; σ = 1.452 S/m; ε_r = 41.415; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.19, 8.19, 8.19) @ 1909.8 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

GSM1900 Body Bottom 3Tx 810ch/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.746 W/kg

GSM1900 Body Bottom 3Tx 810ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.71 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 1.21 W/kg
SAR(1 g) = 0.632 W/kg; SAR(10 g) = 0.313 W/kg
Maximum value of SAR (measured) = 0.992 W/kg



0 dB = 0.746 W/kg = −1.27 d

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.3℃
Ambient Temperature: 21.5℃
Test Date: 05/03/2021
Plot No.: 39

DUT: SM-G990B/DS; Type: Bar;

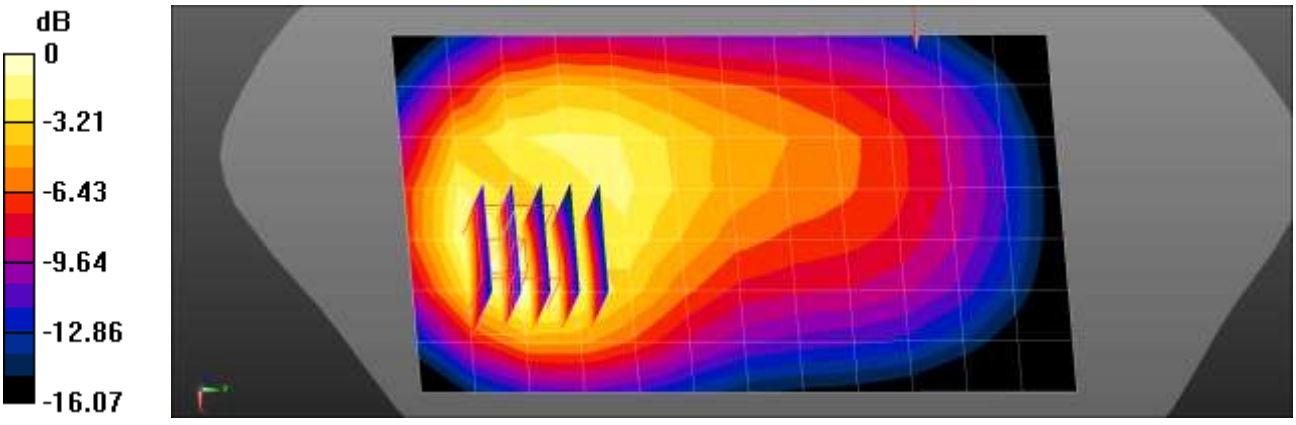
Communication System: UID 0, WCDMA850 (0); Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.916 S/m; ε_r = 42.014; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(9.75, 9.75, 9.75) @ 836.6 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

UMTS Band 5 Body Rear 4183ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.908 W/kg

UMTS Band 5 Body Rear 4183ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.63 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 1.21 W/kg
SAR(1 g) = 0.665 W/kg; SAR(10 g) = 0.378 W/kg
Maximum value of SAR (measured) = 0.994 W/kg



0 dB = 0.994 W/kg = −0.03 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.5℃
Ambient Temperature: 21.6℃
Test Date: 06/03/2021
Plot No.: 40

DUT: SM-G990B/DS; Type: Bar;

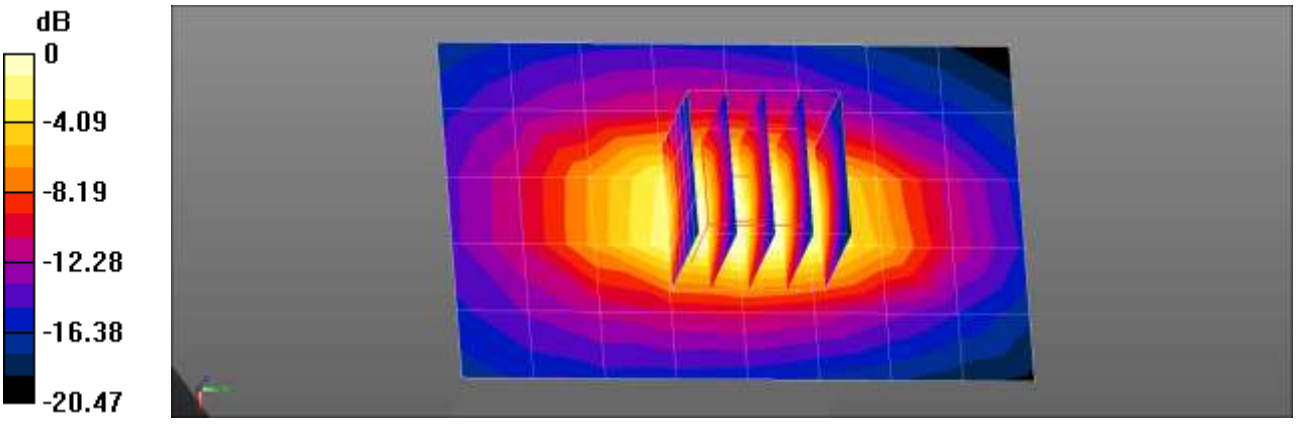
Communication System: UID 0, UMTSIV (0); Frequency: 1732.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.373 S/m; ε_r = 41.412; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.56, 8.56, 8.56) @ 1732.4 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

UMTS BAND 4 Body Bottom 1412ch/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.02 W/kg

UMTS BAND 4 Body Bottom 1412ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.65 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.73 W/kg
SAR(1 g) = 0.966 W/kg; SAR(10 g) = 0.513 W/kg
Maximum value of SAR (measured) = 1.46 W/kg



0 dB = 1.02 W/kg = 0.08 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.5℃
Ambient Temperature: 21.6℃
Test Date: 06/03/2021
Plot No.: 41

DUT: SM-G990B/DS; Type: Bar;

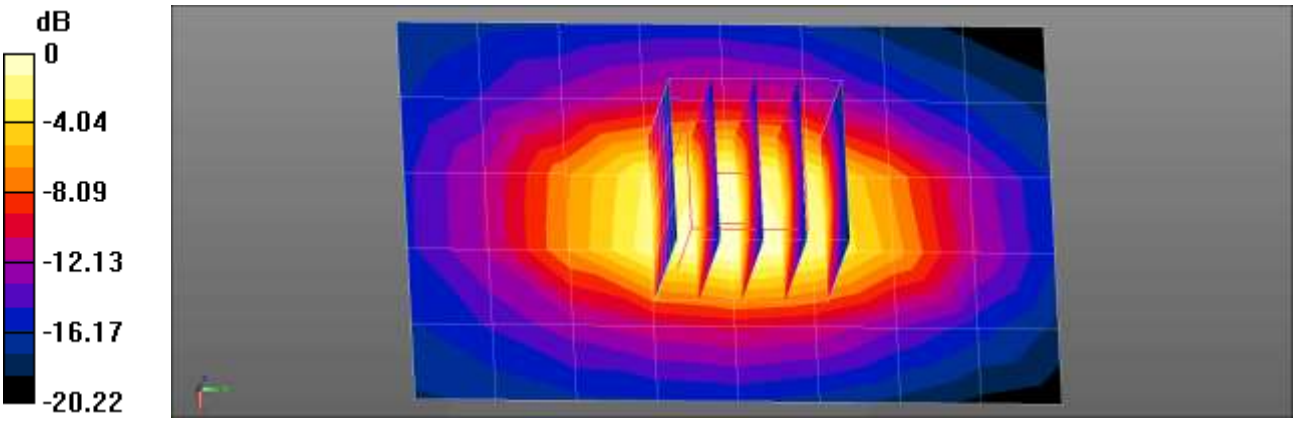
Communication System: UID 0, UMTSIV (0); Frequency: 1752.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1752.6 MHz; σ = 1.394 S/m; ε_r = 41.358; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.56, 8.56, 8.56) @ 1752.6 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

UMTS BAND 4 Body Bottom 1513ch/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.01 W/kg

UMTS BAND 4 Body Bottom 1513ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.08 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 1.72 W/kg
SAR(1 g) = 0.955 W/kg; SAR(10 g) = 0.505 W/kg
Maximum value of SAR (measured) = 1.44 W/kg



0 dB = 1.01 W/kg = 0.06 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.3℃
Ambient Temperature: 21.4℃
Test Date: 05/26/2021
Plot No.: 42

DUT: SM-G990B/DS; Type: Bar;

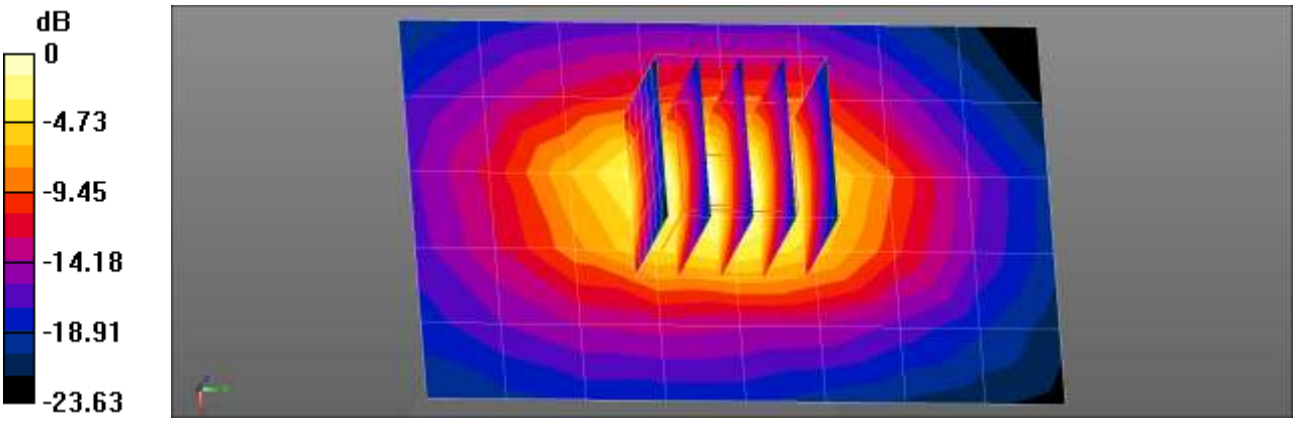
Communication System: UID 0, WCDMA1900 (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.419 S/m; ε_r = 41.515; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.19, 8.19, 8.19) @ 1880 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

UMTSB2 Body Bottom 9400ch/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.824 W/kg

UMTSB2 Body Bottom 9400ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.84 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 1.20 W/kg
SAR(1 g) = 0.641 W/kg; SAR(10 g) = 0.322 W/kg
Maximum value of SAR (measured) = 1.01 W/kg



0 dB = 0.824 W/kg = −0.84 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.0℃
Ambient Temperature: 21.1℃
Test Date: 05/28/2021
Plot No.: 43

DUT: SM-G990B/DS; Type: Bar;

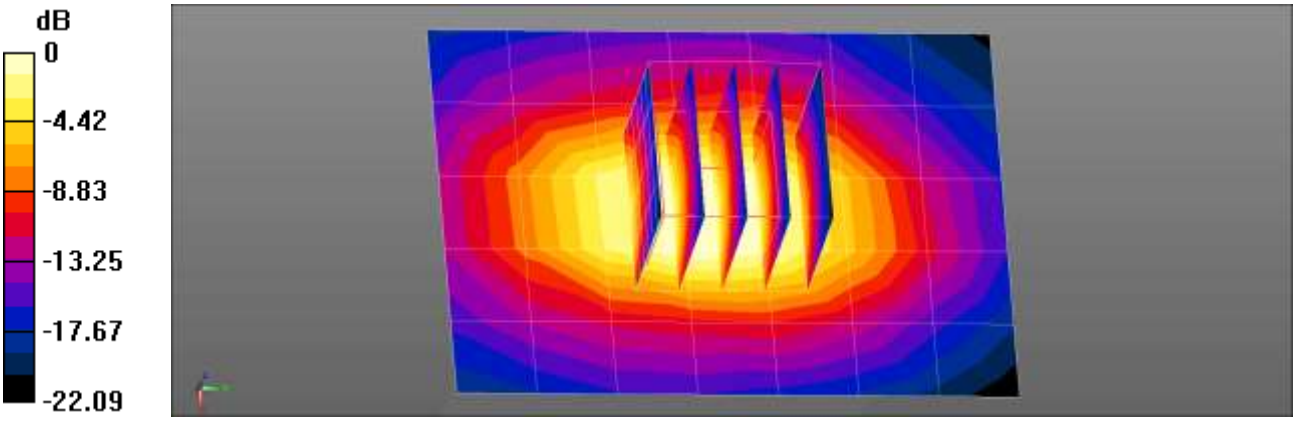
Communication System: UID 0, LTE Band 2 (0); Frequency: 1860 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1860 MHz; σ = 1.397 S/m; ε_r = 41.653; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.19, 8.19, 8.19) @ 1860 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

LTE Band 2 Body Bottom QPSK 20MHz 50RB 25offset 18700ch/Area Scan (6x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.593 W/kg

LTE Band 2 Body Bottom QPSK 20MHz 50RB 25offset 18700ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.47 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.15 W/kg
SAR(1 g) = 0.623 W/kg; SAR(10 g) = 0.319 W/kg
Maximum value of SAR (measured) = 0.951 W/kg



0 dB = 0.593 W/kg = −2.27 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 22.1℃
Ambient Temperature: 22.2℃
Test Date: 05/04/2021
Plot No.: 44

DUT: SM-G990B/DS; Type: Bar;

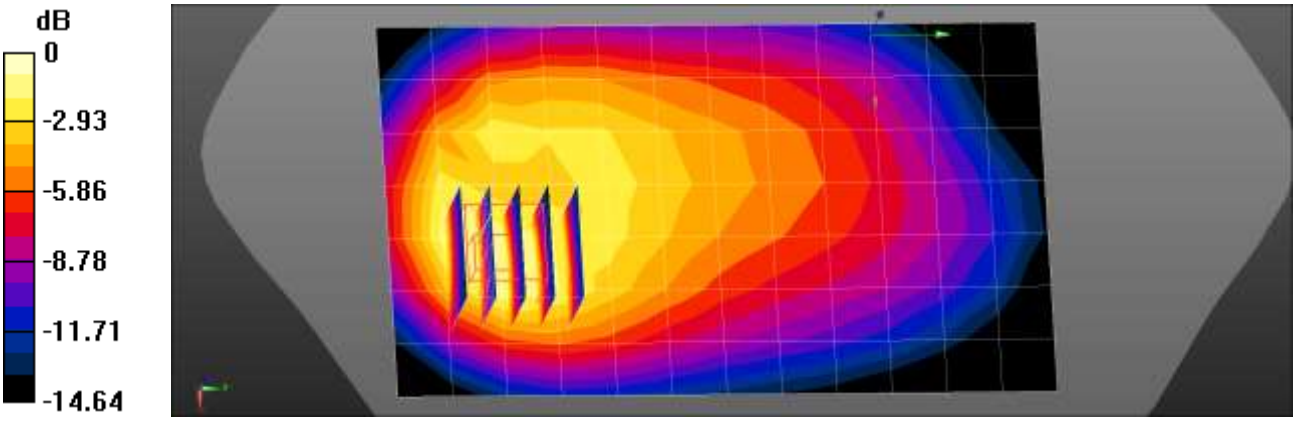
Communication System: UID 0, LTE 12 (0); Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 707.5 MHz; σ = 0.883 S/m; ε_r = 43.385; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(9.95, 9.95, 9.95) @ 707.5 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

LTE Band 12 Body Rear 10MHz QPSK 1RB 49offset 23095ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.445 W/kg

LTE Band 12 Body Rear 10MHz QPSK 1RB 49offset 23095ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.21 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.712 W/kg
SAR(1 g) = 0.374 W/kg; SAR(10 g) = 0.210 W/kg
Maximum value of SAR (measured) = 0.572 W/kg



0 dB = 0.572 W/kg = −2.43 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 22.0℃
Ambient Temperature: 22.1℃
Test Date: 05/05/2021
Plot No.: 45

DUT: SM-G990B/DS; Type: Bar;

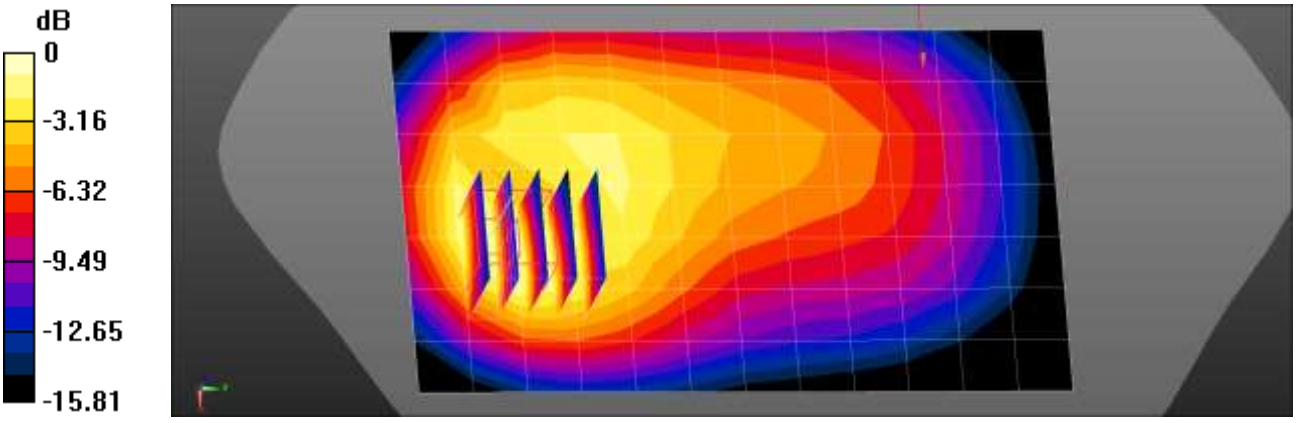
Communication System: UID 0, LTE Band 26 (0); Frequency: 831.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 831.5 MHz; σ = 0.91 S/m; ε_r = 42.076; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(9.75, 9.75, 9.75) @ 831.5 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

LTE Band 26 Body Rear 15MHz QPSK 1RB 0offset 26865ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.486 W/kg

LTE Band 26 Body Rear 15MHz QPSK 1RB 0offset 26865ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.14 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.721 W/kg
SAR(1 g) = 0.382 W/kg; SAR(10 g) = 0.217 W/kg
Maximum value of SAR (measured) = 0.589 W/kg



0 dB = 0.589 W/kg = −2.30 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.8℃
Ambient Temperature: 21.9℃
Test Date: 05/21/2021
Plot No.: 46

DUT: SM-G990B/DS; Type: Bar;

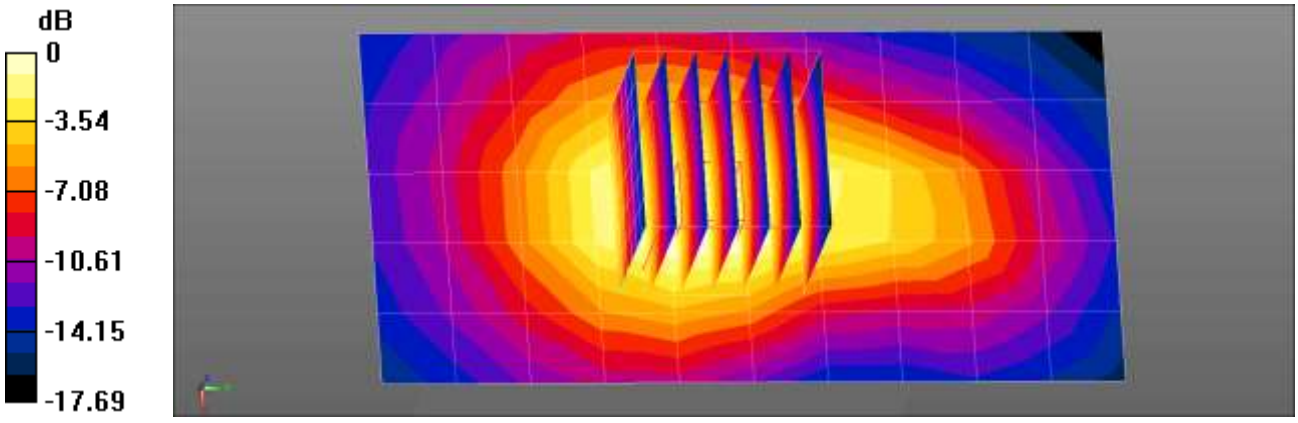
Communication System: UID 0, LTE Band41 (0); Frequency: 2506 MHz;Duty Cycle: 1:1.58052
Medium parameters used (interpolated): f = 2506 MHz; σ = 1.903 S/m; ε_r = 37.655; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3076; ConvF(4.5, 4.5, 4.5) @ 2506 MHz; Calibrated: 2020-07-31
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn648; Calibrated: 2020-05-25
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

LTE Band 41 Body Bottom QPSK 20MHz 1RB 0offset 39750ch/Area Scan (6x11x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.666 W/kg

LTE Band 41 Body Bottom QPSK 20MHz 1RB 0offset 39750ch/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 21.31 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.32 W/kg
SAR(1 g) = 0.662 W/kg; SAR(10 g) = 0.328 W/kg
Maximum value of SAR (measured) = 0.853 W/kg



0 dB = 0.666 W/kg = −1.77 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.8℃
Ambient Temperature: 20.9℃
Test Date: 06/01/2021
Plot No.: 47

DUT: SM-G990B/DS; Type: Bar;

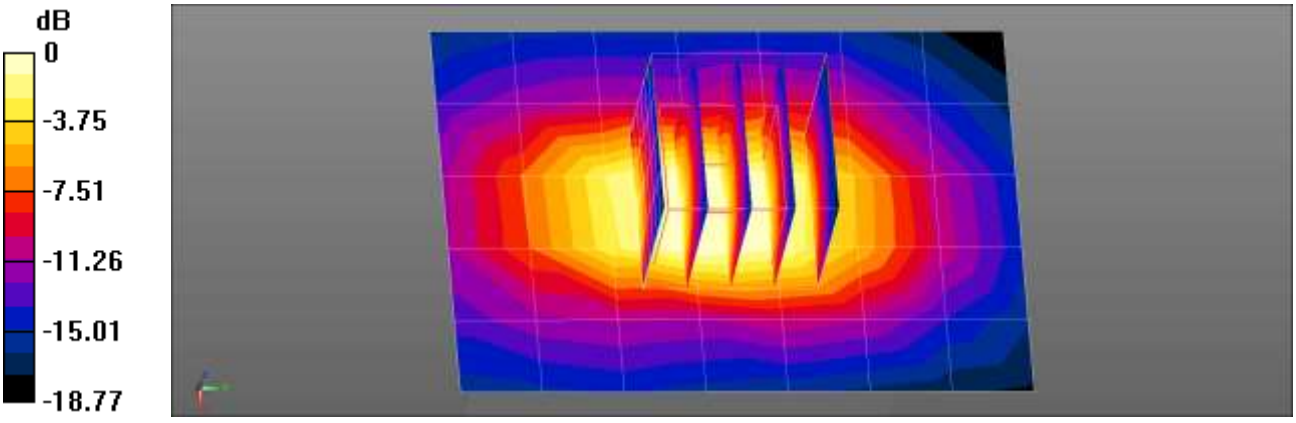
Communication System: UID 0, LTE Band 66(20MHz FCC) (0); Frequency: 1720 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1720 MHz; σ = 1.248 S/m; ε_r = 41.52; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.56, 8.56, 8.56) @ 1720 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

LTE Band 66 Body Bottom QPSK 20MHz 50RB 0offset 132072ch/Area Scan (6x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.417 W/kg

LTE Band 66 Body Bottom QPSK 20MHz 50RB 0offset 132072ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.79 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.833 W/kg
SAR(1 g) = 0.459 W/kg; SAR(10 g) = 0.237 W/kg
Maximum value of SAR (measured) = 0.691 W/kg



0 dB = 0.417 W/kg = −3.80 dBW/kg

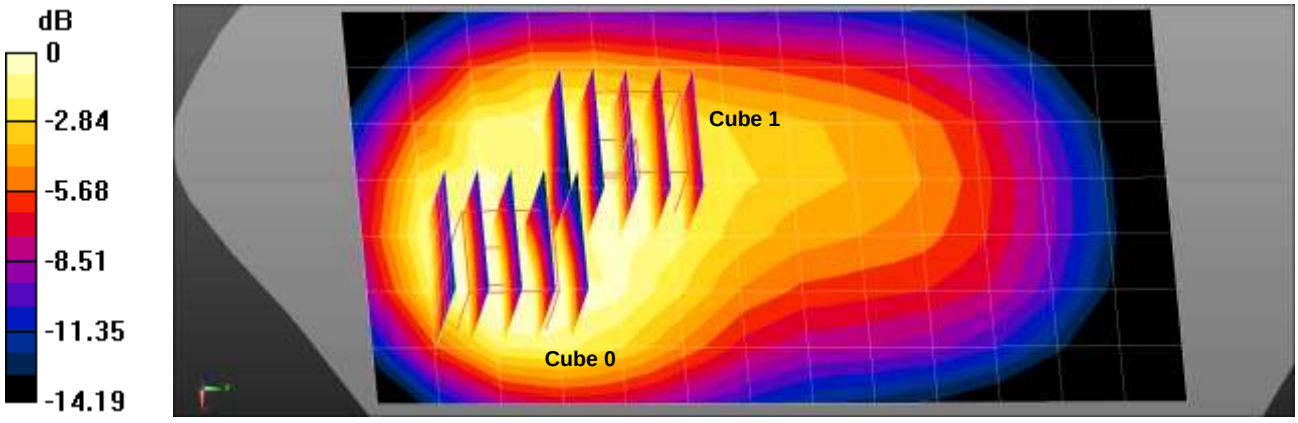
Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.1℃
Ambient Temperature: 20.2℃
Test Date: 05/11/2021
Plot No.: 48
DUT: SM-G990B/DS; Type: Bar;

Communication System: UID 0, NR n5 (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.914 S/m; ε_r = 42.039; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(9.75, 9.75, 9.75) @ 836.5 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

NR Band 5 Body Rear DFT-s 20MHz QPSK 1RB 53offset 167300ch/Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.968 W/kg
NR Band 5 Body Rear DFT-s 20MHz QPSK 1RB 53offset 167300ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.79 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.18 W/kg
SAR(1 g) = 0.655 W/kg; SAR(10 g) = 0.375 W/kg
Maximum value of SAR (measured) = 0.986 W/kg
NR Band 5 Body Rear DFT-s 20MHz QPSK 1RB 53offset 167300ch/Zoom Scan (5x5x7)/Cube 1:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.79 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.792 W/kg
SAR(1 g) = 0.528 W/kg; SAR(10 g) = 0.360 W/kg
Maximum value of SAR (measured) = 0.687 W/kg



0 dB = 0.687 W/kg = −1.63 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.8℃
Ambient Temperature: 20.9℃
Test Date: 05/27/2021
Plot No.: 49

DUT: SM-G990B/DS; Type: Bar;

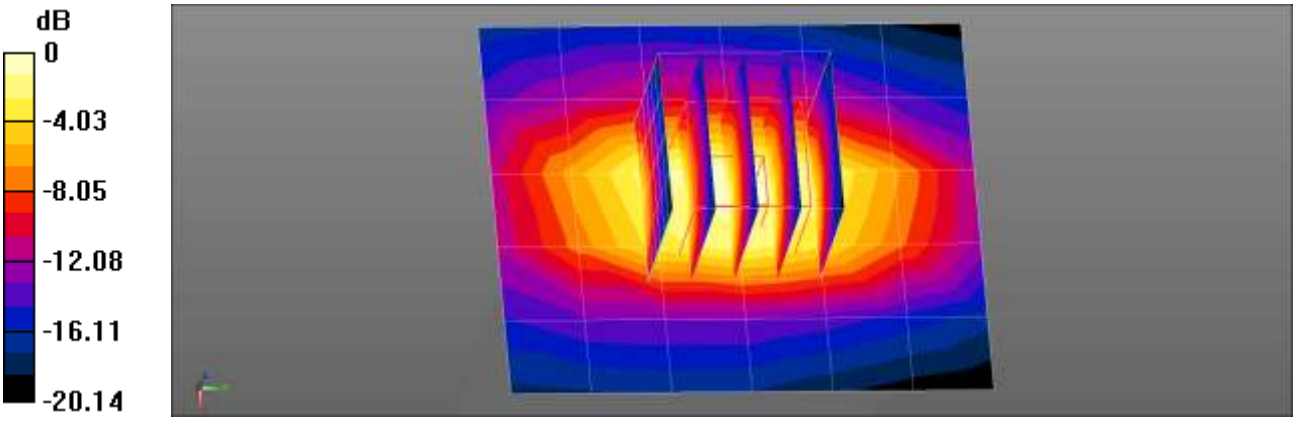
Communication System: UID 0, NR Band 66 (0); Frequency: 1720 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1720 MHz; σ = 1.341 S/m; ε_r = 41.516; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.56, 8.56, 8.56) @ 1720 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

NR Band n66 Body Bottom DFT-s QPSK 20MHz 1RB 1offset 344000ch/Area Scan (6x7x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.770 W/kg

NR Band n66 Body Bottom DFT-s QPSK 20MHz 1RB 1offset 344000ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.32 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 1.24 W/kg
SAR(1 g) = 0.678 W/kg; SAR(10 g) = 0.355 W/kg
Maximum value of SAR (measured) = 1.04 W/kg



0 dB = 0.770 W/kg = −1.14 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	20.4℃
Ambient Temperature:	20.5℃
Test Date:	05/28/2021
Plot No.:	50

DUT: SM-G990B/DS; Type: Bar;

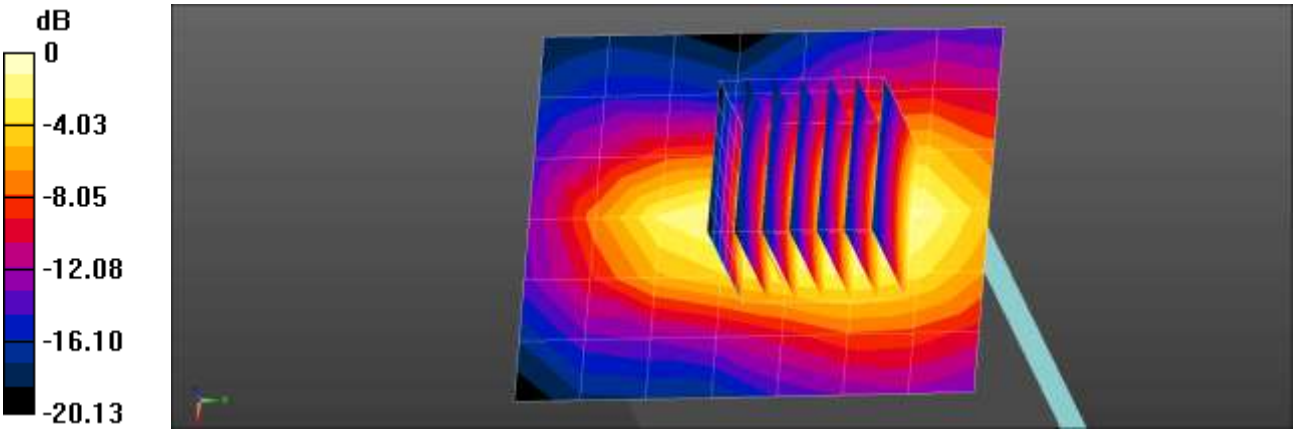
Communication System: UID 0, 2450MHz FCC (0); Frequency: 2412 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2412 MHz; σ = 1.775 S/m; ε_r = 38.056; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.34, 7.34, 7.34) @ 2412 MHz; Calibrated: 2020-11-25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn446; Calibrated: 2020-07-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

802.11b Body Top 1Mbps 1ch/Area Scan (7x8x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.978 W/kg

802.11b Body Top 1Mbps 1ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.14 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 1.26 W/kg
SAR(1 g) = 0.613 W/kg; SAR(10 g) = 0.302 W/kg
Maximum value of SAR (measured) = 1.01 W/kg



0 dB = 0.978 W/kg = −0.10 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	22.2℃
Ambient Temperature:	22.3℃
Test Date:	06/07/2021
Plot No.:	51

DUT: SM-G990B/DS; Type: Bar;

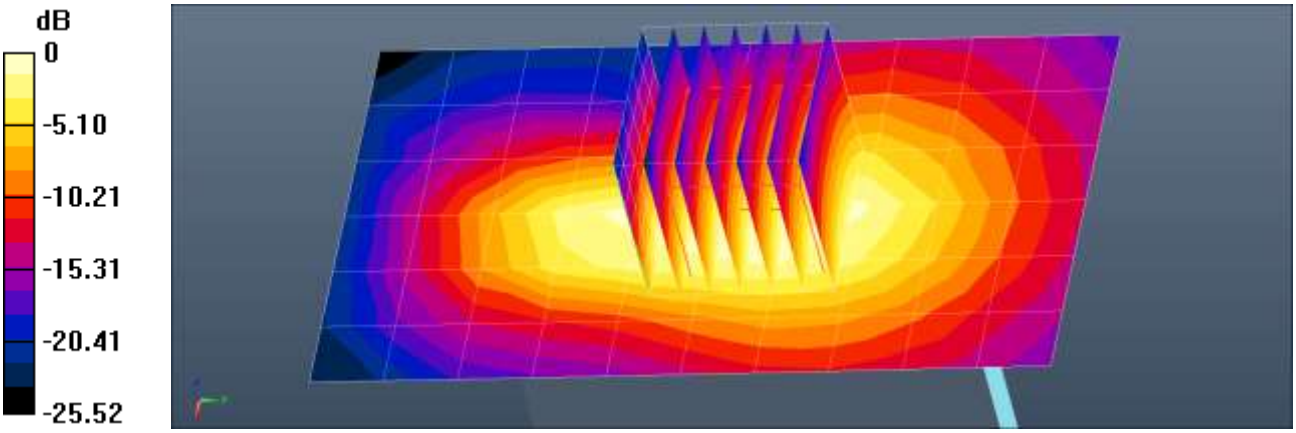
Communication System: UID 0, 2450MHz FCC (0); Frequency: 2412 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2412 MHz; σ = 1.775 S/m; ε_r = 38.046; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(7.47, 7.47, 7.47) @ 2412 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

802.11b Body Top 1Mbps 1ch/Area Scan (7x11x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.305 W/kg

802.11b Body Top 1Mbps 1ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.24 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 0.419 W/kg
SAR(1 g) = 0.203 W/kg; SAR(10 g) = 0.100 W/kg
Maximum value of SAR (measured) = 0.335 W/kg



0 dB = 0.305 W/kg = −5.16 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	21.3℃
Ambient Temperature:	21.5℃
Test Date:	06/08/2021
Plot No.:	52

DUT: SM-G990B/DS; Type: Bar;

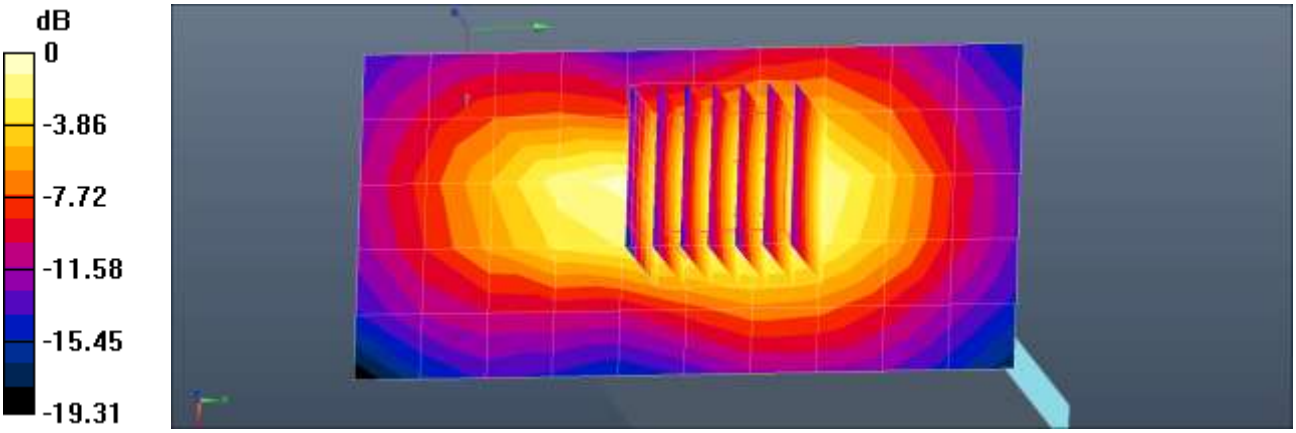
Communication System: UID 0, 2450MHz FCC (0); Frequency: 2412 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2412 MHz; σ = 1.781 S/m; ε_r = 39.017; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(7.47, 7.47, 7.47) @ 2412 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

802.11g Body Top 6Mbps 1ch/Area Scan (6x11x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.237 W/kg

802.11g Body Top 6Mbps 1ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.13 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.334 W/kg
SAR(1 g) = 0.162 W/kg; SAR(10 g) = 0.080 W/kg
Maximum value of SAR (measured) = 0.267 W/kg



0 dB = 0.237 W/kg = −6.25 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.9℃
Ambient Temperature: 22.0℃
Test Date: 05/28/2021
Plot No.: 53

DUT: SM-G990B/DS; Type: Bar;

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5825 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5825 MHz; σ = 5.073 S/m; ε_r = 35.798; ρ = 1000 kg/m^3
Phantom section: Flat Section

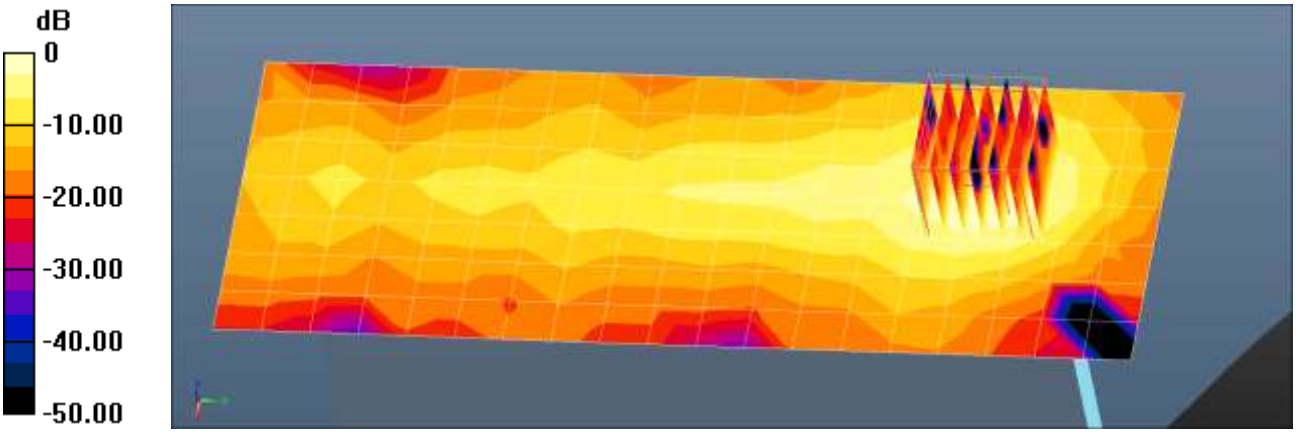
DASY5 Configuration:

- Probe: EX3DV4 - SN7352; ConvF(5.05, 5.05, 5.05) @ 5825 MHz; Calibrated: 2020-10-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2020-08-07
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

802.11a Body Left 6Mbps 165ch/Area Scan (8x20x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.361 W/kg

802.11a Body Left 6Mbps 165ch/Area Scan (8x20x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.361 W/kg

802.11a Body Left 6Mbps 165ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 3.983 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 0.705 W/kg
SAR(1 g) = 0.159 W/kg; SAR(10 g) = 0.057 W/kg
Maximum value of SAR (measured) = 0.380 W/kg



0 dB = 0.361 W/kg = −4.42 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	21.3℃
Ambient Temperature:	21.4℃
Test Date:	06/07/2021
Plot No.:	54

DUT: SM-G990B/DS; Type: Bar;

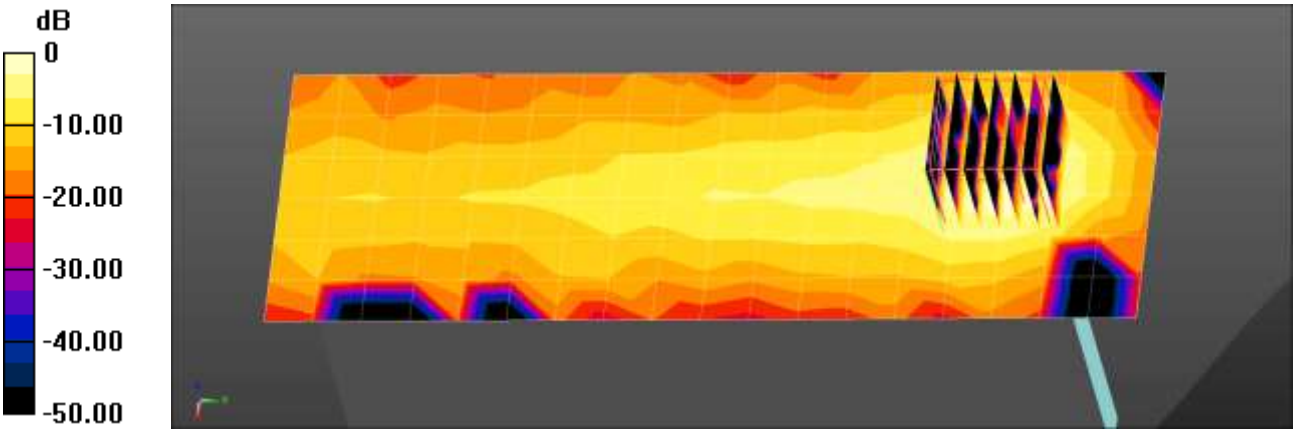
Communication System: UID 0, WIFI 5GHz UNII3 (0); Frequency: 5775 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5775 MHz; σ = 5.114 S/m; ε_r = 35.84; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7622; ConvF(5.14, 5.14, 5.14) @ 5775 MHz; Calibrated: 2020-11-06
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2021-02-19
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

802.11ac80 Body Left QPSK 20MHz 1RB 49offset 39750ch/Area Scan (7x19x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.162 W/kg

802.11ac80 Body Left QPSK 20MHz 1RB 49offset 39750ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 2.267 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 0.301 W/kg
SAR(1 g) = 0.069 W/kg; SAR(10 g) = 0.023 W/kg
Maximum value of SAR (measured) = 0.174 W/kg



0 dB = 0.162 W/kg = −7.89 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	20.6℃
Ambient Temperature:	20.7℃
Test Date:	05/28/2021
Plot No.:	55

DUT: SM-G990B/DS; Type: Bar;

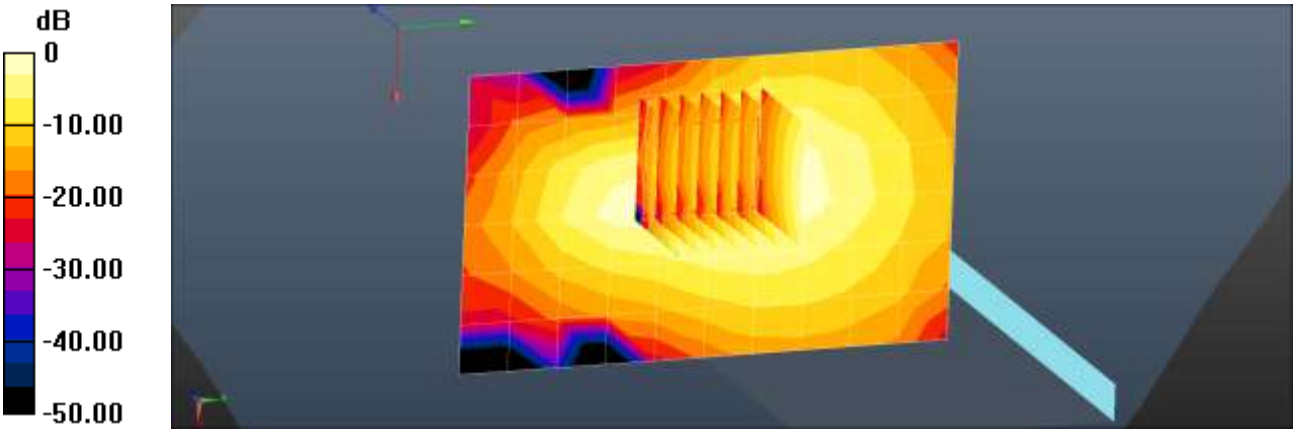
Communication System: UID 0, Bluetooth (0); Frequency: 2402 MHz;Duty Cycle: 1:1.302
Medium parameters used (interpolated): f = 2402 MHz; σ = 1.76 S/m; ε_r = 38.064; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(7.78, 7.78, 7.78) @ 2402 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.8 (7)

Bluetooth Body Top DH-5 0ch/Area Scan (7x11x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.170 W/kg

Bluetooth Body Top DH-5 0ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.817 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.223 W/kg
SAR(1 g) = 0.113 W/kg; SAR(10 g) = 0.057 W/kg
Maximum value of SAR (measured) = 0.182 W/kg



0 dB = 0.170 W/kg = −7.71 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.1℃
Ambient Temperature: 21.2℃
Test Date: 05/25/2021
Plot No.: 56
DUT: SM-G990B/DS; Type: Bar;

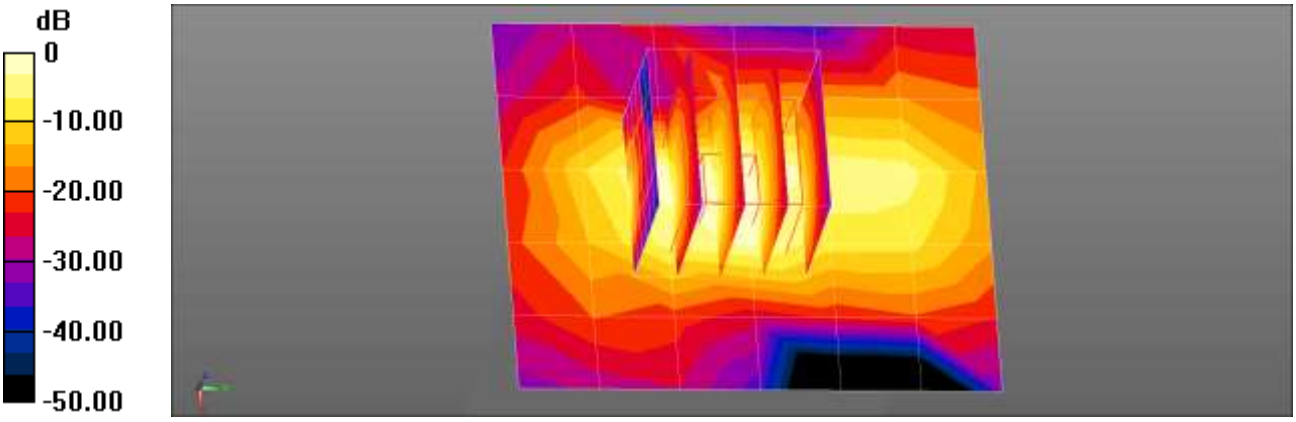
Communication System: UID 0, GSM 1900 3TX (0); Frequency: 1880 MHz;Duty Cycle: 1:2.77013
Medium parameters used: f = 1880 MHz; σ = 1.372 S/m; ε_r = 40.897; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.19, 8.19, 8.19) @ 1880 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

GSM1900 Body Bottom 3Tx 661ch/Area Scan (6x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.02 W/kg

GSM1900 Body Bottom 3Tx 661ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 58.44 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 5.31 W/kg
SAR(1 g) = 2.32 W/kg; SAR(10 g) = 0.952 W/kg
Maximum value of SAR (measured) = 4.43 W/kg



0 dB = 2.02 W/kg = 3.06 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.4℃
Ambient Temperature: 21.5℃
Test Date: 06/04/2021
Plot No.: 57
DUT: SM-G990B/DS; Type: Bar;

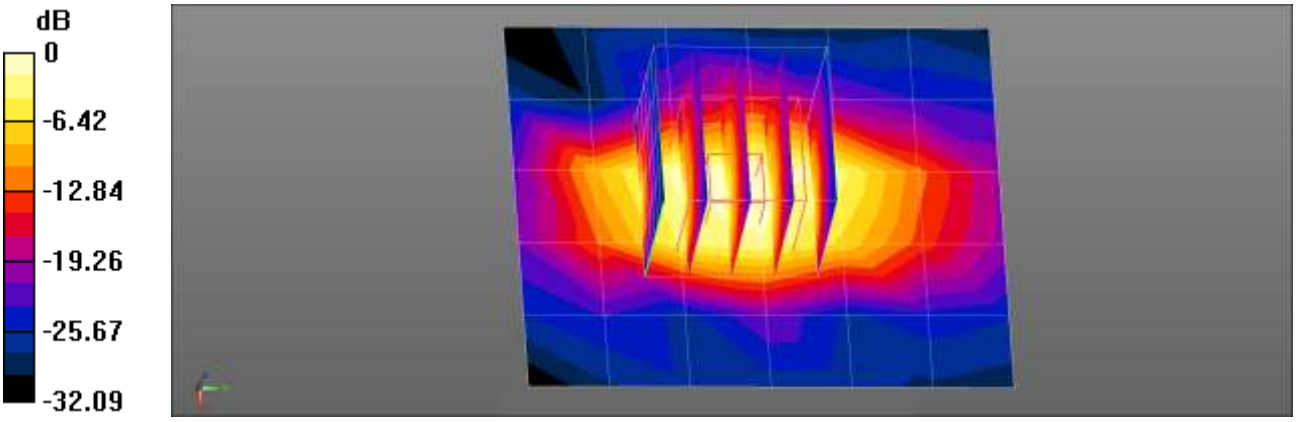
Communication System: UID 0, UMTSIV (0); Frequency: 1712.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1712.4 MHz; σ = 1.328 S/m; ε_r = 41.549; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.56, 8.56, 8.56) @ 1712.4 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

UMTS BAND 4 Body Bottom 1312ch/Area Scan (6x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 4.68 W/kg

UMTS BAND 4 Body Bottom 1312ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 87.47 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 12.9 W/kg
SAR(1 g) = 5.55 W/kg; SAR(10 g) = 2.41 W/kg
Maximum value of SAR (measured) = 10.6 W/kg



0 dB = 4.68 W/kg = 6.70 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.8℃
Ambient Temperature: 20.9℃
Test Date: 05/27/2021
Plot No.: 58

DUT: SM-G990B/DS; Type: Bar;

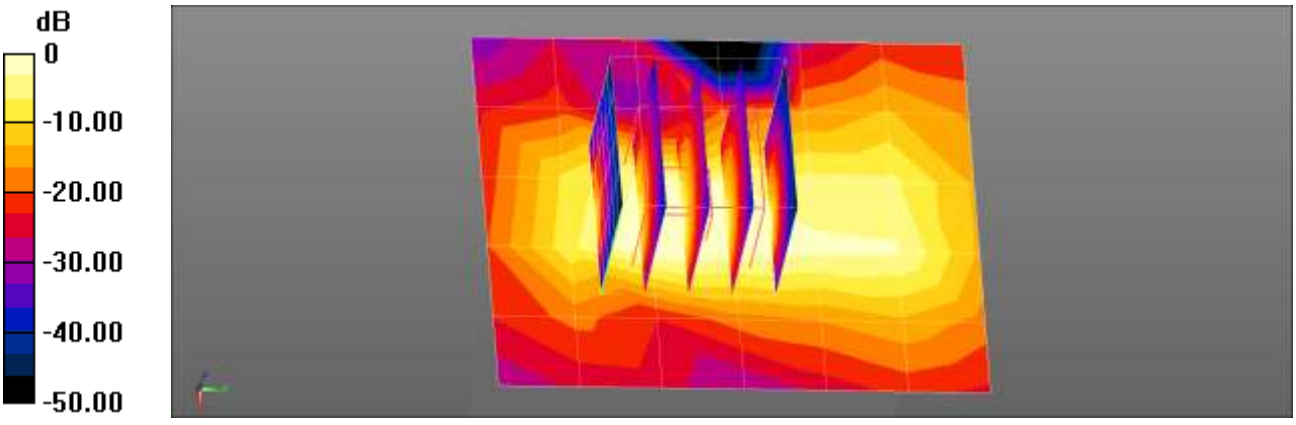
Communication System: UID 0, WCDMA1900 (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.37 S/m; ε_r = 40.933; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.19, 8.19, 8.19) @ 1880 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

UMTSB2 Body Bottom 9400ch/Area Scan (6x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.87 W/kg

UMTSB2 Body Bottom 9400ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 53.44 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 5.82 W/kg
SAR(1 g) = 2.45 W/kg; SAR(10 g) = 1.03 W/kg
Maximum value of SAR (measured) = 4.75 W/kg



0 dB = 1.87 W/kg = 2.73 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.0℃
Ambient Temperature: 21.1℃
Test Date: 05/31/2021
Plot No.: 59

DUT: SM-G990B/DS; Type: Bar;

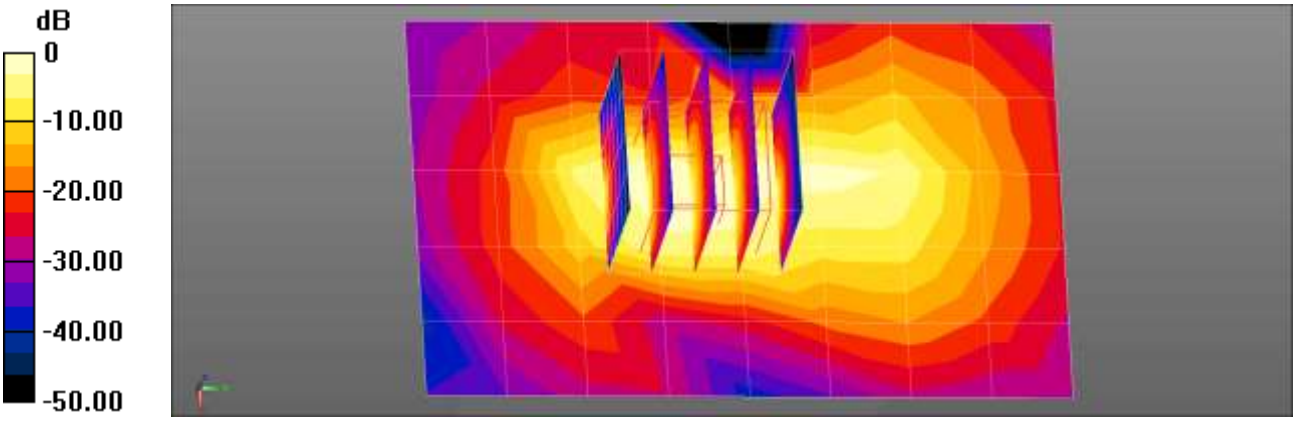
Communication System: UID 0, LTE Band 2 (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.382 S/m; ε_r = 40.862; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.19, 8.19, 8.19) @ 1900 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

LTE Band 2 Body Bottom QPSK 20MHz 1RB 99offset 19100ch/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.64 W/kg

LTE Band 2 Body Bottom QPSK 20MHz 1RB 99offset 19100ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 46.64 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 4.34 W/kg
SAR(1 g) = 1.96 W/kg; SAR(10 g) = 0.824 W/kg
Maximum value of SAR (measured) = 3.54 W/kg



0 dB = 1.64 W/kg = 2.14 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	21.0℃
Ambient Temperature:	21.1℃
Test Date:	05/31/2021
Plot No.:	60

DUT: SM-G990B/DS; Type: Bar;

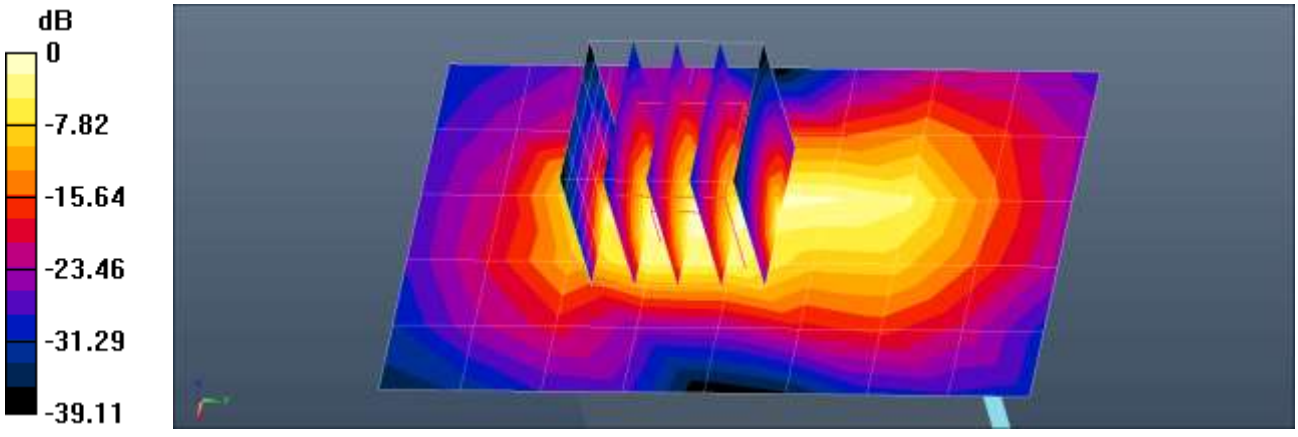
Communication System: UID 0, LTE Band 2 (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.382 S/m; ε_r = 40.862; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.19, 8.19, 8.19) @ 1900 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

LTE Band 2 Body Bottom QPSK 20MHz 50RB 25offset 19100ch/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.69 W/kg

LTE Band 2 Body Bottom QPSK 20MHz 50RB 25offset 19100ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 47.43 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 4.65 W/kg
SAR(1 g) = 2.07 W/kg; SAR(10 g) = 0.853 W/kg
Maximum value of SAR (measured) = 3.80 W/kg



0 dB = 1.69 W/kg = 2.27 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	21.0℃
Ambient Temperature:	21.1℃
Test Date:	06/02/2021
Plot No.:	61

DUT: SM-G990B/DS; Type: Bar;

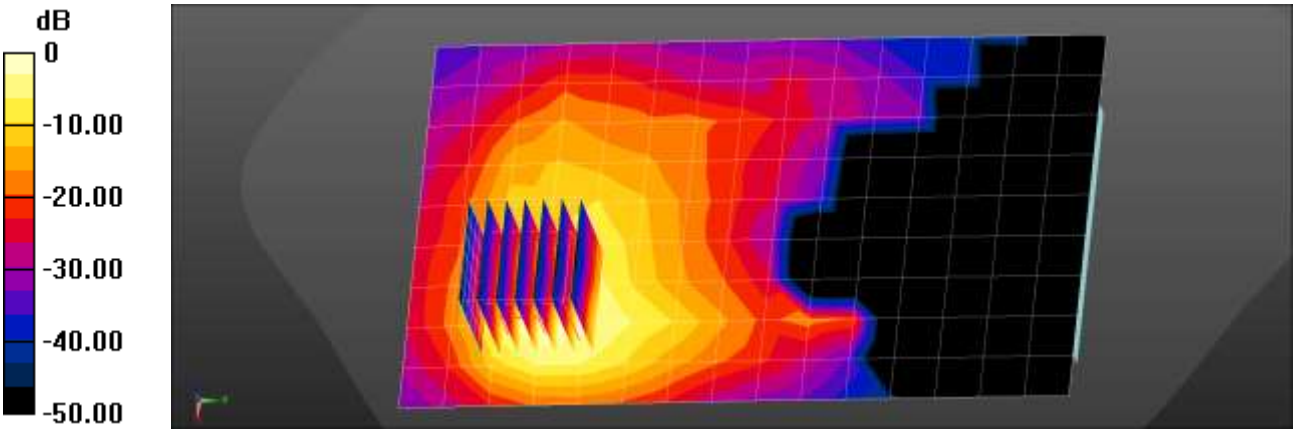
Communication System: UID 0, LTE Band41 (0); Frequency: 2506 MHz;Duty Cycle: 1:1.58052
Medium parameters used (interpolated): f = 2506 MHz; σ = 1.863 S/m; ε_r = 38.203; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7622; ConvF(7.86, 7.86, 7.86) @ 2506 MHz; Calibrated: 2020-11-06
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2021-02-19
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

LTE Band 41 Body Rear QPSK 20MHz 50RB 25offset 39750ch/Area Scan (10x16x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 5.47 W/kg

LTE Band 41 Body Rear QPSK 20MHz 50RB 25offset 39750ch/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.498 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 9.47 W/kg
SAR(1 g) = 2.92 W/kg; SAR(10 g) = 1.33 W/kg
Maximum value of SAR (measured) = 6.50 W/kg



0 dB = 5.47 W/kg = 7.38 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.1℃
Ambient Temperature: 21.2℃
Test Date: 06/02/2021
Plot No.: 62

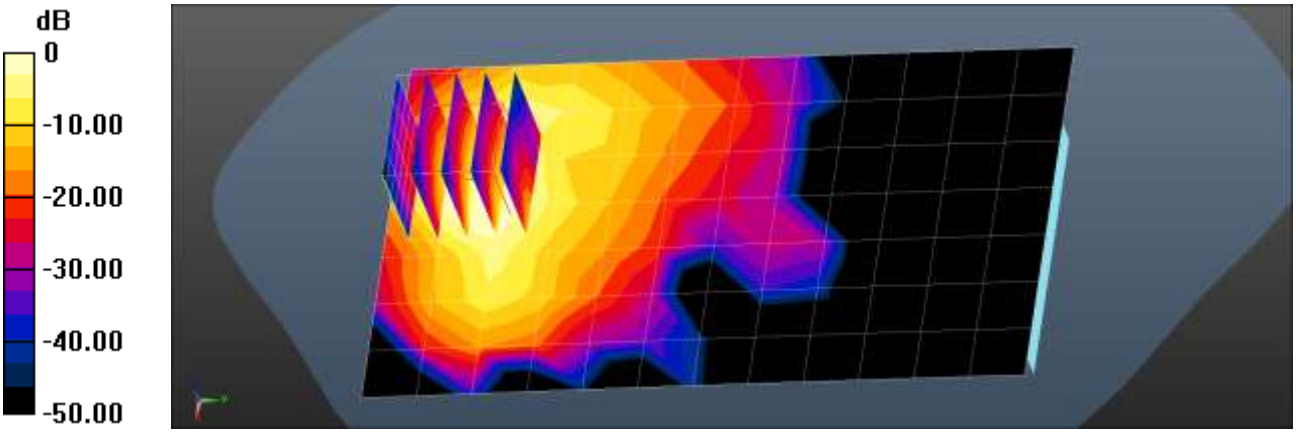
DUT: SM-G990B/DS; Type: Bar;

Communication System: UID 0, LTE Band 66(20MHz FCC) (0); Frequency: 1720 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1720 MHz; σ = 1.339 S/m; ε_r = 41.514; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.56, 8.56, 8.56) @ 1720 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

LTE Band 66 Body Rear QPSK 20MHz 50RB 0offset 132072ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.94 W/kg
LTE Band 66 Body Rear QPSK 20MHz 50RB 0offset 132072ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.524 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 5.15 W/kg
SAR(1 g) = 2.28 W/kg; SAR(10 g) = 1.01 W/kg
Maximum value of SAR (measured) = 4.21 W/kg



0 dB = 1.94 W/kg = 2.87 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.0℃
Ambient Temperature: 21.1℃
Test Date: 05/28/2021
Plot No.: 63

DUT: SM-G990B/DS; Type: Bar;

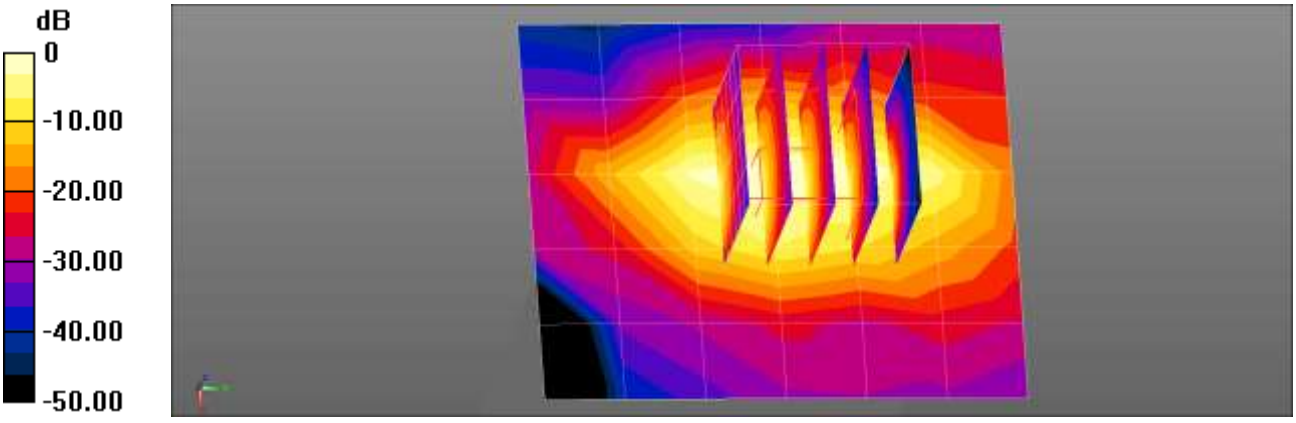
Communication System: UID 0, NR Band 66 (0); Frequency: 1720 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1720 MHz; σ = 1.339 S/m; ε_r = 41.517; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.56, 8.56, 8.56) @ 1720 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

NR Band n66 Body Bottom CP QPSK 20MHz 1RB 1offset 344000ch/Area Scan (6x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 3.68 W/kg

NR Band n66 Body Bottom CP QPSK 20MHz 1RB 1offset 344000ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 54.95 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 7.65 W/kg
SAR(1 g) = 2.62 W/kg; SAR(10 g) = 1.18 W/kg
Maximum value of SAR (measured) = 5.45 W/kg



0 dB = 3.68 W/kg = 5.66 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Mobile Phone
Liquid Temperature:	22.1℃
Ambient Temperature:	22.2℃
Test Date:	05/27/2021
Plot No.:	64

DUT: SM-G990B/DS; Type: Bar;

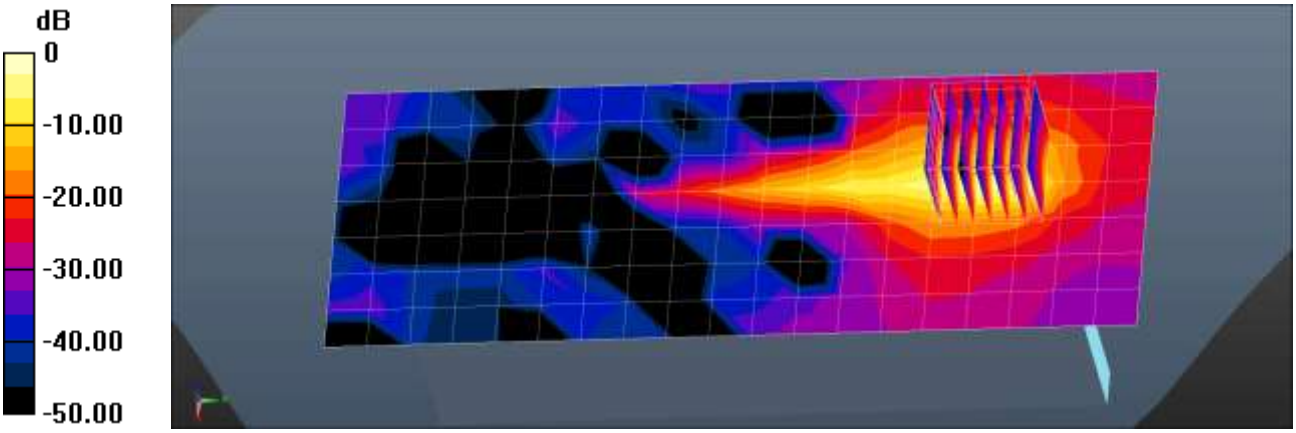
Communication System: UID 0, WIFI 5GHz (0); Frequency: 5720 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5720 MHz; σ = 5.326 S/m; ε_r = 35.639; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7352; ConvF(5.05, 5.05, 5.05) @ 5720 MHz; Calibrated: 2020-10-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2020-08-07
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

802.11a Body Left 6Mbps 144ch/Area Scan (8x20x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 10.8 W/kg

802.11a Body Left 6Mbps 144ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 1.310 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 44.8 W/kg
SAR(1 g) = 4.88 W/kg; SAR(10 g) = 0.955 W/kg
Maximum value of SAR (measured) = 18.6 W/kg



0 dB = 10.8 W/kg = 10.34 dBW/kg

Appendix C. – Dipole Verification Plots

Verification Data (750 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	22.1 ℃
Test Date:	05/04/2021

DUT: Dipole 750 MHz; Type: D750V3;

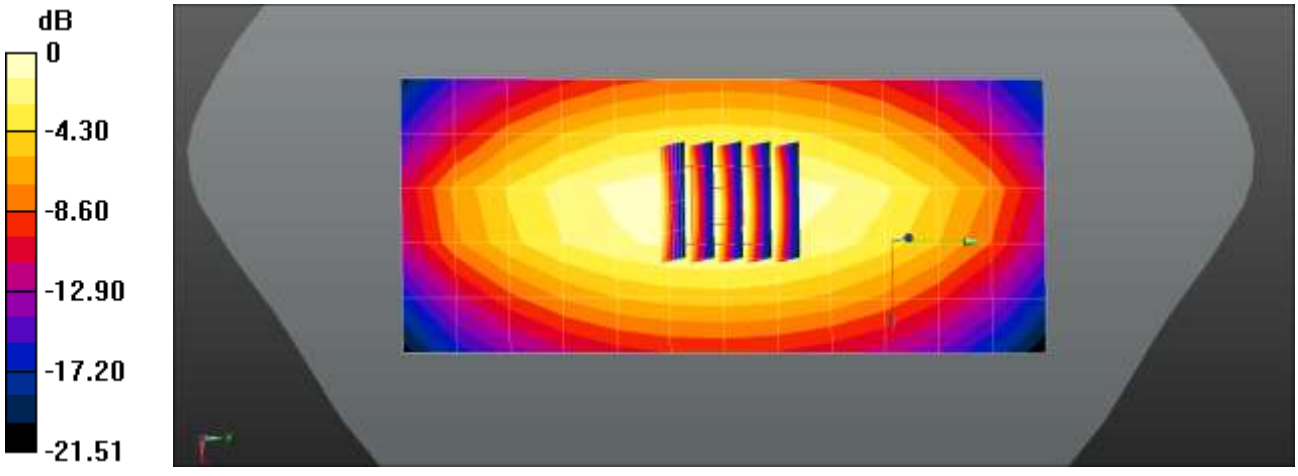
Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; σ = 0.899 S/m; ε_r = 43.208; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(9.95, 9.95, 9.95) @ 750 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

750MHz Head Verification/Area Scan (6x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.508 W/kg

750MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.06 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.605 W/kg
SAR(1 g) = 0.418 W/kg; SAR(10 g) = 0.280 W/kg
Maximum value of SAR (measured) = 0.548 W/kg



0 dB = 0.508 W/kg = −2.94 dBW/kg

Verification Data (835 ㎒ Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 22.7 ℃
Test Date: 05/06/2021
DUT: Dipole 835 MHz; Type: D835V2;

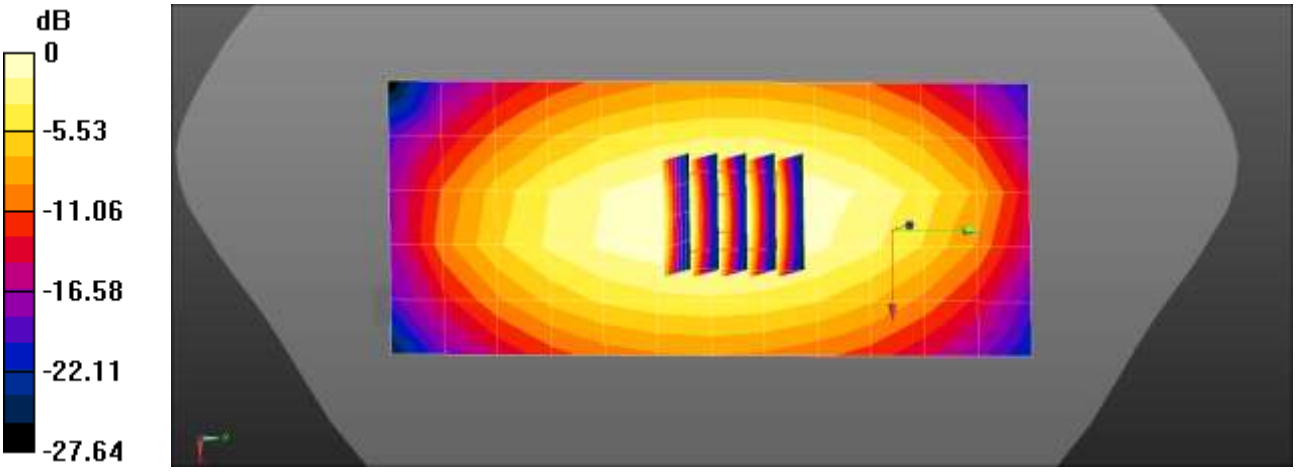
Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 835 MHz; σ = 0.915 S/m; ε_r = 42.097; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(9.75, 9.75, 9.75) @ 835 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

835MHz Head Verification/Area Scan (6x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.588 W/kg

835MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.58 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.774 W/kg
SAR(1 g) = 0.503 W/kg; SAR(10 g) = 0.332 W/kg
Maximum value of SAR (measured) = 0.680 W/kg



0 dB = 0.588 W/kg = −2.30 dBW/kg

Verification Data (835 ㎒ Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 22.0 ℃
Test Date: 05/05/2021
DUT: Dipole 835 MHz; Type: D835V2;

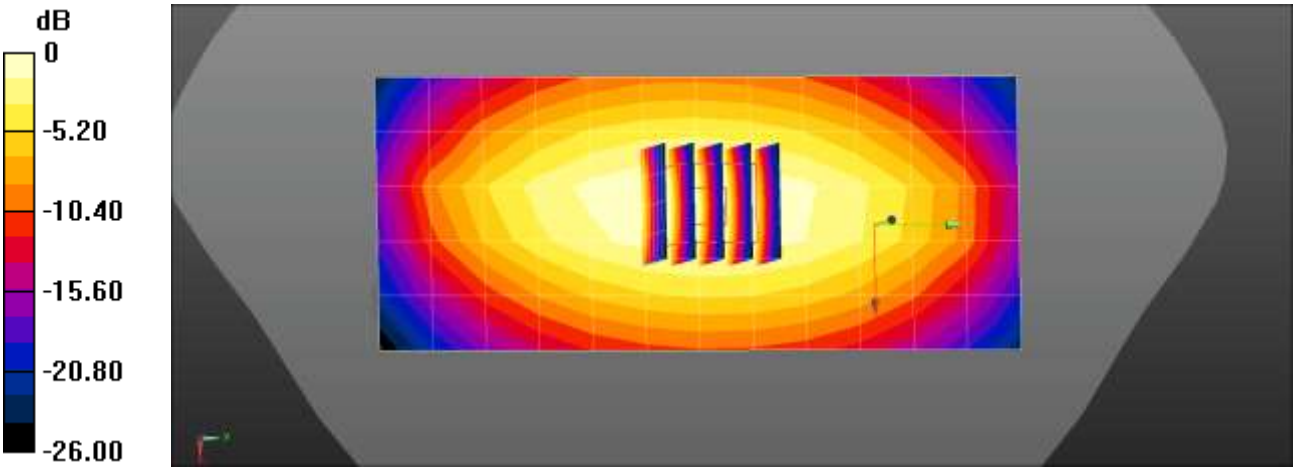
Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 835 MHz; σ = 0.914 S/m; ε_r = 42.029; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(9.75, 9.75, 9.75) @ 835 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

835MHz Head Verification/Area Scan (6x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.614 W/kg

835MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.64 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.760 W/kg
SAR(1 g) = 0.504 W/kg; SAR(10 g) = 0.330 W/kg
Maximum value of SAR (measured) = 0.675 W/kg



0 dB = 0.614 W/kg = −2.12 dBW/kg

Verification Data (835 ㎒ Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 21.3 ℃
Test Date: 05/03/2021
DUT: Dipole 835 MHz; Type: D835V2;

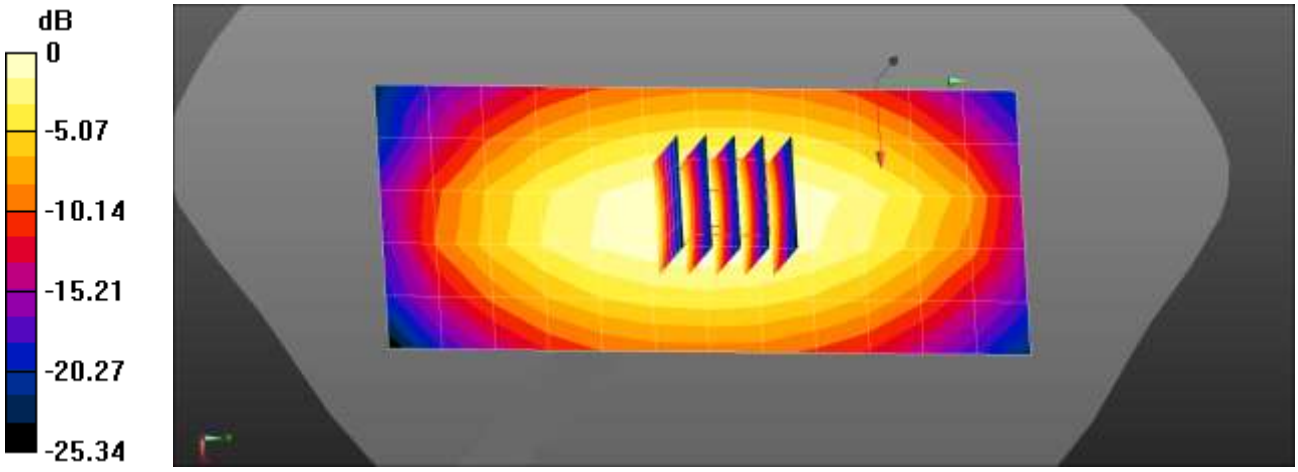
Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 835 MHz; σ = 0.915 S/m; ε_r = 42.031; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(9.75, 9.75, 9.75) @ 835 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

835MHz Head Verification/Area Scan (6x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.590 W/kg

835MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.44 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.763 W/kg
SAR(1 g) = 0.500 W/kg; SAR(10 g) = 0.331 W/kg
Maximum value of SAR (measured) = 0.671 W/kg



0 dB = 0.590 W/kg = −2.29 dBW/kg

Verification Data (835 ㎒ Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 20.1 ℃
Test Date: 05/11/2021
DUT: Dipole 835 MHz; Type: D835V2;

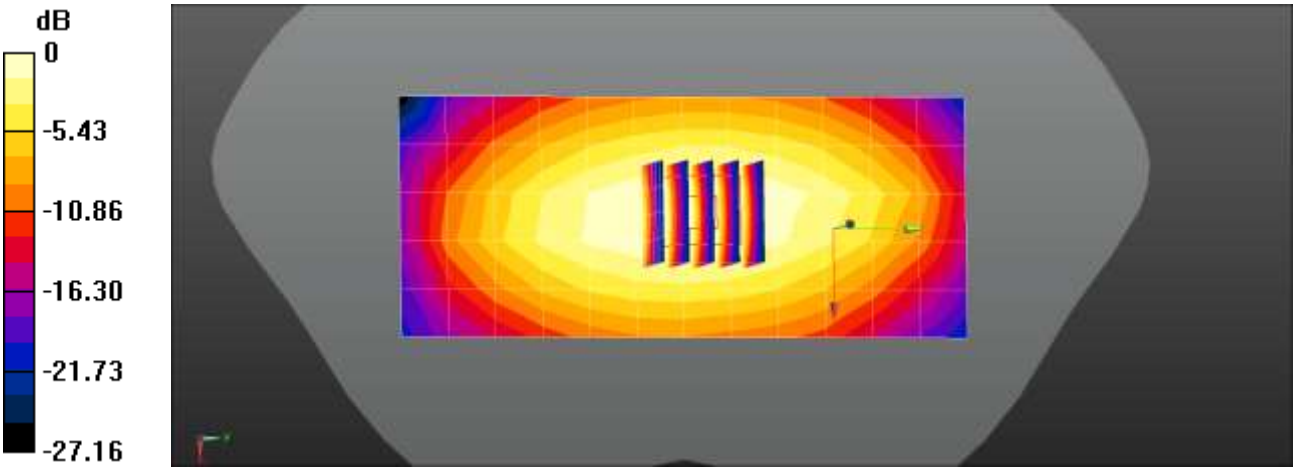
Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 835 MHz; σ = 0.913 S/m; ε_r = 42.056; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(9.75, 9.75, 9.75) @ 835 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

835MHz Head Verification/Area Scan (6x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.588 W/kg

835MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.51 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.766 W/kg
SAR(1 g) = 0.501 W/kg; SAR(10 g) = 0.332 W/kg
Maximum value of SAR (measured) = 0.673 W/kg



0 dB = 0.588 W/kg = −2.30 dBW/kg

Verification Data (1 800 ㎒ Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 21.5 ℃
Test Date: 06/03/2021
DUT: Dipole 1800 MHz D1800V2; Type: D1800V2;

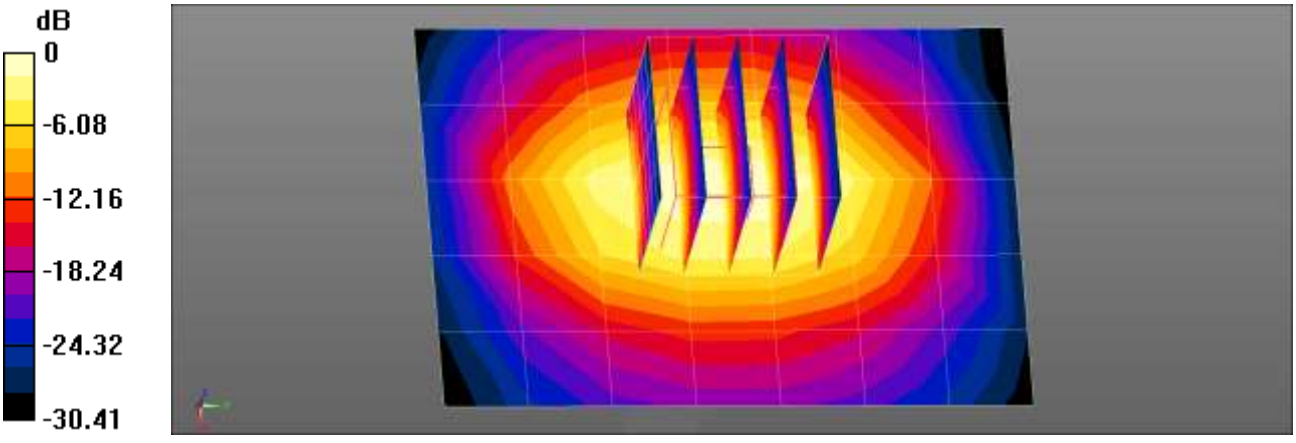
Communication System: UID 0, CW (0); Frequency: 1800 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1800 MHz; σ = 1.415 S/m; ε_r = 41.102; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.56, 8.56, 8.56) @ 1800 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

1800MHz Head Verification/Area Scan (6x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.55 W/kg

1800MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 44.80 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 3.62 W/kg
SAR(1 g) = 1.95 W/kg; SAR(10 g) = 1.03 W/kg
Maximum value of SAR (measured) = 3.05 W/kg



0 dB = 2.55 W/kg = 4.06 dBW/kg

Verification Data (1 800 ㎒ Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 20.8 ℃
Test Date: 06/01/2021
DUT: Dipole 1800 MHz D1800V2; Type: D1800V2;

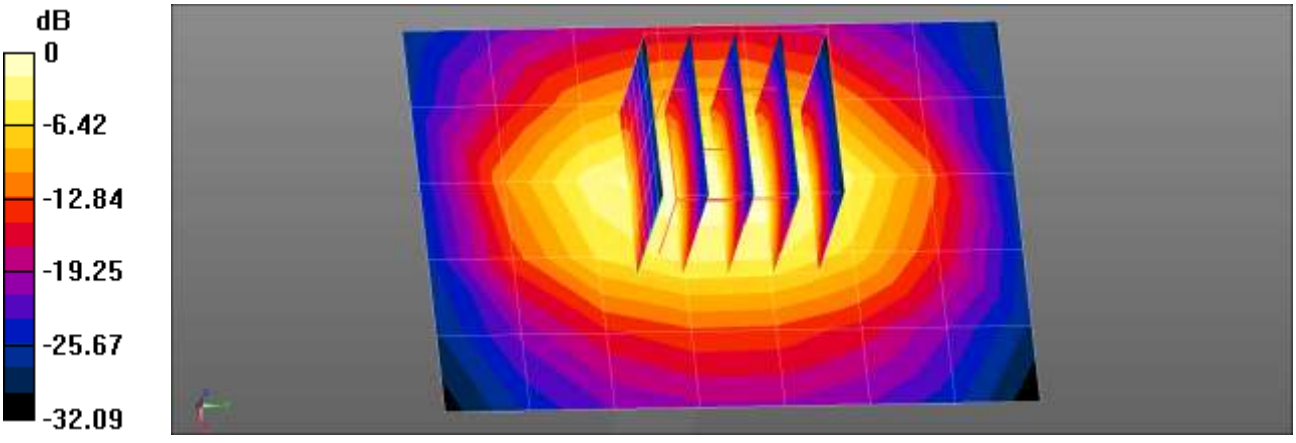
Communication System: UID 0, CW (0); Frequency: 1800 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1800 MHz; σ = 1.418 S/m; ε_r = 41.114; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.56, 8.56, 8.56) @ 1800 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

1800MHz Head Verification/Area Scan (6x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.54 W/kg

1800MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 44.67 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 3.67 W/kg
SAR(1 g) = 1.96 W/kg; SAR(10 g) = 1.04 W/kg
Maximum value of SAR (measured) = 3.07 W/kg



0 dB = 2.54 W/kg = 4.05 dBW/kg

Verification Data (1 800 ㎒ Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 20.8 ℃
Test Date: 05/27/2021
DUT: Dipole 1800 MHz D1800V2; Type: D1800V2;

Communication System: UID 0, CW (0); Frequency: 1800 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1800 MHz; σ = 1.42 S/m; ε_r = 41.114; ρ = 1000 kg/m^3
Phantom section: Flat Section

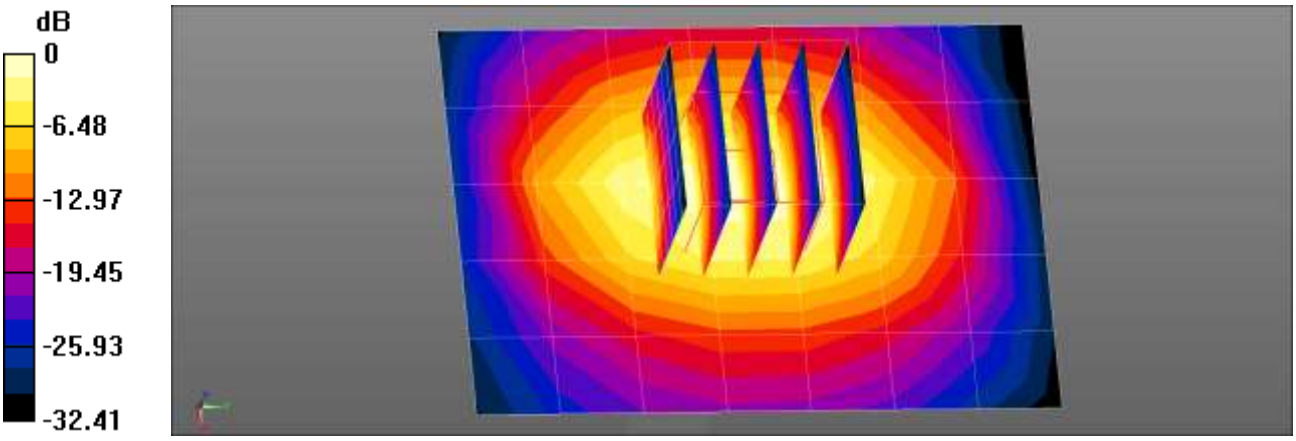
DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.56, 8.56, 8.56) @ 1800 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

1800MHz Head Verification/Area Scan (6x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.86 W/kg

1800MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 45.23 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 3.83 W/kg
SAR(1 g) = 2.02 W/kg; SAR(10 g) = 1.06 W/kg

Maximum value of SAR (measured) = 3.19 W/kg



0 dB = 2.86 W/kg = 4.56 dBW/kg

Verification Data (1 900 ㎒ Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 21.8 ℃
Test Date: 05/24/2021
DUT: Dipole 1900 MHz D1900V2; Type: D1900V2;

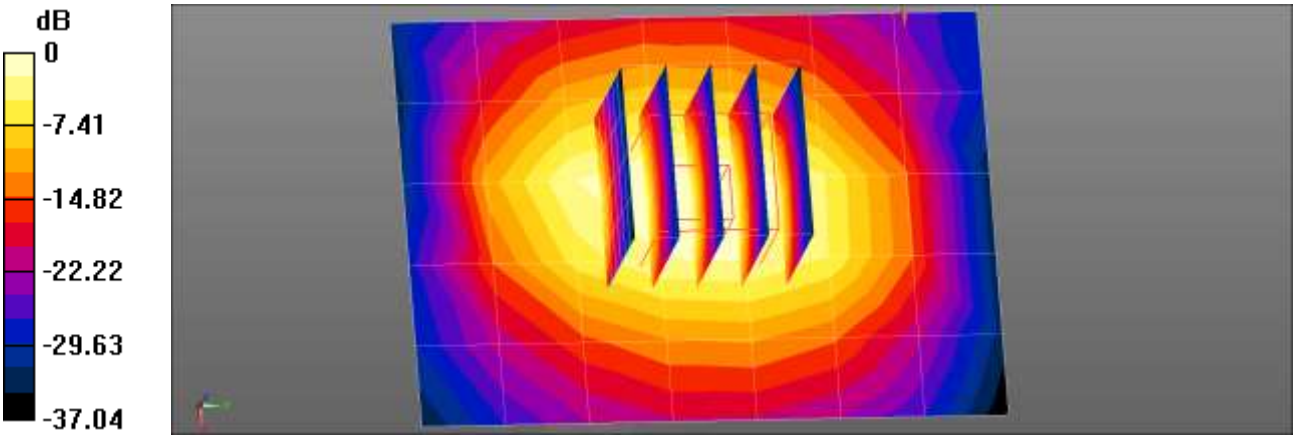
Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.45 S/m; ε_r = 41.462; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.19, 8.19, 8.19) @ 1900 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

1900MHz Head Verification/Area Scan (6x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.64 W/kg

1900MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 48.46 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 3.92 W/kg
SAR(1 g) = 2.05 W/kg; SAR(10 g) = 1.05 W/kg
Maximum value of SAR (measured) = 3.27 W/kg



0 dB = 2.64 W/kg = 4.21 dBW/kg

Verification Data (1 900 ㎒ Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 21.3 ℃
Test Date: 05/26/2021
DUT: Dipole 1900 MHz D1900V2; Type: D1900V2;

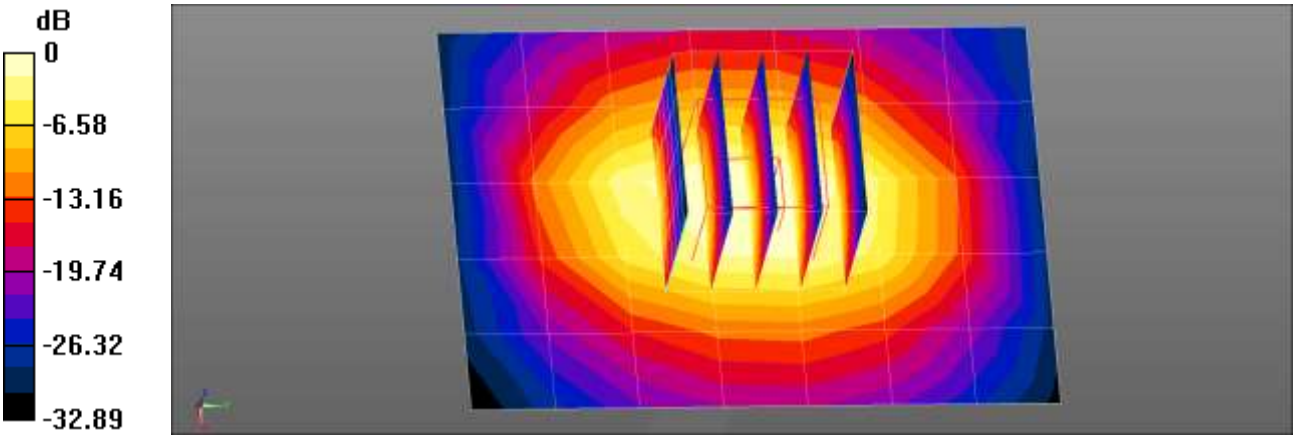
Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.448 S/m; ε_r = 41.45; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.19, 8.19, 8.19) @ 1900 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

1900MHz Head Verification/Area Scan (6x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.45 W/kg

1900MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 48.36 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 3.93 W/kg
SAR(1 g) = 2.1 W/kg; SAR(10 g) = 1.09 W/kg
Maximum value of SAR (measured) = 3.30 W/kg



0 dB = 2.45 W/kg = 3.89 dBW/kg

Verification Data (1 900 ㎒ Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 21.0 ℃
Test Date: 05/28/2021
DUT: Dipole 1900 MHz D1900V2; Type: D1900V2;

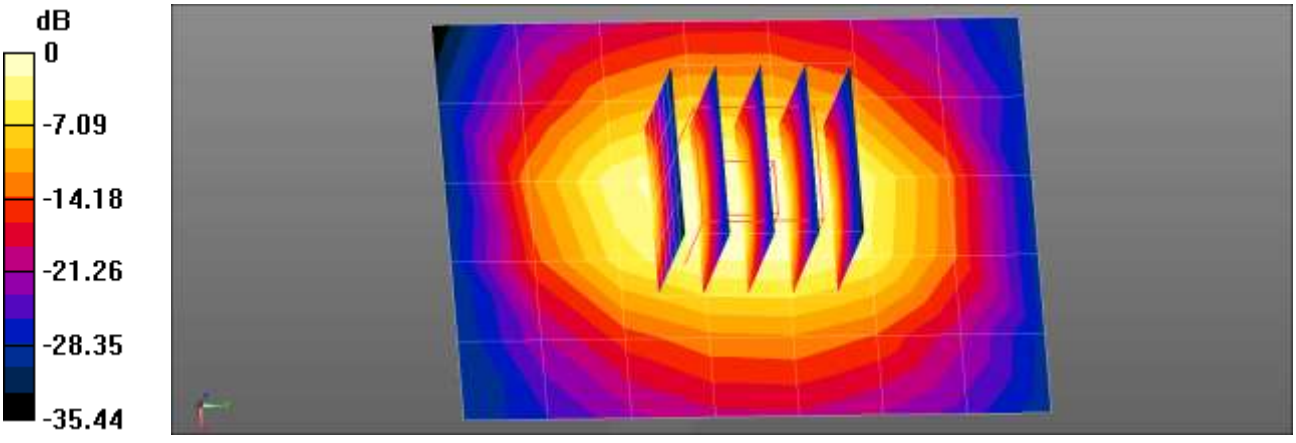
Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.445 S/m; ε_r = 41.478; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.19, 8.19, 8.19) @ 1900 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

1900MHz Head Verification/Area Scan (6x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.43 W/kg

1900MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 48.41 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 3.90 W/kg
SAR(1 g) = 2.09 W/kg; SAR(10 g) = 1.08 W/kg
Maximum value of SAR (measured) = 3.28 W/kg



0 dB = 2.43 W/kg = 3.86 dBW/kg

Verification Data (2 450 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	20.4 ℃
Test Date:	05/28/2021

DUT: Dipole 2450 MHz D2450V2; Type: D2450V2;

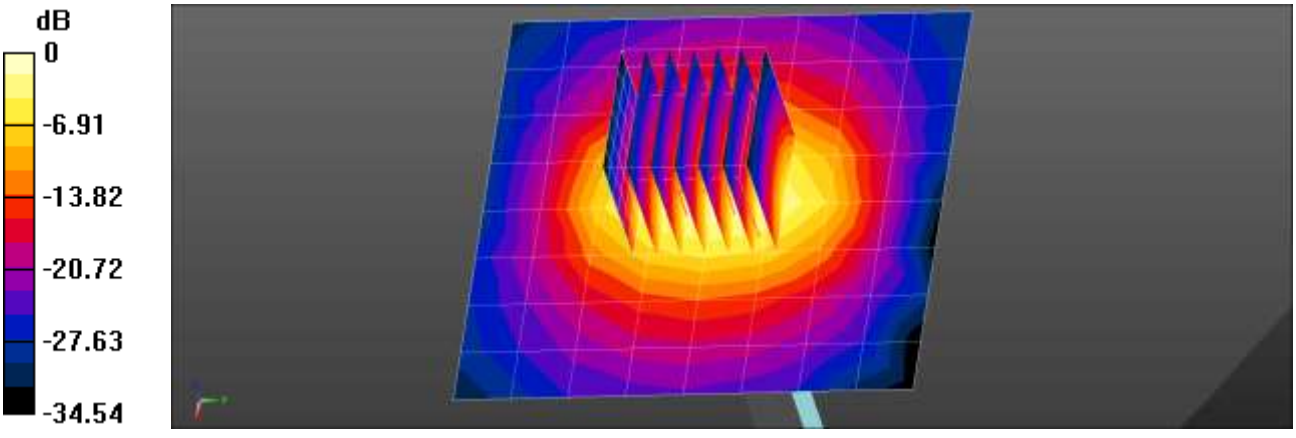
Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.82 S/m; ε_r = 37.884; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.34, 7.34, 7.34) @ 2450 MHz; Calibrated: 2020-11-25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn446; Calibrated: 2020-07-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

Dipole/2450MHz Head Verification/Area Scan (9x9x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 4.26 W/kg

Dipole/2450MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 50.10 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 5.66 W/kg
SAR(1 g) = 2.54 W/kg; SAR(10 g) = 1.15 W/kg
Maximum value of SAR (measured) = 4.45 W/kg



0 dB = 4.26 W/kg = 6.29 dBW/kg

Verification Data (2 450 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	19.6 ℃
Test Date:	06/04/2021

DUT: Dipole 2450 MHz D2450V2; Type: D2450V2;

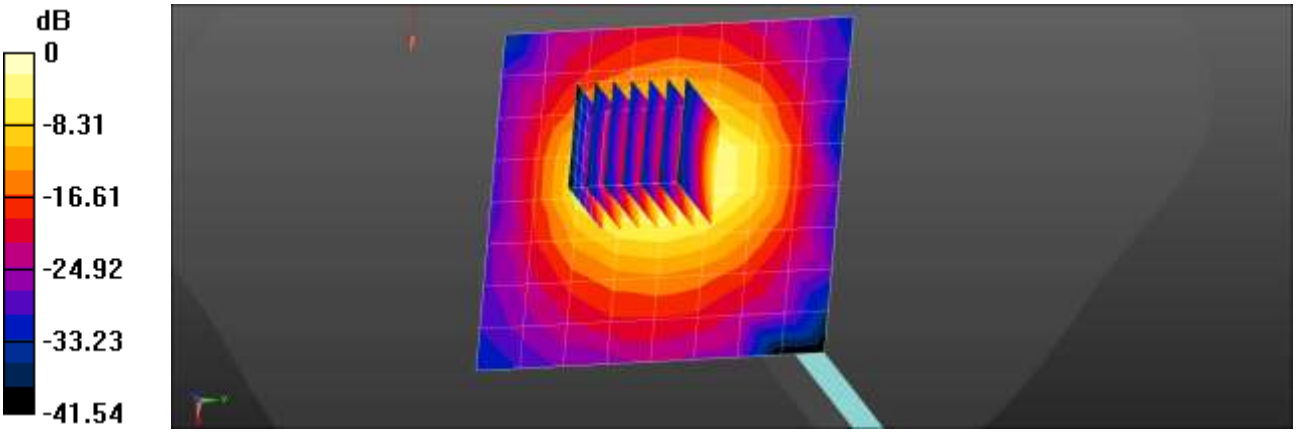
Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.818 S/m; ε_r = 38.923; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.34, 7.34, 7.34) @ 2450 MHz; Calibrated: 2020-11-25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn446; Calibrated: 2020-07-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

Dipole/2450MHz Head Verification/Area Scan (9x9x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 3.62 W/kg

Dipole/2450MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 46.04 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 5.83 W/kg
SAR(1 g) = 2.58 W/kg; SAR(10 g) = 1.16 W/kg
Maximum value of SAR (measured) = 4.55 W/kg



0 dB = 3.62 W/kg = 5.59 dBW/kg

Verification Data (2 450 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	22.2 ℃
Test Date:	06/07/2021

DUT: Dipole 2450 MHz D2450V2; Type: D2450V2;

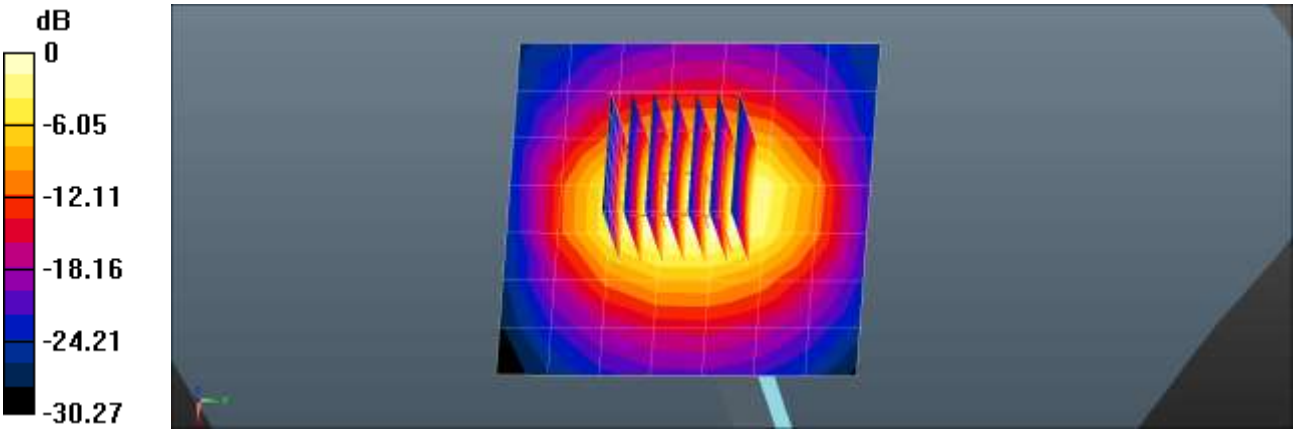
Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.822 S/m; ε_r = 39.879; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(7.47, 7.47, 7.47) @ 2450 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

Dipole/2450 MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 3.39 W/kg

Dipole/2450 MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.56 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 5.87 W/kg
SAR(1 g) = 2.72 W/kg; SAR(10 g) = 1.24 W/kg
Maximum value of SAR (measured) = 4.68 W/kg



0 dB = 3.39 W/kg = 5.31 dBW/kg

Verification Data (2 450 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	21.3 ℃
Test Date:	06/08/2021

DUT: Dipole 2450 MHz D2450V2; Type: D2450V2;

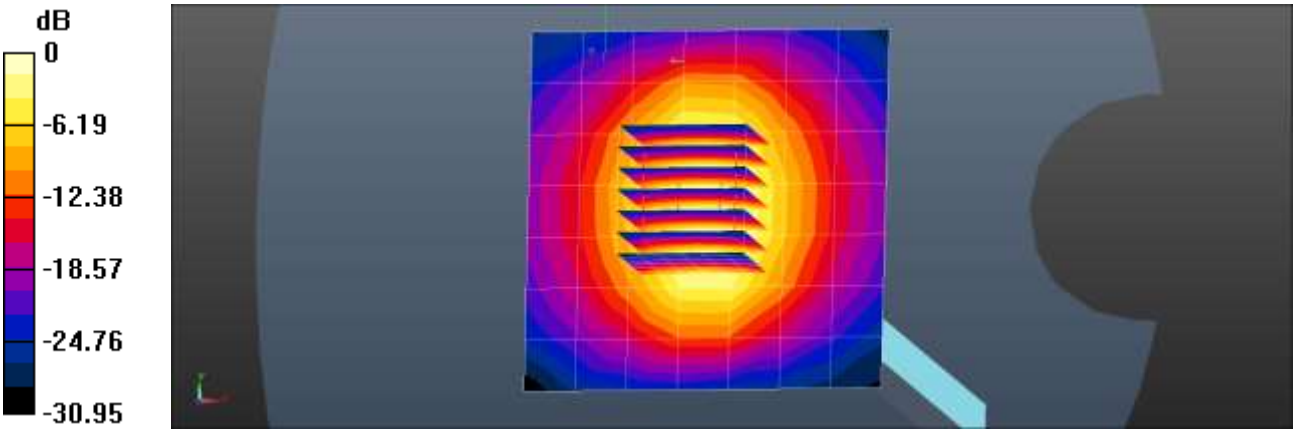
Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.82 S/m; ε_r = 38.862; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(7.47, 7.47, 7.47) @ 2450 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

Dipole/2450 MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 3.45 W/kg

Dipole/2450 MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 53.40 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 6.11 W/kg
SAR(1 g) = 2.75 W/kg; SAR(10 g) = 1.24 W/kg
Maximum value of SAR (measured) = 4.81 W/kg



0 dB = 3.45 W/kg = 5.38 dBW/kg

Verification Data (2 450 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	20.6 ℃
Test Date:	05/28/2021

DUT: Dipole 2450 MHz; Type: D2450V2;

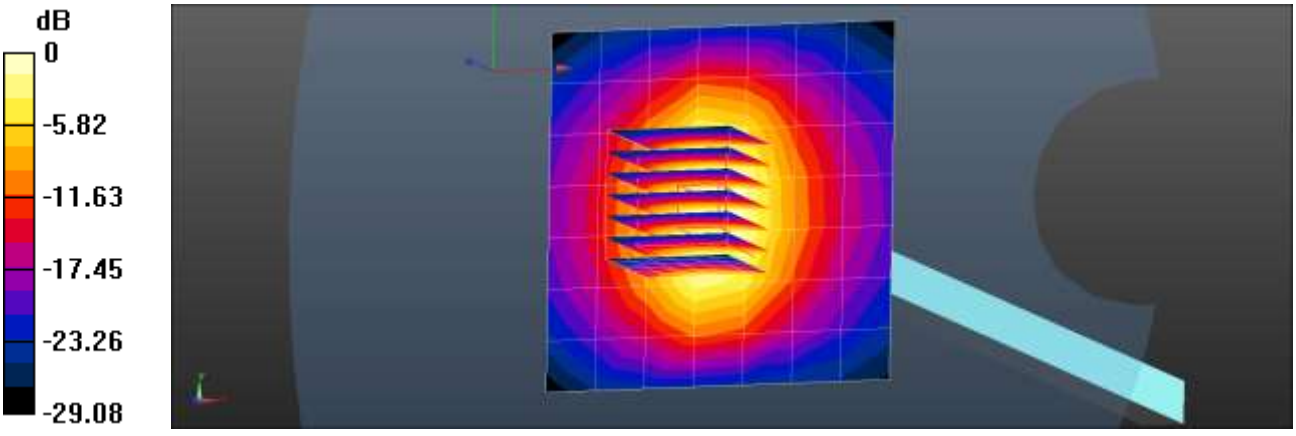
Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.82 S/m; ε_r = 37.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(7.78, 7.78, 7.78) @ 2450 MHz; Calibrated: 2021-03-24
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1629; Calibrated: 2020-08-11
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.8 (7)

Dipole/2450MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 3.27 W/kg

Dipole/2450MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 48.36 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 5.09 W/kg
SAR(1 g) = 2.38 W/kg; SAR(10 g) = 1.11 W/kg
Maximum value of SAR (measured) = 4.06 W/kg



0 dB = 3.27 W/kg = 5.15 dBW/kg

Verification Data (2 600 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	20.9 ℃
Test Date:	06/01/2021

DUT: Dipole 2600 MHz D2600V2; Type: D2600V2;

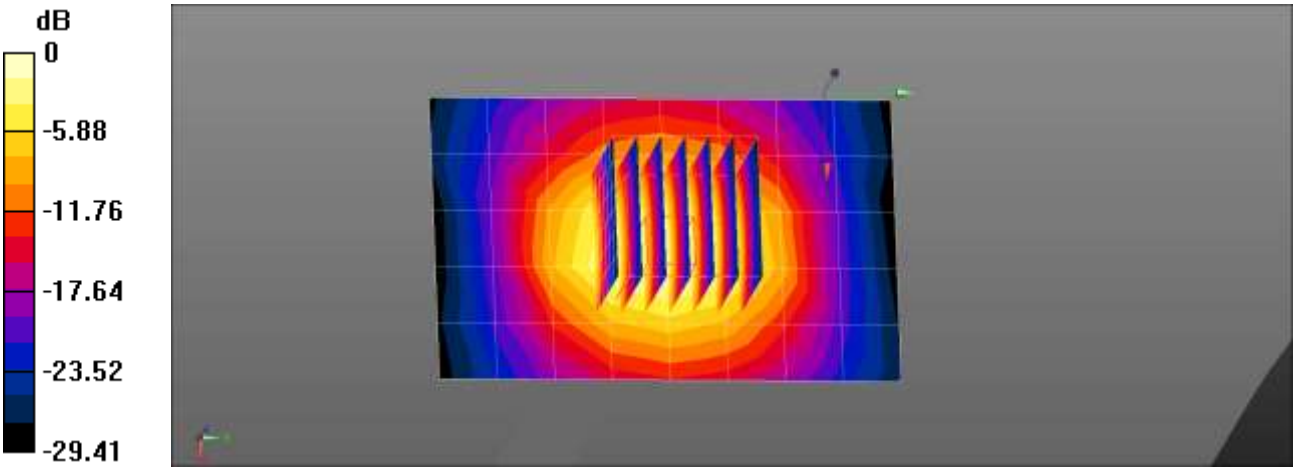
Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; σ = 2.001 S/m; ε_r = 37.561; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3076; ConvF(4.5, 4.5, 4.5) @ 2600 MHz; Calibrated: 2020-07-31
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn648; Calibrated: 2020-05-25
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

2600MHz Head Verification/Area Scan (6x9x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 3.24 W/kg

2600MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 44.21 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 6.14 W/kg
SAR(1 g) = 2.74 W/kg; SAR(10 g) = 1.2 W/kg
Maximum value of SAR (measured) = 3.67 W/kg



0 dB = 3.24 W/kg = 5.10 dBW/kg

Verification Data (5 250 ㎒ Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 20.3 ℃
Test Date: 06/01/2021
DUT: Dipole 5GHz; Type: D5000V2;

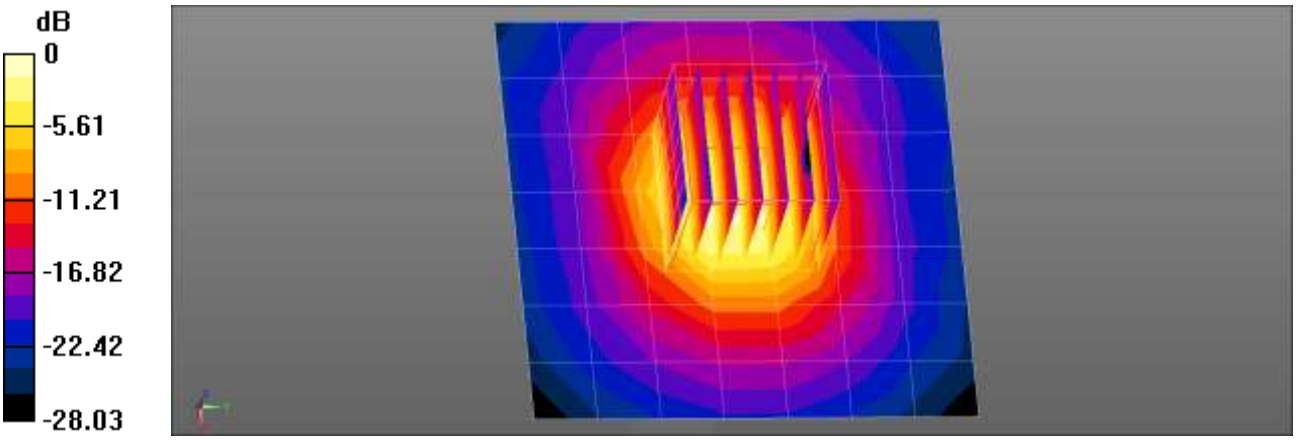
Communication System: UID 0, CW (0); Frequency: 5250 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5250 MHz; σ = 4.697 S/m; ε_r = 36.353; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7352; ConvF(5.75, 5.75, 5.75) @ 5250 MHz; Calibrated: 2020-10-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2020-08-07
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

5250MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 7.34 W/kg

5250MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 49.55 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 16.9 W/kg
SAR(1 g) = 3.83 W/kg; SAR(10 g) = 1.08 W/kg
Maximum value of SAR (measured) = 9.83 W/kg



0 dB = 7.34 W/kg = 8.66 dBW/kg

Verification Data (5 600 ㎒ Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 20.3 ℃
Test Date: 06/01/2021
DUT: Dipole 5GHz; Type: D5000V2;

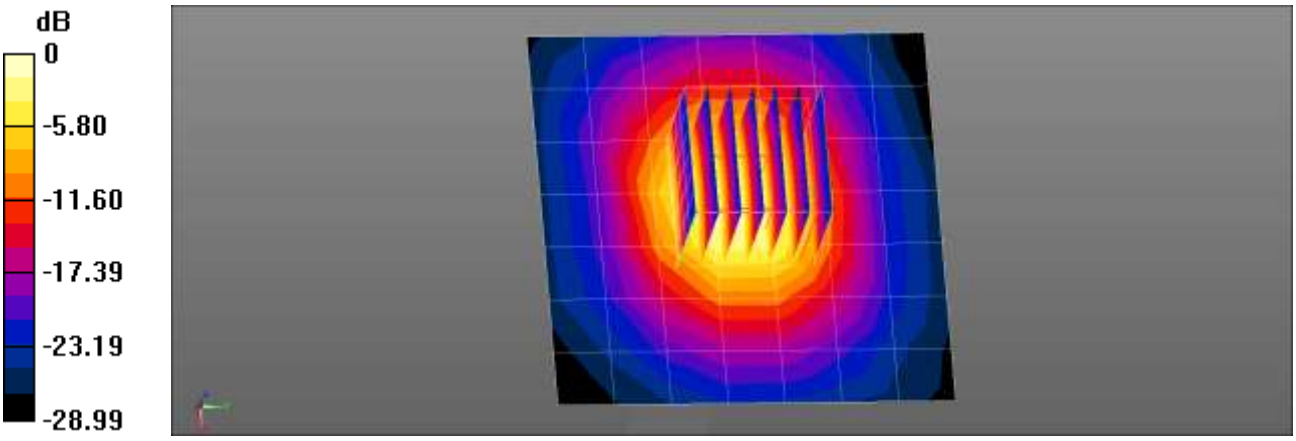
Communication System: UID 0, CW (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5600 MHz; σ = 5.026 S/m; ε_r = 35.949; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7352; ConvF(4.83, 4.83, 4.83) @ 5600 MHz; Calibrated: 2020-10-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2020-08-07
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

5600MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 7.45 W/kg

5600MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 46.26 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 17.8 W/kg
SAR(1 g) = 3.76 W/kg; SAR(10 g) = 1.07 W/kg
Maximum value of SAR (measured) = 9.84 W/kg



0 dB = 7.45 W/kg = 8.72 dBW/kg

Verification Data (5 750 ㎒ Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 20.3 ℃
Test Date: 06/01/2021
DUT: Dipole 5GHz; Type: D5000V2;

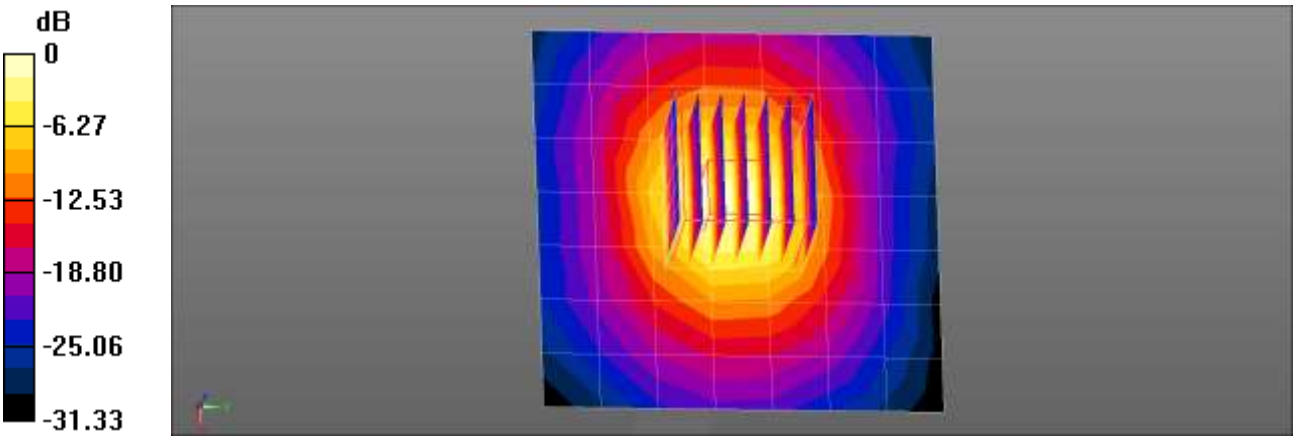
Communication System: UID 0, CW (0); Frequency: 5750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5750 MHz; σ = 5.246 S/m; ε_r = 35.717; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7352; ConvF(5.05, 5.05, 5.05) @ 5750 MHz; Calibrated: 2020-10-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2020-08-07
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

5750MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 8.39 W/kg

5750MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 45.22 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 19.1 W/kg
SAR(1 g) = 3.88 W/kg; SAR(10 g) = 1.11 W/kg
Maximum value of SAR (measured) = 10.3 W/kg



0 dB = 8.39 W/kg = 9.24 dBW/kg

Verification Data (5 750 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	21.3 ℃
Test Date:	06/07/2021

DUT: Dipole D5GHzV2; Type: D5GHzV2;

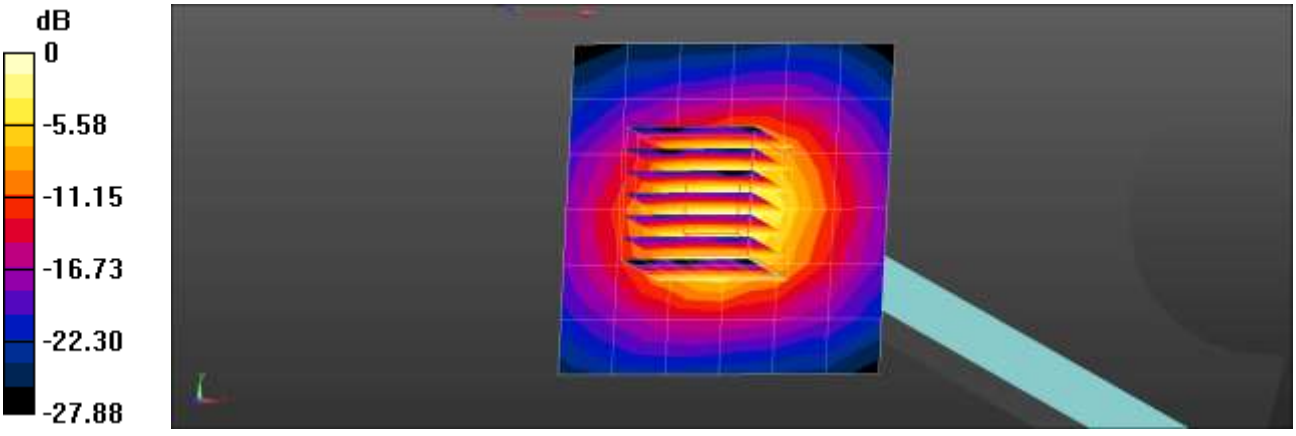
Communication System: UID 0, CW (0); Frequency: 5750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5750 MHz; σ = 5.116 S/m; ε_r = 35.934; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7622; ConvF(5.14, 5.14, 5.14) @ 5750 MHz; Calibrated: 2020-11-06
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2021-02-19
- Phantom: Twin-SAM V5.0
- Measurement SW: DASY52, Version 52.10 (4)

Dipole/5750MHz Head Verification/Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 10.3 W/kg

Dipole/5750MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 49.80 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 18.6 W/kg
SAR(1 g) = 3.99 W/kg; SAR(10 g) = 1.15 W/kg
Maximum value of SAR (measured) = 10.4 W/kg



0 dB = 10.3 W/kg = 10.12 dBW/kg

Verification Data (5 250 ㎒ Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 21.9 ℃
Test Date: 05/26/2021
DUT: Dipole 5GHz; Type: D5000V2;

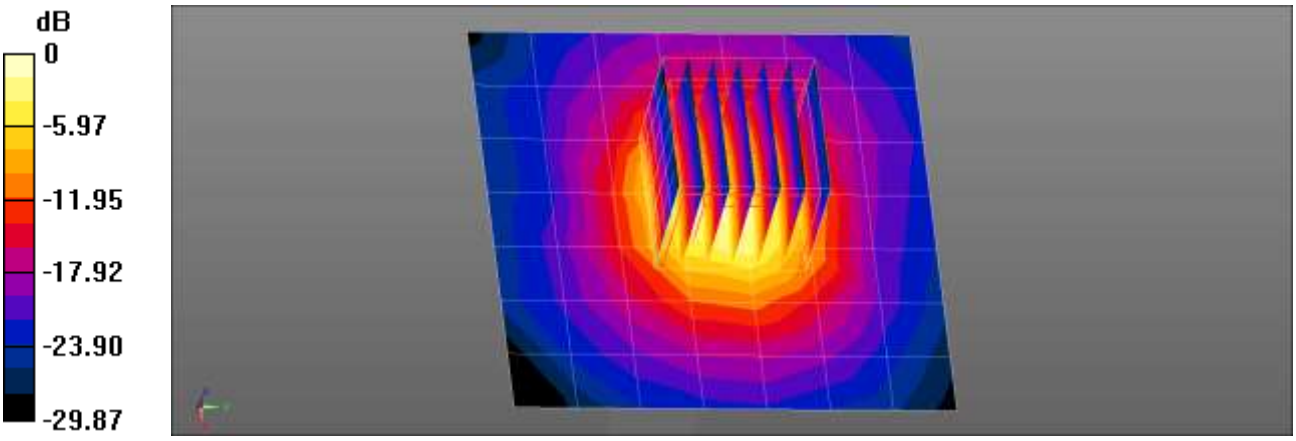
Communication System: UID 0, CW (0); Frequency: 5250 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5250 MHz; σ = 4.634 S/m; ε_r = 37.011; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7352; ConvF(5.75, 5.75, 5.75) @ 5250 MHz; Calibrated: 2020-10-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2020-08-07
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

5250MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 9.02 W/kg

5250MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 49.34 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 18.8 W/kg
SAR(1 g) = 4.17 W/kg; SAR(10 g) = 1.15 W/kg
Maximum value of SAR (measured) = 10.8 W/kg



0 dB = 9.02 W/kg = 9.55 dBW/kg

Verification Data (5 600 ㎒ Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 22.1 ℃
Test Date: 05/27/2021
DUT: Dipole 5GHz; Type: D5000V2;

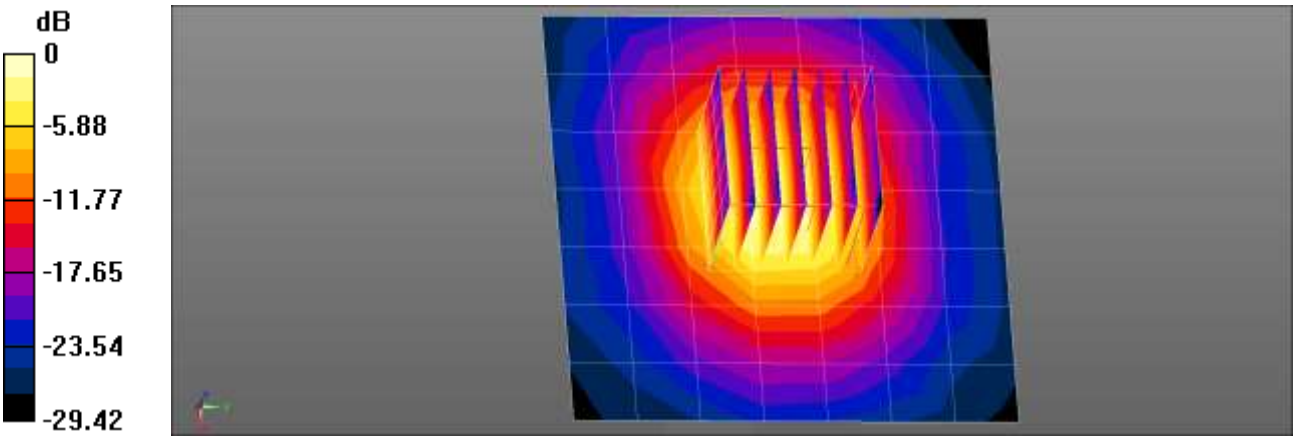
Communication System: UID 0, CW (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5600 MHz; σ = 5.192 S/m; ε_r = 35.969; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7352; ConvF(4.83, 4.83, 4.83) @ 5600 MHz; Calibrated: 2020-10-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2020-08-07
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

5600MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 7.77 W/kg

5600MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 46.47 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 18.5 W/kg
SAR(1 g) = 3.9 W/kg; SAR(10 g) = 1.11 W/kg
Maximum value of SAR (measured) = 10.2 W/kg



0 dB = 7.77 W/kg = 8.91 dBW/kg

Verification Data (5 750 ㎒ Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 21.9 ℃
Test Date: 05/28/2021
DUT: Dipole 5GHz; Type: D5000V2;

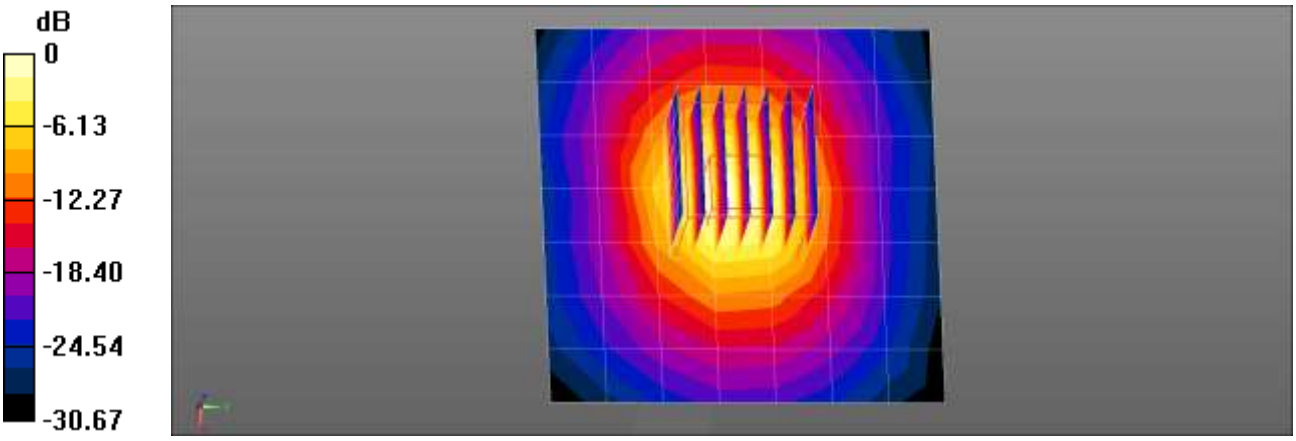
Communication System: UID 0, CW (0); Frequency: 5750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5750 MHz; σ = 5.27 S/m; ε_r = 36.005; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7352; ConvF(5.05, 5.05, 5.05) @ 5750 MHz; Calibrated: 2020-10-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2020-08-07
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

5750MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 8.49 W/kg

5750MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 45.00 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 18.8 W/kg
SAR(1 g) = 3.9 W/kg; SAR(10 g) = 1.12 W/kg
Maximum value of SAR (measured) = 10.1 W/kg



0 dB = 8.49 W/kg = 9.29 dBW/kg

Extremity SAR

Verification Data (1 800 ㎒ Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 21.4 ℃
Test Date: 06/04/2021

DUT: Dipole 1800 MHz D1800V2; Type: D1800V2;

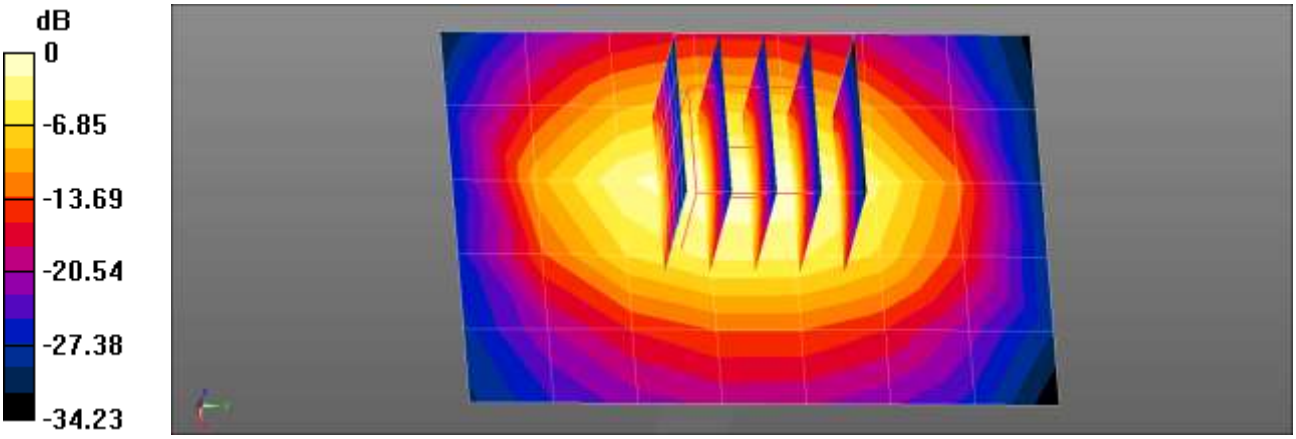
Communication System: UID 0, CW (0); Frequency: 1800 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1800 MHz; σ = 1.42 S/m; ε_r = 41.118; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.56, 8.56, 8.56) @ 1800 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

1800MHz Head Verification/Area Scan (6x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.83 W/kg

1800MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 45.09 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 3.84 W/kg
SAR(1 g) = 2.03 W/kg; SAR(10 g) = 1.06 W/kg
Maximum value of SAR (measured) = 3.19 W/kg



0 dB = 2.83 W/kg = 4.52 dBW/kg

Verification Data (1 800 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	19.7 ℃
Test Date:	05/28/2021

DUT: Dipole 1800 MHz D1800V2; Type: D1800V2;

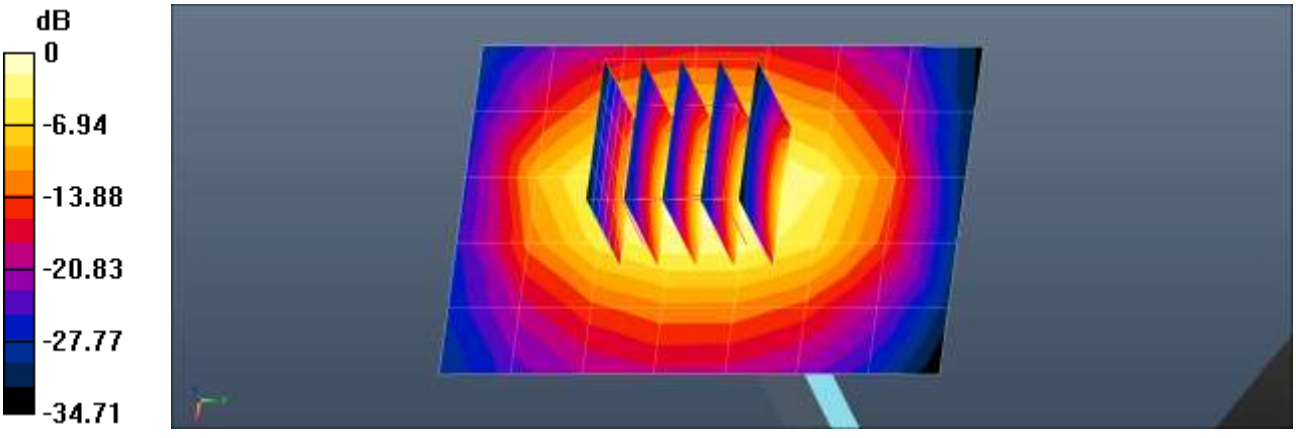
Communication System: UID 0, CW (0); Frequency: 1800 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1800 MHz; σ = 1.425 S/m; ε_r = 41.143; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.56, 8.56, 8.56) @ 1800 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

Dipole/1800MHz Head Verification/Area Scan (6x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.67 W/kg

Dipole/1800MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 45.96 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 3.77 W/kg
SAR(1 g) = 2 W/kg; SAR(10 g) = 1.04 W/kg
Maximum value of SAR (measured) = 3.16 W/kg



0 dB = 2.67 W/kg = 4.26 dBW/kg

Verification Data (1 800 ㎒ Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 21.1 ℃
Test Date: 06/02/2021
DUT: Dipole 1800 MHz D1800V2; Type: D1800V2;

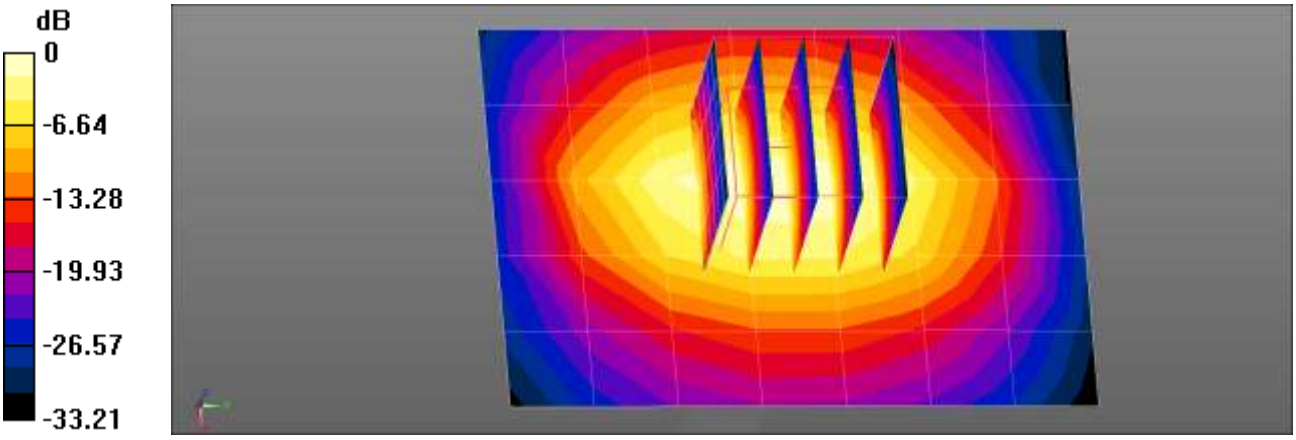
Communication System: UID 0, CW (0); Frequency: 1800 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1800 MHz; σ = 1.415 S/m; ε_r = 41.141; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.56, 8.56, 8.56) @ 1800 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.
- Measurement SW: DASY52, Version 52.10 (4)

1800MHz Head Verification/Area Scan (6x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.83 W/kg

1800MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 45.09 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 3.82 W/kg
SAR(1 g) = 2.02 W/kg; SAR(10 g) = 1.05 W/kg
Maximum value of SAR (measured) = 3.18 W/kg



0 dB = 2.83 W/kg = 4.52 dBW/kg

Verification Data (1 900 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	21.1 ℃
Test Date:	05/25/2021

DUT: Dipole 1900 MHz D1900V2; Type: D1900V2;

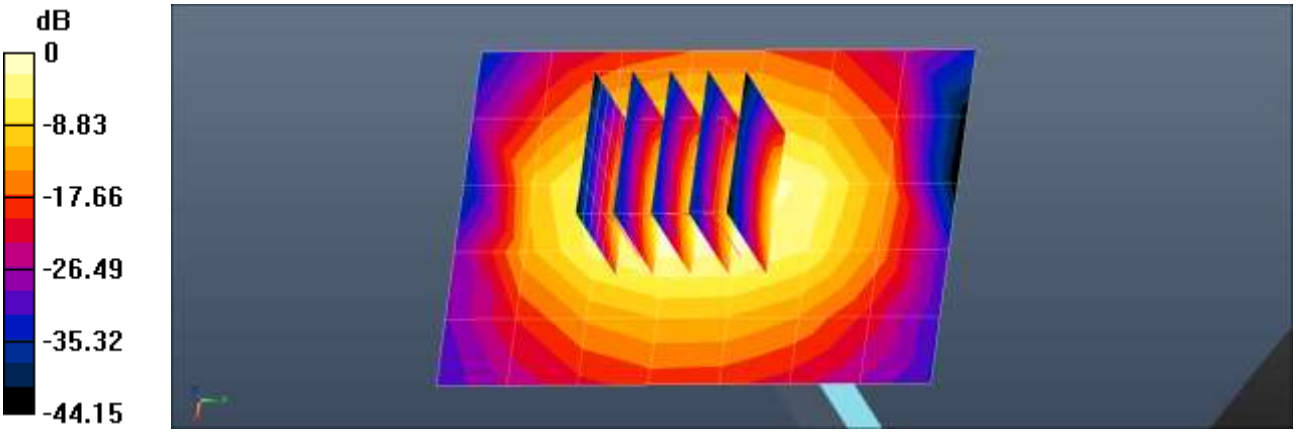
Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.386 S/m; ε_r = 40.795; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.19, 8.19, 8.19) @ 1900 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

Dipole/1900MHz Head Verification/Area Scan (6x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.47 W/kg

Dipole/1900MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 48.50 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 3.83 W/kg
SAR(1 g) = 2.02 W/kg; SAR(10 g) = 1.03 W/kg
Maximum value of SAR (measured) = 3.20 W/kg



0 dB = 2.47 W/kg = 3.92 dBW/kg

Verification Data (1 900 ㎒ Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 20.8 ℃
Test Date: 05/27/2021

DUT: Dipole 1900 MHz D1900V2; Type: D1900V2;

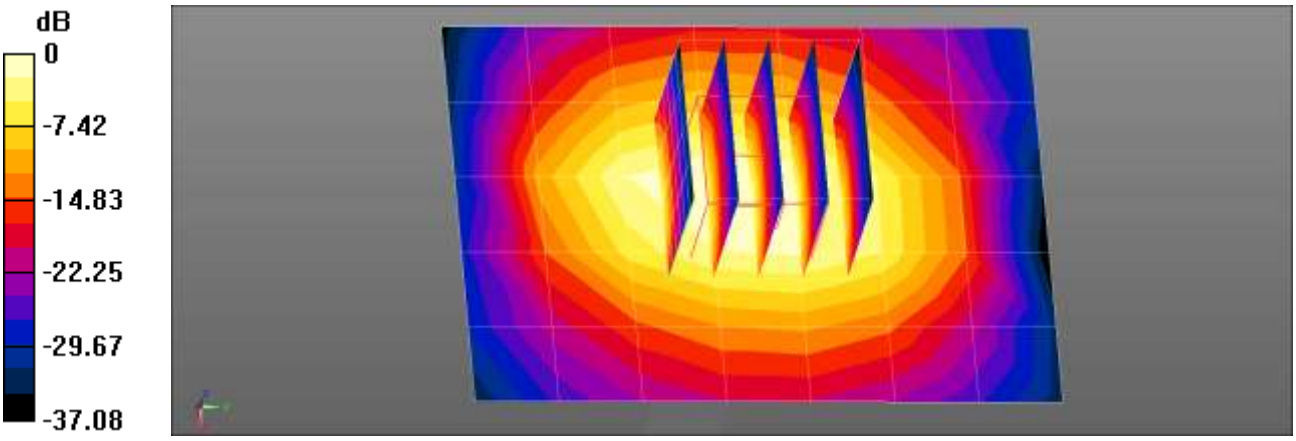
Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.384 S/m; ε_r = 40.87; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.19, 8.19, 8.19) @ 1900 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0
- Measurement SW: DASY52, Version 52.10 (4)

1900MHz Head Verification/Area Scan (6x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.48 W/kg

1900MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 48.31 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 3.73 W/kg
SAR(1 g) = 1.96 W/kg; SAR(10 g) = 1 W/kg
Maximum value of SAR (measured) = 3.10 W/kg



0 dB = 2.48 W/kg = 3.94 dBW/kg

Verification Data (1 900 ㎒ Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 21.0 ℃
Test Date: 05/31/2021

DUT: Dipole 1900 MHz D1900V2; Type: D1900V2;

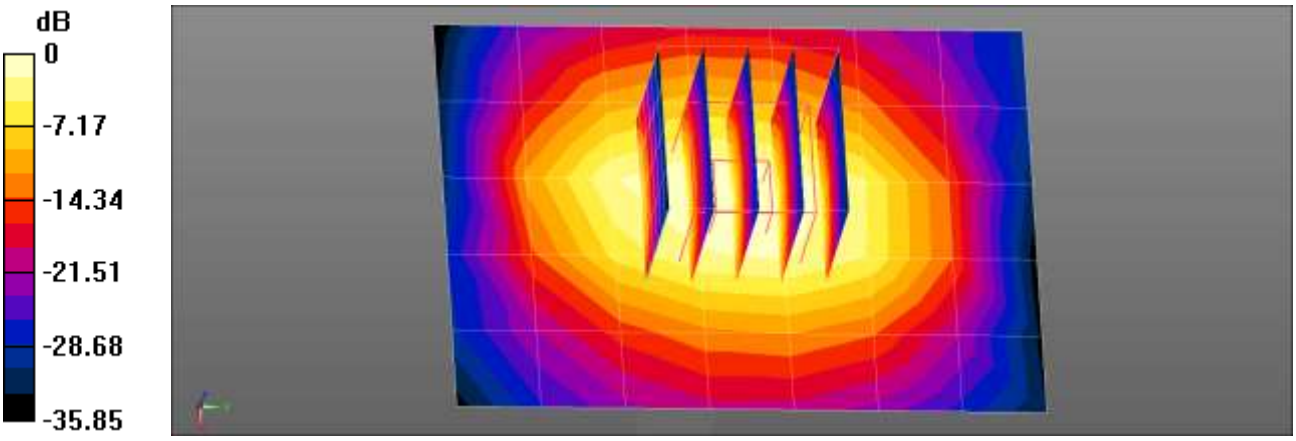
Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.382 S/m; ε_r = 40.862; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.19, 8.19, 8.19) @ 1900 MHz; Calibrated: 2020-09-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2020-09-29
- Phantom: SAM with CRP v5.0_Front
- Measurement SW: DASY52, Version 52.10 (4)

1900MHz Head Verification/Area Scan (6x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.48 W/kg

1900MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 48.10 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 3.81 W/kg
SAR(1 g) = 1.96 W/kg; SAR(10 g) = 1.000 W/kg
Maximum value of SAR (measured) = 3.16 W/kg



0 dB = 2.48 W/kg = 3.94 dBW/kg

Verification Data (2 600 ㎒ Head)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	21.0 ℃
Test Date:	06/02/2021

DUT: Dipole 2600 MHz D2600V2; Type: D2600V2;

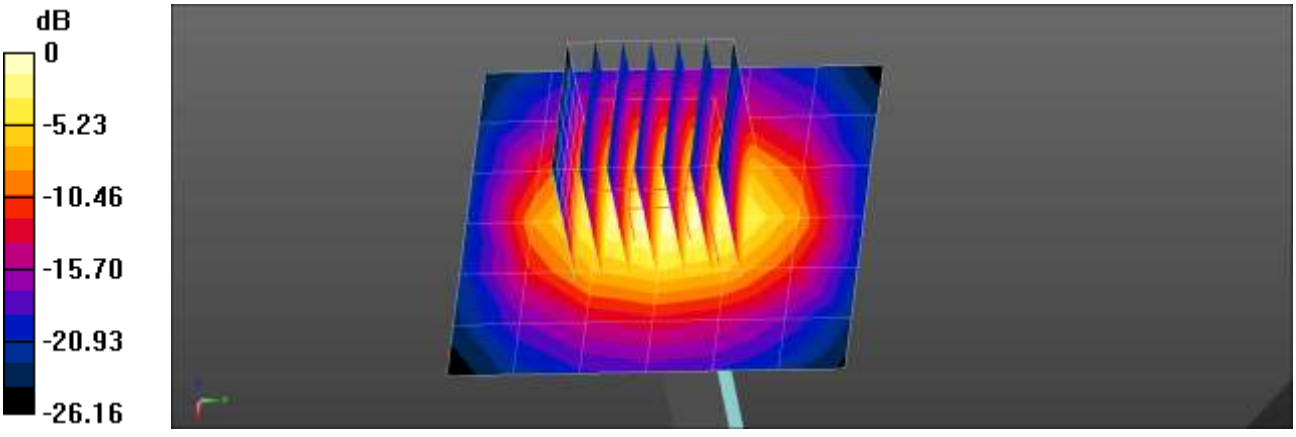
Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; σ = 1.959 S/m; ε_r = 37.741; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7622; ConvF(7.86, 7.86, 7.86) @ 2600 MHz; Calibrated: 2020-11-06
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn504; Calibrated: 2021-02-19
- Phantom: Twin-SAM V8.0_20171017(Left2)
- Measurement SW: DASY52, Version 52.10 (4)

Dipole/2600MHz Head Verification/Area Scan (7x7x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 4.93 W/kg

Dipole/2600MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.52 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 6.44 W/kg
SAR(1 g) = 2.77 W/kg; SAR(10 g) = 1.2 W/kg
Maximum value of SAR (measured) = 4.98 W/kg



0 dB = 4.93 W/kg = 6.93 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 (㎒)											
	750		835		1 750		1 900		2 450 – 2 700		3500 - 5 800	
Tissue Type	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	41.1	51.7	40.45	53.06	52.6	68.8	54.9	70.17	71.88	73.2	65.52	78.66
Salt (NaCl)	1.4	0.9	1.45	0.94	0.4	0.2	0.18	0.39	0.16	0.1	0.0	0.0
Sugar	57.0	47.2	57.0	44.9	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
HEC	0.2	0	1.0	1.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Bactericide	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Triton X-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.97	0.0	17.24	10.67
DGBE	0.0	0.0	0.0	0.0	47	31	44.92	29.44	7.99	26.7	0.0	0.0
Diethylene glycol hexyl ether	-	-	-	-	-	-	-	-	-	-	-	-

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

Composition of the Tissue Equivalent Matter

Appendix E. – SAR Tissue Characterization

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
3	3903	EX3DV4	Head	750	1014	2020-06-26	41.7	0.87	PASS	PASS	PASS	N/A	N/A	N/A
3	3903	EX3DV4	Head	835	4d266	2020-12-20	41.5	0.89	PASS	PASS	PASS	GMSK	PASS	N/A
3	3903	EX3DV4	Head	835	4d266	2020-12-20	41.5	0.89	PASS	PASS	PASS	N/A	N/A	N/A
4	3968	EX3DV4	Head	1750	2d007	2020-10-27	40.2	1.49	PASS	PASS	PASS	GMSK	PASS	N/A
4	3968	EX3DV4	Head	1750	2d007	2020-10-27	40.2	1.49	PASS	PASS	PASS	N/A	N/A	N/A
4	3968	EX3DV4	Head	1900	5d032	2021-02-14	40.1	1.42	PASS	PASS	PASS	N/A	N/A	N/A
4	3968	EX3DV4	Head	1900	5d032	2021-02-14	40.1	1.42	PASS	PASS	PASS	GMSK	PASS	N/A
2	3797	EX3DV4	Head	2450	1049	2020-12-20	39.2	1.83	PASS	PASS	PASS	OFDM	N/A	PASS
4	3968	EX3DV4	Head	2450	1049	2020-10-14	39.2	1.83	PASS	PASS	PASS	OFDM	N/A	PASS
3	3903	EX3DV4	Head	2450	1049	2020-09-27	39.2	1.83	PASS	PASS	PASS	OFDM	N/A	PASS
5	3076	ES3DV3	Head	2600	1015	2020-09-25	38.7	1.95	PASS	PASS	PASS	TDD	PASS	N/A
8	7352	EX3DV4	Head	5250	1253	2021-11-24	35.7	4.70	PASS	PASS	PASS	OFDM	N/A	PASS
8	7352	EX3DV4	Head	5600	1253	2021-11-24	35.3	5.05	PASS	PASS	PASS	OFDM	N/A	PASS
8	7352	EX3DV4	Head	5750	1253	2021-11-24	35.6	5.24	PASS	PASS	PASS	OFDM	N/A	PASS
7	7622	EX3DV4	Head	5750	1253	2020-12-14	35.6	5.24	PASS	PASS	PASS	OFDM	N/A	PASS

SAR System Validation Summary 1g

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
4	3968	EX3DV4	Head	1750	2d007	2020-10-27	40.2	1.49	PASS	PASS	PASS	GMSK	PASS	N/A
4	3968	EX3DV4	Head	1750	2d007	2020-10-27	40.2	1.49	PASS	PASS	PASS	N/A	N/A	N/A
4	3968	EX3DV4	Head	1900	5d032	2021-02-14	40.1	1.42	PASS	PASS	PASS	N/A	N/A	N/A
4	3968	EX3DV4	Head	1900	5d032	2021-02-14	40.1	1.42	PASS	PASS	PASS	GMSK	PASS	N/A
5	3076	ES3DV3	Head	2600	1015	2020-09-25	38.7	1.95	PASS	PASS	PASS	TDD	PASS	N/A
8	7352	EX3DV4	Head	5250	1253	2021-11-24	35.7	4.70	PASS	PASS	PASS	OFDM	N/A	PASS
8	7352	EX3DV4	Head	5600	1253	2021-11-24	35.3	5.05	PASS	PASS	PASS	OFDM	N/A	PASS

SAR System Validation Summary – Extremity SAR Considerations

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.