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SAR TEST REPORT

Applicant Name:

SAMSUNG Electronics Co., Ltd.

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16677 Rep. of Korea

Date of Issue: 01. 22. 2020

Test Report No.: HCT-SR-2001-FC005-R2

Test Site: HCT CO., LTD.

FCC ID:

A3LSMG988B

Equipment Type:	Mobile Phone
Application Type	Certification
FCC Rule Part(s):	CFR §2.1093
Model Name:	SM-G988B/DS
Additional Model Name:	SM-G988B
Date of Test:	12/13/2019 ~ 01/12/2020

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

Moon-Pyung Choi
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REVISION HISTORY

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

Revision No.	Date of Issue	Description
0	01. 15, 2020	Initial Release
R1	01. 21, 2020	Revised Sec.3.2,4.3.1,11.4,13.3 and 14.3
R2	01. 22, 2020	Revised page 198,199,200,214,220 Sec.14.2 ,14.3and 14.4

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1. Test Regulations

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

- FCC KDB Publication 941225 D01 3G SAR Procedures v03r01
- FCC KDB Publication 941225 D06 Hot Spot SAR v02r01
- FCC KDB Publication 941225 D05 SAR for LTE Devices v02r05
- FCC KDB Publication 941225 D05A LTE Rel.10 KDB Inquiry sheet v01r02
- FCC KDB Publication 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB Publication 447498 D01 General 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

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 2018 TCBC Workshop Notes (LTE DL CA SAR Test Exclusion)
- April 2019 TCBC Workshop Notes (802.11ax SAR Testing)

2. Test Location

2.1 Test Laboratory

Company Name	HCT Co., Ltd.
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Telephone	031-645-6300
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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-G988B/DS
Additional Model Name	SM-G988B
Equipment Type	Mobile Phone
FCC ID	A3LSMG988B
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 MHz ~ 848.8 MHz	PCE	0.22	0.24	0.66	N/A
GSM/GPRS/EDGE 1900	1 850.2 MHz ~ 1 909.8 MHz	PCE	0.07	0.21	1.04	2.12
UMTS 850	826.4 MHz ~ 846.6 MHz	PCE	0.26	0.29	0.52	N/A
UMTS 1700	1 712.4 MHz ~ 1 752.6 MHz	PCE	0.12	0.33	0.72	1.57
UMTS 1900	1 852.4 MHz ~ 1 907.6 MHz	PCE	0.13	0.37	0.98	1.95
LTE Band 5 (Cell)	824.7 MHz ~ 848.3 MHz	PCE	0.23	0.35	0.71	N/A
LTE Band 12	699.7 MHz ~ 715.3 MHz	PCE	0.13	0.22	0.37	N/A
LTE Band 13	779.5 MHz ~ 784.5 MHz	PCE	0.17	0.30	0.58	N/A
LTE Band 25	1 850.7 MHz ~ 1 914.3 MHz	PCE	0.11	0.32	0.76	2.08
LTE Band 26	814.7 MHz ~ 848.3 MHz	PCE	0.21	0.34	0.69	N/A
LTE TDD Band 41	2 498.5 MHz ~ 2 687.5 MHz	PCE	0.10	0.30	0.95	1.34
LTE Band 66 (AWS)	1 710.7 MHz ~ 1 779.3 MHz	PCE	0.12	0.41	0.62	1.78
802.11b	2 412 MHz ~ 2 472 MHz	DTS	0.54	0.13	0.55	N/A
U-NII-1	5 180 MHz ~ 5 240 MHz	NII	N/A	N/A	N/A	N/A
U-NII-2A	5 260 MHz ~ 5 320 MHz	NII	0.26	0.46	N/A	0.86
U-NII-2C	5 500 MHz ~ 5 720 MHz	NII	0.32	1.12	N/A	0.97
U-NII-3	5 745 MHz ~ 5 825 MHz	NII	0.29	0.92	1.30	1.48
Bluetooth	2 402 MHz ~ 2 480 MHz	DSS	0.74	<0.10	0.23	N/A
Simultaneous SAR per KDB 690783 D01v01r03			1.559	1.573	1.552	2.519
Date(s) of Tests:	12/03/2019 ~ 01/12/2020					

4. Device Under Test Description

4.1 DUT specification

Device Wireless specification overview		
Band & Mode	Operating Mode	Tx Frequency
GSM850	Voice / Data	824.2 MHz ~ 848.8 MHz
GSM1900	Voice / Data	1 850.2 MHz ~ 1 909.8 MHz
UMTS 850	Voice / Data	826.4 MHz ~ 846.6 MHz
UMTS 1700	Voice / Data	1 712.4 MHz ~ 1 752.6 MHz
UMTS 1900	Voice / Data	1 852.4 MHz ~ 1 907.6 MHz
LTE Band 2 (PCS)	Voice / Data	1 850.7 MHz ~ 1 909.3 MHz
LTE Band 4 (AWS)	Voice / Data	1 710.7 MHz ~ 1 754.3 MHz
LTE Band 5 (Cell)	Voice / Data	824.7 MHz ~ 848.3 MHz
LTE Band 12	Voice / Data	699.7 MHz ~ 715.3 MHz
LTE Band 13	Voice / Data	779.5 MHz ~ 784.5 MHz
LTE Band 17	Voice / Data	706.5 MHz ~ 713.5 MHz
LTE Band 25	Voice / Data	1 850.7 MHz ~ 1 914.3 MHz
LTE Band 26 (Cell)	Voice / Data	814.7 MHz ~ 848.3 MHz
LTE TDD Band 41	Voice / Data	2 498.5 MHz ~ 2 687.5 MHz
LTE Band 66 (AWS)	Voice / Data	1 710.7 MHz ~ 1 779.3 MHz
U-NII-1	Voice / Data	5 180 MHz ~ 5 240 MHz
U-NII-2A	Voice / Data	5 260 MHz ~ 5 320 MHz
U-NII-2C	Voice / Data	5 500 MHz ~ 5 720 MHz
U-NII-3	Voice / Data	5 745 MHz ~ 5 825 MHz
2.4 GHz WLAN	Voice / Data	2 412 MHz ~ 2 472 MHz
Bluetooth / LE 5.0	Data	2 402 MHz ~ 2 480 MHz
ANT+	Data	2 402 MHz ~ 2 480 MHz
NFC	Data	13.56 MHz
Device Description		
Device Dimension	Overall (Length x Width): 159 mm x 71.2 mm Overall Diagonal: 177.5 mm Display Diagonal: 170.5 mm	
Battery Information	Standard (Li-ion Polymer Battery) Battery Model Name: EB-BG988ABY(SDIV)	
HW version	REV0.3	
SW version	G988B.001	
Device Serial Numbers	Mode	Serial Number
	2.4 GHz WLAN, 5 GHz WLAN, Bluetooth	SKC0751S SKC0754S
	Main	SKC0752S SKC0753S
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 power reduction mechanisms for some wireless modes and bands for SAR compliance under hotspot conditions and under some conditions when the device is being used in close proximity to the user's hand. All hotspot SAR evaluations for this device were performed at the maximum allowed output power when Hotspot is enabled. FCC KDB Publication 616217 D04v01r02 Sec.6 was used as a guideline for selection SAR test distances for device when being used in phablet use conditions.

This device uses an independent fixed level power reduction mechanism for WLAN modes during 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 IEEE1528-2013. 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 Maximum PCE Output Power

Mode / Band		Voice	Burst Average GMSK (dBm)				Burst Average 8-PSK (dBm)			
		1 Tx Slot	1 Tx Slot	2 Tx Slot	3 Tx Slot	4 Tx Slot	1 Tx Slot	2 Tx Slot	3 Tx Slot	4 Tx Slot
GSM/GPRS/EDGE 850	Maximum	34.0	34.0	32.5	31.0	29.5	28.0	26.0	25.0	23.0
	Nominal	33.0	33.0	31.5	30.0	28.5	27.0	25.0	24.0	22.0
GSM/GPRS/EDGE1900	Maximum	31.0	31.0	28.0	26.5	25.0	27.0	24.0	23.0	22.0
	Nominal	30.0	30.0	27.0	25.5	24.0	26.0	23.0	22.0	21.0
Mode / Band		Modulated Average (dBm)								
		3GPP WCDMA	3GPP HSDPA	3GPP HSUPA	DC-HSDPA					
UMTS Band 5 (850 MHz)	Maximum	25.5	23.5	23.0	24.3					
	Nominal	24.5	22.5	22.0	23.3					
UMTS Band 4 (1700 MHz)	Maximum	24.0	24.0	23.0	24.0					
	Nominal	23.0	23.0	22.0	23.0					
UMTS Band 2 (1900 MHz)	Maximum	24.0	24.0	23.0	23.5					
	Nominal	23.0	23.0	22.0	22.5					
Mode / Band		Modulated Average (dBm)								
LTE Band 2 (PCS)	Maximum	24.0								
	Nominal	23.0								
LTE Band 4 (AWS)	Maximum	24.0								
	Nominal	23.0								
LTE Band 5	Maximum	25.5								
	Nominal	24.5								
LTE Band 12	Maximum	25.0								
	Nominal	24.0								
LTE Band 13	Maximum	25.0								
	Nominal	24.0								
LTE Band 17	Maximum	25.0								
	Nominal	24.0								
LTE Band 25	Maximum	24.0								
	Nominal	23.0								
LTE Band 26	Maximum	25.0								
	Nominal	24.0								
LTE Band 41 (PC 3)	Maximum	25.0								
	Nominal	24.0								
LTE Band 41 (PC 2)	Maximum	26.5								
	Nominal	25.5								
LTE Band 66 (AWS)	Maximum	24.0								
	Nominal	23.0								

4.3.2 Reduced PCE Power (Grip Sensor Ear jack, Hot spot Mode activated)

Mode / Band		Voice	Burst Average GMSK (dBm)				Burst Average 8-PSK (dBm)			
		1 Tx Slot	1 Tx Slot	2 Tx Slot	3 Tx Slot	4 Tx Slot	1 Tx Slot	2 Tx Slot	3 Tx Slot	4 Tx Slot
GSM/GPRS/EDGE1900	Maximum	30.0	30.0	27.5	26.0	24.0	26.0	24.0	22.5	21.0
	Nominal	29.0	29.0	26.5	25.0	23.0	25.0	23.0	21.5	20.0

UMTS band /HSDPA/HSUPA – Hotspot Mode

Mode / Band		Modulated Average (dBm)			
		3GPP WCDMA	3GPP HSDPA	3GPP HSUPA	DC-HSDPA
UMTS Band 4 (1700 MHz)	Maximum	21.0	21.0	20.0	20.5
	Nominal	20.0	20.0	19.0	19.5
Mode / Band		Modulated Average (dBm)			
		3GPP WCDMA	3GPP HSDPA	3GPP HSUPA	DC-HSDPA
UMTS Band 2 (1900 MHz)	Maximum	21.0	20.0	20.0	20.5
	Nominal	20.0	19.0	19.0	19.5

LTE Mode

Mode / Band		Reduced Power (dBm)
LTE Band 2 (PCS)	Maximum	21.0
	Nominal	20.0
LTE Band 4 (AWS)	Maximum	21.0
	Nominal	20.0
LTE Band 25	Maximum	21.0
	Nominal	20.0
LTE Band 41 (PC 3)	Maximum	23.0
	Nominal	22.0
LTE Band 41 (PC 2)	Maximum	24.5
	Nominal	23.5
LTE Band 66 (AWS)	Maximum	21.0
	Nominal	20.0

4.3.4 Maximum 2.4 GHz, 5 GHz WIFI output power

Mode	Band	SISO					MIMO					
		a	b	g	n	ac	ax(SU)	a (CDD+STBC)	g (CDD+STBC)	n (CDD+STB C, SDM)	ac (CDD+STB C, SDM)	ax(SU) (CDD+STBC, SDM)
2.4GHz	1 CH		20	15	15		14		18	18		17
	2~10 CH		18	16	16		16		19	19		19
	11 CH		19	15	15		14		18	18		17
	12 CH		12.5	12.5	12.5		12.5		15.5	15.5		15.5
	13 CH		6.5	6.5	6.5		6.5		9.5	9.5		9.5
5GHZ (20MHz)	5200MHz	17			17	17	17	20		20	20	20
	5300MHz	17			17	17	17	20		20	20	20
	5500MHz	17 (10 0ch: 15)			17 (100ch: 14)	17 (100ch: 14)	17 (100ch: 14)	20 (100ch: 18)		20 (100ch: 17)	20 (100ch: 17)	20 (100ch: 17)
	5800MHz	17			17	17	17	20		20	20	20
5GHZ (40MHz)	5200MHz				16 (38ch: 13)	16 (38ch: 13)	16 (38ch: 14)			19 (38ch: 16)	19 (38ch: 16)	19 (38ch: 17)
	5300MHz				16 (62ch: 14)	16 (62ch: 14)	16 (62ch: 14)			19 (62ch: 17)	19 (62ch: 17)	19 (62ch: 17)
	5500MHz				16 (102ch: 10)	16 (102ch: 10)	16 (102ch: 10)			19 (102ch: 13)	19 (102ch: 13)	19 (102ch: 13)
	5800MHz				16	16	16			19	19	19
5GHZ (80MHz)	5200MHz					13	13				16	16
	5300MHz					14	13				17	16
	5500MHz					15 (106ch: 10)	15 (106ch: 10)				18 (106ch: 13)	18 (106ch: 13)

(Upper Tolerance: target -1.5dB ~ +1.0 dB)

4.3.5 Reduced 2.4 GHz, 5 GHz WIFI output power – RCV on

Mode	Band	SISO					MIMO					
		a	b	g	n	ac	ax(SU)	a (CDD+S TBC)	g (CDD+STB C)	n (CDD+STB C, SDM)	ac (CDD+STBC, SDM)	ax(SU) (CDD+STB C, SDM)
2.4GHz	1 CH		16	15	15		14		18	18		17
	2~10 CH		16	16	16		16		19	19		19
	11 CH		16	15	15		14		18	18		17
	12 CH		12.5	12.5	12.5		12.5		15.5	15.5		15.5
	13 CH		6.5	6.5	6.5		6.5		9.5	9.5		9.5
5GHZ (20MHz)	5200MHz	14			14	14	14	17		17	17	17
	5300MHz	14			14	14	14	17		17	17	17
	5500MHz	14			14	14	14	17		17	17	17
	5800MHz	14			14	14	14	17		17	17	17
5GHZ (40MHz)	5200MHz				14 (38ch: 13)	14 (38ch: 13)	14			17 (38ch: 16)	17 (38ch: 16)	17
	5300MHz				14	14	14			17	17	17
	5500MHz				14 (102ch: 10)	14 (102ch: 10)	14 (102ch: 10)			17 (102ch: 13)	17 (102ch: 13)	17 (102ch: 13)
	5800MHz				14	14	14			17	17	17
5GHZ (80MHz)	5200MHz						13	14			16	17
	5300MHz						14	14			17	17
	5500MHz						14 (106ch: 10)	14 (106ch: 10)			17 (106ch: 13)	17 (106ch: 13)
	5800MHz						14	14			17	17

(Upper Tolerance: target -1.5dB ~ +1.0 dB)

4.3.5 Reduced 2.4 GHz, 5 GHz WIFI output power – RSDB

Mode	Band	SISO					MIMO					
		a	b	g	n	ac	ax(SU)	a (CDD+S TBC)	g (CDD+STBC)	n (CDD+STB C, SDM)	ac (CDD+STB C, SDM)	ax(SU) (CDD+STB C, SDM)
2.4GHz	1 CH		16	15	15		14		18	18		17
	2~10 CH		16	16	16		16		19	19		19
	11 CH		16	15	15		14		18	18		17
	12 CH		12.5	12.5	12.5		12.5		15.5	15.5		15.5
	13 CH		6.5	6.5	6.5		6.5		9.5	9.5		9.5
5GHZ (20MHz)	5200MHz	13			13	13	13	16		16	16	16
	5300MHz	13			13	13	13	16		16	16	16
	5500MHz	13			13	13	13	16		16	16	16
	5800MHz	13			13	13	13	16		16	16	16
5GHZ (40MHz)	5200MHz				13	13	13			16	16	16
	5300MHz				13	13	13			16	16	16
	5500MHz				13 (102ch :: 10)	13 (102ch:: 10)	13 (102ch:: 10)			16 (102ch:: 13)	16 (102ch:: 13)	16 (102ch:: 13)
	5800MHz				13	13	13			16	16	16
5GHZ (80MHz)	5200MHz					13	13				16	16
	5300MHz					13	13				16	16
	5500MHz					13 (106ch: 10)	13 (106ch: 10)				16 (106ch: 13)	16 (106ch: 13)
	5800MHz					13	13				16	16

(Upper Tolerance: target -1.5dB ~ +1.0 dB)

4.3.6 Reduced 2.4 GHz, 5 GHz WIFI output power – RSDB with RCV on

Mode	Band	SISO						MIMO				
		a	b	g	n	ac	ax(SU)	a (CDD+S TBC)	g (CDD+STBC)	n (CDD+STBC, SDM)	ac (CDD+STBC, SDM)	ax(SU) (CDD+STB C, SDM)
2.4GHz	2.45GHz		13	13	13		13		16	16		16
	12 CH		12.5	12.5	12.5		12.5		15.5	15.5		15.5
	13 CH		6.5	6.5	6.5		6.5		9.5	9.5		9.5
5GHz (20MHz)	5200MHz	13			13	13	13	16		16	16	16
	5300MHz	13			13	13	13	16		16	16	16
	5500MHz	13			13	13	13	16		16	16	16
	5800MHz	13			13	13	13	16		16	16	16
5GHz (40MHz)	5200MHz				13	13	13			16	16	16
	5300MHz				13	13	13			16	16	16
	5500MHz				13 (102ch:: 10)	13 (102ch:: 10)	13 (102ch:: 10)			16 (102ch:: 13)	16 (102ch:: 13)	16 (102ch:: 13)
	5800MHz				13	13	13			16	16	16
5GHz (80MHz)	5200MHz					13	13				16	16
	5300MHz					13	13				16	16
	5500MHz					13 (106ch: 10)	13 (106ch: 10)				16 (106ch: 13)	16 (106ch: 13)
	5800MHz					13	13				16	16

(Upper Tolerance: target -1.5dB ~ +1.0 dB)

4.3.7 maximum 802.11ax RU Tx Power

Mode	Band	SISO						MIMO					
		26T	52T	106T	242T	484T	996T	26T	52T	106T	242T	484T	996T
2.4GHz	1 CH	14	14	14	14			17	17	17	17		
	2~10 CH	13	14	16	16			16	17	19	19		
	11 CH	14	14	14	14			17	17	17	17		
	12 CH	12.5	12.5	12.5	12.5			15.5	15.5	15.5	15.5		
	13 CH	6.5	6.5	6.5	6.5			9.5	9.5	9.5	9.5		
5GHZ (20MHz)	5200MHz	11	13	15	17			14	16	18	20		
	5300MHz	11	13	15	17			14	16	18	20		
	5500MHz	11	13	15	17 (100ch : 14)			14	16	18	20 (100ch: 17))		
	5800MHz	14	17	17	17			17	20	20	20		
5GHZ (40MHz)	5200MHz	11	13	15	16	16 (38ch: 14)		14	16	18	19	19 (38ch: 17)	
	5300MHz	10	13	15	16	16 (62ch: 14)		13	16	18	19	19 (62ch: 17)	
	5500MHz	10	13 (102ch:11)	15 (102ch :12)	16 (102ch :13)	16 (102ch:10)		13	16 (102ch:14)	18 (102ch:15)	19 (102ch:16)	19 (102ch:13)	
	5800MHz	12	16	16	16	16		15	19	19	19	19	
5GHZ (80MHz)	5200MHz	11	13	15	15	13	13	14	16	18	18	16	16
	5300MHz	10	13	15	15	13	13	13	16	18	18	16	16
	5500MHz	11 (106ch: 10)	13 (106ch: 10)	15 (106ch : 11)	15 (106ch : 11)	15 (106ch: 10)	15 (106ch : 10)	14 (106ch: 13)	16 (106ch: 13)	18 (106ch: 14)	18 (106ch: 14)	18 (106ch: 13)	18 (106ch: 13)
	5800MHz	14	15	15	15	15	15	17	18	18	18	18	18

(Upper Tolerance: target -1.5dB ~ +1.0 dB)

4.3.8 Reduced Power 11ax RU Tx power Tables – RCV on

Mode	Band	SISO						MIMO					
		26T	52T	106T	242T	484T	996T	26T	52T	106T	242T	484T	996T
2.4GHz	1 CH	14	14	14	14			17	17	17	17		
	2~10 CH	13	14	16	16			16	17	19	19		
	11 CH	14	14	14	14			17	17	17	17		
	12 CH	12.5	12.5	12.5	12.5			15.5	15.5	15.5	15.5		
	13 CH	6.5	6.5	6.5	6.5			9.5	9.5	9.5	9.5		
5GHz (20MHz)	5200MHz	11	13	13	13			14	16	16	16		
	5300MHz	11	13	13	13			14	16	16	16		
	5500MHz	11	13	13	13			14	16	16	16		
	5800MHz	13	13	13	13			16	16	16	16		
5GHz (40MHz)	5200MHz	11	13	13	13	13		14	16	16	16	16	
	5300MHz	10	13	13	13	13		13	16	16	16	16	
	5500MHz	10	13 (102ch:11)	13 (102ch:12)	13	13 (102ch:10)		13	16 (102ch:14)	16 (102ch:15)	16	16 (102ch:13)	
	5800MHz	12	13	13	13	13		15	16	16	16	16	
5GHz (80MHz)	5200MHz	11	13	13	13	13	13	14	16	16	16	16	16
	5300MHz	10	13	13	13	13	13	13	16	16	16	16	16
	5500MHz	11 (106ch:10)	13 (106ch:10)	13 (106ch:11)	13 (106ch:11)	13 (106ch:10)	13 (106ch:10)	14 (106ch:13)	16 (106ch:13)	16 (106ch:14)	16 (106ch:14)	16 (106ch:13)	16 (106ch:13)
	5800MHz	13	13	13	13	13	13	16	16	16	16	16	16

(Upper Tolerance: target -1.5dB ~ +1.0 dB)

4.3.9 Reduced Power 11ax RU Tx power Tables in RSDB mode

Mode	Band	SISO						MIMO					
		26T	52T	106T	242T	484T	996T	26T	52T	106T	242T	484T	996T
2.4GHz	1 CH	14	14	14	14			17	17	17	17		
	2~10 CH	13	14	16	16			16	17	19	19		
	11 CH	14	14	14	14			17	17	17	17		
	12 CH	12.5	12.5	12.5	12.5			15.5	15.5	15.5	15.5		
	13 CH	6.5	6.5	6.5	6.5			9.5	9.5	9.5	9.5		
5GHz (20MHz)	5200MHz	11	13	13	13			14	16	16	16		
	5300MHz	11	13	13	13			14	16	16	16		
	5500MHz	11	13	13	13			14	16	16	16		
	5800MHz	13	13	13	13			16	16	16	16		
5GHz (40MHz)	5200MHz	11	13	13	13	13		14	16	16	16	16	
	5300MHz	10	13	13	13	13		13	16	16	16	16	
	5500MHz	10	13 (102ch:11)	13 (102ch:12)	13	13 (102ch:10)		13	16 (102ch:14)	16 (102ch:15)	16	16 (102ch:13)	
	5800MHz	12	13	13	13	13		15	16	16	16	16	
5GHz (80MHz)	5200MHz	11	13	13	13	13	13	14	16	16	16	16	16
	5300MHz	10	13	13	13	13	13	13	16	16	16	16	16
	5500MHz	11 (106ch: 10)	13 (106ch: 10)	13 (106ch: 11)	13 (106ch: 11)	13 (106ch: 10)	13 (106ch: 10)	14 (106ch: 13)	16 (106ch: 13)	16 (106ch: 14)	16 (106ch: 14)	16 (106ch: 13)	16 (106ch: 13)
	5800MHz	13	13	13	13	13	13	16	16	16	16	16	16

(Upper Tolerance: target -1.5dB ~ +1.0 dB)

4.3.10 Reduced Power 11ax RU Tx power Tables in RSDB – RCV on

Mode	Band	SISO						MIMO					
		26T	52T	106T	242T	484T	996T	26T	52T	106T	242T	484T	996T
2.4GHZ	2.45GHz	13	13	13	13			16	16	16	16		
	12 CH	12.5	12.5	12.5	12.5			15.5	15.5	15.5	15.5		
	13 CH	6.5	6.5	6.5	6.5			9.5	9.5	9.5	9.5		
5GHZ (20MHz)	5200MHz	11	13	13	13			14	16	16	16		
	5300MHz	11	13	13	13			14	16	16	16		
	5500MHz	11	13	13	13			14	16	16	16		
	5800MHz	13	13	13	13			16	16	16	16		
5GHZ (40MHz)	5200MHz	11	13	13	13	13		14	16	16	16	16	
	5300MHz	10	13	13	13	13		13	16	16	16	16	
	5500MHz	10	13 (102ch:11)	13 (102ch:12)	13	13 (102ch:10)		13	16 (102ch:14)	16 (102ch:15)	16	16 (102ch:13)	
	5800MHz	12	13	13	13	13		15	16	16	16	16	
5GHZ (80MHz)	5200MHz	11	13	13	13	13	13	14	16	16	16	16	16
	5300MHz	10	13	13	13	13	13	13	16	16	16	16	16
	5500MHz	11 (106ch:10)	13 (106ch:10)	13 (106ch:11)	13 (106ch:11)	13 (106ch:10)	13 (106ch:10)	14 (106ch:13)	16 (106ch:13)	16 (106ch:14)	16 (106ch:14)	16 (106ch:13)	16 (106ch:13)
	5800MHz	13	13	13	13	13	13	16	16	16	16	16	16

(Upper Tolerance: target -1.5dB ~ +1.0 dB)

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

	# TX	5 GHz WIFI[dBm]		2.4 GHz WIFI[dBm]		802.11 Modes
		Ant1	Ant2	Ant1	Ant2	
2.4 GHz + 5 GHz RSDB Only	2	13 dBm	-	-	16 dBm	2.4 GHz: b, g, n, ax 5 GHz: a, n, ac, ax
	2	-	13 dBm	16 dBm	-	
	2	13 dBm	-	16 dBm	-	
	2	-	13 dBm	-	16 dBm	
2.4 GHz + 5 GHz RSDB & MIMO	3	13 dBm	13 dBm	16 dBm	-	2.4 GHz: b, g, n,ax 5 GHz: a, n, ac,ax (CDD+STBC Only)
	3	13 dBm	13 dBm	-	16 dBm	
	3	13 dBm	-	16 dBm	16 dBm	2.4 GHz: g, n, ax(CDD+STBC Only), 5 GHz: a, n, ac, ax
	3	-	13 dBm	16 dBm	16 dBm	
2.4 GHz + 5 GHz RSDB MIMO	4	13 dBm	13 dBm	16 dBm	16 dBm	2.4 GHz: b, g, n,ax (CDD+STBC Only) 5 GHz: a, n, ac,ax (CDD+STBC Only)

(Upper Tolerance: target -1.5dB ~ +1.0 dB)

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

	#TX	5 GHz WIFI[dBm]		2.4 GHz WIFI[dBm]		802.11 Modes
		Ant1	Ant2	Ant1	Ant2	
2.4 GHz + 5 GHz RSDB Only	2	13 dBm	-	-	13 dBm	2.4 GHz: b, g, n, ax 5 GHz: a, n, ac, ax
	2	-	13 dBm	13 dBm	-	
	2	13 dBm	-	13 dBm	-	
	2	-	13 dBm	-	13 dBm	
2.4 GHz + 5 GHz RSDB & MIMO	3	13 dBm	13 dBm	13 dBm	-	2.4 GHz: b, g, n,ax 5 GHz: a, n, ac,ax (CDD+STBC Only)
	3	13 dBm	13 dBm	-	13 dBm	
	3	13 dBm	-	13 dBm	13 dBm	2.4 GHz: g, n, ax(CDD+STBC Only), 5 GHz: a, n, ac, ax
	3	-	13 dBm	13 dBm	13 dBm	
2.4 GHz + 5 GHz RSDB MIMO	4	13 dBm	13 dBm	13 dBm	13 dBm	2.4 GHz: b, g, n,ax (CDD+STBC Only) 5 GHz: a, n, ac,ax (CDD+STBC Only)

(Upper Tolerance: target -1.5dB ~ +1.0 dB)

4.3.12. Simultaneous TX condition Bluetooth with 5GHz WIFI (not RSDB)

	#TX	5 GHz WIFI[dBm]		2.4GHz BT
		Ant1	Ant2	Ant1
BT(2.4 GHz) + 5GHz WiFi (Not RSDB)	2	o	-	o
	2		o	o
	3	o	o	o

Mode / Band		Modulated Average (dBm)
Bluetooth (1 Mbps)	Maximum	18
	Nominal	17
Bluetooth (EDR)	Maximum	12
	Nominal	11
Bluetooth LE (2 Mbps)	Maximum	9
	Nominal	8
Bluetooth LE 1Mbps, 125/500Kbps	Maximum	8
	Nominal	7

4.4 LTE Information

Item.	Description
Frequency Range	LTE Band 2 (PCS) 1 850.7 MHz ~ 1 909.3 MHz
	LTE Band 4 (AWS) 1 710.7 MHz ~ 1 754.3 MHz
	LTE Band 5 (Cell) 824.7 MHz ~ 848.3 MHz
	LTE Band 12 699.7 MHz ~ 715.3 MHz
	LTE Band 13 779.5 MHz ~ 784.5 MHz
	LTE Band 17 706.5 MHz ~ 713.5 MHz
	LTE Band 25 850.7 MHz ~ 1 914.3 MHz
	LTE Band 26 (Cell) 814.7 MHz ~ 848.3 MHz
	LTE TDD Band 41 2 498.5 MHz ~ 2 687.5 MHz
LTE Band 66 (AWS) 1 710.7 MHz ~ 1 779.3 MHz	
Channel Bandwidths	LTE Band 2 (PCS) 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE Band 4 (AWS) 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE Band 5 (Cell) 1.4 MHz, 3 MHz, 5 MHz, 10 MHz
	LTE Band 12 1.4 MHz, 3 MHz, 5 MHz, 10 MHz
	LTE Band 13 5 MHz, 10 MHz
	LTE Band 17 5 MHz, 10 MHz
	LTE Band 25 5 MHz, 10 MHz
	LTE Band 26 5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE TDD Band 41 5 MHz, 10 MHz, 15 MHz, 20 MHz
LTE Band 66 (AWS) 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz	

Ch. No.& Freq.(MHz)	Low	Mid	High
LTE Band 2	1.4 MHz 1 850.7 (18607)	1 880.0 (18900)	1 909.3 (19193)
	3 MHz 1 851.5 (18615)	1 880.0 (18900)	1 908.5 (19185)
	5 MHz 1 852.5 (18625)	1 880.0 (18900)	1 907.5 (19175)
	10 MHz 1 855.0 (18650)	1 880.0 (18900)	1 905.0 (19150)
	15 MHz 1 857.5 (18675)	1 880.0 (18900)	1 902.5 (19125)
	20 MHz 1 860.0 (18700)	1 880.0 (18900)	1 900.0 (19100)
LTE Band 4	1.4 MHz 1 710.7 (19957)	1 732.5 (20175)	1 754.3 (20393)
	3 MHz 1 711.5 (19965)	1 732.5 (20175)	1 753.5 (20385)
	5 MHz 1 712.5 (19975)	1 732.5 (20175)	1 752.5 (20375)
	10 MHz 1 715.0 (20000)	1 732.5 (20175)	1 750.0 (20350)
	15 MHz 1 717.5 (20025)	1 732.5 (20175)	1 747.5 (20325)
	20 MHz 1 720.0 (20050)	1 732.5 (20175)	1 745.0 (20300)
LTE Band 5	1.4 MHz 824.7 (20407)	836.5 (20525)	848.3 (20643)
	3 MHz 825.5 (20415)	836.5 (20525)	847.5 (20635)
	5 MHz 826.5 (20425)	836.5 (20525)	846.5 (20625)
	10 MHz 829.0 (20450)	836.5 (20525)	844.0 (20600)
LTE Band 12	1.4 MHz 699.7 (23017)	707.5 (23095)	715.3 (23173)
	3 MHz 700.5 (23025)	707.5 (23095)	714.5 (23165)
	5 MHz 701.5 (23035)	707.5 (23095)	713.5 (23155)
	10 MHz 704.0 (23060)	707.5 (23095)	711.0 (23130)
LTE Band 13	5 MHz 779.5 (23205)	782 (23230)	784.5 (23255)
	10 MHz	782 (23230)	
LTE Band 14	5 MHz 790.5 (23305)	793 (23330)	795.5 (23355)
	10 MHz	793 (23330)	
LTE Band 17	5 MHz 706.5 (23755)	710 (23790)	713.5 (23825)
	10 MHz 709.0 (23780)	710 (23790)	711.0 (23800)

Ch. No.& Freq.(MHz)	Low		Mid		High	
LTE Band 25	1.4 MHz	1 850.7 (26047)	1 882.5 (26365)		1 914.3 (26683)	
	3 MHz	1 851.5 (26055)	1 882.5 (26365)		1 913.5 (26675)	
	5 MHz	1 852.5 (26065)	1 882.5 (26365)		1 912.5 (26665)	
	10 MHz	1 855 (26090)	1 882.5 (26365)		1 910 (26640)	
	15 MHz	1 857.5 (26115)	1 882.5 (26365)		1 907.5 (26615)	
	20 MHz	1 860 (26140)	1 882.5 (26365)		1 905 (26590)	
LTE Band 26 (Cell)	1.4 MHz	814.7 (26697)	831.5 (26865)		848.3 (27033)	
	3 MHz	815.5 (26705)	831.5 (26865)		847.5 (27025)	
	5 MHz	816.5 (26715)	831.5 (26865)		846.5 (27015)	
	10 MHz	819.0 (26740)	831.5 (26865)		844.0 (26990)	
	15 MHz	821.5 (26765)	831.5 (26865)		841.5 (26965)	
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	2498.5(39675)	2545.8(40148)	2593.0(40620)	2640.3(41093)	2687.5(41565)
	10 MHz	2501.0(39700)	2547.0(40160)	2593.0(40620)	2639.0(41080)	2685.0(41540)
	15 MHz	2503.5(39725)	2548.3(41073)	2593.0(40620)	2637.8(41068)	2682.5(41515)
	20 MHz	2506.0(39750)	2549.5(40185)	2593.0(40620)	2636.5(41055)	2680.0(41490)
HPUE Power Class	TDD 41 Power Class 3 :(Duty: 63.3%) Power Class 2 : (Duty:43.3%)					
UE Category	LTE Rel. 15, DL: Category 20, UL: Category 18					
Modulations Supported in UL	QPSK, 16QAM, 64QAM,256QAM					
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3	Yes					
A-MPR disabled for SAR Testing.	Yes					
LTE Carrier Aggregation	Up-Link CA	This device dose not supports Up-Link Carrier aggregation.in US.				
	Down-Link CA	This device supports Inter-band & Intra-band DL DL-link Carrier aggregations only. Detaled information of Down-Link CA are included in the Attachment 8				
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 te release 8 specifications. The following LTE Release 15 Features are not supported: Relay, Hetnet, Enhanced eICl, MDH, cross-carrier Scheduling, Enhanced SC-FDMA.					

4.5 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 850	Yes	Yes	Yes	Yes	Yes	No
UMTS 1700	Yes	Yes	Yes	Yes	Yes	No
UMTS 1900	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 13	Yes	Yes	Yes	Yes	Yes	No
LTE Band 17	Yes	Yes	Yes	Yes	Yes	No
LTE Band 25	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
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.

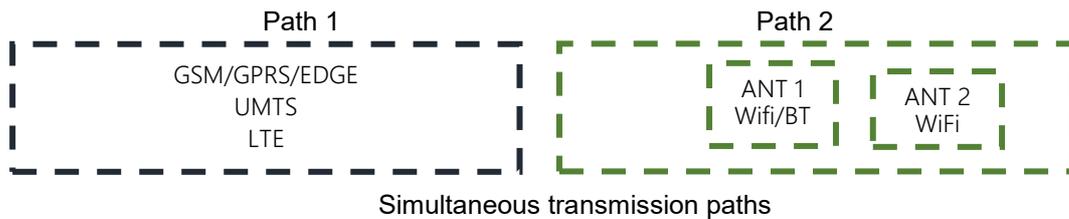
The distance between the transmit antennas and the edges of the device are included in the filing.
 - Note: All test configurations are based on front view position.

4.6 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.

4.7 SAR Summation Scenario

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



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

Simultaneous Transmission Scenarios				
Applicable Combination	Head	Body-Worn	Hotspot	Extremity
GSM Voice + 2.4 GHz WiFi SISO	Yes	Yes	N/A	Yes
GSM Voice + 5 GHz WiFi SISO	Yes	Yes	N/A	Yes
GSM Voice + 2.4 GHz WiFi MIMO	Yes	Yes	N/A	Yes
GSM Voice + 5 GHz WiFi MIMO	Yes	Yes	N/A	Yes
GSM Voice + 2.4 GHz WiFi SISO + 5 GHz WiFi SISO	Yes	Yes	N/A	Yes
GSM Voice + 2.4 GHz WiFi MIMO+ 5 GHz WiFi MIMO	Yes	Yes	N/A	Yes
GSM Voice + Bluetooth + 5 GHz WiFi SISO	Yes#	Yes	N/A	Yes
GSM Voice + Bluetooth + 5 GHz WiFi MIMO	Yes#	Yes	N/A	Yes
GSM Voice + Bluetooth	Yes#	Yes	N/A	Yes
GPRS + 2.4 GHz WiFi SISO	N/A	N/A	Yes	Yes
GPRS + 5 GHz WiFi SISO	N/A	N/A	Yes	Yes
GPRS + 2.4 GHz WiFi MIMO	N/A	N/A	Yes	Yes
GPRS + 5 GHz WiFi MIMO	N/A	N/A	Yes	Yes
GPRS + Bluetooth	N/A	N/A	Yes#	Yes
GPRS + Bluetooth+ 5 GHz WiFi SISO	N/A	N/A	Yes#	Yes
GPRS + Bluetooth+ 5 GHz WiFi MIMO	N/A	N/A	Yes#	Yes
GPRS + 2.4 GHz WiFi SISO + 5 GHz WiFi SISO	N/A	N/A	Yes	Yes
GPRS + 2.4 GHz WiFi MIMO + 5 GHz WiFi MIMO	N/A	N/A	Yes	Yes
UMTS + 2.4 GHz WiFi SISO	Yes	Yes	Yes	Yes
UMTS + 5 GHz WiFi SISO	Yes	Yes	Yes	Yes
UMTS + 2.4 GHz WiFi MIMO	Yes	Yes	Yes	Yes
UMTS + 5 GHz WiFi MIMO	Yes	Yes	Yes	Yes
UMTS + 2.4 GHz Bluetooth	Yes#	Yes	Yes#	Yes
UMTS + 2.4 GHz Bluetooth+ 5 GHz WiFi SISO	Yes#	Yes	Yes#	Yes
UMTS + 2.4 GHz Bluetooth+ 5 GHz WiFi MIMO	Yes#	Yes	Yes#	Yes
UMTS + 2.4 GHz WiFi SISO+ 5 GHz WiFi SISO	Yes	Yes	Yes	Yes
UMTS + 2.4 GHz WiFi SISO+ 5 GHz WiFi SISO	Yes	Yes	Yes	Yes
LTE + 2.4 GHz WiFi SISO	Yes	Yes	Yes	Yes
LTE + 5 GHz WiFi SISO	Yes	Yes	Yes	Yes
LTE + 2.4 GHz WiFi MIMO	Yes	Yes	Yes	Yes
LTE + 5 GHz WiFi MIMO	Yes	Yes	Yes	Yes
LTE+ 2.4 GHz Bluetooth	Yes#	Yes	Yes#	Yes
LTE+ 2.4 GHz Bluetooth+ 5 GHz WiFi SISO	Yes#	Yes	Yes#	Yes
LTE+ 2.4 GHz Bluetooth+ 5 GHz WiFi MIMO	Yes#	Yes	Yes#	Yes
LTE + 2.4 GHz WiFi SISO + 5 GHz WiFi SISO	Yes	Yes	Yes	Yes
LTE + 2.4 GHz WiFi MIMO + 5 GHz WiFi MIMO	Yes	Yes	Yes	Yes

1. Bluetooth cannot transmit simultaneously with 2.4GHz WLAN
2. All licensed modes share the same antenna path and cannot transmit simultaneously.
3. UMTS +WLAN scenario also represents the UMTS Voice/DATA + WLAN hotspot scenario.
4. Per the manufacturer, GPRS does not support VOIP service.
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.
8. This device supports VoLTE.
9. This device supports VoWiFi.
10. 5 GHz Wireless Router is only supported for the UNII-3 by SW, therefore U-NII-1,U-NII2A and U-NII2C were not evaluated for wireless router conditions.
11. This device supports 2x2 MIMO Tx for WLAN 802.11a/g/n/ac/ax. WLAN 802.11a/g/n/ac/ax supports CDD and STBC and 802.11n/ac/ax additionally supports SDM. Each WLAN antenna can transmit independently or together when operating with MIMO.

4.8 SAR Test Considerations

4.8.1 WiFi

Since 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 802.11 ax with the following features:

- a) Up to 80 MHz Bandwidth only for 5Ghz
- b) Up to 20 MHz Bandwidth only for 2Ghz
- c) No aggregate channel configurations
- d) 2Tx Antenna output
- e) Up to 1024AQM QAM is supported
- f) TDWR channels are supported.
- g) Straddle channels are supported

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, phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR >1.2 W/kg.

Per April 2019 TCBC workshop document, SAR testing was not required for 802.11ax when applying the initial test configuration procedures of KDB 248227 D01, with 802.11ax considered a high order 802.11 mode.

For modes with the same maximum output power, the guidance from section 5.3.2 a) of FCC KDB Publication 248227 D01 should be applied, with 802.11ax being considered as the highest 802.11 mode for the appropriate frequency bands

4.8.2 Licensed Transmitter(s)

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

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

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

This device support 64QAM and 256QAM on the uplink and 256QAM on the down link for LTE Operations. Conduced Powers for 64QAM and 256QAM uplink configurations were measured per section 5.1 of FCC KDB Publication 941225D05v02r05. SAR was not required for 64QAM or 256QAM since the highest maximum output power for 64QAM and 256QAM is $\leq 1/2$ dB higher than the same configuration in QPSK and the reported SAR for e QPSK configuration is ≤ 1.45 W/kg, per section 5.2.4 of FCC KDB publication 941225 D05v02r05.

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

LTE Band 2(1850.7 MHz ~ 1909.3 MHz) is covered by LTE Band 25 (1850.7 MHz ~ 1914.3 MHz), LTE Band 17(706.5 MHz ~ 713.5 MHz) is covered by LTE Band 12 (699.7 MHz ~ 715.3 MHz), LTE Band 4 (1 710.7 MHz ~ 1 754.3 MHz) is covered by LTE Band 66 (1 710.7 MHz ~ 1 779.3 MHz) each both LTE bands have the same target powers

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

This device supports downlink 4x4 MIMO operations for some LTE bands. Per Ma 2017 TCB Workshop Notes, SAR for 4x4 DL MIMO was not needed since the maximum output power with 4x4 DL MIMO inactive.

Additionally, SAR for 4x4 MIMO Downlink Carrier Aggregation mode was not more than 0.25dB higher than the maximum output power with 4x4 MIMO Downlink and downlink carrier aggregation inactive.

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

Per FCC KDB 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.

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

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

Per FCC KDB 690783 1 D01 SAR Listings on Grants v01r03 and KDB 447498 D01 General RF Exposure Guidance v06 The SAR numbers listed must be consistent with the highest reported test results required by the published RF exposure KDB procedures. When the measured SAR is not at the maximum tune-up tolerance limit or maximum output power allowed for production units, the measured results are scaled to the maximum conditions to determine compliance; the scaled results are referred to as the reported SAR.

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

The Reported SAR for WLAN and Bluetooth

$$\text{The Reported SAR} = \text{The Measured SAR} \times \frac{\text{Maximum tune-up (mW)}}{\text{Measured Conducted Power(mW)}} \times \text{Duty factor}$$

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

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

Where:

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

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

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

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

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

5. Introduction

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

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

SAR Definition

Specific Absorption Rate (SAR) is defined as the time derivative of the incremental electromagnetic energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dV) 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)

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

Where:

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

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

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.

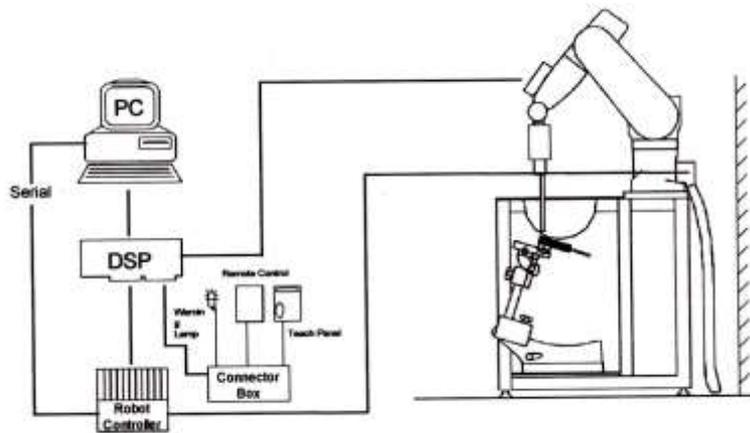


Figure 2. HCT SAR Lab. Test Measurement Set-up

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.

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5±1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
	≤ 2 GHz: ≤15 mm 2-3 GHz: ≤12 mm	3-4 GHz: ≤12 mm 4-6 GHz: ≤10 mm

Maximum area scan Spatial resolution: $\Delta x_{Area}, \Delta y_{Area}$

When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.

Maximum zoom scan Spatial resolution: $\Delta x_{zoom}, \Delta y_{zoom}$	≤ 2 GHz: ≤8mm 2-3 GHz: ≤5mm*	3-4 GHz: ≤5 mm* 4-6 GHz: ≤4 mm*
uniform grid: $\Delta z_{zoom}(n)$	≤ 5 mm	3-4 GHz: ≤4 mm 4-5 GHz: ≤3 mm 5-6 GHz: ≤2 mm
Maximum zoom scan Spatial resolution normal to phantom surface	$\Delta z_{zoom}(1)$: between 1 st two Points closest to phantom surface ≤ 4 mm	3-4 GHz: ≤3 mm 4-5 GHz: ≤2.5 mm 5-6 GHz: ≤2 mm
graded grid $\Delta z_{zoom}(n>1)$: between subsequent Points		$\leq 1.5 \cdot \Delta z_{zoom}(n-1)$
Minimum zoom scan volume x, y, z	≥ 30 mm	3-4 GHz: ≥28 mm 4-5 GHz: ≥25 mm 5-6 GHz: ≥22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.

* When zoom scan is required and the reported SAR from the area scan based 1-g SAR estimation procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

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.

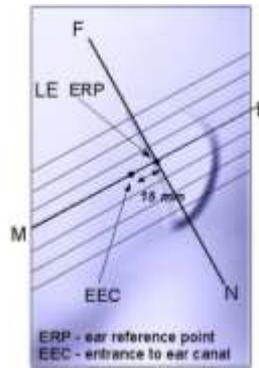


Figure 8-1
Close-up side view of ERP

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



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

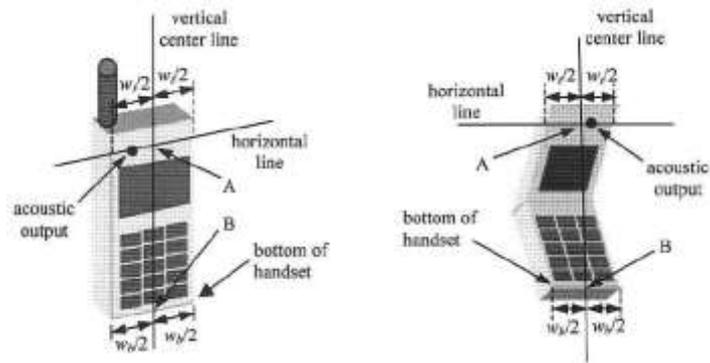


Figure 6-3. Handset vertical and horizontal reference lines

8.3 Device Holder

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

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.

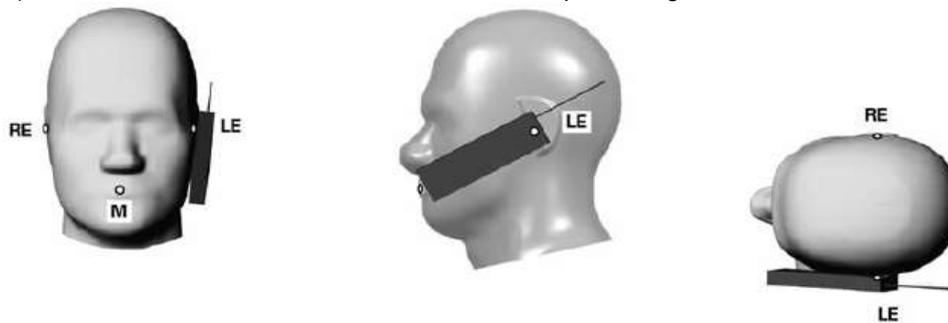


Figure 8.4 Cheek/ Touch position of the wireless device

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 ≥ 9cm x 5 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-worn 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
ANT.1	WWAN (GSM 1900/ WCDMA B2/B4 LTE/B2/B4/B25/B26/B66)	Rear	9	N/A	N/A	8
		Front	7	N/A	N/A	6
		Bottom	13	N/A	N/A	12
ANT.2	LTE 41 LTE 41 (HUPE)	Rear	9	N/A	N/A	8
		Front	7	N/A	N/A	6
		Bottom	13	N/A	N/A	12

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

10.3.4 SAR Measurements with Rel. 6 HSUPA

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

10.3.5 DC-HSDPA

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

DC-HSDPA Configurations

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



10.4 SAR Measurement Conditions for LTE

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

10.4.1 Spectrum Plots for RB Configurations

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

10.4.2 MPR

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

10.4.3 A-MPR

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

10.4.4 Required RB Size and RB offsets for SAR testing

According to FCC KDB 941225 D05v02r05

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

10.4.5 Downlink Carrier Aggregation

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

10.4.6 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	$26336 \cdot T_s$			$7680 \cdot T_s$		
5	$6592 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$20480 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
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:

$$\text{Calculated Duty Cycle} = (5120 \times (1/(15000 \times 2048)) \times 2 + 0.006)/0.01 = 63.33 \%$$

Where

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

HPUE :

Calculated Duty Cycle for Uplink-Downlink Configuration 1:

$$\text{Calculated Duty Cycle} = 5120 \times (1/(15000 \times 2048)) \times 2 + 0.004 / 0.01 = 43.33 \%$$

10.4.6 The Call Box Setup for LTE(TDD)

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

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

Reference Signal not found UE Power : -21.5 dBm

Power Measurement (Meas. Count : 11/ 20)

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

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

Common Parameter

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

Call Processing On Scenario Normal

Frequency

Frame Structure TDD

Channel Bandwidth FDD Hz

UL Channel & Frequency TDD 20 CH = 2593.000000 MHz

DL Channel & Frequency TDD 40620 CH = 2593.000000 MHz

Operation Band 41

Frequency Separation (0)MHz

Level

Input Level 30.0 dBm

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

Reference Signal not found UE Power : -21.5 dBm

Power Measurement (Meas. Count : 11/ 20)

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

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

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

CFI 3

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

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

Special Subframe Configuration 6

Physical Channel Parameter

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

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

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

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

Unless band gap channels are permanently disabled, SAR must be considered for these channels.

10.5.4 Initial Test Position Procedure

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

10.5.5 2.4 GHz SAR test Requirements

SAR is measured for 2.4 GHz 802.11b DSSS using either the fixed test position or, when applicable, the initial test position procedure. SAR test reduction is determined according to the following:

- 1) When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS is that exposure configuration.
- 2) When the reported SAR is > 0.8 W/kg, SAR is required for that position using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

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

10.5.6 OFDM Transmission Mode and SAR Test Channel Selection

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

10.5.7 Initial Test Configuration Procedure

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

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

10.5.8 Subsequent Test Configuration Procedures

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

10.5.9 MIMO SAR Considerations

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

11. Output Power Specifications

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

Licensed bands

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

Test Overview

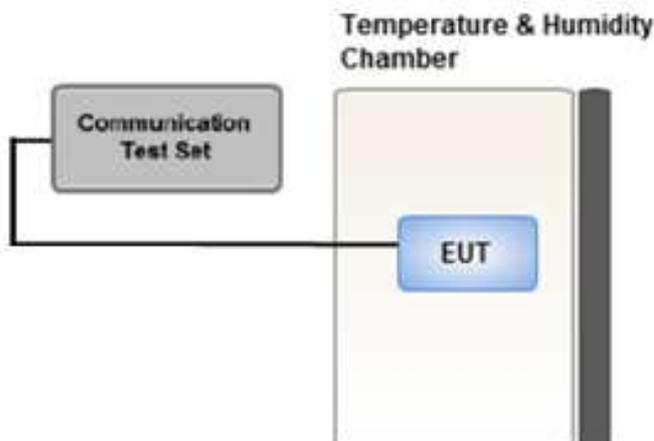
According to ANSI C63.26-2015 Section 5.2.1 when measuring the maximum RF output power from such devices, control over the EUT must be provided either through special test software (provided by manufacturer specifically for compliance testing, but not accessible by an end user) or through use of a base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

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

Test Procedure

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

Test setup



11.1 GSM

11.1.1 GSM Maximum Conducted Output Power

Mode / Band	Voice	GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)				
	GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot	
Maximum	34.0	34.0	32.5	31.0	29.5	28.0	26.0	25.0	23.0	
Nominal	33.0	33.0	31.5	30.0	28.5	27.0	25.0	24.0	22.0	
GSM 850	128	33.49	33.60	31.34	30.20	28.64	26.87	24.93	23.86	22.09
	190	33.56	33.62	31.49	30.38	28.73	26.95	25.16	24.00	22.23
	251	33.53	33.61	31.50	30.35	28.62	27.04	25.11	23.83	22.13
Maximum	31.0	31.0	28.0	26.5	25.0	27.0	24.0	23.0	22.0	
Nominal	30.0	30.0	27.0	25.5	24.0	26.0	23.0	22.0	21.0	
GSM 1900	512	30.49	30.54	27.76	25.95	24.50	26.08	23.74	22.69	21.15
	661	30.44	30.44	27.73	25.97	24.59	25.89	23.81	22.37	21.14
	810	30.32	30.35	27.67	25.88	24.43	25.99	23.80	22.38	21.19

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	24.97	24.97	26.48	26.74	26.49	18.97	19.98	20.74	19.99	
Nominal	23.97	23.97	25.48	25.74	25.49	17.97	18.98	19.74	18.99	
GSM 850	128	24.46	24.57	25.32	25.94	25.63	17.84	18.91	19.60	19.08
	190	24.53	24.59	25.47	26.12	25.72	17.92	19.14	19.74	19.22
	251	24.50	24.58	25.48	26.09	25.61	18.01	19.09	19.57	19.12
Maximum	21.97	21.97	21.98	22.24	21.99	17.97	17.98	18.74	18.99	
Nominal	20.97	20.97	20.98	21.24	20.99	16.97	16.98	17.74	17.99	
GSM 1900	512	21.46	21.51	21.74	21.69	21.49	17.05	17.72	18.43	18.14
	661	21.41	21.41	21.71	21.71	21.58	16.86	17.79	18.11	18.13
	810	21.29	21.32	21.65	21.62	21.42	16.96	17.78	18.12	18.18

GSM Conducted output powers (Frame-Average)

11.1.2 GSM Maximum Conducted Output Power (Hotspot Back-off 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		30.0	30.0	27.5	26.0	24.0	26.0	24.0	22.5	21.0
Nominal		29.0	29.0	26.5	25.0	23.0	25.0	23.0	21.5	20.0
GSM 1900	512	29.65	29.73	26.95	25.72	23.94	25.62	23.48	22.33	20.81
	661	29.44	29.53	26.88	25.57	23.92	25.41	23.43	22.06	20.79
	810	29.55	29.37	26.72	25.34	23.82	25.44	23.46	22.14	20.68

GSM Conducted output powers (Burst-Average)

Mode / Band		Voice	GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)			
		GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Maximum		20.97	20.97	21.48	21.74	20.99	16.97	17.98	18.24	17.99
Nominal		19.97	19.97	20.48	20.74	19.99	15.97	16.98	17.24	16.99
GSM 1900	512	20.62	20.70	20.93	21.46	20.93	16.59	17.46	18.07	17.80
	661	20.41	20.50	20.86	21.31	20.91	16.38	17.41	17.80	17.78
	810	20.52	20.34	20.70	21.08	20.81	16.41	17.44	17.88	17.67

GSM Conducted output powers (Frame-Average)

11.1.3 GSM Maximum Conducted Output Power (Grip back-off 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	30.0	30.0	27.5	26.0	24.0	26.0	24.0	22.5	21.0	
Nominal	29.0	29.0	26.5	25.0	23.0	25.0	23.0	21.5	20.0	
GSM 1900	512	29.59	29.59	26.88	25.54	23.90	25.47	23.32	22.13	20.65
	661	29.38	29.40	26.68	25.41	23.94	25.29	23.32	22.02	20.64
	810	29.40	29.37	26.57	25.27	23.71	25.39	23.30	22.04	20.64

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	20.97	20.97	21.48	21.74	20.99	16.97	17.98	18.24	17.99	
Nominal	19.97	19.97	20.48	20.74	19.99	15.97	16.98	17.24	16.99	
GSM 1900	512	20.56	20.56	20.86	21.28	20.89	16.44	17.30	17.87	17.64
	661	20.35	20.37	20.66	21.15	20.93	16.26	17.30	17.76	17.63
	810	20.37	20.34	20.55	21.01	20.70	16.36	17.28	17.78	17.63

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)



11.2 UMTS

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

WCDMA Band 5

3GPP Release Version	Mode	3GPP 34.121 Subtest	WCDMA Band 5 [dBm]			3GPP MPR
			UL 4132 DL 4357	UL 4183 DL 4408	UL 4233 DL 4458	
99	WCDMA	12.2 kbps RMC	24.47	24.62	24.62	-
99		12.2 kbps AMR	22.45	22.63	22.45	
5	HSDPA	Subtest 1	22.82	22.95	23.03	0
5		Subtest 2	22.32	22.49	22.51	0
5		Subtest 3	21.80	22.00	22.00	0.5
5		Subtest 4	21.30	21.46	21.47	0.5
6	HSUPA	Subtest 1	21.77	21.97	21.99	0
6		Subtest 2	19.80	19.99	19.98	2
6		Subtest 3	20.76	20.96	20.97	1
6		Subtest 4	19.79	19.96	19.95	2
6		Subtest 5	21.76	21.96	21.98	0
8	DC-HSDPA	Subtest 1	24.19	24.17	24.28	0
8		Subtest 2	22.72	22.89	22.81	0
8		Subtest 3	21.65	21.88	21.79	0.5
8		Subtest 4	21.63	21.85	21.81	0.5

WCDMA Average Conducted output powers

WCDMA Band 4

3GPP Release Version	Mode	3GPP 34.121 Subtest	WCDMA Band 4 [dBm]			3GPP MPR
			UL 1312 DL 1537	UL 1412 DL 1637	UL 1513 DL 1738	
99	WCDMA	12.2 kbps RMC	23.28	22.87	23.58	-
99		12.2 kbps AMR	22.24	21.83	22.56	
5	HSDPA	Subtest 1	23.10	22.78	23.49	0
5		Subtest 2	23.10	22.78	23.48	0
5		Subtest 3	23.12	22.26	23.49	0.5
5		Subtest 4	22.15	21.76	22.48	0.5
6	HSUPA	Subtest 1	22.12	21.70	22.46	0
6		Subtest 2	18.63	18.55	18.91	2
6		Subtest 3	19.48	19.20	19.93	1
6		Subtest 4	19.08	18.58	19.41	2
6		Subtest 5	22.08	21.69	22.46	0
8	DC-HSDPA	Subtest 1	22.70	22.51	22.87	0
8		Subtest 2	22.71	22.52	22.89	0
8		Subtest 3	21.74	21.51	21.88	0.5
8		Subtest 4	21.70	21.55	21.89	0.5

WCDMA Average Conducted output powers

WCDMA Band 2

3GPP Release Version	Mode	3GPP 34.121	WCDMA Band 2 [dBm]			3GPP MPR
		Subtest	UL 9262 DL 9662	UL 9400 DL 9800	UL 9538 DL 9938	
99	WCDMA	12.2 kbps RMC	23.63	23.14	23.37	-
99		12.2 kbps AMR	22.58	22.13	22.33	
5	HSDPA	Subtest 1	23.52	23.09	23.34	0
5		Subtest 2	23.01	22.67	22.84	0
5		Subtest 3	22.51	22.14	22.33	0.5
5		Subtest 4	22.00	21.61	21.80	0.5
6	HSUPA	Subtest 1	22.47	21.97	22.32	0
6		Subtest 2	18.97	18.59	18.78	2
6		Subtest 3	19.57	18.95	19.58	1
6		Subtest 4	18.96	18.79	18.66	2
6		Subtest 5	22.49	22.07	22.31	0
8	DC-HSDPA	Subtest 1	23.44	22.98	22.86	0
8		Subtest 2	23.46	23.08	22.92	0
8		Subtest 3	22.55	22.05	21.92	0.5
8		Subtest 4	22.54	22.08	21.93	0.5

WCDMA Average Conducted output powers

11.2.2 UMTS Reduced Conducted Output Power (Hotspot back-off Power)

MPR is set to zero when output reduction is applied.

WCDMA Band 4 (Hotspot back-off Power)

3GPP Release Version	Mode	3GPP 34.121	WCDMA Band 4 [dBm]			MPR
		Subtest	UL 1312 DL 1537	UL 1412 DL 1637	UL 1513 DL 1738	
99	WCDMA	12.2 kbps RMC	19.76	19.35	20.04	-
99		12.2 kbps AMR	19.75	19.36	20.00	
5	HSDPA	Subtest 1	19.67	19.22	19.96	0
5		Subtest 2	19.62	19.21	19.96	0
5		Subtest 3	19.63	19.28	19.95	0
5		Subtest 4	19.72	19.33	19.98	0
6	HSUPA	Subtest 1	18.67	18.33	18.97	0
6		Subtest 2	18.63	18.16	18.83	0
6		Subtest 3	18.72	18.32	18.94	0
6		Subtest 4	18.73	18.27	18.99	0
6		Subtest 5	18.62	18.31	18.98	0
8	DC-HSDPA	Subtest 1	19.28	19.02	19.44	0
8		Subtest 2	19.21	19.00	19.43	0
8		Subtest 3	19.22	19.08	19.39	0
8		Subtest 4	19.23	19.03	19.37	0

WCDMA Average Conducted output powers

WCDMA Band 2 (Hotspot back-off Power)

3GPP Release Version	Mode	3GPP 34.121	WCDMA Band 2 [dBm]			MPR
		Subtest	UL 9262 DL 9662	UL 9400 DL 9800	UL 9538 DL 9938	
99	WCDMA	12.2 kbps RMC	20.02	19.62	19.81	-
99		12.2 kbps AMR	20.03	19.67	19.69	
5	HSDPA	Subtest 1	20.02	19.63	19.82	0
5		Subtest 2	19.93	19.67	19.80	0
5		Subtest 3	20.00	19.64	19.87	0
5		Subtest 4	20.03	19.63	19.83	0
6	HSUPA	Subtest 1	19.01	18.65	18.81	0
6		Subtest 2	18.85	18.57	18.71	0
6		Subtest 3	18.98	18.60	18.84	0
6		Subtest 4	19.00	18.58	18.78	0
6		Subtest 5	19.05	18.61	18.84	0
8	DC-HSDPA	Subtest 1	19.99	19.53	19.65	0
8		Subtest 2	20.05	19.54	19.64	0
8		Subtest 3	19.97	19.58	19.69	0
8		Subtest 4	19.99	19.61	19.60	0

WCDMA Average Conducted output powers

11.2.3 UMTS Reduced Conducted Output Power (Grip back-off Power)

MPR is set to zero when output reduction is applied.

WCDMA Band 4(Grip back-off Power)

3GPP Release Version	Mode	3GPP 34.121	WCDMA Band 4 [dBm]			MPR
		Subtest	UL 1312 DL 1537	UL 1412 DL 1637	UL 1513 DL 1738	
99	WCDMA	12.2 kbps RMC	19.72	19.33	19.98	-
99		12.2 kbps AMR	19.72	19.30	19.99	-
5	HSDPA	Subtest 1	19.60	19.21	19.90	0
5		Subtest 2	19.59	19.20	19.89	0
5		Subtest 3	19.61	19.21	19.90	0
5		Subtest 4	19.64	19.23	19.93	0
6	HSUPA	Subtest 1	18.62	18.25	18.92	0
6		Subtest 2	18.53	18.15	18.81	0
6		Subtest 3	18.62	18.25	18.90	0
6		Subtest 4	18.63	18.26	18.90	0
6		Subtest 5	18.61	18.25	18.90	0
8	DC-HSDPA	Subtest 1	19.18	18.97	19.35	0
8		Subtest 2	19.17	18.96	19.34	0
8		Subtest 3	19.20	18.98	19.36	0
8		Subtest 4	19.16	18.96	19.36	0

WCDMA Average Conducted output powers

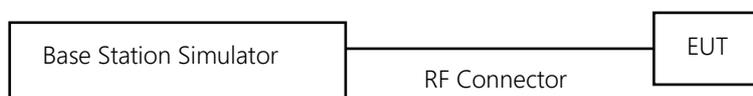
WCDMA Band 2(Grip back-off Power)

3GPP Release Version	Mode	3GPP 34.121	WCDMA Band 2 [dBm]			MPR
		Subtest	UL 9262 DL 9662	UL 9400 DL 9800	UL 9538 DL 9938	
99	WCDMA	12.2 kbps RMC	20.00	19.59	19.80	-
99		12.2 kbps AMR	19.99	19.60	19.68	-
5	HSDPA	Subtest 1	19.92	19.57	19.77	0
5		Subtest 2	19.91	19.57	19.76	0
5		Subtest 3	19.96	19.61	19.78	0
5		Subtest 4	19.97	19.57	19.79	0
6	HSUPA	Subtest 1	18.95	18.59	18.76	0
6		Subtest 2	18.83	18.49	18.66	0
6		Subtest 3	18.94	18.57	18.75	0
6		Subtest 4	18.96	18.57	18.76	0
6		Subtest 5	18.95	18.59	18.75	0
8	DC-HSDPA	Subtest 1	19.95	19.52	19.62	0
8		Subtest 2	19.98	19.53	19.59	0
8		Subtest 3	19.96	19.55	19.63	0
8		Subtest 4	19.98	19.52	19.59	0

WCDMA Average Conducted output powers

DC-HSDPA Configurations

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



11.3 LTE Maximum Output Power

LTE B4/5/12/13/17/26 at 20 MHz 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 _ 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18607 Ch. 1850.7 MHz	18900 Ch. 1880 MHz	19193 Ch. 1909.3 MHz		
1.4 MHz	QPSK	1	0	22.79	23.06	22.71	0	0
		1	3	22.82	23.02	22.76	0	0
		1	5	22.79	23.11	22.77	0	0
		3	0	22.78	23.01	22.72	0	0
		3	1	22.87	23.17	22.85	0	0
		3	3	22.85	23.06	22.78	0	0
	16QAM	6	0	21.85	22.07	21.76	0-1	1
		1	0	22.02	22.20	21.97	0-1	1
		1	3	21.82	22.12	21.67	0-1	1
		1	5	21.90	22.28	21.91	0-1	1
		3	0	21.80	22.15	21.77	0-1	1
		3	1	21.93	22.22	21.90	0-1	1
	64QAM	3	3	21.84	22.24	21.76	0-1	1
		6	0	20.85	21.23	20.77	0-2	2
		1	0	20.92	21.24	20.89	0-2	2
		1	3	20.79	21.14	20.78	0-2	2
		1	5	20.98	21.20	20.91	0-2	2
		3	0	20.75	21.12	20.74	0-2	2
	256QAM	3	1	20.85	21.26	20.93	0-2	2
		3	3	20.74	21.12	20.83	0-2	2
		6	0	19.75	20.15	19.80	0-3	3
		1	0	17.70	18.06	17.62	0-2	2
		1	3	17.63	17.97	17.60	0-2	2
		1	5	17.63	17.96	17.69	0-2	2
	3	0	17.66	18.03	17.61	0-2	2	
	3	1	17.79	18.10	17.72	0-2	2	
	3	3	17.76	18.13	17.71	0-2	2	
	6	0	17.67	18.02	17.61	0-3	3	

LTE Band 2_ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18615 Ch. 1851.5 MHz	18900 Ch. 1880 MHz	19185 Ch. 1908.5 MHz		
3 MHz	QPSK	1	0	22.74	23.06	22.72	0	0
		1	7	22.76	22.97	22.70	0	0
		1	14	22.77	23.06	22.73	0	0
		8	0	21.83	22.14	21.82	0-1	1
		8	3	21.81	22.08	21.78	0-1	1
		8	7	21.81	22.10	21.82	0-1	1
		15	0	21.85	22.11	21.81	0-1	1
	16QAM	1	0	22.04	22.31	22.00	0-1	1
		1	7	22.05	22.25	21.97	0-1	1
		1	14	22.04	22.22	21.95	0-1	1
		8	0	20.85	21.13	20.90	0-2	2
		8	3	20.80	21.15	20.83	0-2	2
		8	7	20.88	21.15	20.87	0-2	2
		15	0	20.82	21.17	20.85	0-2	2
	64QAM	1	0	20.91	21.16	20.91	0-2	2
		1	7	20.65	21.13	20.88	0-2	2
		1	14	20.91	21.18	20.95	0-2	2
		8	0	19.82	20.12	19.84	0-3	3
		8	3	19.78	20.10	19.78	0-3	3
		8	7	19.78	20.17	19.76	0-3	3
		15	0	19.80	20.11	19.79	0-3	3
	256QAM	1	0	17.71	18.04	17.72	0-2	2
		1	7	17.71	17.89	17.55	0-2	2
		1	14	17.72	18.01	17.63	0-2	2
		8	0	17.70	17.98	17.63	0-3	3
		8	3	17.68	18.01	17.59	0-3	3
		8	7	17.69	18.01	17.63	0-3	3
15		0	17.68	18.02	17.62	0-3	3	

LTE Band 2 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18625 Ch. 1852.5 MHz	18900 Ch. 1880 MHz	19175 Ch. 1907.5 MHz		
5 MHz	QPSK	1	0	22.91	23.10	22.83	0	0
		1	12	22.87	23.12	22.85	0	0
		1	24	22.90	23.12	22.84	0	0
		12	0	22.01	22.20	21.85	0-1	1
		12	6	21.96	22.17	21.87	0-1	1
		12	11	21.95	22.19	21.86	0-1	1
	16QAM	25	0	22.01	22.20	21.88	0-1	1
		1	0	21.98	22.35	22.07	0-1	1
		1	12	22.06	22.30	21.90	0-1	1
		1	24	22.05	22.51	21.97	0-1	1
		12	0	20.91	21.17	20.88	0-2	2
		12	6	20.94	21.16	20.85	0-2	2
	64QAM	12	11	20.98	21.19	20.86	0-2	2
		25	0	20.94	21.19	20.90	0-2	2
		1	0	21.15	21.39	21.07	0-2	2
		1	12	20.97	21.30	20.98	0-2	2
		1	24	21.03	21.27	21.01	0-2	2
		12	0	19.92	20.18	19.84	0-3	3
	256QAM	12	6	19.90	20.15	19.84	0-3	3
		12	11	19.91	20.15	19.81	0-3	3
		25	0	19.79	20.15	19.86	0-3	3
		1	0	17.90	18.16	17.81	0-2	2
		1	12	17.72	18.15	17.72	0-2	2
		1	24	17.85	18.09	17.78	0-2	2
	12	0	17.76	18.05	17.75	0-3	3	
	12	6	17.77	17.97	17.68	0-3	3	
	12	11	17.76	18.00	17.70	0-3	3	
	25	0	17.74	17.99	17.74	0-3	3	

LTE Band 2 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18650 Ch. 1855 MHz	18900 Ch. 1880 MHz	19150 Ch. 1905 MHz		
10 MHz	QPSK	1	0	22.81	23.02	22.82	0	0
		1	24	22.77	23.08	22.86	0	0
		1	49	22.82	23.13	22.87	0	0
		25	0	21.92	22.18	21.94	0-1	1
		25	12	21.90	22.16	21.92	0-1	1
		25	24	21.86	22.14	21.96	0-1	1
		50	0	21.91	22.17	21.93	0-1	1
	16QAM	1	0	22.04	22.27	22.04	0-1	1
		1	24	22.05	22.20	22.01	0-1	1
		1	49	22.06	22.29	22.12	0-1	1
		25	0	20.88	21.16	20.88	0-2	2
		25	12	20.87	21.16	20.91	0-2	2
		25	24	20.90	21.17	20.90	0-2	2
		50	0	20.89	21.15	20.92	0-2	2
	64QAM	1	0	21.05	21.21	20.93	0-2	2
		1	24	21.06	21.33	21.13	0-2	2
		1	49	21.04	21.29	21.06	0-2	2
		25	0	19.85	20.12	19.84	0-3	3
		25	12	19.81	20.15	19.91	0-3	3
		25	24	19.80	20.13	19.87	0-3	3
		50	0	19.87	20.14	19.89	0-3	3
	256QAM	1	0	17.83	18.14	17.83	0-2	2
		1	24	17.73	18.09	17.85	0-2	2
		1	49	17.77	18.14	17.80	0-2	2
25		0	17.73	18.05	17.74	0-3	3	
25		12	17.74	18.04	17.79	0-3	3	
25		24	17.72	18.02	17.76	0-3	3	
50		0	17.78	18.07	17.83	0-3	3	

LTE Band 2 _ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18675 Ch. 1857.5 MHz	18900 Ch. 1880 MHz	19125 Ch. 1902.5 MHz		
15 MHz	QPSK	1	0	22.99	23.17	22.73	0	0
		1	36	22.86	22.95	22.69	0	0
		1	74	22.96	23.10	22.84	0	0
		36	0	22.04	22.16	21.91	0-1	1
		36	18	21.96	22.17	21.87	0-1	1
		36	39	21.96	22.18	21.88	0-1	1
		75	0	22.03	22.13	21.88	0-1	1
	16QAM	1	0	22.13	22.38	22.01	0-1	1
		1	36	22.10	22.27	22.04	0-1	1
		1	74	22.11	22.39	22.07	0-1	1
		36	0	20.96	21.19	20.84	0-2	2
		36	18	20.95	21.16	20.82	0-2	2
		36	39	20.89	21.17	20.85	0-2	2
		75	0	20.99	21.14	20.81	0-2	2
	64QAM	1	0	21.21	21.29	20.97	0-2	2
		1	36	20.92	21.09	20.79	0-2	2
		1	74	20.96	21.26	21.03	0-2	2
		36	0	19.94	20.14	19.87	0-3	3
		36	18	19.93	20.16	19.82	0-3	3
		36	39	19.91	20.15	19.87	0-3	3
		75	0	19.89	20.12	19.84	0-3	3
	256QAM	1	0	17.83	18.23	17.67	0-2	2
		1	36	17.83	17.99	17.67	0-2	2
		1	74	17.96	18.10	17.74	0-2	2
		36	0	17.89	18.09	17.75	0-3	3
		36	18	17.86	18.11	17.79	0-3	3
		36	39	17.83	18.04	17.79	0-3	3
		75	0	17.84	18.10	17.77	0-3	3

LTE Band 2 _ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 MHz	18900 Ch. 1880 MHz	19100 Ch. 1900 MHz		
20 MHz	QPSK	1	0	22.92	23.16	22.85	0	0
		1	49	22.87	23.10	22.89	0	0
		1	99	22.87	23.10	23.00	0	0
		50	0	21.93	22.18	22.05	0-1	1
		50	25	21.90	22.14	21.98	0-1	1
		50	49	21.90	22.15	22.02	0-1	1
		100	0	21.91	22.18	21.98	0-1	1
	16QAM	1	0	22.07	22.37	22.12	0-1	1
		1	49	21.97	22.20	21.95	0-1	1
		1	99	22.09	22.33	22.24	0-1	1
		50	0	20.90	21.16	21.00	0-2	2
		50	25	20.88	21.14	20.98	0-2	2
		50	49	20.82	21.13	20.95	0-2	2
		100	0	20.85	21.15	20.94	0-2	2
	64QAM	1	0	21.03	21.29	21.09	0-2	2
		1	49	21.02	21.14	20.91	0-2	2
		1	99	20.96	21.16	21.12	0-2	2
		50	0	19.92	20.17	19.96	0-3	3
		50	25	19.89	20.11	19.99	0-3	3
		50	49	19.84	20.16	19.97	0-3	3
		100	0	19.87	20.13	19.96	0-3	3
	256QAM	1	0	17.95	18.19	17.95	0-2	2
		1	49	17.95	18.19	17.89	0-2	2
		1	99	17.93	18.11	18.02	0-2	2
50		0	17.83	18.08	17.90	0-3	3	
50		25	17.79	18.05	17.96	0-3	3	
50		49	17.77	18.04	17.91	0-3	3	
100		0	17.82	18.05	17.88	0-3	3	

[LTE Band 4 Conducted Power]

LTE Band 4 _ 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19957 Ch. 1710.7 MHz	20175 Ch. 1732.5 MHz	20393 Ch. 1754.3 MHz		
1.4 MHz	QPSK	1	0	23.06	22.54	23.00	0	0
		1	3	23.06	22.66	23.13	0	0
		1	5	23.07	22.67	22.91	0	0
		3	0	23.08	22.51	23.11	0	0
		3	1	23.26	22.70	23.18	0	0
		3	3	23.14	22.67	23.19	0	0
		6	0	22.12	21.68	22.21	0-1	1
	16QAM	1	0	22.24	21.88	22.44	0-1	1
		1	3	22.19	21.73	22.21	0-1	1
		1	5	22.24	21.73	22.06	0-1	1
		3	0	22.21	21.73	22.19	0-1	1
		3	1	22.31	21.79	22.11	0-1	1
		3	3	22.21	21.80	22.34	0-1	1
		6	0	21.15	20.73	21.27	0-2	2
	64QAM	1	0	21.30	20.92	21.11	0-2	2
		1	3	21.19	20.78	21.28	0-2	2
		1	5	21.29	20.90	21.30	0-2	2
		3	0	21.16	20.69	21.23	0-2	2
		3	1	21.36	20.91	21.26	0-2	2
		3	3	21.25	20.82	21.21	0-2	2
		6	0	20.14	19.72	19.92	0-3	3
	256QAM	1	0	17.98	17.49	18.43	0-2	2
		1	3	17.86	17.69	17.84	0-2	2
		1	5	18.00	17.70	18.08	0-2	2
		3	0	17.98	17.59	17.93	0-2	2
		3	1	18.00	17.82	17.89	0-2	2
		3	3	18.04	17.65	18.14	0-2	2
		6	0	17.84	17.65	17.77	0-3	3

LTE Band 4 _ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average 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	23.01	22.57	23.16	0	0
		1	7	23.00	22.55	23.13	0	0
		1	14	23.08	22.65	23.16	0	0
		8	0	22.23	21.73	22.26	0-1	1
		8	3	22.16	21.66	22.21	0-1	1
		8	7	22.25	21.73	22.26	0-1	1
		15	0	22.20	21.75	22.27	0-1	1
	16QAM	1	0	22.22	21.89	22.34	0-1	1
		1	7	22.17	21.84	22.25	0-1	1
		1	14	22.29	21.86	22.37	0-1	1
		8	0	21.21	20.78	21.24	0-2	2
		8	3	21.17	20.73	21.22	0-2	2
		8	7	21.23	20.81	21.24	0-2	2
		15	0	21.26	20.78	21.21	0-2	2
	64QAM	1	0	21.27	20.84	21.29	0-2	2
		1	7	21.20	20.69	21.19	0-2	2
		1	14	21.32	20.77	21.32	0-2	2
		8	0	20.19	19.71	20.16	0-3	3
		8	3	20.15	19.69	20.20	0-3	3
		8	7	20.14	19.67	20.19	0-3	3
		15	0	20.23	19.73	20.23	0-3	3
	256QAM	1	0	18.02	17.69	18.10	0-2	2
		1	7	17.82	17.65	18.00	0-2	2
		1	14	17.99	17.71	18.09	0-2	2
		8	0	17.91	17.62	18.05	0-3	3
		8	3	17.87	17.66	18.05	0-3	3
		8	7	17.92	17.60	18.07	0-3	3
15		0	17.92	17.60	18.11	0-3	3	

LTE Band 4 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19975 Ch. 1712.5 MHz	20175 Ch. 1732.5 MHz	20375 Ch. 1752.5 MHz		
5 MHz	QPSK	1	0	23.07	22.75	23.22	0	0
		1	12	23.05	22.59	23.13	0	0
		1	24	23.09	22.72	23.18	0	0
		12	0	22.23	21.78	22.31	0-1	1
		12	6	22.22	21.76	22.28	0-1	1
		12	11	22.23	21.79	22.28	0-1	1
		25	0	22.23	21.78	22.32	0-1	1
	16QAM	1	0	22.23	21.82	22.42	0-1	1
		1	12	22.13	21.84	22.34	0-1	1
		1	24	22.20	21.87	22.38	0-1	1
		12	0	21.21	20.82	21.31	0-2	2
		12	6	21.21	20.80	21.25	0-2	2
		12	11	21.19	20.81	21.27	0-2	2
		25	0	21.20	20.81	21.23	0-2	2
	64QAM	1	0	21.34	20.85	21.39	0-2	2
		1	12	21.22	20.82	21.36	0-2	2
		1	24	21.20	20.96	21.44	0-2	2
		12	0	20.20	19.81	20.30	0-3	3
		12	6	20.19	19.81	20.28	0-3	3
		12	11	20.21	19.76	20.28	0-3	3
		25	0	20.13	19.80	20.18	0-3	3
	256QAM	1	0	18.11	17.81	18.15	0-2	2
		1	12	17.88	17.61	18.12	0-2	2
		1	24	18.02	17.76	18.21	0-2	2
12		0	17.97	17.68	18.11	0-3	3	
12		6	17.93	17.69	18.08	0-3	3	
12		11	17.97	17.67	18.13	0-3	3	
25		0	17.90	17.70	18.12	0-3	3	

LTE Band 4 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20000 Ch. 1715 MHz	20175 Ch. 1732.5 MHz	20350 Ch. 1750 MHz		
10 MHz	QPSK	1	0	23.05	22.69	23.20	0	0
		1	24	23.07	22.72	23.21	0	0
		1	49	23.07	22.69	23.15	0	0
		25	0	22.20	21.81	22.27	0-1	1
		25	12	22.15	21.78	22.30	0-1	1
		25	24	22.17	21.79	22.26	0-1	1
		50	0	22.29	21.85	22.36	0-1	1
	16QAM	1	0	22.26	21.94	22.37	0-1	1
		1	24	22.09	21.64	22.28	0-1	1
		1	49	22.17	21.89	22.39	0-1	1
		25	0	21.17	20.83	21.23	0-2	2
		25	12	21.09	20.79	21.19	0-2	2
		25	24	21.11	20.72	21.22	0-2	2
		50	0	21.20	20.80	21.34	0-2	2
	64QAM	1	0	21.37	20.95	21.33	0-2	2
		1	24	21.14	20.98	21.40	0-2	2
		1	49	21.13	20.91	21.34	0-2	2
		25	0	20.18	19.81	20.17	0-3	3
		25	12	20.09	19.73	20.18	0-3	3
		25	24	20.11	19.76	20.19	0-3	3
		50	0	20.20	19.79	20.31	0-3	3
	256QAM	1	0	17.93	17.87	18.07	0-2	2
		1	24	18.05	17.84	18.06	0-2	2
		1	49	18.15	17.70	18.23	0-2	2
25		0	17.91	17.78	18.05	0-3	3	
25		12	17.89	17.72	18.09	0-3	3	
25		24	17.92	17.69	18.08	0-3	3	
50		0	18.03	17.63	18.19	0-3	3	

LTE Band 4 _ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20025 Ch. 1717.5 MHz	20175 Ch. 1732.5 MHz	20325 Ch. 1747.5 MHz		
15 MHz	QPSK	1	0	23.03	22.74	23.02	0	0
		1	36	22.93	22.68	22.95	0	0
		1	74	23.02	22.71	23.06	0	0
		36	0	22.22	21.86	22.23	0-1	1
		36	18	22.17	21.80	22.21	0-1	1
		36	39	22.18	21.81	22.18	0-1	1
		75	0	22.19	21.78	22.21	0-1	1
	16QAM	1	0	22.16	21.91	22.22	0-1	1
		1	36	22.10	21.86	22.06	0-1	1
		1	74	22.16	21.84	22.24	0-1	1
		36	0	21.12	20.81	21.19	0-2	2
		36	18	21.09	20.81	21.16	0-2	2
		36	39	21.10	20.77	21.14	0-2	2
		75	0	21.08	20.79	21.14	0-2	2
	64QAM	1	0	21.23	20.98	21.33	0-2	2
		1	36	21.01	20.88	21.10	0-2	2
		1	74	21.10	20.86	21.25	0-2	2
		36	0	20.09	19.82	20.14	0-3	3
		36	18	20.10	19.78	20.14	0-3	3
		36	39	20.08	19.74	20.11	0-3	3
		75	0	20.07	19.72	20.13	0-3	3
	256QAM	1	0	17.87	17.84	18.02	0-2	2
		1	36	17.69	17.67	17.94	0-2	2
		1	74	18.05	17.72	17.96	0-2	2
		36	0	18.04	17.82	18.12	0-3	3
		36	18	18.06	17.77	18.08	0-3	3
		36	39	18.06	17.74	18.07	0-3	3
75		0	18.06	17.77	18.10	0-3	3	

LTE Band 4 _ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				20175 Ch. 1732.5 MHz		
20 MHz	QPSK	1	0	22.79	0	0
		1	49	22.74	0	0
		1	99	22.69	0	0
		50	0	21.86	0-1	1
		50	25	21.84	0-1	1
		50	49	21.80	0-1	1
		100	0	21.85	0-1	1
	16QAM	1	0	21.93	0-1	1
		1	49	21.84	0-1	1
		1	99	21.79	0-1	1
		50	0	20.90	0-2	2
		50	25	20.81	0-2	2
		50	49	20.81	0-2	2
		100	0	20.78	0-2	2
	64QAM	1	0	20.96	0-2	2
		1	49	20.98	0-2	2
		1	99	20.84	0-2	2
		50	0	19.87	0-3	3
		50	25	19.82	0-3	3
		50	49	19.73	0-3	3
		100	0	19.79	0-3	3
	256QAM	1	0	17.80	0-2	2
		1	49	17.89	0-2	2
		1	99	17.67	0-2	2
		50	0	17.72	0-3	3
		50	25	17.68	0-3	3
		50	49	17.67	0-3	3
		100	0	17.73	0-3	3

[LTE Band 5 Conducted Power]

LTE Band 5 _ 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20407 Ch. 824.7 MHz	20525 Ch. 836.5 MHz	20643 Ch. 848.3 MHz		
1.4 MHz	QPSK	1	0	24.33	24.81	24.97	0	0
		1	3	24.34	24.79	24.94	0	0
		1	5	24.31	24.84	24.95	0	0
		3	0	24.29	24.81	24.97	0	0
		3	1	24.38	24.94	25.07	0	0
		3	3	24.37	24.85	24.98	0	0
		6	0	23.37	23.82	23.98	0-1	1
	16QAM	1	0	23.57	24.05	24.17	0-1	1
		1	3	23.44	23.94	23.97	0-1	1
		1	5	23.60	24.00	24.05	0-1	1
		3	0	23.30	23.95	24.10	0-1	1
		3	1	23.46	24.11	24.22	0-1	1
		3	3	23.42	23.93	24.20	0-1	1
		6	0	22.42	22.99	23.21	0-2	2
	64QAM	1	0	22.52	22.95	23.20	0-2	2
		1	3	22.41	22.99	23.16	0-2	2
		1	5	22.41	22.98	23.29	0-2	2
		3	0	22.40	22.96	23.11	0-2	2
		3	1	22.48	23.06	23.26	0-2	2
		3	3	22.36	22.96	23.20	0-2	2
		6	0	21.33	21.90	22.09	0-3	3
	256QAM	1	0	19.43	19.99	20.24	0-2	2
		1	3	19.33	19.88	20.08	0-2	2
		1	5	19.51	19.99	20.19	0-2	2
		3	0	19.35	19.94	20.09	0-2	2
		3	1	19.51	20.04	20.27	0-2	2
		3	3	19.44	20.02	20.24	0-2	2
		6	0	19.28	19.94	20.05	0-3	3

LTE Band 5_ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20415 Ch. 825.5 MHz	20525 Ch. 836.5 MHz	20635 Ch. 847.5 MHz		
3 MHz	QPSK	1	0	24.28	24.83	25.00	0	0
		1	7	24.28	24.74	24.95	0	0
		1	14	24.34	24.85	24.97	0	0
		8	0	23.42	24.00	24.14	0-1	1
		8	3	23.38	23.88	24.06	0-1	1
		8	7	23.45	23.97	24.19	0-1	1
		15	0	23.45	23.93	24.15	0-1	1
	16QAM	1	0	23.47	24.08	24.26	0-1	1
		1	7	23.53	23.87	24.18	0-1	1
		1	14	23.53	24.00	24.10	0-1	1
		8	0	22.45	22.96	23.27	0-2	2
		8	3	22.46	22.88	23.15	0-2	2
		8	7	22.50	23.02	23.17	0-2	2
		15	0	22.43	22.97	23.17	0-2	2
	64QAM	1	0	22.57	23.19	23.22	0-2	2
		1	7	22.46	22.87	23.22	0-2	2
		1	14	22.54	23.01	23.22	0-2	2
		8	0	21.37	21.89	22.10	0-3	3
		8	3	21.35	21.91	22.04	0-3	3
		8	7	21.40	21.90	22.10	0-3	3
		15	0	21.44	21.92	22.11	0-3	3
	256QAM	1	0	19.45	19.99	20.16	0-2	2
		1	7	19.48	19.91	20.11	0-2	2
		1	14	19.57	20.08	20.26	0-2	2
		8	0	19.40	19.82	20.07	0-3	3
		8	3	19.41	19.85	20.08	0-3	3
		8	7	19.39	19.87	20.13	0-3	3
15		0	19.41	19.86	20.10	0-3	3	

LTE Band 5 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20425 Ch. 826.5 MHz	20525 Ch. 836.5 MHz	20625 Ch. 846.5 MHz		
5 MHz	QPSK	1	0	24.33	24.86	25.04	0	0
		1	12	24.29	24.72	24.94	0	0
		1	24	24.41	24.78	24.97	0	0
		12	0	23.50	23.96	24.19	0-1	1
		12	6	23.50	23.91	24.18	0-1	1
		12	11	23.51	23.93	24.17	0-1	1
		25	0	23.50	23.94	24.19	0-1	1
	16QAM	1	0	23.54	24.17	24.30	0-1	1
		1	12	23.50	24.04	24.22	0-1	1
		1	24	23.66	24.00	24.27	0-1	1
		12	0	22.48	22.95	23.23	0-2	2
		12	6	22.51	22.95	23.15	0-2	2
		12	11	22.50	22.99	23.18	0-2	2
		25	0	22.45	22.99	23.13	0-2	2
	64QAM	1	0	22.51	23.09	23.38	0-2	2
		1	12	22.43	22.92	23.24	0-2	2
		1	24	22.61	23.16	23.29	0-2	2
		12	0	21.45	21.93	22.18	0-3	3
		12	6	21.51	21.94	22.17	0-3	3
		12	11	21.47	21.95	22.20	0-3	3
		25	0	21.48	21.88	22.17	0-3	3
	256QAM	1	0	19.52	20.06	20.22	0-2	2
		1	12	19.50	20.00	20.13	0-2	2
		1	24	19.66	19.96	20.36	0-2	2
12		0	19.46	19.89	20.14	0-3	3	
12		6	19.49	19.90	20.07	0-3	3	
12		11	19.53	19.91	20.11	0-3	3	
25		0	19.47	19.90	20.10	0-3	3	

LTE Band 5 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				20525 Ch. 836.5 MHz		
10 MHz	QPSK	1	0	24.87	0	0
		1	24	24.82	0	0
		1	49	24.75	0	0
		25	0	23.96	0-1	1
		25	12	23.89	0-1	1
		25	24	23.83	0-1	1
		50	0	23.88	0-1	1
	16QAM	1	0	24.10	0-1	1
		1	24	23.90	0-1	1
		1	49	23.91	0-1	1
		25	0	22.92	0-2	2
		25	12	22.90	0-2	2
		25	24	22.87	0-2	2
		50	0	22.89	0-2	2
	64QAM	1	0	23.00	0-2	2
		1	24	22.94	0-2	2
		1	49	22.96	0-2	2
		25	0	21.84	0-3	3
		25	12	21.86	0-3	3
		25	24	21.85	0-3	3
		50	0	21.88	0-3	3
	256QAM	1	0	19.95	0-2	2
		1	24	19.83	0-2	2
		1	49	19.98	0-2	2
		25	0	19.83	0-3	3
		25	12	19.79	0-3	3
		25	24	19.79	0-3	3
		50	0	19.82	0-3	3

[LTE Band 12 Conducted Power]

LTE Band 12 _ 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23017 Ch. 699.7 MHz	23095 Ch. 707.5 MHz	23173 Ch. 715.3 MHz		
1.4 MHz	QPSK	1	0	23.74	23.73	23.66	0	0
		1	3	23.74	23.71	23.63	0	0
		1	5	23.76	23.84	23.66	0	0
		3	0	23.77	23.78	23.48	0	0
		3	1	23.85	23.94	23.84	0	0
		3	3	23.83	23.79	23.76	0	0
		6	0	22.82	22.83	22.76	0-1	1
	16QAM	1	0	23.04	22.82	22.71	0-1	1
		1	3	22.83	22.98	22.80	0-1	1
		1	5	23.02	22.78	22.94	0-1	1
		3	0	22.78	22.94	22.82	0-1	1
		3	1	22.97	23.04	22.97	0-1	1
		3	3	22.85	22.71	22.84	0-1	1
		6	0	21.84	21.75	21.82	0-2	2
	64QAM	1	0	22.00	22.14	21.78	0-2	2
		1	3	21.94	22.03	22.06	0-2	2
		1	5	22.06	22.02	22.06	0-2	2
		3	0	21.85	22.01	21.92	0-2	2
		3	1	22.01	22.00	21.97	0-2	2
		3	3	21.96	21.94	21.79	0-2	2
		6	0	20.84	20.93	20.81	0-3	3
	256QAM	1	0	18.85	19.26	19.08	0-2	2
		1	3	18.78	18.64	19.09	0-2	2
		1	5	18.91	18.91	18.56	0-2	2
		3	0	18.77	19.17	18.59	0-2	2
		3	1	18.94	18.95	19.25	0-2	2
		3	3	18.92	18.99	18.90	0-2	2
6		0	18.80	19.17	18.58	0-3	3	

LTE Band 12 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23025 Ch. 700.5 MHz	23095 Ch. 707.5 MHz	23165 Ch. 714.5 MHz		
3 MHz	QPSK	1	0	23.85	23.84	23.76	0	0
		1	7	23.78	23.72	23.66	0	0
		1	14	23.83	23.79	23.70	0	0
		8	0	22.92	22.91	22.86	0-1	1
		8	3	22.83	22.90	22.84	0-1	1
		8	7	22.87	22.99	22.92	0-1	1
	16QAM	15	0	22.93	22.94	22.92	0-1	1
		1	0	22.99	23.09	23.02	0-1	1
		1	7	22.95	23.00	22.94	0-1	1
		1	14	22.95	23.02	22.95	0-1	1
		8	0	21.91	21.98	21.87	0-2	2
		8	3	21.86	21.97	21.83	0-2	2
	64QAM	8	7	21.98	22.04	21.89	0-2	2
		15	0	21.93	21.94	21.83	0-2	2
		1	0	22.09	22.06	21.97	0-2	2
		1	7	21.93	21.88	21.74	0-2	2
		1	14	22.13	22.13	21.83	0-2	2
		8	0	20.92	20.93	20.84	0-3	3
	256QAM	8	3	20.82	20.92	20.80	0-3	3
		8	7	20.85	20.95	20.85	0-3	3
		15	0	20.92	20.91	20.81	0-3	3
		1	0	18.91	19.03	18.90	0-2	2
		1	7	18.78	18.73	18.64	0-2	2
		1	14	18.95	19.00	18.86	0-2	2
	8	0	18.86	18.88	18.83	0-3	3	
	8	3	18.88	18.92	18.78	0-3	3	
	8	7	18.88	18.90	18.78	0-3	3	
	15	0	18.83	18.87	18.75	0-3	3	

LTE Band 12 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23035 Ch. 701.5 MHz	23095 Ch. 707.5 MHz	23155 Ch. 713.5 MHz		
5 MHz	QPSK	1	0	23.81	23.82	23.86	0	0
		1	12	23.75	23.80	23.70	0	0
		1	24	23.86	23.83	23.72	0	0
		12	0	22.94	22.98	22.91	0-1	1
		12	6	22.91	22.97	22.85	0-1	1
		12	11	22.93	22.94	22.88	0-1	1
		25	0	22.90	22.93	22.98	0-1	1
	16QAM	1	0	22.96	23.09	23.20	0-1	1
		1	12	23.03	23.02	23.04	0-1	1
		1	24	23.06	23.17	22.89	0-1	1
		12	0	21.93	21.99	21.96	0-2	2
		12	6	21.91	21.97	21.91	0-2	2
		12	11	21.96	21.99	21.84	0-2	2
		25	0	21.91	21.98	21.91	0-2	2
	64QAM	1	0	21.97	22.17	22.04	0-2	2
		1	12	21.88	21.93	21.81	0-2	2
		1	24	22.04	22.17	21.99	0-2	2
		12	0	20.92	21.03	20.92	0-3	3
		12	6	20.91	21.00	20.93	0-3	3
		12	11	20.90	21.03	20.84	0-3	3
		25	0	20.89	21.00	20.92	0-3	3
	256QAM	1	0	18.94	19.03	19.08	0-2	2
		1	12	18.77	19.00	18.70	0-2	2
		1	24	19.05	19.00	18.98	0-2	2
12		0	18.85	18.95	18.90	0-3	3	
12		6	18.81	18.97	18.85	0-3	3	
12		11	18.86	19.02	18.82	0-3	3	
25		0	18.87	19.00	18.85	0-3	3	

LTE Band 12_ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				23095 Ch. 707.5 MHz		
10 MHz	QPSK	1	0	23.97	0	0
		1	24	23.96	0	0
		1	49	23.91	0	0
		25	0	23.08	0-1	1
		25	12	23.09	0-1	1
		25	24	23.07	0-1	1
		50	0	23.11	0-1	1
	16QAM	1	0	23.20	0-1	1
		1	24	23.06	0-1	1
		1	49	23.07	0-1	1
		25	0	22.05	0-2	2
		25	12	22.01	0-2	2
		25	24	22.04	0-2	2
		50	0	21.97	0-2	2
	64QAM	1	0	22.14	0-2	2
		1	24	22.13	0-2	2
		1	49	22.24	0-2	2
		25	0	21.02	0-3	3
		25	12	21.03	0-3	3
		25	24	21.02	0-3	3
		50	0	20.98	0-3	3
	256QAM	1	0	18.96	0-2	2
		1	24	19.16	0-2	2
		1	49	19.01	0-2	2
		25	0	19.04	0-3	3
		25	12	19.02	0-3	3
		25	24	19.07	0-3	3
		50	0	19.00	0-3	3

[LTE Band 13 Conducted Power]

LTE Band 13 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23205 Ch. 779.5 MHz	23230 Ch. 782 MHz	23255 Ch. 784.5 MHz		
5 MHz	QPSK	1	0	23.87	23.90	23.84	0	0
		1	12	23.75	23.74	23.90	0	0
		1	24	23.90	23.91	23.97	0	0
		12	0	22.98	22.95	22.96	0-1	1
		12	6	22.91	22.96	23.01	0-1	1
		12	11	22.90	22.94	23.00	0-1	1
		25	0	22.92	22.97	23.03	0-1	1
	16QAM	1	0	23.02	23.20	23.17	0-1	1
		1	12	22.99	23.14	23.12	0-1	1
		1	24	23.05	23.09	23.22	0-1	1
		12	0	21.98	21.95	22.04	0-2	2
		12	6	21.99	21.96	22.06	0-2	2
		12	11	21.99	21.99	22.05	0-2	2
		25	0	21.92	21.98	22.06	0-2	2
	64QAM	1	0	21.98	22.05	22.26	0-2	2
		1	12	22.01	22.06	22.07	0-2	2
		1	24	22.11	22.20	22.19	0-2	2
		12	0	20.90	20.98	21.05	0-3	3
		12	6	20.94	20.96	21.07	0-3	3
		12	11	20.96	20.94	21.03	0-3	3
		25	0	20.92	20.95	21.01	0-3	3
	256QAM	1	0	19.07	18.87	19.15	0-2	2
		1	12	18.99	18.99	19.14	0-2	2
		1	24	19.00	19.06	19.04	0-2	2
12		0	18.88	18.93	19.01	0-3	3	
12		6	18.83	18.89	18.97	0-3	3	
12		11	18.82	18.86	18.93	0-3	3	
25		0	18.91	18.92	19.00	0-3	3	

LTE Band 13 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				23230 Ch. 782 MHz		
10 MHz	QPSK	1	0	23.92	0	0
		1	24	23.99	0	0
		1	49	23.93	0	0
		25	0	23.19	0-1	1
		25	12	23.17	0-1	1
		25	24	23.15	0-1	1
		50	0	23.07	0-1	1
	16QAM	1	0	23.28	0-1	1
		1	24	23.25	0-1	1
		1	49	23.29	0-1	1
		25	0	22.20	0-2	2
		25	12	22.18	0-2	2
		25	24	22.18	0-2	2
		50	0	22.10	0-2	2
	64QAM	1	0	22.36	0-2	2
		1	24	22.32	0-2	2
		1	49	22.32	0-2	2
		25	0	21.17	0-3	3
		25	12	21.13	0-3	3
		25	24	21.19	0-3	3
		50	0	21.11	0-3	3
	256QAM	1	0	19.21	0-2	2
		1	24	19.31	0-2	2
		1	49	19.24	0-2	2
		25	0	19.15	0-3	3
		25	12	19.19	0-3	3
		25	24	19.14	0-3	3
		50	0	19.05	0-3	3

[LTE Band 17 Conducted Power]
 LTE Band 17 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				23790 Ch. 710 MHz		
5 MHz	QPSK	1	0	23.82	0	0
		1	12	23.81	0	0
		1	24	23.85	0	0
		12	0	22.96	0-1	1
		12	6	22.93	0-1	1
		12	11	22.95	0-1	1
	16QAM	25	0	22.98	0-1	1
		1	0	23.18	0-1	1
		1	12	23.06	0-1	1
		1	24	23.02	0-1	1
		12	0	22.00	0-2	2
		12	6	22.01	0-2	2
	64QAM	12	11	22.00	0-2	2
		25	0	22.00	0-2	2
		1	0	22.18	0-2	2
		1	12	22.06	0-2	2
		1	24	22.20	0-2	2
		12	0	21.07	0-3	3
	256QAM	12	6	21.08	0-3	3
		12	11	20.99	0-3	3
		25	0	21.01	0-3	3
		1	0	19.08	0-2	2
		1	12	18.91	0-2	2
		1	24	18.92	0-2	2
	256QAM	12	0	18.96	0-3	3
		12	6	18.87	0-3	3
		12	11	18.93	0-3	3
		25	0	18.94	0-3	3

LTE Band 17 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				23790 Ch. 710 MHz		
10 MHz	QPSK	1	0	23.94	0	0
		1	24	23.93	0	0
		1	49	23.86	0	0
		25	0	23.06	0-1	1
		25	12	23.03	0-1	1
		25	24	23.01	0-1	1
		50	0	23.03	0-1	1
	16QAM	1	0	23.16	0-1	1
		1	24	23.04	0-1	1
		1	49	23.00	0-1	1
		25	0	22.07	0-2	2
		25	12	21.98	0-2	2
		25	24	21.97	0-2	2
		50	0	21.97	0-2	2
	64QAM	1	0	22.16	0-2	2
		1	24	22.21	0-2	2
		1	49	22.07	0-2	2
		25	0	21.01	0-3	3
		25	12	20.97	0-3	3
		25	24	20.95	0-3	3
		50	0	20.92	0-3	3
	256QAM	1	0	19.07	0-2	2
		1	24	19.03	0-2	2
		1	49	18.97	0-2	2
		25	0	19.05	0-3	3
		25	12	19.05	0-3	3
		25	24	18.98	0-3	3
50		0	18.96	0-3	3	

[LTE Band 25 Conducted Power]
 LTE Band 25 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26047 Ch. 1850.7 MHz	26365 Ch. 1882.5 MHz	26683 Ch. 1914.3 MHz		
1.4 MHz	QPSK	1	0	22.86	22.63	22.53	0	0
		1	3	23.82	22.74	22.77	0	0
		1	5	22.62	22.99	22.84	0	0
		3	0	22.80	22.73	22.79	0	0
		3	1	22.96	23.04	22.97	0	0
		3	3	22.80	23.05	22.93	0	0
	16QAM	6	0	21.80	22.00	21.91	0-1	1
		1	0	21.96	22.28	22.09	0-1	1
		1	3	21.93	21.88	22.02	0-1	1
		1	5	22.06	22.08	21.83	0-1	1
		3	0	21.96	21.84	21.89	0-1	1
		3	1	21.95	21.93	22.02	0-1	1
	64QAM	3	3	21.94	21.89	21.75	0-1	1
		6	0	20.93	21.13	21.00	0-2	2
		1	0	21.04	21.20	20.86	0-2	2
		1	3	21.06	21.09	21.06	0-2	2
		1	5	21.08	21.26	20.86	0-2	2
		3	0	20.63	20.81	20.94	0-2	2
	256QAM	3	1	20.98	21.20	20.86	0-2	2
		3	3	20.90	20.86	20.72	0-2	2
		6	0	19.84	19.89	19.77	0-3	3
		1	0	17.67	17.97	18.03	0-2	2
		1	3	17.63	18.06	17.68	0-2	2
		1	5	17.70	18.10	17.67	0-2	2
	3	0	18.10	18.08	17.87	0-2	2	
	3	1	17.78	18.26	17.99	0-2	2	
	3	3	18.20	18.17	17.99	0-2	2	
	6	0	17.84	18.14	17.91	0-3	3	

LTE Band 25 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26055 Ch. 1851.5 MHz	26365 Ch. 1882.5 MHz	26675Ch. 1913.5 MHz		
3 MHz	QPSK	1	0	22.83	22.81	22.80	0	0
		1	7	22.75	22.90	22.69	0	0
		1	14	22.82	22.99	22.79	0	0
		8	0	21.89	22.11	21.89	0-1	1
		8	3	21.86	22.05	21.85	0-1	1
		8	7	21.88	22.14	21.87	0-1	1
	16QAM	15	0	21.89	22.13	21.90	0-1	1
		1	0	21.93	22.26	21.92	0-1	1
		1	7	21.85	22.25	21.91	0-1	1
		1	14	22.02	22.13	22.03	0-1	1
		8	0	20.90	21.18	20.92	0-2	2
		8	3	20.89	21.11	20.84	0-2	2
	64QAM	8	7	20.89	21.15	20.92	0-2	2
		15	0	20.85	21.14	20.87	0-2	2
		1	0	21.01	21.22	20.98	0-2	2
		1	7	20.99	21.06	20.90	0-2	2
		1	14	20.91	21.14	21.05	0-2	2
		8	0	19.83	20.14	19.93	0-3	3
	256QAM	8	3	19.76	20.08	19.79	0-3	3
		8	7	19.81	20.06	19.84	0-3	3
		15	0	19.81	20.09	19.82	0-3	3
		1	0	17.87	18.24	17.90	0-2	2
		1	7	17.71	18.07	17.60	0-2	2
		1	14	17.88	18.13	17.80	0-2	2
		8	0	17.76	18.05	17.77	0-3	3
		8	3	17.81	18.09	17.72	0-3	3
		8	7	17.76	18.09	17.77	0-3	3
15		0	17.77	18.02	17.75	0-3	3	

LTE Band 25 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26065 Ch. 1852.5 MHz	26365 Ch. 1882.5 MHz	26665 Ch. 1912.5 MHz		
5 MHz	QPSK	1	0	22.71	23.04	22.83	0	0
		1	12	22.67	23.00	22.74	0	0
		1	24	22.76	23.05	22.79	0	0
		12	0	21.87	22.15	21.92	0-1	1
		12	6	21.84	22.15	21.87	0-1	1
		12	11	21.85	22.11	21.93	0-1	1
	16QAM	25	0	21.87	22.16	21.91	0-1	1
		1	0	21.93	22.21	22.11	0-1	1
		1	12	22.01	22.28	21.99	0-1	1
		1	24	22.07	22.34	21.89	0-1	1
		12	0	20.87	21.16	20.98	0-2	2
		12	6	20.87	21.11	20.97	0-2	2
	64QAM	12	11	20.87	21.06	20.92	0-2	2
		25	0	20.85	21.12	20.96	0-2	2
		1	0	20.94	21.09	21.01	0-2	2
		1	12	20.99	21.17	20.82	0-2	2
		1	24	21.05	21.18	20.86	0-2	2
		12	0	19.77	20.11	19.92	0-3	3
	256QAM	12	6	19.85	20.09	19.90	0-3	3
		12	11	19.79	20.07	19.91	0-3	3
		25	0	19.77	20.09	19.91	0-3	3
		1	0	17.92	18.22	18.02	0-2	2
		1	12	17.81	18.04	17.84	0-2	2
		1	24	17.83	18.15	17.89	0-2	2
		12	0	17.78	18.09	17.84	0-3	3
		12	6	17.78	18.04	17.77	0-3	3
		12	11	17.78	18.02	17.81	0-3	3
25		0	17.83	18.10	17.85	0-3	3	

LTE Band 25 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26090 Ch. 1855 MHz	26365 Ch. 1882.5 MHz	26640 Ch. 1910 MHz		
10 MHz	QPSK	1	0	22.88	22.89	22.64	0	0
		1	24	22.88	22.97	22.72	0	0
		1	49	22.88	23.01	22.77	0	0
		25	0	21.98	22.10	21.89	0-1	1
		25	12	21.97	22.07	21.83	0-1	1
		25	24	21.90	22.12	21.87	0-1	1
	16QAM	50	0	21.96	22.18	21.89	0-1	1
		1	0	22.04	22.25	22.00	0-1	1
		1	24	21.84	22.18	21.88	0-1	1
		1	49	22.12	22.12	21.96	0-1	1
		25	0	20.94	21.13	20.88	0-2	2
		25	12	20.94	21.13	20.86	0-2	2
	64QAM	25	24	20.94	21.07	20.86	0-2	2
		50	0	20.93	21.05	20.88	0-2	2
		1	0	21.01	21.29	20.96	0-2	2
		1	24	20.98	21.22	20.94	0-2	2
		1	49	20.98	21.26	20.86	0-2	2
		25	0	19.86	20.10	19.83	0-3	3
	256QAM	25	12	19.88	20.08	19.80	0-3	3
		25	24	19.84	20.03	19.81	0-3	3
		50	0	19.90	20.08	19.85	0-3	3
		1	0	18.03	18.19	18.01	0-2	2
		1	24	17.89	18.28	17.97	0-2	2
		1	49	18.01	18.21	17.90	0-2	2
		25	0	17.91	18.11	17.87	0-3	3
		25	12	17.92	18.13	17.81	0-3	3
		25	24	17.85	18.07	17.82	0-3	3
		50	0	17.87	18.04	17.80	0-3	3

LTE Band 25 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26115 Ch. 1857.5 MHz	26365 Ch. 1882.5 MHz	26615 Ch. 1907.5 MHz		
15	QPSK	1	0	22.84	22.91	22.85	0	0
		1	36	22.74	22.96	22.72	0	0
		1	74	22.85	23.01	22.81	0	0
		36	0	21.98	22.13	21.91	0-1	1
		36	18	21.94	22.13	21.92	0-1	1
		36	39	21.92	22.12	21.88	0-1	1
	16QAM	75	0	21.92	22.14	21.91	0-1	1
		1	0	22.03	22.15	22.06	0-1	1
		1	36	21.91	22.04	21.93	0-1	1
		1	74	21.97	22.25	21.89	0-1	1
		36	0	20.92	21.08	20.92	0-2	2
		36	18	20.86	21.11	20.90	0-2	2
	64QAM	36	39	20.86	21.08	20.88	0-2	2
		75	0	20.84	21.06	20.88	0-2	2
		1	0	20.96	21.17	21.03	0-2	2
		1	36	20.93	21.01	20.83	0-2	2
		1	74	21.00	21.08	21.03	0-2	2
		36	0	19.87	20.08	19.85	0-3	3
	256QAM	36	18	19.81	20.07	19.89	0-3	3
		36	39	19.79	20.05	19.85	0-3	3
		75	0	19.77	20.03	19.80	0-3	3
		1	0	18.00	18.30	18.04	0-2	2
		1	36	17.88	18.10	17.83	0-2	2
		1	74	17.90	18.22	17.88	0-2	2
		36	0	17.85	18.09	17.88	0-3	3
		36	18	17.86	18.13	17.89	0-3	3
		36	39	17.82	18.07	17.83	0-3	3
75		0	17.84	18.07	17.83	0-3	3	

LTE Band 25 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26140 Ch. 1860 MHz	26365 Ch. 1882.5 MHz	26590 Ch. 1905 MHz		
20 MHz	QPSK	1	0	23.04	23.09	22.76	0	0
		1	49	22.93	23.04	22.75	0	0
		1	99	22.98	23.05	22.78	0	0
		50	0	22.14	22.17	21.88	0-1	1
		50	25	22.06	22.14	21.87	0-1	1
		50	49	22.05	22.12	21.88	0-1	1
	16QAM	100	0	22.03	22.14	21.87	0-1	1
		1	0	22.14	22.30	22.00	0-1	1
		1	49	22.07	22.12	21.91	0-1	1
		1	99	22.14	22.22	21.92	0-1	1
		50	0	21.04	21.14	20.85	0-2	2
		50	25	21.02	21.13	20.86	0-2	2
	64QAM	50	49	21.02	21.12	20.82	0-2	2
		100	0	20.94	21.11	20.83	0-2	2
		1	0	21.10	21.33	21.02	0-2	2
		1	49	21.09	21.25	20.97	0-2	2
		1	99	21.10	21.26	20.96	0-2	2
		50	0	20.01	20.12	19.88	0-3	3
	256QAM	50	25	19.98	20.11	19.85	0-3	3
		50	49	19.93	20.09	19.86	0-3	3
		100	0	19.94	20.08	19.84	0-3	3
		1	0	18.13	18.23	17.91	0-2	2
		1	49	18.09	18.15	17.99	0-2	2
		1	99	18.00	18.18	17.89	0-2	2
		50	0	17.96	18.06	17.81	0-3	3
		50	25	17.93	18.05	17.79	0-3	3
		50	49	17.89	18.04	17.74	0-3	3
		100	0	17.92	18.06	17.79	0-3	3

[LTE Band 26 Conducted Power]
 LTE Band 26 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26697 Ch. 814.7 MHz	26865 Ch. 831.5 MHz	27033 Ch. 848.3 MHz		
1.4 MHz	QPSK	1	0	23.80	24.02	24.07	0	0
		1	3	23.77	24.06	24.07	0	0
		1	5	23.78	24.12	24.13	0	0
		3	0	23.78	24.09	24.12	0	0
		3	1	23.87	24.23	24.26	0	0
		3	3	23.78	24.10	24.16	0	0
	16QAM	6	0	22.79	23.07	23.16	0-1	1
		1	0	23.07	23.41	23.28	0-1	1
		1	3	22.87	23.19	23.39	0-1	1
		1	5	23.04	23.27	23.44	0-1	1
		3	0	22.88	23.21	23.32	0-1	1
		3	1	22.96	23.30	23.43	0-1	1
	64QAM	3	3	22.92	23.20	23.34	0-1	1
		6	0	21.93	22.14	22.32	0-2	2
		1	0	22.04	22.34	22.37	0-2	2
		1	3	21.85	22.27	22.35	0-2	2
		1	5	22.02	22.33	22.39	0-2	2
		3	0	21.83	22.24	22.22	0-2	2
	256QAM	3	1	22.05	22.23	22.31	0-2	2
		3	3	21.87	22.22	22.20	0-2	2
		6	0	20.88	21.16	21.18	0-3	3
		1	0	18.85	19.05	19.23	0-2	2
		1	3	18.91	19.23	19.20	0-2	2
		1	5	18.95	19.24	19.20	0-2	2
		3	0	18.86	19.06	19.20	0-2	2
		3	1	18.88	19.24	19.39	0-2	2
		3	3	19.02	19.17	19.27	0-2	2
6		0	18.89	19.08	19.19	0-3	3	

LTE Band 26 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26705 Ch. 815.5 MHz	26865 Ch. 831.5 MHz	27025 Ch. 847.5 MHz		
3 MHz	QPSK	1	0	23.87	24.22	24.16	0	0
		1	7	23.72	24.04	24.06	0	0
		1	14	23.81	24.10	24.12	0	0
		8	0	22.91	23.18	23.24	0-1	1
		8	3	22.87	23.15	23.19	0-1	1
		8	7	22.90	23.21	23.24	0-1	1
	16QAM	15	0	22.94	23.17	23.25	0-1	1
		1	0	22.98	23.32	23.44	0-1	1
		1	7	23.06	23.27	23.33	0-1	1
		1	14	23.10	23.40	23.30	0-1	1
		8	0	21.88	22.18	22.28	0-2	2
		8	3	21.90	22.17	22.20	0-2	2
	64QAM	8	7	21.99	22.20	22.29	0-2	2
		15	0	21.93	22.17	22.27	0-2	2
		1	0	22.08	22.37	22.46	0-2	2
		1	7	22.09	22.27	22.37	0-2	2
		1	14	22.02	22.30	22.38	0-2	2
		8	0	20.88	21.16	21.23	0-3	3
	256QAM	8	3	20.83	21.20	21.23	0-3	3
		8	7	20.93	21.20	21.26	0-3	3
		15	0	20.90	21.13	21.25	0-3	3
		1	0	18.88	19.25	19.35	0-2	2
		1	7	18.80	19.18	19.25	0-2	2
		1	14	18.95	19.23	19.32	0-2	2
		8	0	18.79	19.17	19.25	0-3	3
		8	3	18.84	19.10	19.27	0-3	3
		8	7	18.89	19.14	19.30	0-3	3
15		0	18.86	19.13	19.20	0-3	3	

LTE Band 26 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26715 Ch. 816.5 MHz	26865 Ch. 831.5 MHz	27015 Ch. 846.5 MHz		
5 MHz	QPSK	1	0	23.87	24.14	24.25	0	0
		1	12	23.82	23.99	24.11	0	0
		1	24	23.95	24.10	24.20	0	0
		12	0	22.99	23.22	23.35	0-1	1
		12	6	22.99	23.23	23.34	0-1	1
		12	11	22.98	23.21	23.35	0-1	1
	16QAM	25	0	23.01	23.20	23.35	0-1	1
		1	0	23.02	23.37	23.49	0-1	1
		1	12	22.99	23.38	23.38	0-1	1
		1	24	23.11	23.30	23.49	0-1	1
		12	0	22.01	22.23	22.33	0-2	2
		12	6	21.98	22.21	22.37	0-2	2
	64QAM	12	11	21.94	22.22	22.38	0-2	2
		25	0	21.91	22.18	22.38	0-2	2
		1	0	22.05	22.38	22.51	0-2	2
		1	12	21.93	22.07	22.29	0-2	2
		1	24	22.10	22.37	22.51	0-2	2
		12	0	20.92	21.26	21.35	0-3	3
	256QAM	12	6	20.97	21.20	21.35	0-3	3
		12	11	20.96	21.19	21.36	0-3	3
		25	0	20.89	21.12	21.30	0-3	3
		1	0	18.81	19.30	19.37	0-2	2
		1	12	18.81	19.10	19.24	0-2	2
		1	24	19.02	19.41	19.51	0-2	2
		12	0	18.96	19.12	19.26	0-3	3
		12	6	18.92	19.14	19.26	0-3	3
		12	11	18.96	19.16	19.25	0-3	3
25		0	19.02	19.17	19.32	0-3	3	

LTE Band 26_ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26740 Ch. 819 MHz	26865 Ch. 831.5 MHz	26990 Ch. 844 MHz		
10 MHz	QPSK	1	0	23.97	24.13	24.33	0	0
		1	24	23.94	24.11	24.20	0	0
		1	49	23.99	24.13	24.19	0	0
		25	0	23.03	23.18	23.37	0-1	1
		25	12	23.01	23.22	23.34	0-1	1
		25	24	23.04	23.19	23.29	0-1	1
	16QAM	50	0	23.07	23.19	23.35	0-1	1
		1	0	23.11	23.35	23.45	0-1	1
		1	24	23.17	23.25	23.34	0-1	1
		1	49	23.28	23.37	23.40	0-1	1
		25	0	22.05	22.23	22.38	0-2	2
		25	12	22.04	22.23	22.35	0-2	2
	64QAM	25	24	22.08	22.20	22.34	0-2	2
		50	0	22.07	22.18	22.30	0-2	2
		1	0	22.16	22.31	22.59	0-2	2
		1	24	22.15	22.39	22.66	0-2	2
		1	49	22.29	22.32	22.54	0-2	2
		25	0	21.02	21.17	21.39	0-3	3
	256QAM	25	12	20.98	21.20	21.40	0-3	3
		25	24	21.03	21.17	21.35	0-3	3
		50	0	20.99	21.17	21.37	0-3	3
		1	0	19.06	19.35	19.41	0-2	2
		1	24	19.07	19.33	19.39	0-2	2
		1	49	19.15	19.24	19.35	0-2	2
		25	0	18.97	19.20	19.31	0-3	3
		25	12	18.95	19.21	19.33	0-3	3
		25	24	19.02	19.18	19.32	0-3	3
50		0	18.94	19.16	19.27	0-3	3	

LTE Band 26 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]		MPR Allowed Per 3GPP [dB]	MPR [dB]
					26865 Ch. 831.5 MHz		
15 MHz	QPSK	1	0		24.13		0
		1	36		24.02		0
		1	74		24.10		0
		36	0		23.20		0-1
		36	18		23.18		0-1
		36	39		23.17		0-1
		75	0		23.19		0-1
	16QAM	1	0		23.32		0-1
		1	36		23.41		0-1
		1	74		23.30		0-1
		36	0		22.21		0-2
		36	18		22.21		0-2
		36	39		22.16		0-2
		75	0		22.17		0-2
	64QAM	1	0		22.29		0-2
		1	36		22.20		0-2
		1	74		22.38		0-2
		36	0		21.22		0-3
		36	18		21.23		0-3
		36	39		21.19		0-3
		75	0		21.20		0-3
	256QAM	1	0		19.30		0-2
		1	36		19.20		0-2
		1	74		19.18		0-2
		36	0		19.17		0-3
		36	18		19.19		0-3
		36	39		19.14		0-3
		75	0		19.16		0-3

[LTE Band 41 Conducted Power] - Power Class 3
 LTE Band 41 5 MHz Bandwidth - Power Class 3

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per GPP [dB]	MPR [dB]
				39675 Ch. 2498.5 MHz	40148 Ch. 2545.8 MHz	40620 Ch. 2593.0 MHz	41093 Ch. 2640.3 MHz	41565 Ch. 2687.5 MHz		
5 MHz	QPSK	1	0	24.49	24.59	24.27	24.31	24.48	0	0
		1	12	24.45	24.42	24.56	24.54	24.61	0	0
		1	24	24.55	24.62	24.34	24.38	24.50	0	0
		12	0	23.16	23.21	22.93	22.61	23.15	0-1	1
		12	6	23.04	23.27	22.86	22.90	23.13	0-1	1
		12	11	23.10	23.26	22.86	22.94	23.10	0-1	1
	16QAM	25	0	23.13	23.26	22.86	23.03	23.08	0-1	1
		1	0	22.57	22.61	22.29	22.26	22.45	0-1	1
		1	12	22.70	22.33	22.31	22.26	22.48	0-1	1
		1	24	22.59	22.61	22.39	22.15	22.34	0-1	1
		12	0	21.52	21.68	21.42	21.48	21.59	0-2	2
		12	6	21.54	21.70	21.36	21.37	21.66	0-2	2
	64QAM	12	11	21.56	21.70	21.38	21.41	21.59	0-2	2
		25	0	21.52	21.73	21.34	21.43	21.55	0-2	2
		1	0	21.41	21.72	21.56	21.63	21.72	0-2	2
		1	12	21.52	21.46	21.75	21.75	21.63	0-2	2
		1	24	21.44	21.74	21.48	21.56	21.75	0-2	2
		12	0	20.55	20.70	20.41	20.42	20.58	0-3	3
	256QAM	12	6	20.64	20.65	20.38	20.36	20.64	0-3	3
		12	11	20.61	20.70	20.37	20.42	20.61	0-3	3
		25	0	20.52	20.72	20.30	20.42	20.60	0-3	3
		1	0	20.28	20.38	20.16	20.18	20.30	0-2	2
		1	12	20.23	20.19	20.31	20.46	20.09	0-2	2
		1	24	20.27	20.40	20.12	20.25	20.33	0-2	2
		12	0	19.57	19.67	19.40	19.46	19.65	0-3	3
12		6	19.64	19.61	19.45	19.51	19.67	0-3	3	
12		11	19.62	19.68	19.42	19.49	19.65	0-3	3	
25		0	19.63	19.79	19.37	19.45	19.68	0-3	3	

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]
				39700 Ch. 2501 MHz	40160 Ch. 2547 MHz	40620 Ch. 2593 MHz	41080 Ch. 2639 MHz	41540 Ch. 2685 MHz		
10 MHz	QPSK	1	0	24.45	24.67	24.40	24.36	24.48	0	0
		1	24	24.44	24.63	24.33	24.31	24.43	0	0
		1	49	24.50	24.64	24.37	24.29	24.44	0	0
		25	0	23.14	23.22	22.98	22.98	23.14	0-1	1
		25	12	23.16	23.15	22.96	23.01	23.12	0-1	1
		25	24	23.13	23.20	22.94	22.94	23.10	0-1	1
		50	0	23.21	23.23	23.03	23.04	23.13	0-1	1
	16QAM	1	0	22.54	22.63	22.23	22.39	22.66	0-1	1
		1	24	22.42	22.51	22.15	22.28	22.49	0-1	1
		1	49	22.54	22.59	22.20	22.35	22.53	0-1	1
		25	0	21.66	21.71	21.45	21.49	21.62	0-2	2
		25	12	21.66	21.62	21.45	21.52	21.60	0-2	2
		25	24	21.64	21.64	21.39	21.47	21.59	0-2	2
		50	0	21.69	21.68	21.51	21.49	21.60	0-2	2
	64QAM	1	0	21.43	21.86	21.43	21.57	21.85	0-2	2
		1	24	21.37	21.73	21.37	21.55	21.75	0-2	2
		1	49	21.44	21.74	21.40	21.53	21.73	0-2	2
		25	0	20.59	20.67	20.40	20.44	20.59	0-3	3
		25	12	20.65	20.57	20.44	20.47	20.55	0-3	3
		25	24	20.62	20.63	20.39	20.43	20.53	0-3	3
		50	0	20.67	20.72	20.48	20.47	20.60	0-3	3
	256QAM	1	0	20.27	20.37	20.12	20.32	20.37	0-2	2
		1	24	20.19	20.32	20.04	20.23	20.22	0-2	2
		1	49	20.28	20.36	20.10	20.27	20.23	0-2	2
		25	0	19.64	19.74	19.47	19.52	19.67	0-3	3
		25	12	19.62	19.64	19.52	19.48	19.59	0-3	3
		25	24	19.63	19.70	19.43	19.47	19.60	0-3	3
		50	0	19.62	19.78	19.52	19.51	19.65	0-3	3

LTE Band 41 15 MHz Bandwidth - Power Class 3

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39725 Ch. 2503.5 MHz	40173 Ch. 2548.3 MHz	40620 Ch. 2593.0 MHz	41068 Ch. 2637.8 MHz	41515 Ch. 2682.5 MHz		
15 MHz	QPSK	1	0	24.53	24.67	24.49	24.43	24.55	0	0
		1	36	24.65	24.69	24.52	24.35	24.32	0	0
		1	74	24.62	24.68	24.40	24.32	24.52	0	0
		36	0	23.22	23.32	23.08	22.98	23.23	0-1	1
		36	18	23.20	23.23	23.02	23.09	23.16	0-1	1
		36	39	23.23	23.27	22.99	22.98	23.15	0-1	1
		75	0	23.18	23.30	23.06	22.95	23.20	0-1	1
	16QAM	1	0	22.62	22.68	22.54	22.32	22.54	0-1	1
		1	36	22.49	22.73	22.27	22.41	22.51	0-1	1
		1	74	22.63	22.59	22.47	22.23	22.40	0-1	1
		36	0	21.66	21.74	21.44	21.50	21.68	0-2	2
		36	18	21.60	21.67	21.45	21.39	21.60	0-2	2
		36	39	21.64	21.71	21.39	21.43	21.59	0-2	2
		75	0	21.65	21.76	21.48	21.46	21.69	0-2	2
	64QAM	1	0	21.78	21.92	21.52	21.62	21.86	0-2	2
		1	36	21.60	22.01	21.21	21.74	21.68	0-2	2
		1	74	21.73	21.83	21.50	21.56	21.72	0-2	2
		36	0	20.65	20.74	20.47	20.46	20.64	0-3	3
		36	18	20.63	20.70	20.47	20.38	20.64	0-3	3
		36	39	20.65	20.68	20.41	20.42	20.61	0-3	3
		75	0	20.67	20.74	20.47	20.47	20.67	0-3	3
	256QAM	1	0	20.40	20.36	20.25	20.20	20.36	0-2	2
		1	36	20.39	20.39	19.94	20.22	20.09	0-2	2
		1	74	20.38	20.34	20.12	20.09	20.23	0-2	2
		36	0	19.71	19.75	19.52	19.51	19.68	0-3	3
		36	18	19.73	19.69	19.54	19.45	19.68	0-3	3
		36	39	19.72	19.77	19.47	19.46	19.61	0-3	3
75		0	19.69	19.77	19.43	19.49	19.64	0-3	3	

LTE Band 41 20 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		
20 MHz	QPSK	1	0	24.63	24.67	24.35	24.48	24.72	0	0
		1	49	24.56	24.55	24.29	24.36	24.54	0	0
		1	99	24.69	24.56	24.30	24.35	24.55	0	0
		50	0	23.35	23.29	23.02	23.08	23.30	0-1	1
		50	25	23.28	23.21	22.98	23.02	23.28	0-1	1
		50	49	23.32	23.23	22.95	22.98	23.19	0-1	1
		100	0	23.32	23.34	22.94	23.04	23.21	0-1	1
	16QAM	1	0	22.49	22.72	22.41	22.35	22.68	0-1	1
		1	49	22.42	22.70	22.21	22.19	22.46	0-1	1
		1	99	22.48	22.71	22.17	22.23	22.50	0-1	1
		50	0	21.77	21.73	21.56	21.55	21.78	0-2	2
		50	25	21.72	21.74	21.51	21.53	21.72	0-2	2
		50	49	21.81	21.69	21.51	21.56	21.67	0-2	2
		100	0	21.76	21.72	21.45	21.53	21.72	0-2	2
	64QAM	1	0	21.77	21.94	21.50	21.68	21.92	0-2	2
		1	49	21.66	21.86	21.34	21.52	21.73	0-2	2
		1	99	21.71	21.85	21.34	21.54	21.65	0-2	2
		50	0	20.76	20.80	20.50	20.54	20.76	0-3	3
		50	25	20.75	20.76	20.43	20.53	20.67	0-3	3
		50	49	20.77	20.73	20.42	20.48	20.67	0-3	3
		100	0	20.70	20.66	20.42	20.43	20.69	0-3	3
	256QAM	1	0	20.44	20.55	20.17	20.25	20.53	0-2	2
		1	49	20.30	20.39	20.02	20.07	20.32	0-2	2
		1	99	20.40	20.45	20.04	20.10	20.34	0-2	2
		50	0	19.81	19.82	19.53	19.60	19.81	0-3	3
		50	25	19.75	19.76	19.45	19.56	19.71	0-3	3
		50	49	19.78	19.76	19.47	19.52	19.71	0-3	3
		100	0	19.72	19.67	19.41	19.44	19.69	0-3	3

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 MHz Bandwidth - Power Class 2

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per GPP [dB]	MPR [dB]
				39675 Ch. 2498.5 MHz	40148 Ch. 2545.8 MHz	40620 Ch. 2593.0 MHz	41093 Ch. 2640.3 MHz	41565 Ch. 2687.5 MHz		
5 MHz	QPSK	1	0	25.87	25.98	25.78	25.81	25.93	0	0
		1	12	25.63	26.07	25.55	25.64	25.86	0	0
		1	24	25.88	26.02	25.73	25.77	25.84	0	0
		12	0	24.62	24.76	24.48	24.51	24.64	0-1	1
		12	6	24.70	24.65	24.53	24.47	24.57	0-1	1
		12	11	24.62	24.70	24.46	24.52	24.58	0-1	1
		25	0	24.57	24.75	24.37	24.55	24.60	0-1	1
	16QAM	1	0	23.93	24.32	24.03	23.93	24.21	0-1	1
		1	12	23.69	24.54	23.85	23.87	24.26	0-1	1
		1	24	23.99	24.35	24.00	23.88	24.15	0-1	1
		12	0	23.12	23.25	22.96	22.92	23.21	0-2	2
		12	6	23.17	23.11	23.06	22.88	23.17	0-2	2
		12	11	23.10	23.17	22.97	22.94	23.16	0-2	2
		25	0	23.11	23.21	22.90	23.02	23.06	0-2	2
	64QAM	1	0	23.51	23.52	23.40	23.06	23.07	0-2	2
		1	12	23.35	23.54	23.15	23.07	23.13	0-2	2
		1	24	23.59	23.52	23.44	22.95	23.03	0-2	2
		12	0	22.01	22.25	21.87	21.91	22.04	0-3	3
		12	6	22.03	22.18	21.93	21.80	22.01	0-3	3
		12	11	22.05	22.21	21.88	21.90	21.99	0-3	3
		25	0	22.08	22.18	21.84	21.96	21.95	0-3	3
	256QAM	1	0	22.04	22.04	21.86	21.84	21.92	0-2	2
		1	12	21.81	22.12	21.48	21.95	21.81	0-2	2
		1	24	22.08	22.00	21.79	21.82	21.83	0-2	2
12		0	21.09	21.21	20.93	20.99	21.13	0-3	3	
12		6	21.11	21.15	20.99	20.91	21.11	0-3	3	
12		11	21.15	21.22	20.91	21.03	21.09	0-3	3	
25		0	21.14	21.27	20.98	21.08	21.04	0-3	3	

LTE Band 41 10 MHz Bandwidth - Power Class 2

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39700 Ch. 2501 MHz	40160 Ch. 2547 MHz	40620 Ch. 2593 MHz	41080 Ch. 2639 MHz	41540 Ch. 2685 MHz		
10 MHz	QPSK	1	0	25.88	25.96	25.79	25.79	25.95	0	0
		1	24	25.89	25.88	25.71	25.74	25.89	0	0
		1	49	25.91	25.95	25.70	25.74	25.94	0	0
		25	0	24.65	24.73	24.45	24.50	24.70	0-1	1
		25	12	24.65	24.69	24.42	24.48	24.62	0-1	1
		25	24	24.63	24.71	24.40	24.45	24.64	0-1	1
		50	0	24.68	24.67	24.50	24.43	24.67	0-1	1
	16QAM	1	0	24.12	24.14	23.97	23.97	24.32	0-1	1
		1	24	24.06	23.99	23.89	23.88	24.22	0-1	1
		1	49	24.12	24.04	23.87	23.93	24.20	0-1	1
		25	0	23.13	23.17	22.98	23.02	23.29	0-2	2
		25	12	23.14	23.12	22.91	23.00	23.05	0-2	2
		25	24	23.12	23.14	22.90	23.00	23.09	0-2	2
		50	0	23.13	23.16	22.97	22.91	23.11	0-2	2
	64QAM	1	0	23.32	23.75	23.47	23.53	23.23	0-2	2
		1	24	23.31	23.73	23.39	23.24	23.16	0-2	2
		1	49	23.31	23.65	23.37	23.18	23.03	0-2	2
		25	0	22.09	22.18	21.88	21.95	22.21	0-3	3
		25	12	22.16	22.12	21.86	21.91	22.12	0-3	3
		25	24	22.10	22.16	21.81	21.90	22.13	0-3	3
		50	0	22.14	22.16	21.98	21.91	22.16	0-3	3
	256QAM	1	0	21.93	22.14	21.93	21.78	21.98	0-2	2
		1	24	22.00	22.16	21.90	21.76	21.86	0-2	2
		1	49	21.94	22.12	21.83	21.72	21.87	0-2	2
		25	0	21.13	21.21	20.95	21.05	21.23	0-3	3
		25	12	21.17	21.16	20.94	20.98	21.17	0-3	3
		25	24	21.10	21.21	20.88	21.00	21.19	0-3	3
		50	0	21.12	21.22	20.99	20.97	21.26	0-3	3

LTE Band 41 15 MHz Bandwidth - Power Class 2

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39725 Ch. 2503.5 MHz	40173 Ch. 2548.3 MHz	40620 Ch. 2593.0 MHz	41068 Ch. 2637.8 MHz	41515 Ch. 2682.5 MHz		
15 MHz	QPSK	1	0	25.92	25.99	25.84	25.85	26.01	0	0
		1	36	25.67	26.00	25.62	25.79	25.94	0	0
		1	74	26.02	26.01	25.75	25.77	25.94	0	0
		36	0	24.70	24.73	24.49	24.54	24.75	0-1	1
		36	18	24.72	24.67	24.44	24.55	24.65	0-1	1
		36	39	24.70	24.67	24.41	24.51	24.66	0-1	1
		75	0	24.66	24.75	24.42	24.56	24.69	0-1	1
	16QAM	1	0	24.08	24.45	24.24	23.83	24.31	0-1	1
		1	36	23.86	24.38	24.06	23.93	24.29	0-1	1
		1	74	24.07	24.32	24.08	24.01	24.08	0-1	1
		36	0	23.22	23.22	22.95	23.00	23.11	0-2	2
		36	18	23.24	23.17	22.95	22.99	23.04	0-2	2
		36	39	23.18	23.15	22.91	22.95	23.04	0-2	2
		75	0	23.13	23.22	22.91	23.01	23.11	0-2	2
	64QAM	1	0	23.76	23.84	23.46	23.16	23.35	0-2	2
		1	36	23.40	23.91	23.00	23.17	23.45	0-2	2
		1	74	23.75	23.76	23.37	23.07	23.38	0-2	2
		36	0	22.15	22.21	21.97	22.01	22.16	0-3	3
		36	18	22.20	22.14	21.96	21.96	22.12	0-3	3
		36	39	22.16	22.16	21.89	21.95	22.08	0-3	3
		75	0	22.18	22.23	21.91	22.00	22.13	0-3	3
	256QAM	1	0	21.90	22.22	21.81	21.75	22.06	0-2	2
		1	36	21.57	22.36	21.48	21.75	21.92	0-2	2
		1	74	21.91	22.21	21.69	21.63	21.91	0-2	2
		36	0	21.21	21.22	20.98	21.03	21.20	0-3	3
		36	18	21.24	21.17	21.00	20.95	21.17	0-3	3
		36	39	21.21	21.16	20.92	20.97	21.11	0-3	3
75		0	21.17	21.23	20.91	21.01	21.13	0-3	3	

LTE Band 41 20 MHz 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 MHz	40185 Ch. 2549.5 MHz	40620 Ch. 2593.0 MHz	41055 Ch. 2636.5 MHz	41490 Ch. 2680.0 MHz		
20 MHz	QPSK	1	0	26.07	26.09	25.81	25.91	26.10	0	0
		1	49	26.03	26.00	25.71	25.82	25.92	0	0
		1	99	26.04	25.96	25.70	25.80	25.90	0	0
		50	0	24.77	24.75	24.49	24.56	24.78	0-1	1
		50	25	24.82	24.66	24.48	24.50	24.74	0-1	1
		50	49	24.76	24.69	24.41	24.52	24.69	0-1	1
		100	0	24.76	24.78	24.43	24.59	24.74	0-1	1
	16QAM	1	0	24.14	23.97	23.93	24.09	24.12	0-1	1
		1	49	24.09	23.66	23.63	23.83	23.80	0-1	1
		1	99	24.13	23.82	23.77	23.91	23.91	0-1	1
		50	0	23.29	23.23	22.95	23.05	23.18	0-2	2
		50	25	23.23	23.12	22.94	22.95	23.10	0-2	2
		50	49	23.18	23.13	22.86	22.95	23.07	0-2	2
		100	0	23.23	23.29	22.94	23.08	23.17	0-2	2
	64QAM	1	0	23.72	23.54	23.53	23.39	23.33	0-2	2
		1	49	23.63	23.52	23.40	23.29	23.17	0-2	2
		1	99	23.70	23.49	23.36	23.21	23.11	0-2	2
		50	0	22.25	22.22	21.99	22.03	22.23	0-3	3
		50	25	22.26	22.13	21.98	21.94	22.17	0-3	3
		50	49	22.23	22.14	21.90	21.96	22.11	0-3	3
		100	0	22.20	22.23	21.91	22.03	22.11	0-3	3
	256QAM	1	0	22.11	22.34	21.75	21.99	22.03	0-2	2
		1	49	22.15	22.26	21.68	22.11	21.84	0-2	2
		1	99	22.10	22.21	21.57	22.04	21.81	0-2	2
		50	0	21.27	21.27	21.02	21.06	21.28	0-3	3
		50	25	21.27	21.21	20.99	20.99	21.22	0-3	3
		50	49	21.22	21.20	20.90	21.01	21.17	0-3	3
		100	0	21.17	21.19	20.86	20.98	21.14	0-3	3

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

[LTE Band 66 Conducted Power]

LTE Band 66 _ 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131979 Ch. 1710.7 MHz	132322 Ch. 1745 MHz	132665 Ch. 1779.3 MHz		
1.4 MHz	QPSK	1	0	23.22	23.27	22.97	0	0
		1	3	23.22	23.25	23.01	0	0
		1	5	23.22	23.25	22.97	0	0
		3	0	23.16	23.22	22.96	0	0
		3	1	23.31	23.34	23.09	0	0
		3	3	23.19	23.30	22.98	0	0
		6	0	22.26	22.28	22.00	0-1	1
	16QAM	1	0	22.42	22.48	22.24	0-1	1
		1	3	22.24	22.38	22.09	0-1	1
		1	5	22.23	22.55	22.17	0-1	1
		3	0	22.29	22.31	22.07	0-1	1
		3	1	22.39	22.36	22.27	0-1	1
		3	3	22.31	22.41	22.09	0-1	1
		6	0	21.31	21.39	21.08	0-2	2
	64QAM	1	0	21.36	21.44	21.21	0-2	2
		1	3	21.36	21.40	21.06	0-2	2
		1	5	21.32	21.48	21.18	0-2	2
		3	0	21.28	21.31	21.05	0-2	2
		3	1	21.37	21.40	21.17	0-2	2
		3	3	21.29	21.40	21.08	0-2	2
		6	0	20.30	20.33	20.03	0-3	3
	256QAM	1	0	18.15	18.23	17.93	0-2	2
		1	3	18.12	18.16	17.95	0-2	2
		1	5	18.15	18.31	17.87	0-2	2
		3	0	17.98	18.10	17.82	0-2	2
		3	1	18.16	18.22	18.01	0-2	2
		3	3	18.06	18.22	17.98	0-2	2
6		0	17.91	18.10	17.83	0-3	3	

LTE Band 66 _ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131987 Ch. 1711.5 MHz	132322 Ch. 1745 MHz	132657 Ch. 1778.5 MHz		
3 MHz	QPSK	1	0	23.18	23.12	22.87	0	0
		1	7	23.21	23.16	22.84	0	0
		1	14	23.28	23.27	22.94	0	0
		8	0	22.35	22.30	22.02	0-1	1
		8	3	22.25	22.35	21.99	0-1	1
		8	7	22.39	22.33	22.01	0-1	1
		15	0	22.34	22.33	22.04	0-1	1
	16QAM	1	0	22.34	22.53	22.14	0-1	1
		1	7	22.30	22.34	22.18	0-1	1
		1	14	22.41	22.52	22.13	0-1	1
		8	0	21.33	21.39	21.01	0-2	2
		8	3	21.37	21.32	21.04	0-2	2
		8	7	21.33	21.39	21.07	0-2	2
		15	0	21.26	21.29	21.03	0-2	2
	64QAM	1	0	21.33	21.46	21.09	0-2	2
		1	7	21.24	21.40	21.01	0-2	2
		1	14	21.45	21.52	21.11	0-2	2
		8	0	20.28	20.27	20.02	0-3	3
		8	3	20.23	20.23	19.98	0-3	3
		8	7	20.29	20.31	19.99	0-3	3
		15	0	20.31	20.27	19.99	0-3	3
	256QAM	1	0	18.18	18.23	17.98	0-2	2
		1	7	18.03	18.18	17.72	0-2	2
		1	14	18.06	18.37	17.92	0-2	2
		8	0	17.99	18.11	17.89	0-3	3
		8	3	18.06	18.15	17.84	0-3	3
		8	7	18.03	18.11	17.84	0-3	3
		15	0	18.04	18.16	17.87	0-3	3

LTE Band 66 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131997 Ch. 1712.5 MHz	132322Ch. 1745 MHz	132647 Ch. 1777.5 MHz		
5 MHz	QPSK	1	0	23.23	23.28	22.94	0	0
		1	12	23.18	23.15	22.91	0	0
		1	24	23.30	23.30	23.05	0	0
		12	0	22.38	22.42	22.07	0-1	1
		12	6	22.34	22.37	22.09	0-1	1
		12	11	22.37	22.36	22.09	0-1	1
		25	0	22.34	22.34	22.02	0-1	1
	16QAM	1	0	22.51	22.48	22.28	0-1	1
		1	12	22.34	22.50	22.16	0-1	1
		1	24	22.51	22.48	22.29	0-1	1
		12	0	21.35	21.36	21.09	0-2	2
		12	6	21.32	21.36	21.13	0-2	2
		12	11	21.27	21.34	21.10	0-2	2
		25	0	21.30	21.34	21.07	0-2	2
	64QAM	1	0	21.46	21.46	21.19	0-2	2
		1	12	21.38	21.23	21.07	0-2	2
		1	24	21.43	21.45	21.17	0-2	2
		12	0	20.31	20.34	20.12	0-3	3
		12	6	20.32	20.33	20.05	0-3	3
		12	11	20.27	20.29	20.11	0-3	3
		25	0	20.27	20.29	20.01	0-3	3
	256QAM	1	0	18.10	18.22	18.08	0-2	2
		1	12	17.97	18.03	17.89	0-2	2
		1	24	18.24	18.19	18.05	0-2	2
12		0	18.06	18.13	17.97	0-3	3	
12		6	18.00	18.15	17.92	0-3	3	
12		11	18.05	18.17	17.92	0-3	3	
25		0	18.00	18.14	17.91	0-3	3	

LTE Band 66 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132022 Ch. 1715 MHz	132322 Ch. 1745 MHz	132622 Ch. 1775 MHz		
10 MHz	QPSK	1	0	23.22	23.28	22.95	0	0
		1	24	23.29	23.26	23.02	0	0
		1	49	23.36	23.31	23.09	0	0
		25	0	22.35	22.42	22.14	0-1	1
		25	12	22.30	22.40	22.09	0-1	1
		25	24	22.36	22.39	22.08	0-1	1
		50	0	22.42	22.45	22.20	0-1	1
	16QAM	1	0	22.47	22.42	22.18	0-1	1
		1	24	22.31	22.50	22.10	0-1	1
		1	49	22.48	22.50	22.25	0-1	1
		25	0	21.35	21.36	21.10	0-2	2
		25	12	21.31	21.32	21.12	0-2	2
		25	24	21.28	21.31	21.14	0-2	2
		50	0	21.35	21.41	21.11	0-2	2
	64QAM	1	0	21.41	21.50	21.23	0-2	2
		1	24	21.34	21.44	21.22	0-2	2
		1	49	21.40	21.53	21.21	0-2	2
		25	0	20.28	20.30	20.07	0-3	3
		25	12	20.24	20.25	20.05	0-3	3
		25	24	20.25	20.29	20.08	0-3	3
		50	0	20.36	20.35	20.15	0-3	3
	256QAM	1	0	18.17	18.27	18.13	0-2	2
		1	24	18.09	18.27	18.12	0-2	2
		1	49	18.26	18.30	18.10	0-2	2
25		0	18.01	18.16	17.97	0-3	3	
25		12	18.06	18.18	17.96	0-3	3	
25		24	18.11	18.16	17.96	0-3	3	
50		0	18.20	18.23	18.04	0-3	3	

LTE Band 66 _ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132047 Ch. 1717.5 MHz	132322 Ch. 1745 MHz	132597 Ch. 1772.5 MHz		
15 MHz	QPSK	1	0	23.23	23.34	23.16	0	0
		1	36	23.27	23.27	23.07	0	0
		1	74	23.34	23.34	23.17	0	0
		36	0	22.41	22.44	22.25	0-1	1
		36	18	22.37	22.43	22.23	0-1	1
		36	39	22.46	22.43	22.20	0-1	1
		75	0	22.41	22.41	22.22	0-1	1
	16QAM	1	0	22.51	22.53	22.41	0-1	1
		1	36	22.39	22.41	22.19	0-1	1
		1	74	22.57	22.49	22.31	0-1	1
		36	0	21.35	21.41	21.26	0-2	2
		36	18	21.37	21.41	21.21	0-2	2
		36	39	21.36	21.39	21.22	0-2	2
		75	0	21.32	21.36	21.17	0-2	2
	64QAM	1	0	21.30	21.56	21.44	0-2	2
		1	36	21.25	21.43	21.35	0-2	2
		1	74	21.48	21.51	21.30	0-2	2
		36	0	20.35	20.38	20.21	0-3	3
		36	18	20.32	20.42	20.15	0-3	3
		36	39	20.35	20.38	20.22	0-3	3
		75	0	20.33	20.33	20.17	0-3	3
	256QAM	1	0	18.10	18.28	18.19	0-2	2
		1	36	18.35	18.19	17.96	0-2	2
		1	74	18.40	18.34	18.22	0-2	2
		36	0	18.25	18.26	18.12	0-3	3
		36	18	18.26	18.24	18.07	0-3	3
		36	39	18.27	18.27	18.07	0-3	3
		75	0	18.28	18.26	18.14	0-3	3

LTE Band 66 _ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 MHz	132322 Ch. 1745 MHz	132572 Ch. 1770 MHz		
20 MHz	QPSK	1	0	23.24	23.35	23.20	0	0
		1	49	23.28	23.32	23.14	0	0
		1	99	23.36	23.40	23.17	0	0
		50	0	22.42	22.46	22.25	0-1	1
		50	25	22.41	22.48	22.27	0-1	1
		50	49	22.41	22.46	22.24	0-1	1
		100	0	22.38	22.45	22.29	0-1	1
	16QAM	1	0	22.46	22.61	22.39	0-1	1
		1	49	22.34	22.45	22.32	0-1	1
		1	99	22.59	22.54	22.49	0-1	1
		50	0	21.36	21.44	21.23	0-2	2
		50	25	21.39	21.42	21.24	0-2	2
		50	49	21.43	21.47	21.21	0-2	2
		100	0	21.36	21.41	21.24	0-2	2
	64QAM	1	0	21.41	21.53	21.38	0-2	2
		1	49	21.48	21.49	21.28	0-2	2
		1	99	21.49	21.59	21.35	0-2	2
		50	0	20.34	20.38	20.24	0-3	3
		50	25	20.35	20.40	20.19	0-3	3
		50	49	20.35	20.40	20.20	0-3	3
		100	0	20.33	20.35	20.16	0-3	3
	256QAM	1	0	18.05	18.25	18.15	0-2	2
		1	49	18.27	18.18	17.99	0-2	2
		1	99	18.36	18.26	18.15	0-2	2
50		0	18.24	18.30	18.09	0-3	3	
50		25	18.26	18.28	18.10	0-3	3	
50		49	18.24	18.26	18.07	0-3	3	
100		0	18.21	18.29	18.11	0-3	3	

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

11.3.2 LTE Reduced Conducted Power (Hotspot activated)

LTE Band 2 _ 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18607 Ch. 1850.7 MHz	18900 Ch. 1880 MHz	19193 Ch. 1909.3 MHz		
1.4 MHz	QPSK	1	0	19.63	20.10	19.63	0	0
		1	3	19.66	19.88	19.65	0	0
		1	5	19.55	19.92	19.51	0	0
		3	0	19.75	20.12	19.65	0	0
		3	1	19.61	19.99	19.58	0	0
		3	3	19.77	19.92	19.71	0	0
		6	0	19.45	19.83	19.43	0-1	0
	16QAM	1	0	19.77	20.24	19.87	0-1	0
		1	3	19.84	20.24	19.79	0-1	0
		1	5	19.84	20.05	19.84	0-1	0
		3	0	19.60	20.01	19.74	0-1	0
		3	1	19.64	20.12	19.73	0-1	0
		3	3	19.67	20.00	19.51	0-1	0
		6	0	19.78	19.97	19.80	0-2	0
	64QAM	1	0	19.75	19.86	19.76	0-2	0
		1	3	19.80	19.82	19.56	0-2	0
		1	5	19.89	20.09	19.88	0-2	0
		3	0	19.78	19.87	19.71	0-2	0
		3	1	19.57	20.01	19.71	0-2	0
		3	3	19.67	19.97	19.67	0-2	0
		6	0	19.69	19.98	19.62	0-3	0
	256QAM	1	0	18.15	18.65	18.25	0-2	1
		1	3	17.94	18.25	18.10	0-2	1
		1	5	18.18	18.49	17.95	0-2	1
		3	0	18.08	18.39	17.92	0-2	1
		3	1	17.99	18.39	18.01	0-2	1
		3	3	17.99	18.43	18.16	0-2	1
		6	0	17.88	18.57	18.06	0-3	1

LTE Band 2_ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18615 Ch. 1851.5 MHz	18900 Ch. 1880 MHz	19185 Ch. 1908.5 MHz		
3 MHz	QPSK	1	0	19.48	20.08	19.66	0	0
		1	7	19.72	19.87	19.55	0	0
		1	14	19.63	19.88	19.66	0	0
		8	0	19.67	20.08	19.72	0-1	0
		8	3	19.59	20.04	19.54	0-1	0
		8	7	19.79	19.80	19.69	0-1	0
		15	0	19.58	19.87	19.46	0-1	0
	16QAM	1	0	19.65	20.23	19.87	0-1	0
		1	7	19.94	20.20	19.78	0-1	0
		1	14	19.86	20.06	19.88	0-1	0
		8	0	19.54	20.09	19.86	0-2	0
		8	3	19.65	20.06	19.78	0-2	0
		8	7	19.53	19.97	19.57	0-2	0
		15	0	19.67	19.93	19.75	0-2	0
	64QAM	1	0	19.82	20.06	19.56	0-2	0
		1	7	19.77	19.89	19.62	0-2	0
		1	14	19.82	20.08	19.84	0-2	0
		8	0	19.69	19.87	19.76	0-3	0
		8	3	19.52	19.98	19.75	0-3	0
		8	7	19.68	20.06	19.54	0-3	0
		15	0	19.69	19.87	19.57	0-3	0
	256QAM	1	0	18.09	18.55	18.06	0-2	1
		1	7	17.82	18.22	17.96	0-2	1
		1	14	18.09	18.47	17.96	0-2	1
8		0	18.00	18.36	17.87	0-3	1	
8		3	17.92	18.34	17.96	0-3	1	
8		7	17.87	18.30	18.04	0-3	1	
15		0	17.93	18.48	18.01	0-3	1	

LTE Band 2 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18625 Ch. 1852.5 MHz	18900 Ch. 1880 MHz	19175 Ch. 1907.5 MHz		
5 MHz	QPSK	1	0	19.43	19.95	19.49	0	0
		1	12	19.56	19.83	19.51	0	0
		1	24	19.49	19.81	19.51	0	0
		12	0	19.62	19.96	19.61	0-1	0
		12	6	19.57	19.91	19.41	0-1	0
		12	11	19.62	19.74	19.54	0-1	0
	16QAM	25	0	19.44	19.78	19.43	0-1	0
		1	0	19.63	20.12	19.76	0-1	0
		1	12	19.77	20.12	19.60	0-1	0
		1	24	19.69	20.02	19.76	0-1	0
		12	0	19.53	19.93	19.66	0-2	0
		12	6	19.59	19.94	19.58	0-2	0
	64QAM	12	11	19.51	19.80	19.43	0-2	0
		25	0	19.61	19.90	19.62	0-2	0
		1	0	19.74	19.86	19.56	0-2	0
		1	12	19.71	19.76	19.45	0-2	0
		1	24	19.79	19.91	19.72	0-2	0
		12	0	19.59	19.82	19.61	0-3	0
	256QAM	12	6	19.48	19.96	19.62	0-3	0
		12	11	19.59	19.86	19.51	0-3	0
		25	0	19.51	19.87	19.56	0-3	0
		1	0	17.98	18.46	18.05	0-2	1
		1	12	17.79	18.15	17.93	0-2	1
		1	24	18.01	18.38	17.89	0-2	1
	12	0	18.00	18.36	17.86	0-3	1	
	12	6	17.91	18.20	17.95	0-3	1	
	12	11	17.79	18.24	18.01	0-3	1	
	25	0	17.88	18.42	17.98	0-3	1	

LTE Band 2 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18650 Ch. 1855 MHz	18900 Ch. 1880 MHz	19150 Ch. 1905 MHz		
10 MHz	QPSK	1	0	19.54	20.03	19.67	0	0
		1	24	19.58	19.88	19.56	0	0
		1	49	19.59	19.98	19.67	0	0
		25	0	19.72	20.02	19.78	0-1	0
		25	12	19.60	20.08	19.55	0-1	0
		25	24	19.63	19.92	19.71	0-1	0
		50	0	19.48	19.80	19.62	0-1	0
	16QAM	1	0	19.65	20.30	19.85	0-1	0
		1	24	19.92	20.27	19.64	0-1	0
		1	49	19.74	20.17	19.79	0-1	0
		25	0	19.70	19.96	19.76	0-2	0
		25	12	19.67	19.94	19.60	0-2	0
		25	24	19.54	19.95	19.58	0-2	0
		50	0	19.74	20.10	19.72	0-2	0
	64QAM	1	0	19.91	19.86	19.74	0-2	0
		1	24	19.79	19.78	19.57	0-2	0
		1	49	19.93	20.05	19.87	0-2	0
		25	0	19.78	19.88	19.68	0-3	0
		25	12	19.57	20.12	19.81	0-3	0
		25	24	19.68	20.00	19.70	0-3	0
		50	0	19.56	19.93	19.76	0-3	0
	256QAM	1	0	18.08	18.57	18.15	0-2	1
		1	24	17.87	18.17	17.95	0-2	1
		1	49	18.14	18.49	18.06	0-2	1
25		0	18.09	18.47	18.01	0-3	1	
25		12	17.91	18.22	17.97	0-3	1	
25		24	17.93	18.26	18.20	0-3	1	
50		0	17.98	18.48	18.06	0-3	1	

LTE Band 2 _ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18675 Ch. 1857.5 MHz	18900 Ch. 1880 MHz	19125 Ch. 1902.5 MHz		
15 MHz	QPSK	1	0	19.54	20.11	19.66	0	0
		1	36	19.64	19.93	19.61	0	0
		1	74	19.68	19.95	19.55	0	0
		36	0	19.77	20.05	19.63	0-1	0
		36	18	19.59	19.94	19.56	0-1	0
		36	39	19.69	19.76	19.59	0-1	0
		75	0	19.51	19.87	19.61	0-1	0
	16QAM	1	0	19.75	20.22	19.94	0-1	0
		1	36	19.82	20.29	19.80	0-1	0
		1	74	19.89	20.12	19.91	0-1	0
		36	0	19.66	20.01	19.68	0-2	0
		36	18	19.68	20.02	19.63	0-2	0
		36	39	19.62	19.81	19.49	0-2	0
		75	0	19.67	20.07	19.69	0-2	0
	64QAM	1	0	19.78	20.05	19.61	0-2	0
		1	36	19.82	19.96	19.62	0-2	0
		1	74	19.80	20.05	19.78	0-2	0
		36	0	19.65	19.83	19.77	0-3	0
		36	18	19.53	20.09	19.78	0-3	0
		36	39	19.69	19.87	19.53	0-3	0
		75	0	19.52	19.93	19.59	0-3	0
	256QAM	1	0	18.10	18.58	18.07	0-2	1
		1	36	17.87	18.17	18.02	0-2	1
		1	74	18.16	18.39	17.89	0-2	1
36		0	18.05	18.56	18.06	0-3	1	
36		18	18.07	18.28	17.99	0-3	1	
36		39	17.90	18.43	18.12	0-3	1	
75		0	17.89	18.43	18.03	0-3	1	

LTE Band 2 _ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 MHz	18900 Ch. 1880 MHz	19100 Ch. 1900 MHz		
20 MHz	QPSK	1	0	19.44	19.98	19.69	0	0
		1	49	19.65	19.98	19.55	0	0
		1	99	19.65	19.87	19.63	0	0
		50	0	19.81	20.13	19.78	0-1	0
		50	25	19.72	20.01	19.43	0-1	0
		50	49	19.81	19.74	19.66	0-1	0
		100	0	19.60	19.78	19.58	0-1	0
	16QAM	1	0	19.82	20.29	19.76	0-1	0
		1	49	19.89	20.29	19.67	0-1	0
		1	99	19.73	20.07	19.85	0-1	0
		50	0	19.71	19.95	19.81	0-2	0
		50	25	19.77	19.99	19.61	0-2	0
		50	49	19.71	19.80	19.46	0-2	0
		100	0	19.74	20.08	19.69	0-2	0
	64QAM	1	0	19.88	19.97	19.64	0-2	0
		1	49	19.72	19.94	19.49	0-2	0
		1	99	19.85	20.01	19.91	0-2	0
		50	0	19.72	19.93	19.80	0-3	0
		50	25	19.66	20.05	19.69	0-3	0
		50	49	19.62	19.94	19.67	0-3	0
		100	0	19.68	19.95	19.58	0-3	0
	256QAM	1	0	18.13	18.64	18.21	0-2	1
		1	49	17.86	18.23	18.10	0-2	1
		1	99	18.16	18.41	17.95	0-2	1
50		0	18.01	18.53	17.94	0-3	1	
50		25	18.03	18.21	18.06	0-3	1	
50		49	17.94	18.39	18.07	0-3	1	
100		0	17.91	18.47	18.08	0-3	1	

[LTE Band 4 Conducted Power]

LTE Band 4 _ 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19957 Ch. 1710.7 MHz	20175 Ch. 1732.5 MHz	20393 Ch. 1754.3 MHz		
1.4 MHz	QPSK	1	0	20.01	20.03	19.68	0	0
		1	3	19.93	19.92	19.73	0	0
		1	5	19.82	20.01	19.74	0	0
		3	0	19.97	20.04	19.87	0	0
		3	1	20.05	20.07	19.91	0	0
		3	3	19.91	19.84	19.83	0	0
		6	0	19.92	20.04	19.81	0-1	0
	16QAM	1	0	20.14	20.19	19.98	0-1	0
		1	3	20.17	20.06	19.92	0-1	0
		1	5	20.17	20.01	20.10	0-1	0
		3	0	19.91	19.99	19.67	0-1	0
		3	1	19.86	19.81	19.73	0-1	0
		3	3	19.81	20.02	19.78	0-1	0
		6	0	19.91	19.86	19.69	0-2	0
	64QAM	1	0	19.89	20.00	19.98	0-2	0
		1	3	19.85	20.09	19.99	0-2	0
		1	5	20.05	20.21	19.89	0-2	0
		3	0	19.96	19.96	19.80	0-2	0
		3	1	19.82	20.03	19.89	0-2	0
		3	3	20.03	19.98	19.73	0-2	0
		6	0	19.78	19.77	19.84	0-3	0
	256QAM	1	0	18.04	18.43	18.30	0-2	1
		1	3	18.19	18.41	18.17	0-2	1
		1	5	18.36	18.30	18.30	0-2	1
		3	0	18.21	18.23	18.01	0-2	1
		3	1	18.19	18.23	18.13	0-2	1
		3	3	18.09	18.28	18.22	0-2	1
		6	0	18.01	18.27	18.25	0-3	1

LTE Band 4 _ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average 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	19.92	20.08	19.59	0	0
		1	7	19.84	19.80	19.78	0	0
		1	14	19.99	19.97	19.63	0	0
		8	0	19.92	20.11	19.88	0-1	0
		8	3	20.07	20.04	19.74	0-1	0
		8	7	19.96	19.77	19.83	0-1	0
		15	0	19.90	20.09	19.99	0-1	0
	16QAM	1	0	20.19	20.16	20.04	0-1	0
		1	7	20.05	20.00	19.88	0-1	0
		1	14	20.02	20.07	20.07	0-1	0
		8	0	19.94	20.13	19.82	0-2	0
		8	3	19.99	19.99	19.73	0-2	0
		8	7	19.87	20.05	19.69	0-2	0
		15	0	19.99	20.00	19.77	0-2	0
	64QAM	1	0	19.84	20.08	20.00	0-2	0
		1	7	19.83	20.11	19.86	0-2	0
		1	14	19.97	20.25	19.78	0-2	0
		8	0	19.98	19.88	19.73	0-3	0
		8	3	19.89	19.91	19.86	0-3	0
		8	7	20.00	20.06	19.68	0-3	0
		15	0	19.89	19.88	19.71	0-3	0
	256QAM	1	0	18.07	18.45	18.30	0-2	1
		1	7	18.12	18.28	18.28	0-2	1
		1	14	18.39	18.29	18.31	0-2	1
		8	0	18.25	18.11	18.02	0-3	1
		8	3	18.32	18.13	18.15	0-3	1
		8	7	18.17	18.30	18.14	0-3	1
15		0	18.06	18.41	18.23	0-3	1	

LTE Band 4 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19975 Ch. 1712.5 MHz	20175 Ch. 1732.5 MHz	20375 Ch. 1752.5 MHz		
5 MHz	QPSK	1	0	19.84	19.92	19.57	0	0
		1	12	19.74	19.73	19.61	0	0
		1	24	19.79	19.82	19.58	0	0
		12	0	19.84	19.94	19.81	0-1	0
		12	6	19.89	19.92	19.72	0-1	0
		12	11	19.91	19.77	19.76	0-1	0
		25	0	19.90	19.92	19.79	0-1	0
	16QAM	1	0	20.02	20.16	19.86	0-1	0
		1	12	19.98	19.95	19.86	0-1	0
		1	24	20.00	20.01	19.91	0-1	0
		12	0	19.88	19.93	19.65	0-2	0
		12	6	19.85	19.79	19.64	0-2	0
		12	11	19.81	19.88	19.68	0-2	0
		25	0	19.84	19.86	19.59	0-2	0
	64QAM	1	0	19.81	20.00	19.83	0-2	0
		1	12	19.76	19.93	19.80	0-2	0
		1	24	19.96	20.09	19.76	0-2	0
		12	0	19.80	19.84	19.71	0-3	0
		12	6	19.78	19.86	19.72	0-3	0
		12	11	19.86	19.89	19.62	0-3	0
		25	0	19.70	19.76	19.68	0-3	0
	256QAM	1	0	18.03	18.25	18.21	0-2	1
		1	12	18.06	18.26	18.14	0-2	1
		1	24	18.21	18.23	18.12	0-2	1
12		0	18.14	18.11	17.93	0-3	1	
12		6	18.12	18.12	18.08	0-3	1	
12		11	18.06	18.13	18.14	0-3	1	
25		0	17.99	18.21	18.09	0-3	1	

LTE Band 4 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20000 Ch. 1715 MHz	20175 Ch. 1732.5 MHz	20350 Ch. 1750 MHz		
10 MHz	QPSK	1	0	19.96	19.93	19.57	0	0
		1	24	19.88	19.93	19.72	0	0
		1	49	19.95	19.85	19.73	0	0
		25	0	19.89	19.96	19.90	0-1	0
		25	12	20.04	20.10	19.85	0-1	0
		25	24	19.91	19.93	19.84	0-1	0
		50	0	20.00	19.93	19.81	0-1	0
	16QAM	1	0	20.18	20.31	19.86	0-1	0
		1	24	20.01	19.95	19.98	0-1	0
		1	49	20.15	20.12	20.02	0-1	0
		25	0	20.05	20.03	19.73	0-2	0
		25	12	19.95	19.93	19.70	0-2	0
		25	24	19.90	20.08	19.68	0-2	0
		50	0	19.97	20.04	19.75	0-2	0
	64QAM	1	0	19.82	20.18	19.94	0-2	0
		1	24	19.80	20.12	19.93	0-2	0
		1	49	20.07	20.28	19.81	0-2	0
		25	0	19.82	19.91	19.79	0-3	0
		25	12	19.86	20.06	19.91	0-3	0
		25	24	20.00	20.06	19.75	0-3	0
		50	0	19.80	19.84	19.87	0-3	0
	256QAM	1	0	18.16	18.33	18.22	0-2	1
		1	24	18.22	18.27	18.20	0-2	1
		1	49	18.32	18.42	18.25	0-2	1
25		0	18.30	18.24	17.96	0-3	1	
25		12	18.18	18.26	18.15	0-3	1	
25		24	18.24	18.19	18.26	0-3	1	
50		0	18.17	18.28	18.27	0-3	1	

LTE Band 4 _ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20025 Ch. 1717.5 MHz	20175 Ch. 1732.5 MHz	20325 Ch. 1747.5 MHz		
15 MHz	QPSK	1	0	20.00	19.94	19.63	0	0
		1	36	19.86	19.86	19.70	0	0
		1	74	19.80	20.01	19.70	0	0
		36	0	20.03	20.09	19.90	0-1	0
		36	18	19.91	19.93	19.92	0-1	0
		36	39	20.08	19.87	19.81	0-1	0
		75	0	19.93	20.01	19.90	0-1	0
	16QAM	1	0	20.11	20.34	19.92	0-1	0
		1	36	20.16	20.08	19.87	0-1	0
		1	74	20.05	20.18	19.96	0-1	0
		36	0	19.97	20.01	19.71	0-2	0
		36	18	19.88	19.96	19.79	0-2	0
		36	39	19.97	19.90	19.69	0-2	0
		75	0	19.93	20.03	19.75	0-2	0
	64QAM	1	0	19.89	20.09	19.98	0-2	0
		1	36	19.92	20.12	19.83	0-2	0
		1	74	20.01	20.29	19.83	0-2	0
		36	0	19.82	19.89	19.87	0-3	0
		36	18	19.86	19.91	19.81	0-3	0
		36	39	19.88	20.09	19.75	0-3	0
		75	0	19.72	19.95	19.74	0-3	0
	256QAM	1	0	18.15	18.35	18.23	0-2	1
		1	36	18.20	18.41	18.22	0-2	1
		1	74	18.29	18.41	18.30	0-2	1
		36	0	18.34	18.15	18.13	0-3	1
		36	18	18.22	18.13	18.25	0-3	1
		36	39	18.26	18.21	18.23	0-3	1
75		0	18.16	18.41	18.10	0-3	1	

LTE Band 4 _ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				20175 Ch. 1732.5 MHz		
20 MHz	QPSK	1	0	20.11	0	0
		1	49	19.78	0	0
		1	99	19.93	0	0
		50	0	19.98	0-1	0
		50	25	19.93	0-1	0
		50	49	19.82	0-1	0
		100	0	19.97	0-1	0
	16QAM	1	0	20.22	0-1	0
		1	49	20.08	0-1	0
		1	99	20.20	0-1	0
		50	0	20.08	0-2	0
		50	25	19.99	0-2	0
		50	49	19.96	0-2	0
		100	0	19.94	0-2	0
	64QAM	1	0	20.13	0-2	0
		1	49	19.96	0-2	0
		1	99	20.19	0-2	0
		50	0	20.02	0-3	0
		50	25	20.06	0-3	0
		50	49	20.08	0-3	0
		100	0	19.88	0-3	0
	256QAM	1	0	18.43	0-2	1
		1	49	18.26	0-2	1
		1	99	18.29	0-2	1
		50	0	18.18	0-3	1
		50	25	18.24	0-3	1
		50	49	18.28	0-3	1
		100	0	18.21	0-3	1

[LTE Band 25 Conducted Power]
 LTE Band 25 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26047 Ch. 1850.7 MHz	26365 Ch. 1882.5 MHz	26683 Ch. 1914.3 MHz		
1.4 MHz	QPSK	1	0	19.72	20.00	19.79	0	0
		1	3	19.41	19.85	19.50	0	0
		1	5	19.55	19.80	19.73	0	0
		3	0	19.75	19.91	19.63	0	0
		3	1	19.79	19.90	19.76	0	0
		3	3	19.62	20.00	19.66	0	0
	16QAM	6	0	19.49	20.07	19.74	0-1	0
		1	0	19.81	20.32	19.94	0-1	0
		1	3	19.69	19.99	19.81	0-1	0
		1	5	19.72	20.03	19.89	0-1	0
		3	0	19.58	20.04	19.84	0-1	0
		3	1	19.60	20.06	19.91	0-1	0
	64QAM	3	3	19.76	19.86	19.85	0-1	0
		6	0	19.37	20.05	19.78	0-2	0
		1	0	19.82	20.06	19.85	0-2	0
		1	3	19.66	19.82	19.80	0-2	0
		1	5	19.93	20.10	19.99	0-2	0
		3	0	19.65	19.86	19.91	0-2	0
	256QAM	3	1	19.70	20.06	19.71	0-2	0
		3	3	19.75	20.14	19.78	0-2	0
		6	0	19.65	19.91	19.67	0-3	0
		1	0	18.21	18.87	18.54	0-2	1
		1	3	18.14	18.34	18.33	0-2	1
		1	5	18.17	18.58	18.22	0-2	1
		3	0	18.07	18.48	18.22	0-2	1
		3	1	18.17	18.30	18.37	0-2	1
	3	3	18.17	18.52	18.18	0-2	1	
	6	0	18.11	18.72	18.16	0-3	1	

LTE Band 25 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26055 Ch. 1851.5 MHz	26365 Ch. 1882.5 MHz	26675 Ch. 1913.5 MHz		
3 MHz	QPSK	1	0	19.70	19.90	19.81	0	0
		1	7	19.45	19.94	19.52	0	0
		1	14	19.49	19.83	19.65	0	0
		8	0	19.71	19.90	19.74	0-1	0
		8	3	19.68	19.78	19.67	0-1	0
		8	7	19.63	19.95	19.69	0-1	0
	16QAM	15	0	19.50	20.00	19.62	0-1	0
		1	0	19.89	20.17	19.90	0-1	0
		1	7	19.69	20.01	19.88	0-1	0
		1	14	19.76	20.09	19.83	0-1	0
		8	0	19.68	19.98	19.84	0-2	0
		8	3	19.61	19.91	19.91	0-2	0
	64QAM	8	7	19.67	19.93	19.81	0-2	0
		15	0	19.54	19.98	19.63	0-2	0
		1	0	19.63	20.14	19.76	0-2	0
		1	7	19.64	19.79	19.90	0-2	0
		1	14	19.91	20.11	19.98	0-2	0
		8	0	19.75	19.93	19.76	0-3	0
	256QAM	8	3	19.78	20.07	19.83	0-3	0
		8	7	19.68	20.14	19.95	0-3	0
		15	0	19.51	20.05	19.61	0-3	0
		1	0	18.09	18.85	18.40	0-2	1
		1	7	18.25	18.31	18.46	0-2	1
		1	14	18.09	18.61	18.20	0-2	1
		8	0	18.20	18.39	18.24	0-3	1
	8	3	18.03	18.37	18.37	0-3	1	
		8	7	17.97	18.57	18.25	0-3	1
		15	0	18.12	18.72	18.19	0-3	1

LTE Band 25 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26065 Ch. 1852.5 MHz	26365 Ch. 1882.5 MHz	26665 Ch. 1912.5 MHz		
5 MHz	QPSK	1	0	19.54	19.80	19.68	0	0
		1	12	19.37	19.75	19.44	0	0
		1	24	19.45	19.78	19.63	0	0
		12	0	19.64	19.88	19.62	0-1	0
		12	6	19.62	19.78	19.57	0-1	0
		12	11	19.44	19.84	19.57	0-1	0
	16QAM	25	0	19.49	19.89	19.61	0-1	0
		1	0	19.81	20.14	19.77	0-1	0
		1	12	19.50	19.86	19.77	0-1	0
		1	24	19.61	19.97	19.76	0-1	0
		12	0	19.52	19.95	19.73	0-2	0
		12	6	19.57	19.89	19.72	0-2	0
	64QAM	12	11	19.58	19.85	19.69	0-2	0
		25	0	19.37	19.88	19.61	0-2	0
		1	0	19.62	20.03	19.74	0-2	0
		1	12	19.52	19.75	19.73	0-2	0
		1	24	19.78	20.01	19.86	0-2	0
		12	0	19.62	19.82	19.72	0-3	0
	256QAM	12	6	19.59	19.98	19.66	0-3	0
		12	11	19.55	19.97	19.77	0-3	0
		25	0	19.45	19.87	19.60	0-3	0
		1	0	18.04	18.68	18.34	0-2	1
		1	12	18.08	18.19	18.26	0-2	1
		1	24	18.01	18.43	18.15	0-2	1
		12	0	18.04	18.38	18.11	0-3	1
		12	6	17.98	18.30	18.23	0-3	1
		12	11	17.97	18.40	18.13	0-3	1
		25	0	17.95	18.52	18.13	0-3	1

LTE Band 25_ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26090 Ch. 1855 MHz	26365 Ch. 1882.5 MHz	26640 Ch. 1910 MHz		
10 MHz	QPSK	1	0	19.54	20.00	19.75	0	0
		1	24	19.47	19.78	19.58	0	0
		1	49	19.45	19.96	19.73	0	0
		25	0	19.79	19.90	19.82	0-1	0
		25	12	19.79	19.80	19.65	0-1	0
		25	24	19.61	19.94	19.58	0-1	0
	16QAM	50	0	19.57	19.96	19.80	0-1	0
		1	0	19.81	20.19	19.90	0-1	0
		1	24	19.67	19.88	19.96	0-1	0
		1	49	19.67	20.16	19.76	0-1	0
		25	0	19.54	20.09	19.89	0-2	0
		25	12	19.74	20.01	19.80	0-2	0
	64QAM	25	24	19.71	19.93	19.69	0-2	0
		50	0	19.37	20.02	19.81	0-2	0
		1	0	19.71	20.13	19.75	0-2	0
		1	24	19.52	19.78	19.83	0-2	0
		1	49	19.87	20.01	19.96	0-2	0
		25	0	19.63	19.95	19.90	0-3	0
	256QAM	25	12	19.77	20.13	19.68	0-3	0
		25	24	19.74	20.02	19.86	0-3	0
		50	0	19.58	19.90	19.75	0-3	0
		1	0	18.04	18.83	18.44	0-2	1
		1	24	18.24	18.27	18.39	0-2	1
		1	49	18.05	18.57	18.28	0-2	1
		25	0	18.08	18.52	18.11	0-3	1
		25	12	18.17	18.45	18.33	0-3	1
		25	24	18.16	18.47	18.19	0-3	1
		50	0	18.00	18.71	18.14	0-3	1

LTE Band 25 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26115 Ch. 1857.5 MHz	26365 Ch. 1882.5 MHz	26615 Ch. 1907.5 MHz		
15	QPSK	1	0	19.69	19.82	19.75	0	0
		1	36	19.37	19.91	19.57	0	0
		1	74	19.54	19.84	19.67	0	0
		36	0	19.70	19.97	19.63	0-1	0
		36	18	19.70	19.81	19.60	0-1	0
		36	39	19.50	19.93	19.60	0-1	0
	16QAM	75	0	19.61	20.02	19.78	0-1	0
		1	0	19.84	20.20	19.96	0-1	0
		1	36	19.50	19.92	19.81	0-1	0
		1	74	19.64	19.97	19.88	0-1	0
		36	0	19.70	20.05	19.85	0-2	0
		36	18	19.74	19.95	19.76	0-2	0
	64QAM	36	39	19.69	19.95	19.83	0-2	0
		75	0	19.41	20.08	19.65	0-2	0
		1	0	19.67	20.09	19.93	0-2	0
		1	36	19.68	19.85	19.91	0-2	0
		1	74	19.81	20.02	19.89	0-2	0
		36	0	19.68	19.91	19.88	0-3	0
	256QAM	36	18	19.68	20.03	19.70	0-3	0
		36	39	19.62	20.13	19.83	0-3	0
		75	0	19.63	19.98	19.68	0-3	0
		1	0	18.11	18.71	18.47	0-2	1
		1	36	18.21	18.23	18.28	0-2	1
		1	74	18.14	18.56	18.31	0-2	1
		36	0	18.21	18.52	18.11	0-3	1
		36	18	18.18	18.44	18.40	0-3	1
		36	39	18.01	18.46	18.13	0-3	1
		75	0	18.12	18.67	18.30	0-3	1

LTE Band 25 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26140 Ch. 1860 MHz	26365 Ch. 1882.5 MHz	26590 Ch. 1905 MHz		
20 MHz	QPSK	1	0	19.63	19.80	19.80	0	0
		1	49	19.53	19.94	19.51	0	0
		1	99	19.46	19.85	19.68	0	0
		50	0	19.69	20.01	19.62	0-1	0
		50	25	19.62	19.93	19.68	0-1	0
		50	49	19.57	19.87	19.71	0-1	0
	100	0	19.61	20.07	19.76	0-1	0	
	16QAM	1	0	19.88	20.22	19.86	0-1	0
		1	49	19.62	19.86	19.94	0-1	0
		1	99	19.70	20.02	19.84	0-1	0
		50	0	19.67	19.99	19.77	0-2	0
		50	25	19.65	19.96	19.78	0-2	0
		50	49	19.74	20.00	19.80	0-2	0
	100	0	19.47	20.03	19.75	0-2	0	
	64QAM	1	0	19.74	20.14	19.74	0-2	0
		1	49	19.52	19.85	19.81	0-2	0
		1	99	19.78	20.13	19.89	0-2	0
		50	0	19.66	19.82	19.77	0-3	0
		50	25	19.75	20.04	19.71	0-3	0
		50	49	19.69	20.17	19.90	0-3	0
	100	0	19.52	19.94	19.65	0-3	0	
	256QAM	1	0	18.06	18.68	18.53	0-2	1
		1	49	18.20	18.27	18.32	0-2	1
		1	99	18.14	18.57	18.34	0-2	1
		50	0	18.12	18.38	18.15	0-3	1
		50	25	18.02	18.30	18.27	0-3	1
		50	49	17.99	18.49	18.27	0-3	1
	100	0	18.03	18.66	18.25	0-3	1	

[LTE Band 41 Conducted Power] - Power Class 3
 LTE Band 41 5 MHz Bandwidth - Power Class 3

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per GPP [dB]	MPR [dB]
				39675 Ch. 2498.5 MHz	40148 Ch. 2545.8 MHz	40620 Ch. 2593.0 MHz	41093 Ch. 2640.3 MHz	41565 Ch. 2687.5 MHz		
5 MHz	QPSK	1	0	22.54	22.60	22.43	22.49	22.69	0	0
		1	12	22.58	22.56	22.24	22.79	22.48	0	0
		1	24	22.61	22.71	22.50	22.55	22.66	0	0
		12	0	22.71	22.71	22.49	22.52	22.66	0-1	0
		12	6	22.64	22.84	22.47	22.47	22.80	0-1	0
		12	11	22.71	22.73	22.52	22.47	22.71	0-1	0
		25	0	22.78	22.75	22.55	22.57	22.70	0-1	0
	16QAM	1	0	22.57	22.70	22.37	22.39	22.50	0-1	0
		1	12	22.31	22.75	22.12	22.49	22.30	0-1	0
		1	24	22.55	22.62	22.41	22.27	22.41	0-1	0
		12	0	21.66	21.78	21.46	21.55	21.63	0-2	1
		12	6	21.59	21.82	21.40	21.51	21.75	0-2	1
		12	11	21.66	21.74	21.44	21.51	21.73	0-2	1
		25	0	21.70	21.74	21.54	21.49	21.68	0-2	1
	64QAM	1	0	21.65	21.89	21.57	21.69	21.71	0-2	1
		1	12	21.60	21.82	21.32	21.94	21.45	0-2	1
		1	24	21.68	21.85	21.54	21.65	21.62	0-2	1
		12	0	20.60	20.77	20.41	20.44	20.65	0-3	2
		12	6	20.50	20.79	20.36	20.52	20.69	0-3	2
		12	11	20.54	20.79	20.40	20.56	20.74	0-3	2
		25	0	20.59	20.63	20.53	20.47	20.77	0-3	2
	256QAM	1	0	20.33	20.43	20.19	20.13	20.36	0-2	2
		1	12	20.60	20.39	20.13	20.19	20.08	0-2	2
		1	24	20.32	20.42	20.12	20.09	20.34	0-2	2
		12	0	19.65	19.70	19.46	19.52	19.73	0-3	3
		12	6	19.54	19.82	19.40	19.66	19.70	0-3	3
		12	11	19.62	19.82	19.53	19.62	19.70	0-3	3
		25	0	19.62	19.73	19.49	19.57	19.80	0-3	3

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]
				39700 Ch. 2501 MHz	40160 Ch. 2547 MHz	40620 Ch. 2593 MHz	41080 Ch. 2639 MHz	41540 Ch. 2685 MHz		
10 MHz	QPSK	1	0	22.61	22.82	22.52	22.70	22.75	0	0
		1	24	22.61	22.69	22.43	22.53	22.71	0	0
		1	49	22.66	22.83	22.48	22.61	22.63	0	0
		25	0	22.69	22.80	22.52	22.59	22.82	0-1	0
		25	12	22.73	22.87	22.39	22.67	22.71	0-1	0
		25	24	22.80	22.87	22.53	22.58	22.73	0-1	0
		50	0	22.73	22.80	22.63	22.72	22.82	0-1	0
	16QAM	1	0	22.57	22.75	22.53	22.49	22.65	0-1	0
		1	24	22.56	22.62	22.45	22.34	22.44	0-1	0
		1	49	22.62	22.64	22.42	22.48	22.58	0-1	0
		25	0	21.66	21.87	21.59	21.66	21.72	0-2	1
		25	12	21.65	21.89	21.42	21.66	21.73	0-2	1
		25	24	21.71	21.82	21.50	21.62	21.66	0-2	1
		50	0	21.72	21.85	21.57	21.68	21.74	0-2	1
	64QAM	1	0	21.88	22.02	21.67	21.71	21.92	0-2	1
		1	24	21.75	21.88	21.60	21.54	21.76	0-2	1
		1	49	21.77	21.91	21.60	21.64	21.78	0-2	1
		25	0	20.67	20.86	20.52	20.58	20.77	0-3	2
		25	12	20.66	20.83	20.44	20.72	20.70	0-3	2
		25	24	20.67	20.74	20.46	20.59	20.62	0-3	2
		50	0	20.78	20.81	20.64	20.62	20.77	0-3	2
	256QAM	1	0	20.34	20.59	20.31	20.31	20.49	0-2	2
		1	24	20.26	20.56	20.20	20.21	20.54	0-2	2
		1	49	20.35	20.60	20.19	20.21	20.45	0-2	2
		25	0	19.72	19.86	19.60	19.70	19.90	0-3	3
		25	12	19.76	19.90	19.58	19.68	19.70	0-3	3
		25	24	19.75	19.84	19.56	19.72	19.76	0-3	3
		50	0	19.87	19.83	19.61	19.78	19.78	0-3	3

LTE Band 41 15 MHz Bandwidth - Power Class 3

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39725 Ch. 2503.5 MHz	40173 Ch. 2548.3 MHz	40620 Ch. 2593.0 MHz	41068 Ch. 2637.8 MHz	41515 Ch. 2682.5 MHz		
15 MHz	QPSK	1	0	22.74	22.75	22.55	22.53	22.76	0	0
		1	36	22.74	22.80	22.34	22.66	22.52	0	0
		1	74	22.73	22.70	22.51	22.56	22.59	0	0
		36	0	22.81	22.77	22.61	22.59	22.81	0-1	0
		36	18	22.78	22.69	22.57	22.54	22.82	0-1	0
		36	39	22.77	22.80	22.55	22.58	22.67	0-1	0
		75	0	22.75	22.79	22.58	22.59	22.78	0-1	0
	16QAM	1	0	22.77	22.64	22.44	22.63	22.75	0-1	0
		1	36	22.44	22.72	22.14	22.58	22.60	0-1	0
		1	74	22.72	22.64	22.23	22.45	22.63	0-1	0
		36	0	21.72	21.80	21.57	21.61	21.78	0-2	1
		36	18	21.77	21.64	21.59	21.54	21.76	0-2	1
		36	39	21.74	21.74	21.47	21.58	21.67	0-2	1
		75	0	21.68	21.80	21.56	21.56	21.78	0-2	1
	64QAM	1	0	21.79	21.85	21.63	21.63	21.93	0-2	1
		1	36	21.54	21.94	21.38	21.75	21.82	0-2	1
		1	74	21.82	21.68	21.57	21.64	21.78	0-2	1
		36	0	20.77	20.76	20.50	20.58	20.82	0-3	2
		36	18	20.77	20.69	20.56	20.56	20.76	0-3	2
		36	39	20.69	20.71	20.50	20.54	20.74	0-3	2
		75	0	20.70	20.77	20.52	20.54	20.78	0-3	2
	256QAM	1	0	20.41	20.59	20.25	20.29	20.54	0-2	2
		1	36	20.41	20.77	19.84	20.50	20.28	0-2	2
		1	74	20.49	20.44	20.13	20.36	20.37	0-2	2
		36	0	19.73	19.83	19.50	19.58	19.79	0-3	3
		36	18	19.71	19.71	19.54	19.57	19.79	0-3	3
		36	39	19.75	19.76	19.50	19.60	19.72	0-3	3
		75	0	19.72	19.76	19.44	19.56	19.71	0-3	3

LTE Band 41 20 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		
20 MHz	QPSK	1	0	22.67	22.73	22.46	22.54	22.69	0	0
		1	49	22.62	22.63	22.34	22.39	22.53	0	0
		1	99	22.68	22.63	22.33	22.40	22.51	0	0
		50	0	22.80	22.80	22.55	22.55	22.71	0-1	0
		50	25	22.75	22.83	22.46	22.56	22.70	0-1	0
		50	49	22.82	22.76	22.48	22.47	22.72	0-1	0
		100	0	22.82	22.75	22.52	22.50	22.72	0-1	0
	16QAM	1	0	22.59	22.66	22.36	22.40	22.68	0-1	0
		1	49	22.45	22.48	22.15	22.23	22.42	0-1	0
		1	99	22.55	22.47	22.21	22.22	22.41	0-1	0
		50	0	21.81	21.80	21.54	21.56	21.78	0-2	1
		50	25	21.73	21.79	21.43	21.56	21.71	0-2	1
		50	49	21.80	21.73	21.45	21.47	21.66	0-2	1
		100	0	21.82	21.75	21.52	21.53	21.73	0-2	1
	64QAM	1	0	21.81	21.89	21.74	21.73	21.85	0-2	1
		1	49	21.76	21.84	21.49	21.57	21.68	0-2	1
		1	99	21.73	21.88	21.45	21.58	21.64	0-2	1
		50	0	20.79	20.79	20.55	20.59	20.80	0-3	2
		50	25	20.75	20.79	20.45	20.58	20.72	0-3	2
		50	49	20.77	20.73	20.48	20.50	20.70	0-3	2
		100	0	20.78	20.71	20.48	20.47	20.69	0-3	2
	256QAM	1	0	20.41	20.47	20.32	20.31	20.56	0-2	2
		1	49	20.34	20.32	20.18	20.24	20.39	0-2	2
		1	99	20.39	20.33	20.16	20.23	20.38	0-2	2
50		0	19.87	19.83	19.61	19.62	19.84	0-3	3	
50		25	19.84	19.82	19.52	19.57	19.75	0-3	3	
50		49	19.83	19.78	19.53	19.54	19.74	0-3	3	
100		0	19.78	19.70	19.50	19.46	19.70	0-3	3	

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 MHz Bandwidth - Power Class 2

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per GPP [dB]	MPR [dB]
				39675 Ch. 2498.5 MHz	40148 Ch. 2545.8 MHz	40620 Ch. 2593.0 MHz	41093 Ch. 2640.3 MHz	41565 Ch. 2687.5 MHz		
5 MHz	QPSK	1	0	22.59	22.73	22.44	22.52	22.61	0	0
		1	12	22.32	22.73	22.10	22.62	22.43	0	0
		1	24	22.64	22.71	22.42	22.55	22.57	0	0
		12	0	22.63	22.71	22.44	22.53	22.59	0-1	0
		12	6	22.68	22.66	22.51	22.43	22.65	0-1	0
		12	11	22.63	22.71	22.44	22.51	22.56	0-1	0
		25	0	22.59	22.71	22.37	22.56	22.52	0-1	0
	16QAM	1	0	22.69	22.77	22.70	22.78	22.52	0-1	0
		1	12	22.58	22.75	22.35	22.53	22.36	0-1	0
		1	24	22.79	22.73	22.67	22.73	22.45	0-1	0
		12	0	21.64	21.81	21.53	21.48	21.51	0-2	1
		12	6	21.69	21.77	21.56	21.41	21.53	0-2	1
		12	11	21.64	21.83	21.50	21.48	21.47	0-2	1
		25	0	21.67	21.65	21.45	21.62	21.47	0-2	1
	64QAM	1	0	21.93	22.14	21.89	21.58	21.85	0-2	1
		1	12	21.76	22.43	21.67	21.58	21.81	0-2	1
		1	24	22.00	22.29	21.93	21.56	21.85	0-2	1
		12	0	20.59	20.67	20.46	20.50	20.54	0-3	2
		12	6	20.55	20.57	20.53	20.41	20.62	0-3	2
		12	11	20.55	20.64	20.47	20.50	20.64	0-3	2
		25	0	20.60	20.70	20.43	20.51	20.53	0-3	2
	256QAM	1	0	20.44	20.77	20.55	20.11	20.40	0-2	2
		1	12	20.26	20.75	20.29	20.29	20.25	0-2	2
		1	24	20.45	20.75	20.55	20.06	20.37	0-2	2
		12	0	19.63	19.74	19.47	19.59	19.65	0-3	3
		12	6	19.57	19.66	19.49	19.51	19.67	0-3	3
		12	11	19.63	19.70	19.43	19.59	19.62	0-3	3
		25	0	19.71	19.75	19.44	19.57	19.60	0-3	3

LTE Band 41 10 MHz Bandwidth - Power Class 2

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39700 Ch. 2501 MHz	40160 Ch. 2547 MHz	40620 Ch. 2593 MHz	41080 Ch. 2639 MHz	41540 Ch. 2685 MHz		
10 MHz	QPSK	1	0	22.66	22.79	22.49	22.61	22.66	0	0
		1	24	22.64	22.64	22.35	22.47	22.48	0	0
		1	49	22.67	22.71	22.42	22.53	22.54	0	0
		25	0	22.61	22.72	22.45	22.53	22.62	0-1	0
		25	12	22.66	22.65	22.46	22.49	22.57	0-1	0
		25	24	22.63	22.69	22.39	22.51	22.57	0-1	0
		50	0	22.65	22.67	22.46	22.43	22.66	0-1	0
	16QAM	1	0	22.85	22.73	22.43	22.59	22.69	0-1	0
		1	24	22.71	22.68	22.41	22.52	22.69	0-1	0
		1	49	22.77	22.81	22.34	22.54	22.80	0-1	0
		25	0	21.64	21.72	21.40	21.53	21.69	0-2	1
		25	12	21.68	21.69	21.38	21.49	21.61	0-2	1
		25	24	21.59	21.73	21.31	21.47	21.62	0-2	1
		50	0	21.61	21.66	21.43	21.39	21.62	0-2	1
	64QAM	1	0	21.83	22.27	21.80	21.94	22.24	0-2	1
		1	24	22.05	22.20	22.02	21.72	22.20	0-2	1
		1	49	22.07	22.18	21.90	21.70	22.12	0-2	1
		25	0	20.63	20.68	20.42	20.50	20.60	0-3	2
		25	12	20.55	20.61	20.41	20.44	20.54	0-3	2
		25	24	20.52	20.66	20.35	20.47	20.54	0-3	2
		50	0	20.61	20.66	20.45	20.45	20.65	0-3	2
	256QAM	1	0	20.43	20.43	20.46	20.32	20.70	0-2	2
		1	24	20.45	20.40	20.43	20.20	20.67	0-2	2
		1	49	20.47	20.41	20.37	20.23	20.65	0-2	2
		25	0	19.66	19.73	19.48	19.55	19.71	0-3	3
		25	12	19.69	19.66	19.48	19.50	19.66	0-3	3
		25	24	19.64	19.69	19.41	19.56	19.67	0-3	3
		50	0	19.65	19.73	19.50	19.51	19.72	0-3	3

LTE Band 41 15 MHz Bandwidth - Power Class 2

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39725 Ch. 2503.5 MHz	40173 Ch. 2548.3 MHz	40620 Ch. 2593.0 MHz	41068 Ch. 2637.8 MHz	41515 Ch. 2682.5 MHz		
15 MHz	QPSK	1	0	22.67	22.76	22.50	22.46	22.60	0	0
		1	36	22.36	22.81	22.12	22.45	22.23	0	0
		1	74	22.72	22.74	22.43	22.41	22.51	0	0
		36	0	22.67	22.73	22.46	22.41	22.58	0-1	0
		36	18	22.73	22.68	22.48	22.34	22.60	0-1	0
		36	39	22.69	22.69	22.39	22.34	22.51	0-1	0
		75	0	22.67	22.71	22.42	22.37	22.52	0-1	0
	16QAM	1	0	22.68	22.73	22.67	22.68	22.79	0-1	0
		1	36	22.60	22.71	22.32	22.54	22.63	0-1	0
		1	74	22.71	22.68	22.63	22.43	22.64	0-1	0
		36	0	21.59	21.68	21.42	21.41	21.59	0-2	1
		36	18	21.64	21.62	21.45	21.32	21.54	0-2	1
		36	39	21.58	21.64	21.36	21.35	21.50	0-2	1
		75	0	21.67	21.71	21.39	21.40	21.52	0-2	1
	64QAM	1	0	21.92	22.13	21.76	21.96	22.21	0-2	1
		1	36	21.62	22.20	21.37	22.02	22.02	0-2	1
		1	74	21.93	22.04	21.66	21.89	22.12	0-2	1
		36	0	20.69	20.70	20.47	20.44	20.57	0-3	2
		36	18	20.68	20.64	20.51	20.36	20.55	0-3	2
		36	39	20.63	20.66	20.41	20.40	20.47	0-3	2
		75	0	20.66	20.70	20.44	20.40	20.52	0-3	2
	256QAM	1	0	20.43	20.61	20.13	20.48	20.58	0-2	2
		1	36	20.31	20.77	19.74	20.42	20.30	0-2	2
		1	74	20.59	20.55	20.04	20.26	20.41	0-2	2
36		0	19.66	19.77	19.49	19.43	19.62	0-3	3	
36		18	19.68	19.72	19.49	19.38	19.61	0-3	3	
36		39	19.65	19.74	19.43	19.40	19.54	0-3	3	
75		0	19.68	19.69	19.44	19.39	19.54	0-3	3	

LTE Band 41 20 MHz 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 MHz	40185 Ch. 2549.5 MHz	40620 Ch. 2593.0 MHz	41055 Ch. 2636.5 MHz	41490 Ch. 2680.0 MHz		
20 MHz	QPSK	1	0	22.80	22.82	22.61	22.54	22.67	0	0
		1	49	22.82	22.70	22.49	22.40	22.53	0	0
		1	99	22.87	22.74	22.46	22.39	22.49	0	0
		50	0	22.81	22.76	22.39	22.42	22.63	0-1	0
		50	25	22.87	22.67	22.36	22.34	22.61	0-1	0
		50	49	22.75	22.76	22.38	22.39	22.57	0-1	0
		100	0	22.80	22.96	22.50	22.47	22.54	0-1	0
	16QAM	1	0	22.87	22.50	22.49	22.38	22.65	0-1	0
		1	49	22.76	22.30	22.27	22.07	22.35	0-1	0
		1	99	22.94	22.37	22.40	22.26	22.39	0-1	0
		50	0	21.73	21.83	21.54	21.48	21.67	0-2	1
		50	25	21.82	21.64	21.47	21.30	21.62	0-2	1
		50	49	21.75	21.73	21.36	21.40	21.54	0-2	1
		100	0	21.79	21.81	21.45	21.45	21.60	0-2	1
	64QAM	1	0	22.32	22.14	21.85	21.95	22.21	0-2	1
		1	49	22.27	22.09	21.56	21.78	22.02	0-2	1
		1	99	22.25	22.07	21.51	21.82	22.01	0-2	1
		50	0	20.76	20.89	20.56	20.51	20.61	0-3	2
		50	25	20.86	20.73	20.51	20.35	20.60	0-3	2
		50	49	20.81	20.76	20.41	20.44	20.53	0-3	2
		100	0	20.74	20.77	20.49	20.43	20.55	0-3	2
	256QAM	1	0	20.72	20.72	20.35	20.57	20.67	0-2	2
		1	49	20.64	20.54	20.29	20.53	20.63	0-2	2
		1	99	20.64	20.61	20.15	20.46	20.48	0-2	2
50		0	19.90	19.89	19.59	19.48	19.73	0-3	3	
50		25	19.82	19.82	19.53	19.38	19.69	0-3	3	
50		49	19.82	19.81	19.51	19.46	19.57	0-3	3	
100		0	19.78	19.78	19.48	19.48	19.60	0-3	3	

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

[LTE Band 66 Conducted Power]

LTE Band 66 _ 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131979 Ch. 1710.7 MHz	132322 Ch. 1745 MHz	132665 Ch. 1779.3 MHz		
1.4 MHz	QPSK	1	0	20.09	19.89	19.60	0	0
		1	3	19.94	19.86	19.71	0	0
		1	5	20.23	19.95	19.60	0	0
		3	0	20.04	19.90	19.71	0	0
		3	1	20.09	20.07	19.70	0	0
		3	3	20.12	19.94	19.75	0	0
		6	0	20.15	19.96	19.82	0-1	0
	16QAM	1	0	20.42	20.14	19.78	0-1	0
		1	3	20.15	20.02	19.80	0-1	0
		1	5	20.21	20.17	19.86	0-1	0
		3	0	20.21	19.97	19.71	0-1	0
		3	1	20.06	20.14	19.75	0-1	0
		3	3	20.16	19.81	19.58	0-1	0
		6	0	20.13	19.90	19.60	0-2	0
	64QAM	1	0	20.42	20.12	19.57	0-2	0
		1	3	19.97	19.95	19.66	0-2	0
		1	5	20.25	19.82	19.82	0-2	0
		3	0	20.13	20.01	19.65	0-2	0
		3	1	20.20	20.02	19.71	0-2	0
		3	3	20.24	19.90	19.66	0-2	0
		6	0	20.04	20.00	19.69	0-3	0
	256QAM	1	0	18.54	18.40	17.95	0-2	1
		1	3	18.31	18.37	17.93	0-2	1
		1	5	18.41	18.46	18.07	0-2	1
		3	0	18.24	18.32	18.02	0-2	1
		3	1	18.57	18.45	18.01	0-2	1
		3	3	18.36	18.34	17.95	0-2	1
		6	0	18.35	18.38	18.03	0-3	1

LTE Band 66 _ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131987 Ch. 1711.5 MHz	132322 Ch. 1745 MHz	132657 Ch. 1778.5 MHz		
3 MHz	QPSK	1	0	20.06	19.93	19.55	0	0
		1	7	20.04	19.86	19.69	0	0
		1	14	20.08	19.97	19.69	0	0
		8	0	20.10	20.03	19.71	0-1	0
		8	3	19.98	20.10	19.61	0-1	0
		8	7	20.15	19.95	19.75	0-1	0
		15	0	20.10	20.00	19.65	0-1	0
	16QAM	1	0	20.33	20.07	19.89	0-1	0
		1	7	20.07	20.00	19.74	0-1	0
		1	14	20.24	20.24	19.86	0-1	0
		8	0	20.17	19.88	19.58	0-2	0
		8	3	20.00	20.17	19.76	0-2	0
		8	7	20.12	19.80	19.56	0-2	0
		15	0	20.20	20.01	19.71	0-2	0
	64QAM	1	0	20.27	20.04	19.73	0-2	0
		1	7	20.07	19.98	19.63	0-2	0
		1	14	20.24	19.90	19.88	0-2	0
		8	0	20.19	19.92	19.54	0-3	0
		8	3	20.24	20.07	19.67	0-3	0
		8	7	20.08	19.88	19.55	0-3	0
		15	0	20.04	19.95	19.68	0-3	0
	256QAM	1	0	18.52	18.46	18.13	0-2	1
		1	7	18.46	18.49	17.98	0-2	1
		1	14	18.41	18.48	18.03	0-2	1
		8	0	18.32	18.24	18.05	0-3	1
		8	3	18.57	18.50	17.99	0-3	1
		8	7	18.21	18.30	18.08	0-3	1
15		0	18.46	18.26	17.96	0-3	1	

LTE Band 66 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131997 Ch. 1712.5 MHz	132322Ch. 1745 MHz	132647 Ch. 1777.5 MHz		
5 MHz	QPSK	1	0	20.03	19.83	19.50	0	0
		1	12	19.91	19.83	19.57	0	0
		1	24	20.04	19.81	19.53	0	0
		12	0	19.98	19.87	19.51	0-1	0
		12	6	19.95	19.97	19.60	0-1	0
		12	11	19.99	19.83	19.63	0-1	0
		25	0	20.02	19.87	19.63	0-1	0
	16QAM	1	0	20.26	20.07	19.72	0-1	0
		1	12	19.96	19.95	19.73	0-1	0
		1	24	20.16	20.04	19.75	0-1	0
		12	0	20.08	19.86	19.51	0-2	0
		12	6	19.98	19.99	19.57	0-2	0
		12	11	20.08	19.77	19.53	0-2	0
		25	0	20.02	19.89	19.58	0-2	0
	64QAM	1	0	20.25	20.00	19.55	0-2	0
		1	12	19.96	19.89	19.54	0-2	0
		1	24	20.15	19.80	19.75	0-2	0
		12	0	20.08	19.86	19.53	0-3	0
		12	6	20.15	19.93	19.54	0-3	0
		12	11	20.04	19.87	19.52	0-3	0
		25	0	20.02	19.93	19.54	0-3	0
	256QAM	1	0	18.41	18.36	17.95	0-2	1
		1	12	18.27	18.34	17.87	0-2	1
		1	24	18.33	18.34	17.97	0-2	1
12		0	18.22	18.12	17.92	0-3	1	
12		6	18.38	18.30	17.96	0-3	1	
12		11	18.16	18.27	17.89	0-3	1	
25		0	18.26	18.22	17.92	0-3	1	

LTE Band 66 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132022 Ch. 1715 MHz	132322 Ch. 1745 MHz	132622 Ch. 1775 MHz		
10 MHz	QPSK	1	0	20.05	19.92	19.68	0	0
		1	24	19.93	19.92	19.60	0	0
		1	49	20.14	19.86	19.55	0	0
		25	0	20.09	19.93	19.60	0-1	0
		25	12	20.06	20.14	19.76	0-1	0
		25	24	20.13	20.01	19.66	0-1	0
		50	0	20.06	19.92	19.78	0-1	0
	16QAM	1	0	20.29	20.27	19.82	0-1	0
		1	24	19.96	20.14	19.83	0-1	0
		1	49	20.20	20.16	19.78	0-1	0
		25	0	20.17	20.05	19.70	0-2	0
		25	12	20.08	20.15	19.67	0-2	0
		25	24	20.25	19.86	19.64	0-2	0
		50	0	20.05	20.05	19.61	0-2	0
	64QAM	1	0	20.39	20.06	19.75	0-2	0
		1	24	20.08	20.05	19.64	0-2	0
		1	49	20.19	19.98	19.79	0-2	0
		25	0	20.08	20.01	19.63	0-3	0
		25	12	20.31	20.01	19.61	0-3	0
		25	24	20.24	19.96	19.52	0-3	0
		50	0	20.06	19.95	19.58	0-3	0
	256QAM	1	0	18.43	18.47	18.03	0-2	1
		1	24	18.27	18.51	17.99	0-2	1
		1	49	18.53	18.40	18.12	0-2	1
25		0	18.28	18.26	18.05	0-3	1	
25		12	18.58	18.40	18.16	0-3	1	
25		24	18.28	18.37	18.06	0-3	1	
50		0	18.37	18.38	18.08	0-3	1	

LTE Band 66 _ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132047 Ch. 1717.5 MHz	132322 Ch. 1745 MHz	132597 Ch. 1772.5 MHz		
15 MHz	QPSK	1	0	20.10	19.89	19.57	0	0
		1	36	20.07	19.90	19.77	0	0
		1	74	20.16	19.97	19.71	0	0
		36	0	20.16	20.05	19.57	0-1	0
		36	18	19.97	20.13	19.61	0-1	0
		36	39	20.15	20.01	19.76	0-1	0
		75	0	20.05	19.93	19.70	0-1	0
	16QAM	1	0	20.27	20.25	19.89	0-1	0
		1	36	20.04	20.05	19.93	0-1	0
		1	74	20.34	20.08	19.78	0-1	0
		36	0	20.17	19.99	19.67	0-2	0
		36	18	20.04	20.12	19.58	0-2	0
		36	39	20.19	19.86	19.62	0-2	0
		75	0	20.19	20.09	19.66	0-2	0
	64QAM	1	0	20.43	20.15	19.72	0-2	0
		1	36	20.06	19.90	19.54	0-2	0
		1	74	20.24	19.99	19.91	0-2	0
		36	0	20.13	19.96	19.69	0-3	0
		36	18	20.25	19.98	19.74	0-3	0
		36	39	20.10	19.98	19.67	0-3	0
		75	0	20.19	19.97	19.55	0-3	0
	256QAM	1	0	18.51	18.38	17.98	0-2	1
		1	36	18.38	18.40	17.98	0-2	1
		1	74	18.43	18.35	18.15	0-2	1
36		0	18.30	18.20	18.01	0-3	1	
36		18	18.47	18.37	17.99	0-3	1	
36		39	18.30	18.35	18.09	0-3	1	
75		0	18.44	18.26	17.95	0-3	1	

LTE Band 66 _ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 MHz	132322 Ch. 1745 MHz	132572 Ch. 1770 MHz		
20 MHz	QPSK	1	0	20.20	19.87	19.57	0	0
		1	49	19.94	19.86	19.70	0	0
		1	99	20.16	19.92	19.69	0	0
		50	0	20.12	19.89	19.60	0-1	0
		50	25	20.15	20.14	19.72	0-1	0
		50	49	20.18	19.85	19.66	0-1	0
		100	0	20.20	19.91	19.79	0-1	0
	16QAM	1	0	20.31	20.15	19.81	0-1	0
		1	49	19.99	20.05	19.78	0-1	0
		1	99	20.21	20.09	19.84	0-1	0
		50	0	20.17	20.04	19.67	0-2	0
		50	25	20.05	20.13	19.65	0-2	0
		50	49	20.18	19.92	19.73	0-2	0
		100	0	20.20	19.96	19.69	0-2	0
	64QAM	1	0	20.26	20.12	19.68	0-2	0
		1	49	20.15	19.95	19.63	0-2	0
		1	99	20.33	19.94	19.83	0-2	0
		50	0	20.14	19.95	19.54	0-3	0
		50	25	20.17	20.11	19.66	0-3	0
		50	49	20.17	20.01	19.71	0-3	0
		100	0	20.09	19.96	19.69	0-3	0
	256QAM	1	0	18.43	18.49	17.96	0-2	1
		1	49	18.34	18.34	18.01	0-2	1
		1	99	18.38	18.45	18.01	0-2	1
50		0	18.39	18.16	18.04	0-3	1	
50		25	18.48	18.46	17.96	0-3	1	
50		49	18.16	18.37	17.98	0-3	1	
100		0	18.26	18.31	18.00	0-3	1	

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

11.3.3 LTE Reduced Power (Grip sensor-on, Ear jack activated)

LTE Band 2 _ 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18607 Ch. 1850.7 MHz	18900 Ch. 1880 MHz	19193 Ch. 1909.3 MHz		
1.4 MHz	QPSK	1	0	19.31	19.70	19.36	0	0
		1	3	19.30	19.71	19.33	0	0
		1	5	19.34	19.72	19.34	0	0
		3	0	19.24	19.65	19.28	0	0
		3	1	19.38	19.80	19.49	0	0
		3	3	19.33	19.76	19.38	0	0
		6	0	19.28	19.70	19.37	0-1	0
	16QAM	1	0	19.58	19.87	19.51	0-1	0
		1	3	19.37	19.78	19.42	0-1	0
		1	5	19.54	19.90	19.61	0-1	0
		3	0	19.39	19.83	19.43	0-1	0
		3	1	19.55	19.89	19.54	0-1	0
		3	3	19.39	19.72	19.46	0-1	0
		6	0	19.33	19.84	19.46	0-2	0
	64QAM	1	0	19.49	19.92	19.55	0-2	0
		1	3	19.41	19.84	19.54	0-2	0
		1	5	19.55	19.83	19.44	0-2	0
		3	0	19.36	19.75	19.41	0-2	0
		3	1	19.52	19.98	19.51	0-2	0
		3	3	19.39	19.84	19.48	0-2	0
		6	0	19.37	19.78	19.41	0-3	0
	256QAM	1	0	17.74	18.26	17.78	0-2	1
		1	3	17.73	18.03	17.62	0-2	1
		1	5	17.82	18.22	17.83	0-2	1
		3	0	17.72	18.13	17.71	0-2	1
		3	1	17.90	18.32	17.89	0-2	1
		3	3	17.83	18.33	17.91	0-2	1
		6	0	17.71	18.17	17.78	0-3	1

LTE Band 2_ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18615 Ch. 1851.5 MHz	18900 Ch. 1880 MHz	19185 Ch. 1908.5 MHz		
3 MHz	QPSK	1	0	19.33	19.68	19.34	0	0
		1	7	19.25	19.57	19.25	0	0
		1	14	19.29	19.73	19.34	0	0
		8	0	19.41	19.71	19.42	0-1	0
		8	3	19.31	19.74	19.37	0-1	0
		8	7	19.41	19.76	19.39	0-1	0
		15	0	19.41	19.77	19.36	0-1	0
	16QAM	1	0	19.46	19.99	19.61	0-1	0
		1	7	19.54	19.77	19.60	0-1	0
		1	14	19.53	19.86	19.54	0-1	0
		8	0	19.43	19.77	19.40	0-2	0
		8	3	19.42	19.69	19.41	0-2	0
		8	7	19.48	19.84	19.47	0-2	0
		15	0	19.38	19.74	19.40	0-2	0
	64QAM	1	0	19.52	19.85	19.54	0-2	0
		1	7	19.32	19.94	19.31	0-2	0
		1	14	19.46	19.93	19.47	0-2	0
		8	0	19.39	19.75	19.43	0-3	0
		8	3	19.29	19.82	19.32	0-3	0
		8	7	19.34	19.75	19.40	0-3	0
		15	0	19.38	19.75	19.41	0-3	0
	256QAM	1	0	17.80	18.26	17.82	0-2	1
		1	7	17.74	18.14	17.73	0-2	1
		1	14	17.81	18.17	17.72	0-2	1
		8	0	17.75	18.15	17.76	0-3	1
		8	3	17.79	18.18	17.70	0-3	1
		8	7	17.80	18.14	17.75	0-3	1
15		0	17.76	18.20	17.80	0-3	1	

LTE Band 2 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18625 Ch. 1852.5 MHz	18900 Ch. 1880 MHz	19175 Ch. 1907.5 MHz		
5 MHz	QPSK	1	0	19.42	19.75	19.34	0	0
		1	12	19.38	19.74	19.34	0	0
		1	24	19.41	19.70	19.39	0	0
		12	0	19.43	19.77	19.46	0-1	0
		12	6	19.47	19.77	19.41	0-1	0
		12	11	19.48	19.71	19.42	0-1	0
	16QAM	25	0	19.44	19.77	19.43	0-1	0
		1	0	19.53	19.96	19.57	0-1	0
		1	12	19.58	20.02	19.52	0-1	0
		1	24	19.63	19.87	19.57	0-1	0
		12	0	19.47	19.79	19.46	0-2	0
		12	6	19.50	19.78	19.41	0-2	0
	64QAM	12	11	19.46	19.76	19.43	0-2	0
		25	0	19.43	19.74	19.42	0-2	0
		1	0	19.60	19.83	19.56	0-2	0
		1	12	19.64	19.73	19.40	0-2	0
		1	24	19.62	19.90	19.55	0-2	0
		12	0	19.46	19.77	19.43	0-3	0
	256QAM	12	6	19.45	19.77	19.44	0-3	0
		12	11	19.44	19.75	19.43	0-3	0
		25	0	19.44	19.77	19.45	0-3	0
		1	0	17.92	18.30	17.92	0-2	1
		1	12	17.78	18.13	17.77	0-2	1
		1	24	18.01	18.27	17.89	0-2	1
	12	0	17.80	18.17	17.85	0-3	1	
	12	6	17.84	18.14	17.79	0-3	1	
	12	11	17.78	18.13	17.81	0-3	1	
	25	0	17.83	18.22	17.78	0-3	1	

LTE Band 2 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18650 Ch. 1855 MHz	18900 Ch. 1880 MHz	19150 Ch. 1905 MHz		
10 MHz	QPSK	1	0	19.33	19.76	19.35	0	0
		1	24	19.34	19.73	19.40	0	0
		1	49	19.37	19.70	19.43	0	0
		25	0	19.42	19.79	19.49	0-1	0
		25	12	19.41	19.79	19.52	0-1	0
		25	24	19.43	19.75	19.53	0-1	0
		50	0	19.41	19.74	19.48	0-1	0
	16QAM	1	0	19.65	19.97	19.70	0-1	0
		1	24	19.47	19.86	19.60	0-1	0
		1	49	19.60	19.82	19.77	0-1	0
		25	0	19.41	19.80	19.54	0-2	0
		25	12	19.43	19.80	19.51	0-2	0
		25	24	19.40	19.75	19.50	0-2	0
		50	0	19.38	19.78	19.56	0-2	0
	64QAM	1	0	19.61	19.93	19.74	0-2	0
		1	24	19.61	19.96	19.69	0-2	0
		1	49	19.47	19.96	19.66	0-2	0
		25	0	19.38	19.75	19.51	0-3	0
		25	12	19.40	19.70	19.48	0-3	0
		25	24	19.40	19.74	19.47	0-3	0
		50	0	19.43	19.80	19.47	0-3	0
	256QAM	1	0	17.99	18.26	17.95	0-2	1
		1	24	17.90	18.20	17.98	0-2	1
		1	49	17.91	18.18	18.00	0-2	1
25		0	17.83	18.23	17.89	0-3	1	
25		12	17.81	18.15	17.89	0-3	1	
25		24	17.83	18.16	17.86	0-3	1	
50		0	17.84	18.19	17.93	0-3	1	

LTE Band 2 _ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18675 Ch. 1857.5 MHz	18900 Ch. 1880 MHz	19125 Ch. 1902.5 MHz		
15 MHz	QPSK	1	0	19.52	19.77	19.42	0	0
		1	36	19.29	19.62	19.29	0	0
		1	74	19.49	19.71	19.44	0	0
		36	0	19.56	19.79	19.53	0-1	0
		36	18	19.55	19.79	19.48	0-1	0
		36	39	19.53	19.78	19.48	0-1	0
		75	0	19.52	19.76	19.49	0-1	0
	16QAM	1	0	19.84	19.97	19.76	0-1	0
		1	36	19.65	19.89	19.57	0-1	0
		1	74	19.64	19.93	19.60	0-1	0
		36	0	19.52	19.76	19.47	0-2	0
		36	18	19.52	19.75	19.44	0-2	0
		36	39	19.47	19.78	19.47	0-2	0
		75	0	19.48	19.75	19.45	0-2	0
	64QAM	1	0	19.61	19.88	19.60	0-2	0
		1	36	19.47	19.83	19.35	0-2	0
		1	74	19.67	19.83	19.48	0-2	0
		36	0	19.51	19.77	19.49	0-3	0
		36	18	19.53	19.77	19.45	0-3	0
		36	39	19.52	19.76	19.49	0-3	0
		75	0	19.48	19.75	19.43	0-3	0
	256QAM	1	0	18.02	18.20	17.94	0-2	1
		1	36	17.87	18.03	17.77	0-2	1
		1	74	18.02	18.19	17.93	0-2	1
		36	0	18.00	18.24	17.91	0-3	1
		36	18	17.92	18.23	17.88	0-3	1
		36	39	17.95	18.19	17.91	0-3	1
75		0	17.95	18.24	17.92	0-3	1	

LTE Band 2 _ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 MHz	18900 Ch. 1880 MHz	19100 Ch. 1900 MHz		
20 MHz	QPSK	1	0	19.44	19.77	19.51	0	0
		1	49	19.40	19.70	19.55	0	0
		1	99	19.41	19.72	19.56	0	0
		50	0	19.47	19.81	19.62	0-1	0
		50	25	19.47	19.82	19.63	0-1	0
		50	49	19.47	19.77	19.63	0-1	0
		100	0	19.49	19.80	19.60	0-1	0
	16QAM	1	0	19.61	20.01	19.75	0-1	0
		1	49	19.47	19.91	19.70	0-1	0
		1	99	19.66	19.93	19.73	0-1	0
		50	0	19.47	19.82	19.60	0-2	0
		50	25	19.44	19.79	19.55	0-2	0
		50	49	19.45	19.76	19.57	0-2	0
		100	0	19.43	19.73	19.61	0-2	0
	64QAM	1	0	19.63	19.97	19.78	0-2	0
		1	49	19.53	19.94	19.75	0-2	0
		1	99	19.53	19.90	19.63	0-2	0
		50	0	19.46	19.80	19.63	0-3	0
		50	25	19.45	19.79	19.62	0-3	0
		50	49	19.44	19.74	19.61	0-3	0
		100	0	19.41	19.77	19.59	0-3	0
	256QAM	1	0	18.03	18.24	18.09	0-2	1
		1	49	17.99	18.22	18.07	0-2	1
		1	99	18.06	18.27	18.00	0-2	1
50		0	17.88	18.26	18.05	0-3	1	
50		25	17.92	18.25	18.03	0-3	1	
50		49	17.91	18.20	18.03	0-3	1	
100		0	17.90	18.20	18.00	0-3	1	

[LTE Band 4 Conducted Power]

LTE Band 4 _ 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19957 Ch. 1710.7 MHz	20175 Ch. 1732.5 MHz	20393 Ch. 1754.3 MHz		
1.4 MHz	QPSK	1	0	19.77	19.69	19.59	0	0
		1	3	19.72	19.71	19.59	0	0
		1	5	19.71	19.70	19.60	0	0
		3	0	19.71	19.68	19.52	0	0
		3	1	19.84	19.84	19.67	0	0
		3	3	19.77	19.77	19.63	0	0
	16QAM	6	0	19.63	19.71	19.58	0-1	0
		1	0	19.95	20.00	19.77	0-1	0
		1	3	19.80	19.76	19.70	0-1	0
		1	5	19.88	20.01	19.77	0-1	0
		3	0	19.74	19.78	19.64	0-1	0
		3	1	19.89	19.74	19.80	0-1	0
	64QAM	3	3	19.83	19.81	19.62	0-1	0
		6	0	19.70	19.76	19.53	0-2	0
		1	0	19.90	19.84	19.64	0-2	0
		1	3	19.82	19.82	19.62	0-2	0
		1	5	19.92	19.88	19.77	0-2	0
		3	0	19.75	19.73	19.63	0-2	0
	256QAM	3	1	19.94	19.87	19.87	0-2	0
		3	3	19.88	19.81	19.67	0-2	0
		6	0	19.75	19.74	19.63	0-3	0
		1	0	18.10	18.25	18.11	0-2	1
		1	3	17.94	18.15	17.95	0-2	1
		1	5	18.07	18.19	18.19	0-2	1
	3	0	17.94	18.07	18.00	0-2	1	
	3	1	18.10	18.26	18.15	0-2	1	
	3	3	18.04	18.14	18.10	0-2	1	
	6	0	17.87	18.07	17.92	0-3	1	

LTE Band 4 _ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average 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	19.68	19.70	19.55	0	0
		1	7	19.63	19.63	19.55	0	0
		1	14	19.71	19.71	19.54	0	0
		8	0	19.76	19.74	19.64	0-1	0
		8	3	19.70	19.72	19.63	0-1	0
		8	7	19.76	19.79	19.65	0-1	0
		15	0	19.75	19.76	19.66	0-1	0
	16QAM	1	0	19.90	19.92	19.78	0-1	0
		1	7	19.86	19.91	19.63	0-1	0
		1	14	19.88	19.91	19.76	0-1	0
		8	0	19.77	19.81	19.65	0-2	0
		8	3	19.74	19.75	19.58	0-2	0
		8	7	19.81	19.81	19.64	0-2	0
		15	0	19.74	19.81	19.69	0-2	0
	64QAM	1	0	19.87	19.90	19.69	0-2	0
		1	7	19.86	19.88	19.67	0-2	0
		1	14	19.90	19.81	19.76	0-2	0
		8	0	19.72	19.72	19.63	0-3	0
		8	3	19.70	19.67	19.61	0-3	0
		8	7	19.69	19.76	19.65	0-3	0
		15	0	19.74	19.77	19.62	0-3	0
	256QAM	1	0	18.21	18.33	17.98	0-2	1
		1	7	17.90	18.09	17.87	0-2	1
		1	14	18.03	18.12	18.04	0-2	1
		8	0	17.89	18.06	17.99	0-3	1
		8	3	17.93	18.07	17.92	0-3	1
		8	7	17.91	18.05	18.00	0-3	1
15		0	17.96	18.05	17.99	0-3	1	

LTE Band 4 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19975 Ch. 1712.5 MHz	20175 Ch. 1732.5 MHz	20375 Ch. 1752.5 MHz		
5 MHz	QPSK	1	0	19.69	19.75	19.55	0	0
		1	12	19.63	19.65	19.51	0	0
		1	24	19.69	19.73	19.55	0	0
		12	0	19.75	19.77	19.63	0-1	0
		12	6	19.73	19.83	19.60	0-1	0
		12	11	19.73	19.77	19.59	0-1	0
		25	0	19.73	19.77	19.60	0-1	0
	16QAM	1	0	19.91	19.96	19.71	0-1	0
		1	12	19.85	19.90	19.80	0-1	0
		1	24	19.94	19.90	19.85	0-1	0
		12	0	19.76	19.80	19.65	0-2	0
		12	6	19.74	19.72	19.55	0-2	0
		12	11	19.77	19.78	19.61	0-2	0
		25	0	19.72	19.73	19.55	0-2	0
	64QAM	1	0	19.81	19.90	19.80	0-2	0
		1	12	19.69	19.86	19.74	0-2	0
		1	24	19.82	19.95	19.66	0-2	0
		12	0	19.74	19.79	19.62	0-3	0
		12	6	19.71	19.77	19.59	0-3	0
		12	11	19.71	19.76	19.60	0-3	0
		25	0	19.68	19.75	19.53	0-3	0
	256QAM	1	0	17.95	18.22	18.09	0-2	1
		1	12	18.02	18.17	18.13	0-2	1
		1	24	18.15	18.19	18.02	0-2	1
12		0	18.01	18.11	17.93	0-3	1	
12		6	17.96	18.11	17.93	0-3	1	
12		11	18.00	18.11	17.98	0-3	1	
25		0	17.94	18.08	17.93	0-3	1	

LTE Band 4 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20000 Ch. 1715 MHz	20175 Ch. 1732.5 MHz	20350 Ch. 1750 MHz		
10 MHz	QPSK	1	0	19.80	19.81	19.69	0	0
		1	24	19.75	19.70	19.64	0	0
		1	49	19.77	19.74	19.69	0	0
		25	0	19.83	19.82	19.76	0-1	0
		25	12	19.80	19.78	19.72	0-1	0
		25	24	19.81	19.79	19.73	0-1	0
		50	0	19.91	19.82	19.84	0-1	0
	16QAM	1	0	19.98	20.07	19.97	0-1	0
		1	24	19.78	19.95	19.84	0-1	0
		1	49	20.04	20.14	19.96	0-1	0
		25	0	19.80	19.80	19.71	0-2	0
		25	12	19.74	19.82	19.72	0-2	0
		25	24	19.75	19.76	19.71	0-2	0
		50	0	19.84	19.80	19.74	0-2	0
	64QAM	1	0	19.90	19.84	19.87	0-2	0
		1	24	19.97	19.90	19.83	0-2	0
		1	49	19.90	19.87	19.72	0-2	0
		25	0	19.76	19.82	19.67	0-3	0
		25	12	19.73	19.77	19.72	0-3	0
		25	24	19.72	19.75	19.68	0-3	0
		50	0	19.83	19.85	19.74	0-3	0
	256QAM	1	0	18.14	18.26	18.10	0-2	1
		1	24	18.06	18.13	18.09	0-2	1
		1	49	18.11	18.19	18.18	0-2	1
25		0	18.02	18.15	18.04	0-3	1	
25		12	18.02	18.12	18.04	0-3	1	
25		24	18.05	18.12	18.06	0-3	1	
50		0	18.19	18.18	18.18	0-3	1	

LTE Band 4 _ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20025 Ch. 1717.5 MHz	20175 Ch. 1732.5 MHz	20325 Ch. 1747.5 MHz		
15 MHz	QPSK	1	0	19.77	19.83	19.68	0	0
		1	36	19.66	19.71	19.63	0	0
		1	74	19.76	19.76	19.67	0	0
		36	0	19.87	19.84	19.76	0-1	0
		36	18	19.84	19.81	19.75	0-1	0
		36	39	19.81	19.84	19.73	0-1	0
		75	0	19.83	19.80	19.74	0-1	0
	16QAM	1	0	20.03	20.07	19.90	0-1	0
		1	36	19.94	19.90	19.85	0-1	0
		1	74	20.08	19.91	19.80	0-1	0
		36	0	19.76	19.83	19.72	0-2	0
		36	18	19.77	19.83	19.71	0-2	0
		36	39	19.78	19.80	19.71	0-2	0
		75	0	19.77	19.82	19.72	0-2	0
	64QAM	1	0	19.95	20.00	19.91	0-2	0
		1	36	19.65	19.80	19.78	0-2	0
		1	74	19.92	19.85	19.78	0-2	0
		36	0	19.77	19.83	19.75	0-3	0
		36	18	19.76	19.85	19.76	0-3	0
		36	39	19.80	19.79	19.70	0-3	0
		75	0	19.77	19.79	19.71	0-3	0
	256QAM	1	0	18.08	18.40	18.20	0-2	1
		1	36	18.07	18.13	18.00	0-2	1
		1	74	18.30	18.18	18.16	0-2	1
		36	0	18.19	18.29	18.16	0-3	1
		36	18	18.21	18.24	18.12	0-3	1
		36	39	18.22	18.24	18.15	0-3	1
75		0	18.21	18.24	18.12	0-3	1	

LTE Band 4 _ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				20175 Ch. 1732.5 MHz		
20 MHz	QPSK	1	0	19.84	0	0
		1	49	19.77	0	0
		1	99	19.76	0	0
		50	0	19.88	0-1	0
		50	25	19.89	0-1	0
		50	49	19.83	0-1	0
		100	0	19.86	0-1	0
	16QAM	1	0	19.97	0-1	0
		1	49	20.00	0-1	0
		1	99	19.91	0-1	0
		50	0	19.88	0-2	0
		50	25	19.82	0-2	0
		50	49	19.79	0-2	0
		100	0	19.82	0-2	0
	64QAM	1	0	19.99	0-2	0
		1	49	20.01	0-2	0
		1	99	19.97	0-2	0
		50	0	19.84	0-3	0
		50	25	19.85	0-3	0
		50	49	19.85	0-3	0
		100	0	19.84	0-3	0
	256QAM	1	0	18.38	0-2	1
		1	49	18.30	0-2	1
		1	99	18.17	0-2	1
		50	0	18.24	0-3	1
		50	25	18.19	0-3	1
		50	49	18.20	0-3	1
		100	0	18.26	0-3	1

[LTE Band 25 Conducted Power]
 LTE Band 25 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26047 Ch. 1850.7 MHz	26365 Ch. 1882.5 MHz	26683 Ch. 1914.3 MHz		
1.4 MHz	QPSK	1	0	19.33	19.66	19.51	0	0
		1	3	19.31	19.67	19.55	0	0
		1	5	19.34	19.70	19.51	0	0
		3	0	19.35	19.67	19.49	0	0
		3	1	19.50	19.80	19.61	0	0
		3	3	19.45	19.74	19.58	0	0
	16QAM	6	0	19.40	19.69	19.46	0-1	0
		1	0	19.69	19.97	19.64	0-1	0
		1	3	19.52	19.84	19.58	0-1	0
		1	5	19.59	19.98	19.75	0-1	0
		3	0	19.47	19.80	19.59	0-1	0
		3	1	19.54	19.85	19.64	0-1	0
	64QAM	3	3	19.53	19.74	19.63	0-1	0
		6	0	19.47	19.77	19.58	0-2	0
		1	0	19.67	19.85	19.68	0-2	0
		1	3	19.52	19.73	19.62	0-2	0
		1	5	19.52	19.85	19.67	0-2	0
		3	0	19.41	19.78	19.58	0-2	0
	256QAM	3	1	19.58	19.90	19.73	0-2	0
		3	3	19.50	19.84	19.72	0-2	0
		6	0	19.45	19.72	19.53	0-3	0
		1	0	17.98	18.38	18.26	0-2	1
		1	3	18.02	18.23	18.02	0-2	1
		1	5	18.13	18.41	18.09	0-2	1
		3	0	18.00	18.37	18.08	0-2	1
		3	1	18.09	18.46	18.14	0-2	1
	3	3	18.06	18.42	18.16	0-2	1	
			6	0	17.97	18.36	18.04	0-3

LTE Band 25 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26055 Ch. 1851.5 MHz	26365 Ch. 1882.5 MHz	26675 Ch. 1913.5 MHz		
3 MHz	QPSK	1	0	19.33	19.67	19.45	0	0
		1	7	19.28	19.61	19.40	0	0
		1	14	19.36	19.66	19.46	0	0
		8	0	19.43	19.75	19.49	0-1	0
		8	3	19.39	19.70	19.50	0-1	0
		8	7	19.44	19.79	19.55	0-1	0
	16QAM	15	0	19.42	19.73	19.54	0-1	0
		1	0	19.62	19.85	19.66	0-1	0
		1	7	19.47	19.90	19.69	0-1	0
		1	14	19.50	19.88	19.71	0-1	0
		8	0	19.48	19.79	19.55	0-2	0
		8	3	19.42	19.76	19.52	0-2	0
	64QAM	8	7	19.44	19.82	19.58	0-2	0
		15	0	19.40	19.72	19.56	0-2	0
		1	0	19.55	19.92	19.55	0-2	0
		1	7	19.39	19.85	19.52	0-2	0
		1	14	19.51	19.85	19.54	0-2	0
		8	0	19.39	19.74	19.52	0-3	0
	256QAM	8	3	19.44	19.77	19.48	0-3	0
		8	7	19.48	19.76	19.52	0-3	0
		15	0	19.45	19.75	19.53	0-3	0
		1	0	18.08	18.47	18.10	0-2	1
		1	7	17.93	18.30	18.02	0-2	1
		1	14	18.04	18.33	18.04	0-2	1
		8	0	17.96	18.24	17.98	0-3	1
		8	3	17.96	18.29	17.92	0-3	1
	8	7	17.95	18.29	18.02	0-3	1	
	15	0	17.90	18.24	17.93	0-3	1	

LTE Band 25 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26065 Ch. 1852.5 MHz	26365 Ch. 1882.5 MHz	26665 Ch. 1912.5 MHz		
5 MHz	QPSK	1	0	19.36	19.72	19.52	0	0
		1	12	19.32	19.67	19.40	0	0
		1	24	19.35	19.68	19.50	0	0
		12	0	19.45	19.75	19.58	0-1	0
		12	6	19.46	19.73	19.53	0-1	0
		12	11	19.43	19.75	19.56	0-1	0
	16QAM	25	0	19.44	19.72	19.57	0-1	0
		1	0	19.63	19.97	19.72	0-1	0
		1	12	19.50	19.76	19.70	0-1	0
		1	24	19.53	19.91	19.73	0-1	0
		12	0	19.45	19.77	19.59	0-2	0
		12	6	19.40	19.77	19.53	0-2	0
	64QAM	12	11	19.42	19.80	19.55	0-2	0
		25	0	19.35	19.76	19.57	0-2	0
		1	0	19.57	19.91	19.64	0-2	0
		1	12	19.40	19.74	19.62	0-2	0
		1	24	19.58	19.85	19.69	0-2	0
		12	0	19.43	19.76	19.58	0-3	0
	256QAM	12	6	19.42	19.80	19.58	0-3	0
		12	11	19.43	19.79	19.57	0-3	0
		25	0	19.41	19.73	19.55	0-3	0
		1	0	18.01	18.49	18.22	0-2	1
		1	12	18.00	18.19	18.06	0-2	1
		1	24	18.00	18.31	18.09	0-2	1
		12	0	17.94	18.32	18.04	0-3	1
		12	6	17.96	18.27	18.03	0-3	1
		12	11	17.94	18.34	18.01	0-3	1
		25	0	17.94	18.32	18.06	0-3	1

LTE Band 25 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26090 Ch. 1855 MHz	26365 Ch. 1882.5 MHz	26640 Ch. 1910 MHz		
10 MHz	QPSK	1	0	19.46	19.73	19.46	0	0
		1	24	19.44	19.71	19.45	0	0
		1	49	19.44	19.73	19.46	0	0
		25	0	19.53	19.79	19.50	0-1	0
		25	12	19.52	19.75	19.45	0-1	0
		25	24	19.51	19.78	19.49	0-1	0
	16QAM	50	0	19.53	19.79	19.52	0-1	0
		1	0	19.72	19.97	19.68	0-1	0
		1	24	19.45	19.97	19.42	0-1	0
		1	49	19.63	19.95	19.66	0-1	0
		25	0	19.53	19.76	19.53	0-2	0
		25	12	19.49	19.77	19.52	0-2	0
	64QAM	25	24	19.45	19.74	19.50	0-2	0
		50	0	19.51	19.77	19.49	0-2	0
		1	0	19.54	19.84	19.61	0-2	0
		1	24	19.60	19.87	19.52	0-2	0
		1	49	19.55	19.87	19.63	0-2	0
		25	0	19.46	19.79	19.47	0-3	0
	256QAM	25	12	19.44	19.76	19.49	0-3	0
		25	24	19.43	19.76	19.48	0-3	0
		50	0	19.56	19.81	19.51	0-3	0
		1	0	18.18	18.42	18.23	0-2	1
		1	24	18.15	18.47	18.22	0-2	1
		1	49	18.15	18.43	18.12	0-2	1
		25	0	18.03	18.33	18.05	0-3	1
		25	12	18.03	18.35	18.00	0-3	1
		25	24	17.99	18.31	17.96	0-3	1
		50	0	18.04	18.26	17.99	0-3	1

LTE Band 25 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26115 Ch. 1857.5 MHz	26365 Ch. 1882.5 MHz	26615 Ch. 1907.5 MHz		
15	QPSK	1	0	19.46	19.76	19.41	0	0
		1	36	19.35	19.61	19.41	0	0
		1	74	19.44	19.73	19.50	0	0
		36	0	19.53	19.81	19.56	0-1	0
		36	18	19.50	19.81	19.55	0-1	0
		36	39	19.55	19.81	19.54	0-1	0
	16QAM	75	0	19.56	19.79	19.53	0-1	0
		1	0	19.69	19.98	19.66	0-1	0
		1	36	19.57	19.81	19.65	0-1	0
		1	74	19.66	19.92	19.72	0-1	0
		36	0	19.50	19.80	19.55	0-2	0
		36	18	19.48	19.76	19.54	0-2	0
	64QAM	36	39	19.47	19.79	19.52	0-2	0
		75	0	19.49	19.73	19.51	0-2	0
		1	0	19.66	19.92	19.68	0-2	0
		1	36	19.51	19.66	19.41	0-2	0
		1	74	19.53	19.80	19.68	0-2	0
		36	0	19.47	19.81	19.54	0-3	0
	256QAM	36	18	19.51	19.76	19.53	0-3	0
		36	39	19.47	19.75	19.54	0-3	0
		75	0	19.48	19.77	19.50	0-3	0
		1	0	18.29	18.56	18.20	0-2	1
		1	36	17.99	18.36	18.05	0-2	1
		1	74	18.01	18.33	18.08	0-2	1
		36	0	18.00	18.33	18.08	0-3	1
		36	18	17.99	18.28	18.08	0-3	1
		36	39	18.01	18.25	18.05	0-3	1
		75	0	17.99	18.28	18.05	0-3	1

LTE Band 25 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				26140 Ch. 1860 MHz	26365 Ch. 1882.5 MHz	26590 Ch. 1905 MHz		
20 MHz	QPSK	1	0	19.64	19.77	19.52	0	0
		1	49	19.56	19.69	19.48	0	0
		1	99	19.60	19.74	19.50	0	0
		50	0	19.72	19.82	19.58	0-1	0
		50	25	19.71	19.79	19.57	0-1	0
		50	49	19.68	19.78	19.55	0-1	0
	100	0	19.67	19.78	19.55	0-1	0	
	16QAM	1	0	19.81	19.99	19.61	0-1	0
		1	49	19.67	19.81	19.64	0-1	0
		1	99	19.82	20.01	19.66	0-1	0
		50	0	19.71	19.79	19.52	0-2	0
		50	25	19.65	19.74	19.51	0-2	0
		50	49	19.62	19.76	19.54	0-2	0
	100	0	19.60	19.77	19.52	0-2	0	
	64QAM	1	0	19.70	19.92	19.68	0-2	0
		1	49	19.72	19.84	19.62	0-2	0
		1	99	19.63	19.81	19.61	0-2	0
		50	0	19.68	19.78	19.53	0-3	0
		50	25	19.68	19.80	19.52	0-3	0
		50	49	19.65	19.77	19.54	0-3	0
	100	0	19.64	19.75	19.51	0-3	0	
	256QAM	1	0	18.30	18.50	18.25	0-2	1
		1	49	18.32	18.39	18.22	0-2	1
		1	99	18.21	18.37	18.06	0-2	1
		50	0	18.13	18.29	18.01	0-3	1
		50	25	18.09	18.23	17.96	0-3	1
		50	49	18.14	18.23	17.97	0-3	1
	100	0	18.13	18.26	17.97	0-3	1	

[LTE Band 41 Conducted Power] - Power Class 3
 LTE Band 41 5 MHz Bandwidth - Power Class 3

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per GPP [dB]	MPR [dB]
				39675 Ch. 2498.5 MHz	40148 Ch. 2545.8 MHz	40620 Ch. 2593.0 MHz	41093 Ch. 2640.3 MHz	41565 Ch. 2687.5 MHz		
5 MHz	QPSK	1	0	22.50	22.61	22.46	22.50	22.67	0	0
		1	12	22.65	22.49	22.24	22.81	22.51	0	0
		1	24	22.60	22.76	22.40	22.54	22.68	0	0
		12	0	22.62	22.71	22.42	22.51	22.73	0-1	0
		12	6	22.65	22.79	22.43	22.53	22.73	0-1	0
		12	11	22.68	22.78	22.50	22.54	22.70	0-1	0
		25	0	22.80	22.71	22.49	22.58	22.76	0-1	0
	16QAM	1	0	22.52	22.69	22.37	22.37	22.45	0-1	0
		1	12	22.27	22.74	22.05	22.48	22.21	0-1	0
		1	24	22.57	22.64	22.40	22.26	22.47	0-1	0
		12	0	21.67	21.78	21.41	21.59	21.72	0-2	1
		12	6	21.63	21.74	21.42	21.53	21.69	0-2	1
		12	11	21.65	21.77	21.41	21.53	21.73	0-2	1
		25	0	21.73	21.75	21.46	21.46	21.75	0-2	1
	64QAM	1	0	21.70	21.94	21.55	21.68	21.67	0-2	1
		1	12	21.61	21.84	21.27	21.97	21.43	0-2	1
		1	24	21.66	21.79	21.62	21.71	21.57	0-2	1
		12	0	20.59	20.70	20.50	20.45	20.68	0-3	2
		12	6	20.50	20.80	20.38	20.53	20.70	0-3	2
		12	11	20.61	20.73	20.38	20.46	20.69	0-3	2
		25	0	20.56	20.67	20.52	20.44	20.74	0-3	2
	256QAM	1	0	20.34	20.37	20.13	20.13	20.40	0-2	2
		1	12	20.60	20.38	20.08	20.22	20.09	0-2	2
		1	24	20.32	20.45	20.20	20.17	20.38	0-2	2
		12	0	19.61	19.74	19.44	19.57	19.68	0-3	3
		12	6	19.59	19.84	19.37	19.63	19.75	0-3	3
		12	11	19.67	19.82	19.50	19.67	19.77	0-3	3
		25	0	19.57	19.80	19.54	19.60	19.76	0-3	3

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]
				39700 Ch. 2501 MHz	40160 Ch. 2547 MHz	40620 Ch. 2593 MHz	41080 Ch. 2639 MHz	41540 Ch. 2685 MHz		
10 MHz	QPSK	1	0	22.57	22.74	22.39	22.55	22.64	0	0
		1	24	22.51	22.64	22.33	22.44	22.54	0	0
		1	49	22.58	22.65	22.35	22.45	22.53	0	0
		25	0	22.63	22.73	22.46	22.54	22.68	0-1	0
		25	12	22.56	22.76	22.37	22.56	22.59	0-1	0
		25	24	22.63	22.72	22.42	22.49	22.63	0-1	0
		50	0	22.66	22.74	22.47	22.57	22.66	0-1	0
	16QAM	1	0	22.47	22.58	22.44	22.43	22.51	0-1	0
		1	24	22.42	22.47	22.31	22.26	22.34	0-1	0
		1	49	22.50	22.56	22.34	22.32	22.39	0-1	0
		25	0	21.64	21.72	21.44	21.53	21.67	0-2	1
		25	12	21.53	21.75	21.35	21.58	21.61	0-2	1
		25	24	21.60	21.70	21.39	21.50	21.61	0-2	1
		50	0	21.63	21.70	21.44	21.54	21.62	0-2	1
	64QAM	1	0	21.72	21.93	21.58	21.61	21.79	0-2	1
		1	24	21.66	21.78	21.48	21.51	21.67	0-2	1
		1	49	21.73	21.83	21.50	21.48	21.64	0-2	1
		25	0	20.59	20.68	20.42	20.49	20.65	0-3	2
		25	12	20.53	20.72	20.32	20.53	20.57	0-3	2
		25	24	20.57	20.67	20.37	20.47	20.57	0-3	2
		50	0	20.68	20.71	20.47	20.53	20.66	0-3	2
	256QAM	1	0	20.25	20.49	20.20	20.21	20.44	0-2	2
		1	24	20.19	20.42	20.11	20.10	20.36	0-2	2
		1	49	20.24	20.46	20.11	20.13	20.34	0-2	2
		25	0	19.63	19.76	19.49	19.58	19.73	0-3	3
		25	12	19.65	19.76	19.42	19.57	19.63	0-3	3
		25	24	19.64	19.74	19.45	19.57	19.66	0-3	3
		50	0	19.75	19.76	19.54	19.58	19.68	0-3	3

LTE Band 41 15 MHz Bandwidth - Power Class 3

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39725 Ch. 2503.5 MHz	40173 Ch. 2548.3 MHz	40620 Ch. 2593.0 MHz	41068 Ch. 2637.8 MHz	41515 Ch. 2682.5 MHz		
15 MHz	QPSK	1	0	22.66	22.67	22.47	22.47	22.66	0	0
		1	36	22.71	22.74	22.24	22.64	22.44	0	0
		1	74	22.66	22.64	22.42	22.48	22.57	0	0
		36	0	22.71	22.73	22.54	22.55	22.75	0-1	0
		36	18	22.73	22.67	22.53	22.49	22.72	0-1	0
		36	39	22.71	22.71	22.47	22.53	22.66	0-1	0
		75	0	22.71	22.74	22.54	22.54	22.73	0-1	0
	16QAM	1	0	22.71	22.60	22.34	22.54	22.67	0-1	0
		1	36	22.37	22.65	22.07	22.48	22.56	0-1	0
		1	74	22.69	22.58	22.22	22.44	22.54	0-1	0
		36	0	21.67	21.71	21.50	21.52	21.69	0-2	1
		36	18	21.68	21.63	21.50	21.45	21.66	0-2	1
		36	39	21.64	21.67	21.42	21.48	21.61	0-2	1
		75	0	21.65	21.73	21.47	21.54	21.72	0-2	1
	64QAM	1	0	21.74	21.80	21.62	21.62	21.87	0-2	1
		1	36	21.53	21.91	21.29	21.71	21.74	0-2	1
		1	74	21.74	21.65	21.50	21.54	21.73	0-2	1
		36	0	20.67	20.73	20.44	20.54	20.72	0-3	2
		36	18	20.68	20.65	20.47	20.47	20.68	0-3	2
		36	39	20.67	20.69	20.42	20.50	20.65	0-3	2
		75	0	20.66	20.74	20.47	20.53	20.71	0-3	2
	256QAM	1	0	20.40	20.49	20.20	20.27	20.49	0-2	2
		1	36	20.32	20.67	19.78	20.48	20.23	0-2	2
		1	74	20.42	20.40	20.11	20.26	20.33	0-2	2
36		0	19.67	19.76	19.47	19.56	19.72	0-3	3	
36		18	19.65	19.68	19.49	19.51	19.72	0-3	3	
36		39	19.68	19.70	19.43	19.51	19.64	0-3	3	
75		0	19.65	19.74	19.42	19.53	19.70	0-3	3	

LTE Band 41 20 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		
20 MHz	QPSK	1	0	22.70	22.78	22.50	22.59	22.71	0	0
		1	49	22.63	22.64	22.39	22.44	22.61	0	0
		1	99	22.73	22.68	22.40	22.48	22.59	0	0
		50	0	22.88	22.84	22.65	22.61	22.88	0-1	0
		50	25	22.81	22.89	22.49	22.58	22.73	0-1	0
		50	49	22.85	22.82	22.52	22.56	22.72	0-1	0
		100	0	22.89	22.83	22.60	22.57	22.79	0-1	0
	16QAM	1	0	22.61	22.76	22.40	22.44	22.78	0-1	0
		1	49	22.52	22.53	22.25	22.31	22.50	0-1	0
		1	99	22.56	22.51	22.24	22.30	22.51	0-1	0
		50	0	21.91	21.84	21.56	21.57	21.80	0-2	1
		50	25	21.81	21.87	21.51	21.65	21.78	0-2	1
		50	49	21.81	21.79	21.55	21.52	21.67	0-2	1
		100	0	21.90	21.79	21.53	21.57	21.81	0-2	1
	64QAM	1	0	21.91	21.96	21.81	21.82	21.89	0-2	1
		1	49	21.82	21.92	21.54	21.63	21.70	0-2	1
		1	99	21.75	21.89	21.54	21.59	21.72	0-2	1
		50	0	20.82	20.82	20.56	20.68	20.82	0-3	2
		50	25	20.77	20.86	20.53	20.66	20.76	0-3	2
		50	49	20.85	20.75	20.56	20.52	20.75	0-3	2
		100	0	20.81	20.74	20.53	20.52	20.79	0-3	2
	256QAM	1	0	20.50	20.54	20.39	20.33	20.58	0-2	2
		1	49	20.37	20.41	20.27	20.31	20.40	0-2	2
		1	99	20.49	20.40	20.25	20.31	20.42	0-2	2
50		0	19.94	19.85	19.70	19.69	19.86	0-3	3	
50		25	19.87	19.88	19.53	19.66	19.84	0-3	3	
50		49	19.92	19.82	19.63	19.63	19.76	0-3	3	
100		0	19.86	19.72	19.59	19.54	19.72	0-3	3	

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 MHz Bandwidth - Power Class 2

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per GPP [dB]	MPR [dB]
				39675 Ch. 2498.5 MHz	40148 Ch. 2545.8 MHz	40620 Ch. 2593.0 MHz	41093 Ch. 2640.3 MHz	41565 Ch. 2687.5 MHz		
5 MHz	QPSK	1	0	22.68	22.89	22.58	22.64	22.71	0	0
		1	12	22.37	22.85	22.18	22.69	22.51	0	0
		1	24	22.74	22.83	22.48	22.58	22.69	0	0
		12	0	22.73	22.84	22.55	22.72	22.78	0-1	0
		12	6	22.80	22.75	22.58	22.53	22.73	0-1	0
		12	11	22.75	22.82	22.47	22.65	22.68	0-1	0
		25	0	22.76	22.80	22.42	22.69	22.67	0-1	0
	16QAM	1	0	22.94	22.80	22.77	22.71	22.59	0-1	0
		1	12	22.66	22.67	22.45	22.54	22.38	0-1	0
		1	24	22.95	22.81	22.78	22.67	22.58	0-1	0
		12	0	21.69	21.93	21.64	21.62	21.59	0-2	1
		12	6	21.76	21.82	21.59	21.48	21.63	0-2	1
		12	11	21.73	22.02	21.60	21.64	21.59	0-2	1
		25	0	21.74	21.76	21.59	21.77	21.55	0-2	1
	64QAM	1	0	22.07	22.23	21.98	21.69	21.93	0-2	1
		1	12	21.95	22.49	21.75	21.69	21.93	0-2	1
		1	24	22.13	22.39	21.89	21.67	21.96	0-2	1
		12	0	20.71	20.72	20.61	20.53	20.58	0-3	2
		12	6	20.63	20.65	20.61	20.52	20.73	0-3	2
		12	11	20.74	20.77	20.57	20.69	20.82	0-3	2
		25	0	20.61	20.78	20.56	20.59	20.68	0-3	2
	256QAM	1	0	20.60	20.82	20.63	20.20	20.49	0-2	2
		1	12	20.33	20.86	20.34	20.36	20.29	0-2	2
		1	24	20.52	20.85	20.54	20.13	20.46	0-2	2
		12	0	19.75	19.83	19.61	19.66	19.75	0-3	3
		12	6	19.73	19.71	19.64	19.55	19.85	0-3	3
		12	11	19.75	19.78	19.53	19.72	19.78	0-3	3
		25	0	19.72	19.87	19.59	19.70	19.62	0-3	3

LTE Band 41 10 MHz Bandwidth - Power Class 2

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39700 Ch. 2501 MHz	40160 Ch. 2547 MHz	40620 Ch. 2593 MHz	41080 Ch. 2639 MHz	41540 Ch. 2685 MHz		
10 MHz	QPSK	1	0	22.67	22.86	22.57	22.68	22.67	0	0
		1	24	22.67	22.68	22.36	22.56	22.54	0	0
		1	49	22.68	22.81	22.42	22.55	22.54	0	0
		25	0	22.70	22.79	22.47	22.54	22.72	0-1	0
		25	12	22.75	22.72	22.55	22.59	22.62	0-1	0
		25	24	22.68	22.75	22.48	22.57	22.59	0-1	0
		50	0	22.66	22.67	22.55	22.43	22.67	0-1	0
	16QAM	1	0	22.92	22.79	22.45	22.62	22.94	0-1	0
		1	24	22.78	22.68	22.41	22.54	22.72	0-1	0
		1	49	22.85	22.79	22.34	22.63	22.84	0-1	0
		25	0	21.72	21.73	21.42	21.54	21.73	0-2	1
		25	12	21.70	21.79	21.48	21.59	21.65	0-2	1
		25	24	21.60	21.74	21.34	21.51	21.66	0-2	1
		50	0	21.63	21.69	21.48	21.48	21.63	0-2	1
	64QAM	1	0	21.91	22.35	21.86	21.99	22.25	0-2	1
		1	24	22.08	22.20	21.99	21.74	22.24	0-2	1
		1	49	22.09	22.25	21.92	21.76	22.19	0-2	1
		25	0	20.72	20.74	20.48	20.60	20.65	0-3	2
		25	12	20.65	20.61	20.43	20.45	20.64	0-3	2
		25	24	20.58	20.71	20.35	20.49	20.56	0-3	2
		50	0	20.66	20.72	20.49	20.53	20.70	0-3	2
	256QAM	1	0	20.48	20.43	20.46	20.33	20.70	0-2	2
		1	24	20.46	20.45	20.52	20.24	20.67	0-2	2
		1	49	20.56	20.49	20.47	20.23	20.69	0-2	2
		25	0	19.71	19.73	19.53	19.58	19.74	0-3	3
		25	12	19.70	19.71	19.48	19.52	19.71	0-3	3
		25	24	19.73	19.73	19.49	19.65	19.73	0-3	3
		50	0	19.70	19.82	19.59	19.58	19.78	0-3	3

LTE Band 41 15 MHz Bandwidth - Power Class 2

Band width	Modulation	RB Size	RB Offset	Max. Average Power [dBm]					MPR Allowed Per 3GPP [dB]	MPR [dB]
				39725 Ch. 2503.5 MHz	40173 Ch. 2548.3 MHz	40620 Ch. 2593.0 MHz	41068 Ch. 2637.8 MHz	41515 Ch. 2682.5 MHz		
15 MHz	QPSK	1	0	22.76	22.82	22.50	22.48	22.60	0	0
		1	36	22.40	22.87	22.20	22.48	22.32	0	0
		1	74	22.80	22.76	22.44	22.49	22.59	0	0
		36	0	22.68	22.76	22.48	22.45	22.62	0-1	0
		36	18	22.77	22.72	22.51	22.41	22.66	0-1	0
		36	39	22.70	22.79	22.41	22.38	22.57	0-1	0
		75	0	22.72	22.81	22.46	22.43	22.53	0-1	0
	16QAM	1	0	22.75	22.87	22.67	22.73	22.82	0-1	0
		1	36	22.67	22.69	22.32	22.50	22.67	0-1	0
		1	74	22.91	22.81	22.68	22.47	22.72	0-1	0
		36	0	21.60	21.77	21.45	21.49	21.61	0-2	1
		36	18	21.65	21.71	21.48	21.35	21.56	0-2	1
		36	39	21.62	21.69	21.37	21.38	21.52	0-2	1
		75	0	21.73	21.77	21.49	21.45	21.57	0-2	1
	64QAM	1	0	21.99	22.22	21.85	22.03	22.28	0-2	1
		1	36	21.70	22.22	21.39	22.03	22.04	0-2	1
		1	74	21.93	22.12	21.68	21.93	22.15	0-2	1
		36	0	20.73	20.77	20.47	20.52	20.57	0-3	2
		36	18	20.75	20.73	20.55	20.40	20.62	0-3	2
		36	39	20.71	20.74	20.50	20.49	20.49	0-3	2
		75	0	20.67	20.75	20.50	20.48	20.54	0-3	2
	256QAM	1	0	20.43	20.67	20.18	20.56	20.63	0-2	2
		1	36	20.35	20.84	19.83	20.52	20.32	0-2	2
		1	74	20.67	20.63	20.05	20.34	20.43	0-2	2
36		0	19.75	19.78	19.57	19.52	19.71	0-3	3	
36		18	19.72	19.81	19.58	19.45	19.71	0-3	3	
36		39	19.66	19.76	19.53	19.48	19.56	0-3	3	
75		0	19.78	19.71	19.47	19.39	19.57	0-3	3	

LTE Band 41 20 MHz 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 MHz	40185 Ch. 2549.5 MHz	40620 Ch. 2593.0 MHz	41055 Ch. 2636.5 MHz	41490 Ch. 2680.0 MHz		
20 MHz	QPSK	1	0	22.74	22.82	22.54	22.48	22.64	0	0
		1	49	22.74	22.66	22.40	22.35	22.43	0	0
		1	99	22.78	22.68	22.41	22.37	22.47	0	0
		50	0	22.76	22.73	22.39	22.39	22.60	0-1	0
		50	25	22.77	22.64	22.46	22.31	22.56	0-1	0
		50	49	22.74	22.66	22.37	22.32	22.47	0-1	0
		100	0	22.75	22.74	22.42	22.42	22.53	0-1	0
	16QAM	1	0	22.87	22.88	22.49	22.30	22.60	0-1	0
		1	49	22.70	22.27	22.18	22.06	22.26	0-1	0
		1	99	22.87	22.33	22.36	22.19	22.39	0-1	0
		50	0	21.73	21.74	21.44	21.39	21.60	0-2	1
		50	25	21.75	21.63	21.43	21.30	21.55	0-2	1
		50	49	21.70	21.65	21.35	21.35	21.46	0-2	1
		100	0	21.79	21.78	21.43	21.45	21.56	0-2	1
	64QAM	1	0	22.23	22.12	21.84	21.89	22.18	0-2	1
		1	49	22.24	22.00	21.52	21.75	22.02	0-2	1
		1	99	22.21	21.98	21.46	21.73	21.99	0-2	1
		50	0	20.76	20.79	20.49	20.43	20.59	0-3	2
		50	25	20.78	20.68	20.45	20.34	20.54	0-3	2
		50	49	20.72	20.70	20.38	20.36	20.48	0-3	2
		100	0	20.74	20.74	20.40	20.40	20.54	0-3	2
	256QAM	1	0	20.63	20.66	20.28	20.57	20.61	0-2	2
		1	49	20.55	20.54	20.19	20.46	20.54	0-2	2
		1	99	20.60	20.54	20.12	20.41	20.43	0-2	2
50		0	19.81	19.83	19.53	19.45	19.64	0-3	3	
50		25	19.80	19.76	19.52	19.37	19.64	0-3	3	
50		49	19.76	19.76	19.43	19.40	19.52	0-3	3	
100		0	19.70	19.75	19.40	19.38	19.50	0-3	3	

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

[LTE Band 66 Conducted Power]

LTE Band 66 _ 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131979 Ch. 1710.7 MHz	132322 Ch. 1745 MHz	132665 Ch. 1779.3 MHz		
1.4 MHz	QPSK	1	0	19.85	19.62	19.29	0	0
		1	3	19.84	19.66	19.34	0	0
		1	5	19.82	19.69	19.36	0	0
		3	0	19.80	19.71	19.35	0	0
		3	1	19.91	19.83	19.53	0	0
		3	3	19.93	19.75	19.39	0	0
		6	0	19.86	19.72	19.37	0-1	0
	16QAM	1	0	20.14	19.82	19.63	0-1	0
		1	3	19.88	19.76	19.47	0-1	0
		1	5	20.02	19.87	19.50	0-1	0
		3	0	19.89	19.72	19.43	0-1	0
		3	1	19.93	19.80	19.57	0-1	0
		3	3	19.88	19.76	19.48	0-1	0
		6	0	19.95	19.77	19.48	0-2	0
	64QAM	1	0	20.00	19.91	19.52	0-2	0
		1	3	19.91	19.72	19.49	0-2	0
		1	5	19.99	19.91	19.61	0-2	0
		3	0	19.91	19.75	19.44	0-2	0
		3	1	20.06	19.94	19.53	0-2	0
		3	3	19.90	19.78	19.52	0-2	0
		6	0	19.93	19.75	19.48	0-3	0
	256QAM	1	0	18.23	18.11	17.81	0-2	1
		1	3	18.13	18.14	17.86	0-2	1
		1	5	18.29	18.20	17.88	0-2	1
3		0	18.18	18.11	17.83	0-2	1	
3		1	18.24	18.27	17.94	0-2	1	
3		3	18.21	18.17	17.92	0-2	1	
6		0	18.07	18.08	17.79	0-3	1	

LTE Band 66 _ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131987 Ch. 1711.5 MHz	132322 Ch. 1745 MHz	132657 Ch. 1778.5 MHz		
3 MHz	QPSK	1	0	19.89	19.72	19.35	0	0
		1	7	19.83	19.66	19.38	0	0
		1	14	19.89	19.72	19.37	0	0
		8	0	19.95	19.80	19.41	0-1	0
		8	3	19.90	19.75	19.37	0-1	0
		8	7	19.99	19.83	19.46	0-1	0
		15	0	19.91	19.79	19.44	0-1	0
	16QAM	1	0	20.12	19.95	19.62	0-1	0
		1	7	20.01	20.02	19.34	0-1	0
		1	14	20.12	19.97	19.49	0-1	0
		8	0	19.94	19.78	19.48	0-2	0
		8	3	19.98	19.75	19.50	0-2	0
		8	7	19.97	19.79	19.52	0-2	0
		15	0	19.92	19.82	19.43	0-2	0
	64QAM	1	0	20.06	19.80	19.45	0-2	0
		1	7	19.84	19.77	19.51	0-2	0
		1	14	20.00	19.78	19.60	0-2	0
		8	0	19.94	19.77	19.43	0-3	0
		8	3	19.87	19.75	19.34	0-3	0
		8	7	19.90	19.76	19.45	0-3	0
		15	0	19.92	19.76	19.45	0-3	0
	256QAM	1	0	18.25	18.16	17.84	0-2	1
		1	7	18.20	18.04	17.88	0-2	1
		1	14	18.22	18.06	17.83	0-2	1
		8	0	18.09	18.08	17.82	0-3	1
		8	3	18.12	18.11	17.84	0-3	1
		8	7	18.14	18.10	17.81	0-3	1
15		0	18.14	18.08	17.80	0-3	1	

LTE Band 66 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131997 Ch. 1712.5 MHz	132322Ch. 1745 MHz	132647 Ch. 1777.5 MHz		
5 MHz	QPSK	1	0	19.85	19.73	19.45	0	0
		1	12	19.85	19.68	19.45	0	0
		1	24	19.85	19.75	19.45	0	0
		12	0	19.93	19.86	19.48	0-1	0
		12	6	19.95	19.81	19.46	0-1	0
		12	11	19.93	19.80	19.48	0-1	0
		25	0	19.93	19.83	19.53	0-1	0
	16QAM	1	0	20.10	20.06	19.58	0-1	0
		1	12	19.96	19.95	19.60	0-1	0
		1	24	20.10	19.95	19.70	0-1	0
		12	0	19.95	19.83	19.48	0-2	0
		12	6	19.92	19.80	19.55	0-2	0
		12	11	19.92	19.77	19.51	0-2	0
		25	0	19.93	19.80	19.46	0-2	0
	64QAM	1	0	20.06	19.83	19.53	0-2	0
		1	12	19.82	19.86	19.40	0-2	0
		1	24	19.97	19.79	19.62	0-2	0
		12	0	19.94	19.84	19.48	0-3	0
		12	6	19.96	19.83	19.46	0-3	0
		12	11	19.90	19.80	19.45	0-3	0
		25	0	19.91	19.75	19.47	0-3	0
	256QAM	1	0	18.28	18.18	17.89	0-2	1
		1	12	18.19	18.19	17.74	0-2	1
		1	24	18.33	18.20	17.87	0-2	1
12		0	18.19	18.11	17.85	0-3	1	
12		6	18.18	18.11	17.85	0-3	1	
12		11	18.14	18.15	17.84	0-3	1	
25		0	18.15	18.13	17.85	0-3	1	

LTE Band 66 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132022 Ch. 1715 MHz	132322 Ch. 1745 MHz	132622 Ch. 1775 MHz		
10 MHz	QPSK	1	0	19.86	19.81	19.47	0	0
		1	24	19.82	19.74	19.43	0	0
		1	49	19.85	19.80	19.49	0	0
		25	0	19.92	19.82	19.48	0-1	0
		25	12	19.87	19.82	19.51	0-1	0
		25	24	19.91	19.80	19.50	0-1	0
		50	0	19.97	19.90	19.58	0-1	0
	16QAM	1	0	20.14	19.95	19.68	0-1	0
		1	24	19.96	19.93	19.59	0-1	0
		1	49	19.99	19.91	19.67	0-1	0
		25	0	19.91	19.84	19.50	0-2	0
		25	12	19.86	19.77	19.51	0-2	0
		25	24	19.89	19.79	19.51	0-2	0
		50	0	19.94	19.81	19.55	0-2	0
	64QAM	1	0	20.00	20.01	19.62	0-2	0
		1	24	19.94	19.92	19.59	0-2	0
		1	49	19.92	19.87	19.66	0-2	0
		25	0	19.89	19.83	19.46	0-3	0
		25	12	19.83	19.77	19.46	0-3	0
		25	24	19.85	19.78	19.52	0-3	0
		50	0	19.93	19.90	19.54	0-3	0
	256QAM	1	0	18.26	18.24	17.93	0-2	1
		1	24	18.18	18.19	18.00	0-2	1
		1	49	18.35	18.24	17.93	0-2	1
25		0	18.18	18.15	17.90	0-3	1	
25		12	18.18	18.10	17.88	0-3	1	
25		24	18.19	18.15	17.91	0-3	1	
50		0	18.34	18.26	17.96	0-3	1	

LTE Band 66 _ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132047 Ch. 1717.5 MHz	132322 Ch. 1745 MHz	132597 Ch. 1772.5 MHz		
15 MHz	QPSK	1	0	19.96	19.80	19.44	0	0
		1	36	19.82	19.65	19.41	0	0
		1	74	19.89	19.79	19.53	0	0
		36	0	19.94	19.87	19.59	0-1	0
		36	18	19.94	19.86	19.57	0-1	0
		36	39	19.93	19.86	19.57	0-1	0
		75	0	19.93	19.84	19.55	0-1	0
	16QAM	1	0	20.09	20.03	19.73	0-1	0
		1	36	19.90	19.99	19.48	0-1	0
		1	74	19.99	20.01	19.72	0-1	0
		36	0	19.86	19.83	19.56	0-2	0
		36	18	19.89	19.83	19.54	0-2	0
		36	39	19.89	19.82	19.51	0-2	0
		75	0	19.85	19.81	19.50	0-2	0
	64QAM	1	0	20.03	20.00	19.74	0-2	0
		1	36	19.78	19.70	19.56	0-2	0
		1	74	20.03	19.86	19.74	0-2	0
		36	0	19.88	19.85	19.57	0-3	0
		36	18	19.89	19.82	19.60	0-3	0
		36	39	19.89	19.83	19.52	0-3	0
		75	0	19.84	19.76	19.52	0-3	0
	256QAM	1	0	18.28	18.33	17.98	0-2	1
		1	36	18.18	18.06	17.80	0-2	1
		1	74	18.37	18.34	17.99	0-2	1
		36	0	18.36	18.29	17.99	0-3	1
		36	18	18.34	18.25	18.03	0-3	1
		36	39	18.32	18.22	18.01	0-3	1
75		0	18.34	18.22	17.98	0-3	1	

LTE Band 66 _ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 MHz	132322 Ch. 1745 MHz	132572 Ch. 1770 MHz		
20 MHz	QPSK	1	0	19.92	19.86	19.44	0	0
		1	49	19.83	19.80	19.42	0	0
		1	99	19.90	19.84	19.55	0	0
		50	0	19.97	19.89	19.59	0-1	0
		50	25	19.95	19.90	19.62	0-1	0
		50	49	19.93	19.88	19.59	0-1	0
		100	0	19.92	19.90	19.61	0-1	0
	16QAM	1	0	20.15	19.98	19.80	0-1	0
		1	49	19.83	19.96	19.68	0-1	0
		1	99	20.10	20.08	19.91	0-1	0
		50	0	19.88	19.89	19.59	0-2	0
		50	25	19.90	19.85	19.58	0-2	0
		50	49	19.88	19.85	19.55	0-2	0
		100	0	19.89	19.86	19.54	0-2	0
	64QAM	1	0	20.08	20.04	19.75	0-2	0
		1	49	20.01	19.88	19.55	0-2	0
		1	99	20.01	19.96	19.58	0-2	0
		50	0	19.91	19.89	19.58	0-3	0
		50	25	19.90	19.86	19.58	0-3	0
		50	49	19.90	19.88	19.62	0-3	0
		100	0	19.86	19.85	19.58	0-3	0
	256QAM	1	0	18.36	18.35	18.17	0-2	1
		1	49	18.43	18.22	17.89	0-2	1
		1	99	18.43	18.33	17.96	0-2	1
50		0	18.31	18.29	17.96	0-3	1	
50		25	18.31	18.23	17.97	0-3	1	
50		49	18.31	18.24	17.95	0-3	1	
100		0	18.29	18.25	17.99	0-3	1	

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

11.3.4 LTE Down-link Carrier Aggregation Conducted Powers

SAR test exclusion for LTE downlink Carrier Aggregation is determined by power measurements according to the number component carriers(CCs) supported by the product implementation. For those configurations required by April 2018 TCBC Workshop notes, conducted power measurements with LTE Carrier Aggregation(CA) (downlink only) active are made in accordance to KDB Publication 941225 D05Av01r02. The RRC connection is only handled by one cell, the primary component carrier (PCC) for downlink and uplink communications. After making a data connection to the PCC, the UE device adds secondary component carrier(s)(SCC) on the downlink only.

Downlink Carrier aggregation:

1. This device only supports downlink carrier aggregation. For every supported combination of downlink carrier aggregation, power measurements were performed with the downlink carrier aggregation active for the configuration with highest measured maximum conducted power with downlink carrier aggregation inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band.
2. All control and acknowledge data is sent on uplink channels that operate identical to specifications when downlink carrier aggregation is inactive.
3. Per FCC KDB publication 941225 D05A v01r02, Section C)3)b)ii), PCC uplink channel was selected at downlink carrier aggregation combinations. The downlink PCC channel was paired with the selected PCC uplink channel according to normal configurations without carrier aggregation.
4. For continuous intra-band carrier aggregation, the downlink channel spacing between the component carriers was set to multiple of 300kHz less than the nominal channel spacing defined in section 5.4.1A of 3GPP TS 36.521.
5. For non-continuous intra-band carrier aggregation, the downlink channel spacing between the component carriers was set to be larger than the nominal channel spacing and provided maximum separation between the component carriers.
6. All selected downlink channels remained fully within the downlink transmission band of the respective component carrier.

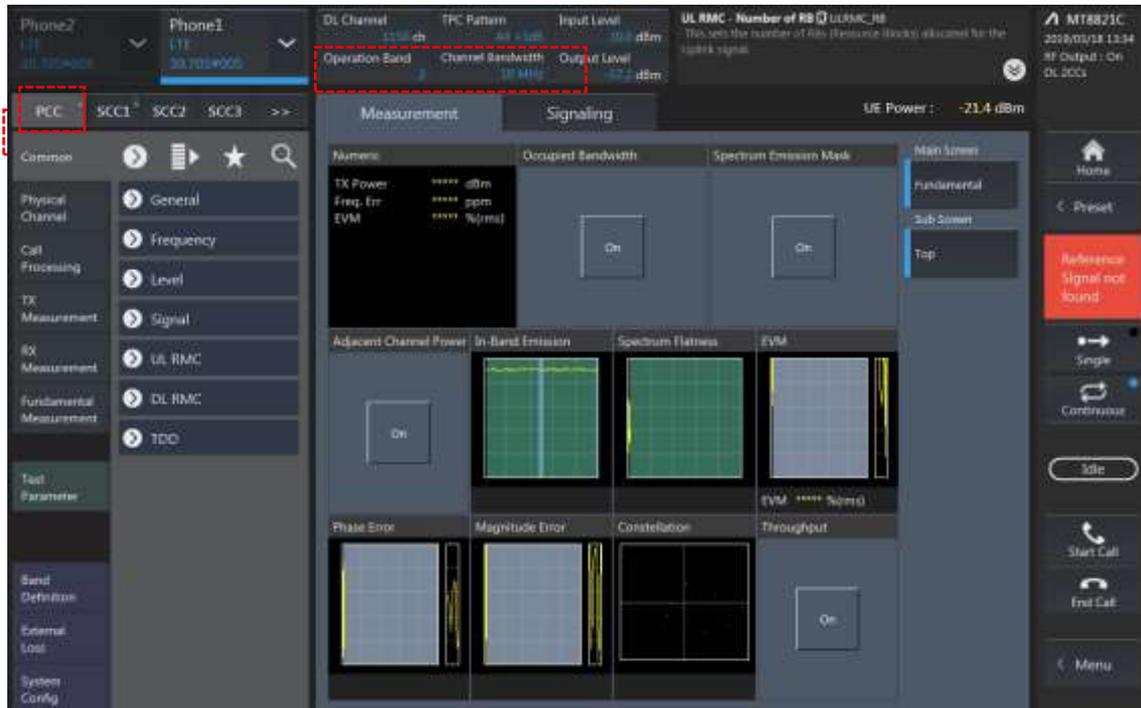


Power Measurement setup

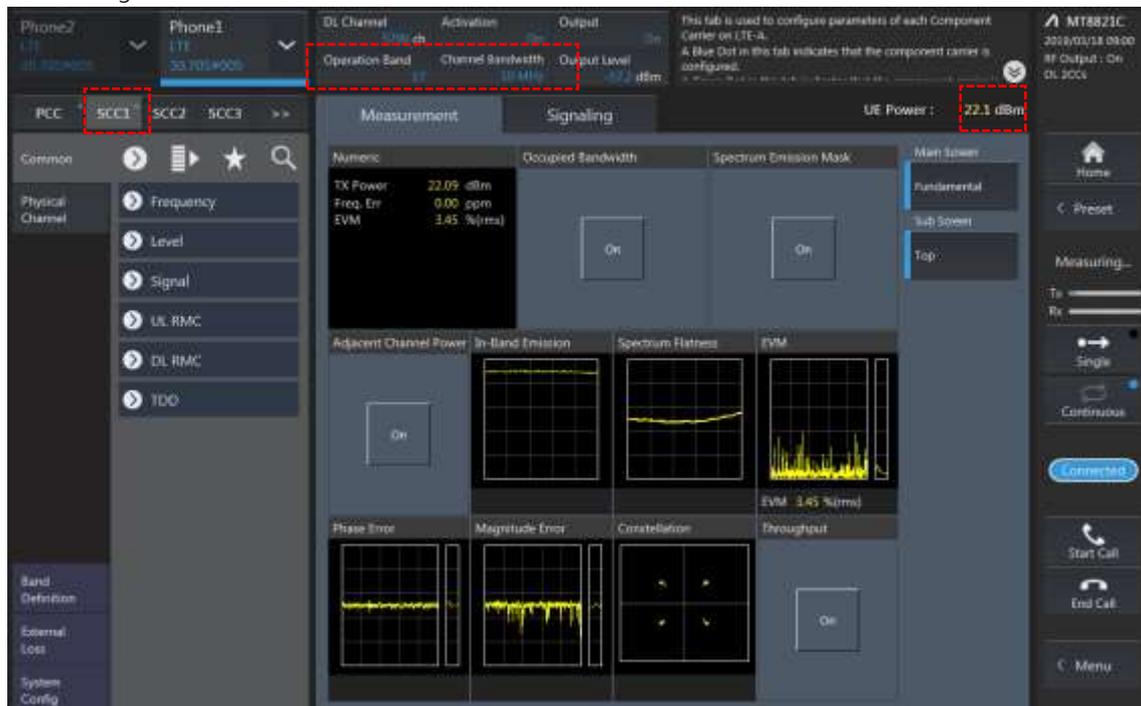
Call box(MT8821C) setup for LTE downlink 2CA /3CA/4CA and MIMO conducted power measurement are as follows. And see Attachment 8 for detailed measured LTE DL CA output power results.

LTE Down Link 2CA Call Setup

PCC Setting : Channel/ RB/ BW/ Modulation

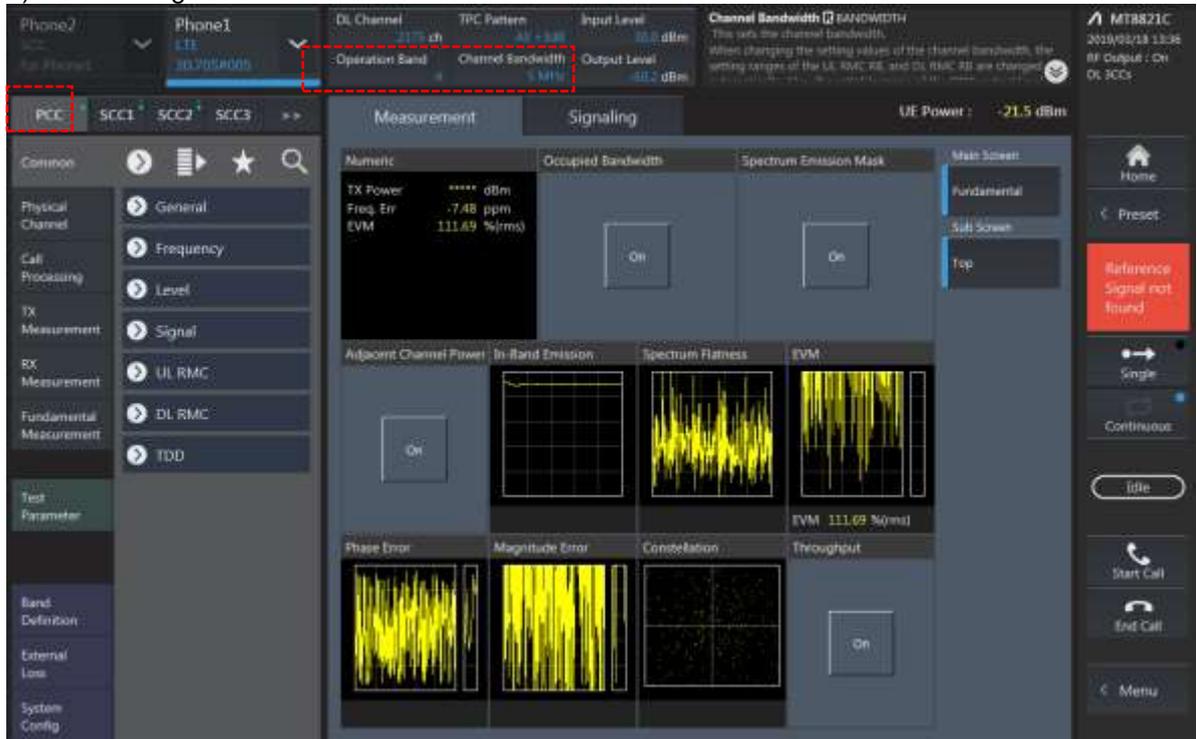


SCC Setting : Channel/ RB/ BW/ Modulation and call Connection

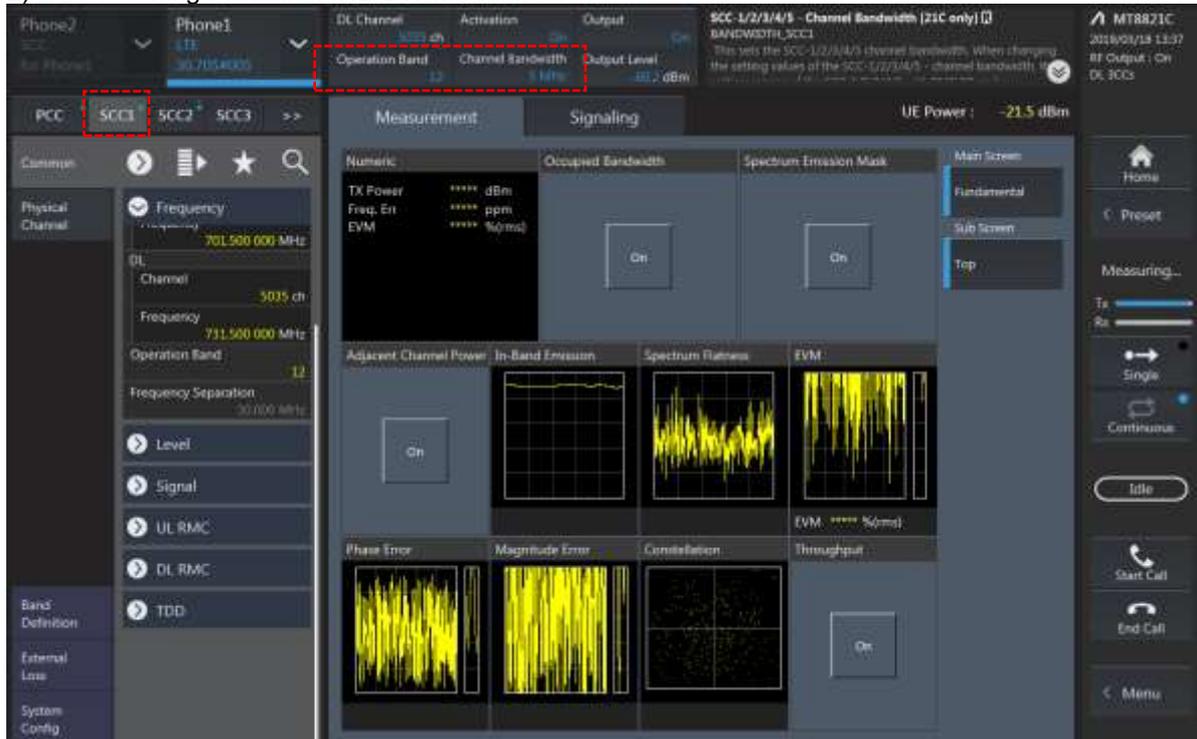


LTE Down Link 3CA Call Setup

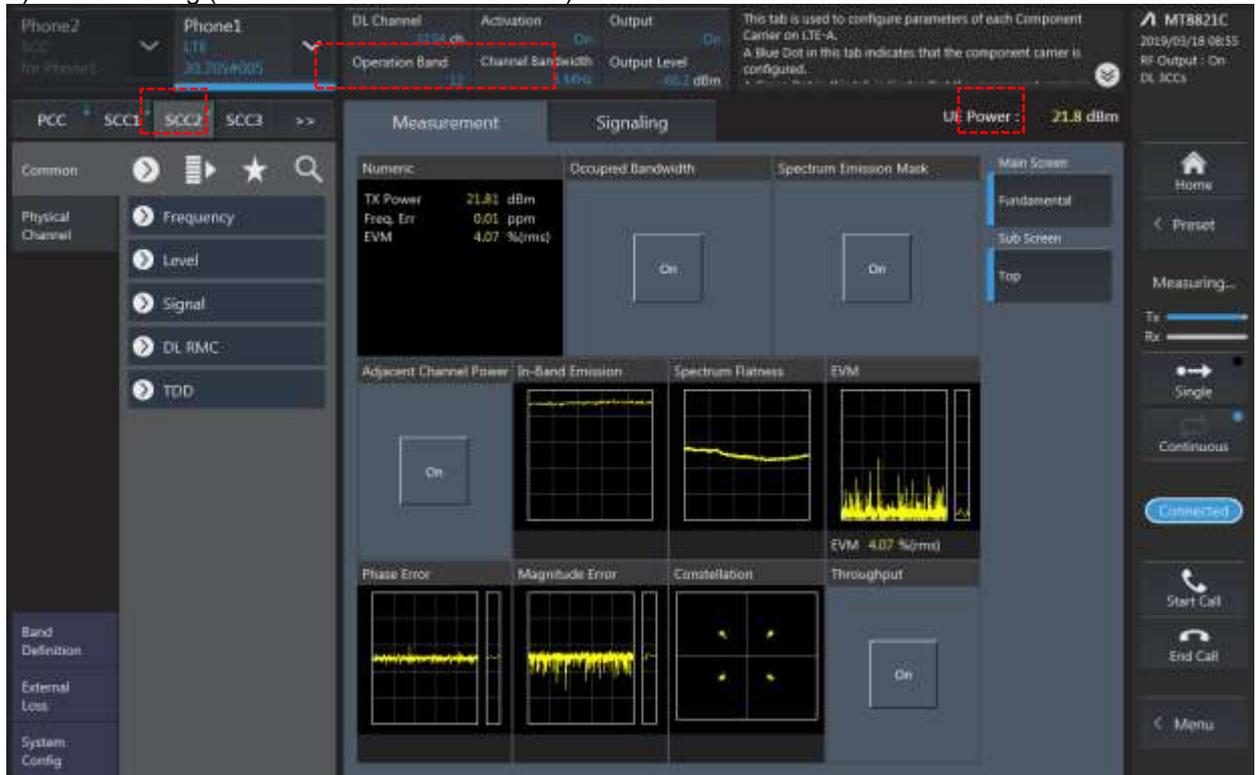
1) PCC Setting: Channel /RB/BW/Modulation



2) SCC1 Setting : Channel /RB/BW/Modulation



3) SCC2 Setting (Channel /RB/BW/Modulation)and call Connection



LTE Down Link 4CA Call Setup

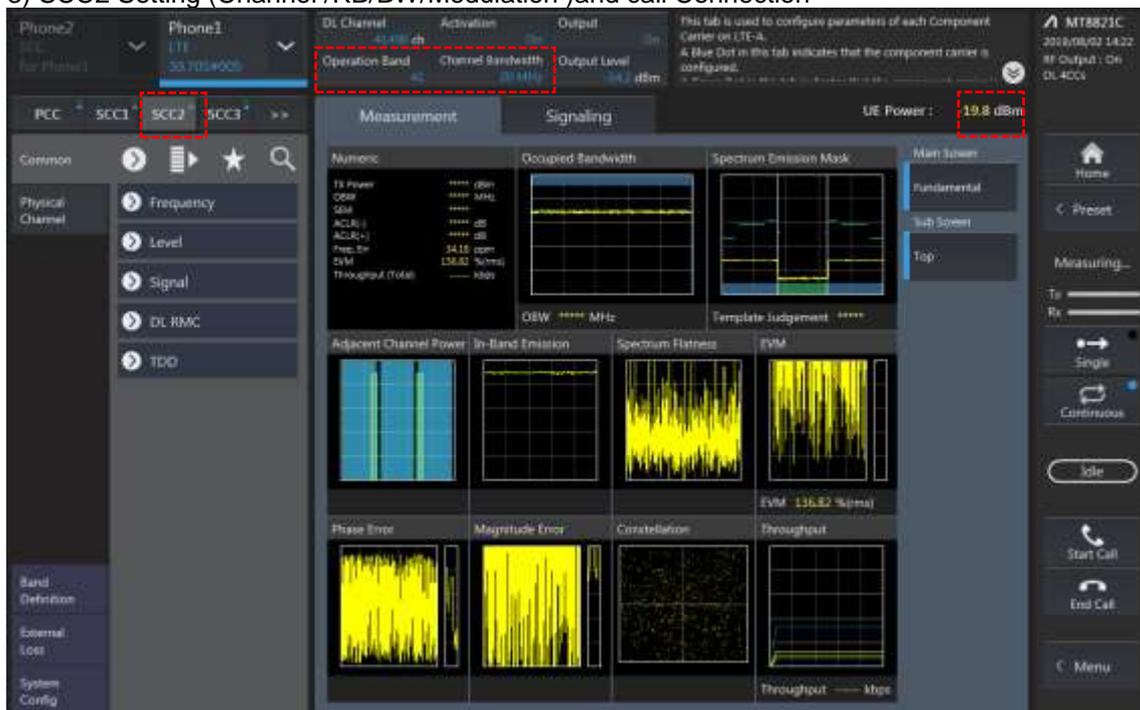
1) PCC Setting: Channel /RB/BW/Modulation



2) SCC1 Setting : Channel /RB/BW/Modulation



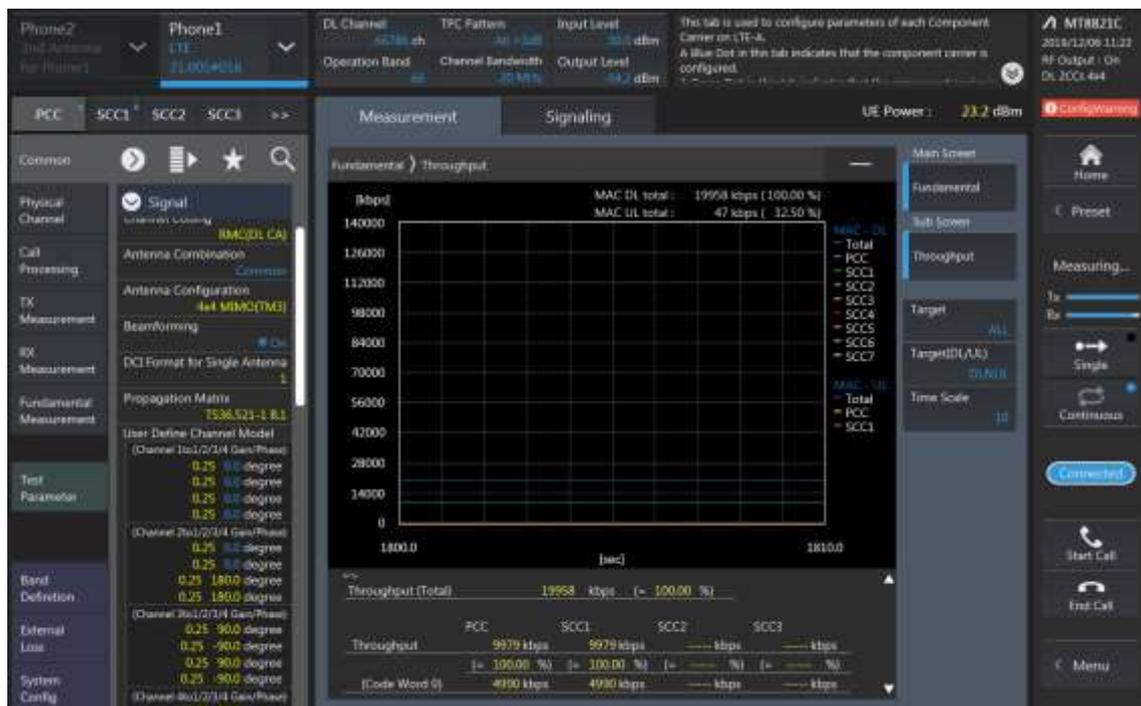
3) SCC2 Setting (Channel /RB/BW/Modulation)and call Connection



4) SCC3 Setting (Channel /RB/BW/Modulation)and call Connection



LTE Down Link 4x4 MIMO CA Call Setup



11.4 WIFI Conducted Power measurement method

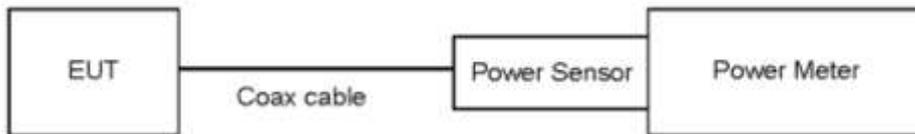
Un-Licensed bands (DTS Band)

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



11.4.1 IEEE 802.11 (2.4 GHz) Maximum Conducted Power

Mode	Frequency [MHz]	Channel	IEEE 802.11 (2.4 GHz) Average RF Conducted Power [dBm]		
			Ant.1	Ant.2	MIMO
802.11b	2 412	1	20.06	19.99	
	2 437	6	17.79	17.74	
	2 462	11	18.61	19.80	
	2 467	12	11.47	11.41	
	2 472	13	5.63	5.41	
802.11g	2 412	1	14.55	14.37	17.47
	2 437	6	15.88	15.40	18.65
	2 462	11	14.83	14.73	17.79
	2 467	12	11.73	11.63	14.69
	2 472	13	5.61	5.54	8.58
802.11n (HT20)	2 412	1	14.61	14.39	17.51
	2 437	6	15.87	15.56	18.72
	2 462	11	14.86	14.60	17.74
	2 467	12	11.65	11.57	14.62
	2 472	13	5.59	5.25	8.43
802.11ax(SU)	2 412	1	13.79	14.15	16.98
	2 437	6	16.12	16.26	19.20
	2 462	11	14.02	14.54	17.30
	2 467	12	11.90	11.89	14.91
	2 472	13	6.41	6.63	9.53

11.4.2 IEEE 802.11 (2.4 GHz) Reduced Conducted Power (Held to ear VOIP)

Mode	Frequency [MHz]	Channel	IEEE 802.11 (2.4 GHz) Average RF Conducted Power [dBm]		
			Ant.1	Ant.2	MIMO
802.11b	2 412	1	15.14	15.88	
	2 437	6	16.00	15.59	
	2 462	11	15.62	15.93	
	2 467	12	11.47	11.41	
	2 472	13	5.63	5.41	
802.11g	2 412	1	15.42	15.64	18.54
	2 437	6	15.85	15.98	18.92
	2 462	11	14.98	15.18	18.09
	2 467	12	11.73	11.63	14.69
	2 472	13	5.61	5.54	8.58
802.11n (HT20)	2 412	1	15.15	15.65	18.41
	2 437	6	15.88	16.03	18.96
	2 462	11	15.63	15.59	18.62
	2 467	12	11.65	11.57	14.62
	2 472	13	5.59	5.25	8.43
802.11ax(SU)	2 412	1	13.79	14.15	16.98
	2 437	6	16.12	16.26	19.20
	2 462	11	14.02	14.54	17.30
	2 467	12	11.90	11.89	14.91
	2 472	13	6.41	6.63	9.53

11.4.3 IEEE 802.11 (2.4 GHz) Reduced Conducted Power (RSDB)

Mode	Frequency [MHz]	Channel	IEEE 802.11 (2.4 GHz) Average RF Conducted Power [dBm]		
			Ant.1	Ant.2	MIMO
802.11b	2 412	1	15.14	15.88	
	2 437	6	16.00	15.59	
	2 462	11	15.62	15.93	
	2 467	12	11.47	11.41	
	2 472	13	5.63	5.41	
802.11g	2 412	1	15.42	15.64	18.54
	2 437	6	15.85	15.98	18.92
	2 462	11	14.98	15.18	18.09
	2 467	12	11.73	11.63	14.69
	2 472	13	5.61	5.54	8.58
802.11n (HT20)	2 412	1	15.15	15.65	18.41
	2 437	6	15.88	16.03	18.96
	2 462	11	15.63	15.59	18.62
	2 467	12	11.65	11.57	14.62
	2 472	13	5.59	5.25	8.43
802.11ax(SU)	2 412	1	13.79	14.15	16.98
	2 437	6	16.12	16.26	19.20
	2 462	11	14.02	14.54	17.30
	2 467	12	11.90	11.89	14.91
	2 472	13	6.41	6.63	9.53

11.4.4 IEEE 802.11 (2.4 GHz) Reduced Conducted Power (RSDB with RCV)

Mode	Frequency [MHz]	Channel	IEEE 802.11 (2.4 GHz) Average RF Conducted Power [dBm]		
			Ant.1	Ant.2	MIMO
802.11b	2 412	1	12.04	13.21	
	2 437	6	13.01	12.88	
	2 462	11	12.57	13.13	
	2 467	12	11.47	11.41	
	2 472	13	5.63	5.41	
802.11g	2 412	1	12.02	12.90	15.49
	2 437	6	12.78	12.96	15.88
	2 462	11	12.47	13.03	15.77
	2 467	12	11.73	11.63	14.69
	2 472	13	5.61	5.54	8.58
802.11n (HT20)	2 412	1	12.33	12.85	15.60
	2 437	6	12.79	13.18	16.00
	2 462	11	12.40	12.74	15.58
	2 467	12	11.65	11.57	14.62
	2 472	13	5.59	5.25	8.43
802.11ax(SU)	2 412	1	11.98	12.57	15.30
	2 437	6	11.93	12.89	15.45
	2 462	11	12.01	12.70	15.38
	2 467	12	11.90	11.89	14.91
	2 472	13	6.41	6.63	9.53

11.4.5 IEEE 802.11 (5 GHz) Maximum Conducted Power

Frequency [MHz]	Channel	IEEE 802.11 a(20 MHz BW) Conducted Power [dBm]			IEEE 802.11n (20 MHz BW) Conducted Power [dBm]			IEEE 802.11ac(20 MHz BW) Conducted Power [dBm]		
		Ant.1	Ant.2	MIMO	Ant.1	Ant.2	MIMO	Ant.1	Ant.2	MIMO
5 180	36	17.61	16.72	20.19	17.59	16.84	20.24	17.63	16.87	20.28
5 200	40	17.50	16.67	20.11	17.48	16.68	20.10	17.48	16.74	20.14
5 220	44	17.44	16.61	20.06	17.32	16.61	19.99	17.45	16.58	20.05
5 240	48	17.45	16.51	20.01	17.43	16.56	20.02	17.47	16.61	20.07
5 260	52	17.18	16.05	19.66	17.22	16.11	19.71	17.22	16.17	19.74
5 280	56	17.24	16.21	19.76	17.20	16.12	19.70	17.18	16.10	19.68
5 300	60	17.16	15.89	19.58	17.16	15.94	19.60	17.17	15.96	19.62
5 320	64	17.12	15.93	19.57	17.12	15.93	19.57	17.12	15.95	19.59
5 500	100	15.33	14.84	18.10	14.34	13.78	17.08	14.30	13.81	17.08
5 580	116	17.52	16.53	20.06	17.54	16.02	19.68	17.51	16.03	19.84
5 600	120	17.69	16.98	20.36	17.64	17.00	20.34	17.65	17.02	20.36
5 620	124	17.63	17.06	20.36	17.57	16.88	20.25	17.16	16.12	19.68
5 720	144	16.94	15.98	19.49	16.93	16.00	19.50	16.95	15.99	19.51
5 745	149	17.57	16.54	20.09	17.55	16.60	20.11	17.54	16.69	20.15
5 785	157	17.64	16.63	20.17	17.64	16.63	20.17	17.63	16.69	20.20
5 825	165	17.61	16.57	20.13	17.66	16.60	20.17	17.63	16.58	20.15

Frequency [MHz]	Channel	IEEE 802.11 ax SU(20 MHz) Conducted Power [dBm]		
		Ant.1	Ant.2	MIMO
5 180	36	16.66	16.46	19.57
5 200	40	16.68	16.48	19.59
5 220	44	16.61	16.33	19.48
5 240	48	16.77	16.51	19.65
5 260	52	17.06	17.03	20.06
5 280	56	17.02	16.80	19.92
5 300	60	17.01	16.89	19.96
5 320	64	17.04	16.88	19.97
5 500	100	13.41	13.35	16.39
5 580	116	16.45	16.31	19.39
5 600	120	16.83	16.37	19.62
5 620	124	16.70	16.28	19.51
5 720	144	17.27	16.30	19.82
5 745	149	16.78	16.22	19.52
5 785	157	17.09	16.43	19.78
5 825	165	17.15	16.52	19.86

11.4.6 IEEE 802.11 (5 GHz) Reduced Conducted Power (RCV ON))

Mode	Frequency [MHz]	Channel	IEEE 802.11 (5 GHz) Reduced Average Conducted Power [dBm]		
			Ant. 1	Ant. 2	MIMO
802.11ac (80 MHz BW)	5 210	42	13.68	13.90	16.80
	5 290	58	14.32	13.09	16.76
	5 530	106	10.29	9.93	13.13
	5 610	122	14.38	13.67	17.05
	5 690	138	14.04	13.77	16.92
	5 775	155	14.27	13.15	16.76
802.11ax(SU) (80 MHz BW)	5 210	42	13.49	12.51	16.04
	5 290	58	13.87	13.23	16.57
	5 530	106	9.93	9.62	12.79
	5 610	122	14.07	13.21	16.67
	5 690	138	14.09	13.18	16.67
	5 775	155	14.07	13.25	16.69

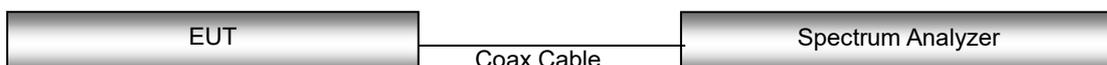
11.4.7 IEEE 802.11 (5 GHz) Reduced Conducted Power (RSDB)

Mode	Frequency [MHz]	Channel	IEEE 802.11 (5 GHz) Reduced Average Conducted Power [dBm]		
			Ant. 1	Ant. 2	MIMO
802.11ac (80 MHz BW)	5 210	42	13.68	12.90	16.32
	5 290	58	13.10	12.07	15.63
	5 530	106	10.29	9.93	13.13
	5 610	122	13.15	12.62	15.91
	5 690	138	12.77	12.68	15.74
	5 775	155	13.58	12.09	15.91
802.11ax(SU) (80 MHz BW)	5 210	42	13.49	12.51	16.04
	5 290	58	13.69	12.59	16.19
	5 530	106	9.93	9.62	12.79
	5 610	122	13.70	13.26	16.50
	5 690	138	13.57	13.43	16.51
	5 775	155	13.59	13.21	16.41

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



11.5 Bluetooth Conducted Power

The Burst averaged-conducted power

Mode	Channel	Bluetooth Power [dBm]
DH5	0	16.05
	39	17.51
	78	14.69
2-DH5	0	10.17
	39	11.53
	78	9.41
3-DH5	0	10.21
	39	11.55
	78	9.40

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.



Duty Cycle

$$= (\text{BT-On time} / \text{BT-Full time}) = (2.880 / 3.744) = 0.769 \text{ (DH5)}$$

Duty factor = 1/Duty cycle : 1.300

12. System Verification

12.1 Tissue Verification

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

Table for Head Tissue Verification

Date of Tests	Tissue Temp. (°C)	Tissue Type	Freq. (MHz)	Measured Conductivity σ (S/m)	Measured Dielectric Constant, ϵ	Target Conductivity σ (S/m)	Target Dielectric Constant, ϵ	% dev σ	% dev ϵ
12/12/2019	22.3	750H	705	0.853	42.232	0.889	42.174	-4.05%	0.14%
			710	0.860	42.126	0.890	42.148	-3.37%	-0.05%
			750	0.887	41.741	0.893	41.940	-0.67%	-0.47%
			785	0.919	41.304	0.896	41.758	2.57%	-1.09%
12/03/2019	19.5	835H	820	0.913	42.492	0.899	41.577	1.56%	2.20%
			835	0.927	42.329	0.900	41.500	3.00%	2.00%
			850	0.935	42.132	0.916	41.500	2.07%	1.52%
12/11/2019	22.3	835H	820	0.910	42.535	0.899	41.577	1.22%	2.30%
			835	0.926	42.352	0.900	41.500	2.89%	2.05%
			850	0.939	42.084	0.916	41.500	2.51%	1.41%
12/03/2019	20.1	1800H	1710	1.305	38.186	1.348	40.144	-3.19%	-4.88%
			1750	1.359	38.106	1.371	40.080	-0.88%	-4.93%
			1800	1.412	38.142	1.400	40.000	0.86%	-4.64%
12/13/2019	22.3	1900H	1850	1.391	38.769	1.400	40.000	-0.64%	-3.08%
			1900	1.397	39.063	1.400	40.000	-0.21%	-2.34%
			1910	1.399	39.135	1.400	40.000	-0.07%	-2.16%
12/03/2019	20.1	1900H	1850	1.406	38.028	1.400	40.000	0.43%	-4.93%
			1900	1.409	38.318	1.400	40.000	0.64%	-4.21%
			1910	1.411	38.383	1.400	40.000	0.79%	-4.04%
12/27/2019	20.7	2450H	2400	1.743	38.431	1.756	39.290	-0.74%	-2.19%
			2450	1.799	38.176	1.800	39.200	-0.06%	-2.61%
			2500	1.852	37.999	1.855	39.140	-0.16%	-2.92%
12/19/2019	21.0	2450H	2400	1.745	38.438	1.756	39.290	-0.63%	-2.17%
			2450	1.812	38.130	1.800	39.200	0.67%	-2.73%
			2500	1.857	37.930	1.855	39.140	0.11%	-3.09%
12/13/2019	21.3	2600H	2500	1.855	38.236	1.855	39.140	0.00%	-2.31%
			2600	1.950	37.813	1.964	39.010	-0.71%	-3.07%
			2690	2.044	37.509	2.062	38.894	-0.87%	-3.56%

Table for Head Tissue Verification

Date of Tests	Tissue Temp. (°C)	Tissue Type	Freq. (MHz)	Measured Conductivity σ (S/m)	Measured Dielectric Constant, ϵ	Target Conductivity σ (S/m)	Target Dielectric Constant, ϵ	% dev σ	% dev ϵ
12/30/2019	20.5	5180H-5825H	5180	4.655	36.125	4.635	36.010	0.43%	0.32%
			5250	4.805	36.235	4.706	35.930	2.10%	0.85%
			5280	4.878	36.030	4.737	35.894	2.98%	0.38%
			5320	4.890	35.521	4.778	35.846	2.34%	-0.91%
			5500	4.976	35.510	4.963	35.640	0.26%	-0.36%
			5600	5.042	35.414	5.065	35.530	-0.45%	-0.33%
			5750	5.131	35.591	5.219	35.360	-1.69%	0.65%
			5800	5.243	35.086	5.270	35.300	-0.51%	-0.61%
			5825	5.173	35.002	5.296	35.270	-2.32%	-0.76%

Table for Body Tissue Verification

Date of Tests	Tissue Temp. (°C)	Tissue Type	Freq. (MHz)	Measured Conductivity σ (S/m)	Measured Dielectric Constant, ϵ	Target Conductivity σ (S/m)	Target Dielectric Constant, ϵ	% dev σ	% dev ϵ
12/12/2019	22.3	750B	705	0.920	56.708	0.959	55.710	-4.07%	1.79%
			710	0.926	56.674	0.960	55.690	-3.54%	1.77%
			750	0.971	56.267	0.963	55.530	0.83%	1.33%
			785	1.000	55.898	0.966	55.397	3.52%	0.90%
12/03/2019	19.5	835B	820	0.944	56.443	0.969	55.260	-2.58%	2.14%
			835	0.962	56.285	0.970	55.200	-0.82%	1.97%
			850	0.971	56.210	0.988	55.150	-1.72%	1.92%
12/11/2019	22.3	835B	820	0.943	56.554	0.969	55.260	-2.68%	2.34%
			835	0.962	56.431	0.970	55.200	-0.82%	2.23%
			850	0.973	56.285	0.988	55.150	-1.52%	2.06%
12/09/2019	19.7	1800B	1710	1.397	54.858	1.463	53.534	-4.51%	2.47%
			1750	1.432	54.774	1.488	53.430	-3.76%	2.52%
			1800	1.483	54.586	1.520	53.300	-2.43%	2.41%
12/10/2019	18.5	1800B	1710	1.394	55.055	1.463	53.534	-4.72%	2.84%
			1750	1.431	54.948	1.488	53.430	-3.83%	2.84%
			1800	1.483	54.797	1.520	53.300	-2.43%	2.81%
12/13/2019	22.3	1900B	1850	1.480	53.631	1.520	53.300	-2.63%	0.62%
			1900	1.526	53.550	1.520	53.300	0.39%	0.47%
			1910	1.540	53.588	1.520	53.300	1.32%	0.54%
12/09/2019	19.7	1900B	1850	1.480	53.607	1.520	53.300	-2.63%	0.58%
			1900	1.526	53.502	1.520	53.300	0.39%	0.38%
			1910	1.538	53.587	1.520	53.300	1.18%	0.54%
12/10/2019	18.5	1900B	1850	1.476	53.640	1.520	53.300	-2.89%	0.64%
			1900	1.526	53.543	1.520	53.300	0.39%	0.46%
			1910	1.535	53.587	1.520	53.300	0.99%	0.54%
01/08/2020	20.1	2450B	2400	1.881	53.754	1.902	52.770	-1.10%	1.86%
			2450	1.943	53.653	1.950	52.700	-0.36%	1.81%
			2500	2.004	53.524	2.021	52.640	-0.84%	1.68%
12/19/2019	21.0	2450B	2400	1.880	53.860	1.902	52.770	-1.16%	2.07%
			2450	1.945	53.659	1.950	52.700	-0.26%	1.82%
			2500	2.002	53.538	2.021	52.640	-0.94%	1.71%
12/28/2019	19.6	2600B	2500	2.008	53.562	2.021	52.640	-0.64%	1.75%
			2600	2.109	53.191	2.163	52.510	-2.50%	1.30%
			2690	2.226	53.007	2.291	52.394	-2.84%	1.17%
12/28/2019	19.6	2600B	2500	2.008	53.562	2.021	52.640	-0.64%	1.75%
			2600	2.109	53.191	2.163	52.510	-2.50%	1.30%
			2690	2.226	53.007	2.291	52.394	-2.84%	1.17%

Table for Body Tissue Verification									
Date of Tests	Tissue Temp. (°C)	Tissue Type	Freq. (MHz)	Measured Conductivity σ (S/m)	Measured Dielectric Constant, ϵ	Target Conductivity σ (S/m)	Target Dielectric Constant, ϵ	% dev σ	% dev ϵ
01/12/2020	19.6	5180B-5825B	5180	5.380	48.446	5.276	49.038	1.97%	-1.21%
			5250	5.566	48.321	5.358	48.950	3.88%	-1.28%
			5280	5.607	48.386	5.393	48.908	3.97%	-1.07%
			5320	5.580	48.308	5.439	48.852	2.59%	-1.11%
			5500	5.877	48.231	5.650	48.610	4.02%	-0.78%
			5600	5.846	47.666	5.766	48.470	1.39%	-1.66%
			5750	6.143	47.295	5.942	48.270	3.38%	-2.02%
			5800	6.155	47.689	6.000	48.200	2.58%	-1.06%
			5825	6.147	47.328	6.029	48.165	1.96%	-1.74%
01/12/2020	19.6	5500-5600B	5500	5.877	48.231	5.650	48.610	4.02%	-0.78%
			5600	5.846	47.666	5.766	48.470	1.39%	-1.66%
01/12/2020	19.6	5180B-5825B	5180	5.329	47.591	5.276	49.038	1.00%	-2.95%
			5250	5.497	47.251	5.358	48.950	2.59%	-3.47%
			5280	5.570	47.614	5.393	48.908	3.28%	-2.65%
			5320	5.562	47.323	5.439	48.852	2.26%	-3.13%
			5500	5.766	47.075	5.650	48.610	2.05%	-3.16%
			5600	5.798	46.734	5.766	48.470	0.55%	-3.58%
			5750	6.145	46.387	5.942	48.270	3.42%	-3.90%
			5800	6.050	46.369	6.000	48.200	0.83%	-3.80%
5825	6.032	46.660	6.029	48.165	0.05%	-3.12%			

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	12/12/2019	3903	1014	Head	22.5	22.3	8.25	0.425	8.5	+ 3.03	± 10
750	12/12/2019	3903		Body	22.5	22.3	8.48	0.402	8.04	- 5.19	± 10
835	12/03/2019	3076	441	Head	19.7	19.5	9.69	0.478	9.56	- 1.34	± 10
835	12/11/2019	3903		Head	22.5	22.3	9.69	0.486	9.72	+ 0.31	± 10
835	12/03/2019	3076		Body	19.7	19.5	9.73	0.486	9.72	- 0.10	± 10
835	12/11/2019	3903		Body	22.5	22.3	9.73	0.449	8.98	- 7.71	± 10
1 800	12/03/2019	3903		2d015	Head	20.2	20.1	38.5	1.95	39	+ 1.30
1 800	12/09/2019	3903	Body		19.9	19.7	38.3	1.93	38.6	+ 0.78	± 10
1 800	12/10/2019	3903	Body		20.2	20.1	38.3	1.93	38.6	+ 0.78	± 10
1 900	12/13/2019	3903	5d032	Head	22.4	22.3	40.0	1.95	39	- 2.50	± 10
1 900	12/03/2019	3903		Head	20.2	20.1	40.0	1.96	39.2	- 2.00	± 10
1 900	12/13/2019	3903		Body	22.4	22.3	39.7	1.86	37.2	- 6.30	± 10
1 900	12/09/2019	3903		Body	19.9	19.7	39.7	1.87	37.4	- 5.79	± 10
1 900	12/10/2019	3903		Body	20.2	20.1	39.7	1.87	37.4	- 5.79	± 10
2 450	12/27/2019	3863		965	Head	20.9	20.7	52.3	2.51	50.2	- 4.02
2 450	12/19/2019	3863	Head		21.1	21.0	52.3	2.46	49.2	- 5.93	± 10
2 450	01/08/2020	3863	Body		20.3	20.1	51.2	2.62	52.4	+ 2.34	± 10
2 450	12/19/2019	3863	Body		21.1	21.0	51.2	2.63	52.6	+ 2.73	± 10
2 600	12/13/2019	3968	1106	Head	21.5	21.3	56.5	3.09	61.8	+ 9.38	± 10
2 600	12/28/2019	3903		Body	19.8	19.6	55.1	2.87	57.4	+ 4.17	± 10
2 600	12/28/2019	3968		Body	19.8	19.6	55.1	2.62	52.4	- 4.90	± 10
5 250	12/30/2019	3863	1107	Head	20.8	20.5	81.6	4.05	81	- 0.74	± 10
5 250	01/12/2020	7370		Body	19.8	19.6	75.4	3.81	76.2	+ 1.06	± 10
5 600	12/30/2019	3863		Head	20.8	20.5	84.0	4.29	85.8	+ 2.14	± 10
5 600	01/12/2020	7370		Body	19.8	19.6	78.5	4.13	82.6	+ 5.22	± 10
5 600	01/12/2020	3797		Body	19.8	19.6	78.5	3.79	75.8	- 3.44	± 10
5 750	12/30/2019	3863		Head	20.8	20.5	80.9	4.25	85	+ 5.07	± 10
5 750	01/12/2020	7370		Body	19.8	19.6	76.6	3.75	75	- 2.09	± 10
5 250	01/12/2020	3968		Body	19.8	19.6	75.4	3.43	68.8	-9.02	± 10
5 600	01/12/2020	3968		Body	19.8	19.6	78.5	3.78	75.6	-3.69	± 10
5 750	01/12/2020	3968		Body	19.8	19.6	76.6	4.03	80.6	+ 5.22	± 10

System Verification Results – Extremity SAR

Input Power: 50 mW

Freq. [MHz]	Date	Probe (S/N)	Dipole (S/N)	Liquid	Amb. Temp. [°C]	Liquid Temp. [°C]	1 W Target SAR _{10g} (SPEAG) [W/kg]	50mW Measured SAR _{10g} [W/kg]	1 W Normalized SAR _{10g} [W/kg]	Deviation [%]	Limit [%]
1 800	12/09/2019	3903	2d015	Body	19.9	19.7	20.2	1.01	20.2	+ 0.00	± 10
1 800	12/10/2019	3903	2d015	Body	20.2	20.1	20.2	1.01	20.2	+ 0.00	± 10
1 900	12/13/2019	3903	5d032	Body	22.4	22.3	20.8	0.960	19.2	- 7.69	± 10
1 900	12/09/2019	3903	5d032	Body	19.9	19.7	20.8	0.960	19.2	- 7.69	± 10
1 900	12/10/2019	3903	5d032	Body	20.2	20.1	20.8	0.960	19.2	- 7.69	± 10
2 600	12/28/2019	3903	1106	Body	19.8	19.6	24.7	1.23	24.6	- 0.40	± 10
5 250	01/12/2020	7370	1107	Body	19.8	19.6	21.0	1.08	21.6	+ 2.86	± 10
5 600	01/12/2020	7370	1107	Body	19.8	19.6	21.8	1.15	23	+ 5.50	± 10
5 600	01/12/2020	7370	1107	Body	19.8	19.6	21.3	1.05	21	-1.41	± 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 mW 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	34.0	33.56	0.15	Left Cheek	1:8.3	0.135	1.107	0.149	-
836.6	190	GSM	34.0	33.56	-0.03	Left Tilt	1:8.3	0.082	1.107	0.091	-
836.6	190	GSM	34.0	33.56	-0.13	Right Cheek	1:8.3	0.195	1.107	0.216	1
836.6	190	GSM	34.0	33.56	-0.04	Right Tilt	1:8.3	0.088	1.107	0.097	-
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)	
1 880	661	GSM	31.0	30.44	-0.18	Left Cheek	1:8.3	0.062	1.138	0.071	2
1 880	661	GSM	31.0	30.44	0.14	Left Tilt	1:8.3	0.054	1.138	0.061	-
1 880	661	GSM	31.0	30.44	-0.17	Right Cheek	1:8.3	0.043	1.138	0.049	-
1 880	661	GSM	31.0	30.44	-0.14	Right Tilt	1:8.3	0.034	1.138	0.039	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Head 1.6 W/kg Averaged over 1 gram					

UMTS 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	4183	RMC	25.5	24.62	0.15	Left Cheek	1:1	0.148	1.225	0.181	-
836.6	4183	RMC	25.5	24.62	0.01	Left Tilt	1:1	0.076	1.225	0.093	-
836.6	4183	RMC	25.5	24.62	-0.14	Right Cheek	1:1	0.208	1.225	0.255	3
836.6	4183	RMC	25.5	24.62	-0.06	Right Tilt	1:1	0.078	1.225	0.096	-
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 1700 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.										
1 752.6	1513	RMC	24.0	23.58	-0.02	Left Cheek	1:1	0.110	1.102	0.121	4
1 752.6	1513	RMC	24.0	23.58	-0.03	Left Tilt	1:1	0.055	1.102	0.061	-
1 752.6	1513	RMC	24.0	23.58	-0.13	Right Cheek	1:1	0.073	1.102	0.080	-
1 752.6	1513	RMC	24.0	23.58	0.10	Right Tilt	1:1	0.041	1.102	0.045	-
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 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.										
1 880	9400	RMC	24.0	23.14	0.12	Left Cheek	1:1	0.108	1.219	0.132	5
1 880	9400	RMC	24.0	23.14	-0.14	Left Tilt	1:1	0.037	1.219	0.045	-
1 880	9400	RMC	24.0	23.14	-0.10	Right Cheek	1:1	0.061	1.219	0.074	-
1 880	9400	RMC	24.0	23.14	0.06	Right Tilt	1:1	0.043	1.219	0.052	-
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 5 Head SAR															
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.														
836.5	20525	QPSK	10	25.5	24.87	-0.09	Left Cheek	0	1	0	1:1	0.130	1.156	0.150	-
836.5	20525	QPSK	10	24.5	23.96	0.16	Left Cheek	1	25	0	1:1	0.107	1.132	0.121	-
836.5	20525	QPSK	10	25.5	24.87	-0.08	Left Tilt	0	1	0	1:1	0.071	1.156	0.082	-
836.5	20525	QPSK	10	24.5	23.96	-0.08	Left Tilt	1	25	0	1:1	0.055	1.132	0.062	-
836.5	20525	QPSK	10	25.5	24.87	0.14	Right Cheek	0	1	0	1:1	0.197	1.156	0.228	6
836.5	20525	QPSK	10	24.5	23.96	0.12	Right Cheek	1	25	0	1:1	0.161	1.132	0.182	-
836.5	20525	QPSK	10	25.5	24.87	0.19	Right Tilt	0	1	0	1:1	0.070	1.156	0.081	-
836.5	20525	QPSK	10	24.5	23.96	0.15	Right Tilt	1	25	0	1:1	0.054	1.132	0.061	-
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 (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.														
707.5	23095	QPSK	10	25.0	23.97	-0.14	Left Cheek	0	1	0	1:1	0.062	1.268	0.079	-
707.5	23095	QPSK	10	24.0	23.09	-0.10	Left Cheek	1	25	12	1:1	0.055	1.233	0.068	-
707.5	23095	QPSK	10	25.0	23.97	-0.01	Left Tilt	0	1	0	1:1	0.027	1.268	0.034	-
707.5	23095	QPSK	10	24.0	23.09	0.13	Left Tilt	1	25	12	1:1	0.022	1.233	0.027	-
707.5	23095	QPSK	10	25.0	23.97	0.05	Right Cheek	0	1	0	1:1	0.105	1.268	0.133	7
707.5	23095	QPSK	10	24.0	23.09	0.01	Right Cheek	1	25	12	1:1	0.089	1.233	0.110	-
707.5	23095	QPSK	10	25.0	23.97	-0.15	Right Tilt	0	1	0	1:1	0.050	1.268	0.063	-
707.5	23095	QPSK	10	24.0	23.09	0.03	Right Tilt	1	25	12	1:1	0.044	1.233	0.054	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Head 1.6 W/kg Averaged over 1 gram								

LTE Band 13 Head SAR

Frequency		Mode	Band width (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.														
782	23230	QPSK	10	25.0	23.99	-0.18	Left Cheek	0	1	24	1:1	0.086	1.262	0.109	-
782	23230	QPSK	10	24.0	23.19	-0.06	Left Cheek	1	25	0	1:1	0.076	1.205	0.092	-
782	23230	QPSK	10	25.0	23.99	0.01	Left Tilt	0	1	24	1:1	0.043	1.262	0.054	-
782	23230	QPSK	10	24.0	23.19	0.09	Left Tilt	1	25	0	1:1	0.034	1.205	0.041	-
782	23230	QPSK	10	25.0	23.99	-0.10	Right Cheek	0	1	24	1:1	0.135	1.262	0.170	8
782	23230	QPSK	10	24.0	23.19	0.15	Right Cheek	1	25	0	1:1	0.113	1.205	0.136	-
782	23230	QPSK	10	25.0	23.99	-0.11	Right Tilt	0	1	24	1:1	0.063	1.262	0.080	-
782	23230	QPSK	10	24.0	23.19	-0.10	Right Tilt	1	25	0	1:1	0.051	1.205	0.061	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Head 1.6 W/kg Averaged over 1 gram								

LTE Band 25 Head SAR

Frequency		Mode	Band width (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.														
1 882.5	26365	QPSK	20	24.0	23.09	-0.16	Left Cheek	0	1	0	1:1	0.089	1.233	0.110	9
1 882.5	26365	QPSK	20	23.0	22.17	0.15	Left Cheek	1	50	0	1:1	0.072	1.211	0.087	-
1 882.5	26365	QPSK	20	24.0	23.09	0.10	Left Tilt	0	1	0	1:1	0.079	1.233	0.097	-
1 882.5	26365	QPSK	20	23.0	22.17	-0.08	Left Tilt	1	50	0	1:1	0.060	1.211	0.073	-
1 882.5	26365	QPSK	20	24.0	23.09	-0.11	Right Cheek	0	1	0	1:1	0.056	1.233	0.069	-
1 882.5	26365	QPSK	20	23.0	22.17	-0.19	Right Cheek	1	50	0	1:1	0.046	1.211	0.056	-
1 882.5	26365	QPSK	20	24.0	23.09	0.18	Right Tilt	0	1	0	1:1	0.062	1.233	0.076	-
1 882.5	26365	QPSK	20	23.0	22.17	-0.02	Right Tilt	1	50	0	1:1	0.044	1.211	0.053	-
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 (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.														
831.5	26865	QPSK	15	25.0	24.13	-0.07	Left Cheek	0	1	0	1:1	0.114	1.222	0.139	-
831.5	26865	QPSK	15	24.0	23.20	-0.05	Left Cheek	1	36	0	1:1	0.094	1.202	0.113	-
831.5	26865	QPSK	15	25.0	24.13	-0.11	Left Tilt	0	1	0	1:1	0.065	1.222	0.079	-
831.5	26865	QPSK	15	24.0	23.20	-0.12	Left Tilt	1	36	0	1:1	0.053	1.202	0.064	-
831.5	26865	QPSK	15	25.0	24.13	0.16	Right Cheek	0	1	0	1:1	0.168	1.222	0.205	10
831.5	26865	QPSK	15	24.0	23.20	0.13	Right Cheek	1	36	0	1:1	0.138	1.202	0.166	-
831.5	26865	QPSK	15	25.0	24.13	0.19	Right Tilt	0	1	0	1:1	0.078	1.222	0.095	-
831.5	26865	QPSK	15	24.0	23.20	0.19	Right Tilt	1	36	0	1:1	0.056	1.202	0.067	-
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 (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.														
2 680.0	41490	QPSK	20	25.0	24.72	0.14	Left Cheek	0	1	0	1:1.58	0.055	1.067	0.059	-
2 506.0	39750	QPSK	20	24.0	23.35	-0.03	Left Cheek	1	50	0	1:1.58	0.038	1.161	0.044	-
2 680.0	41490	QPSK	20	25.0	24.72	0.10	Left Tilt	0	1	0	1:1.58	0.061	1.067	0.065	-
2 506.0	39750	QPSK	20	24.0	23.35	-0.17	Left Tilt	1	50	0	1:1.58	0.042	1.161	0.049	-
2 680.0	41490	QPSK	20	25.0	24.72	-0.15	Right Cheek	0	1	0	1:1.58	0.053	1.067	0.057	-
2 506.0	39750	QPSK	20	24.0	23.35	0.01	Right Cheek	1	50	0	1:1.58	0.036	1.161	0.042	-
2 680.0	41490	QPSK	20	25.0	24.72	-0.16	Right Tilt	0	1	0	1:1.58	0.094	1.067	0.100	-
2 506.0	39750	QPSK	20	24.0	23.35	-0.13	Right Tilt	1	50	0	1:1.58	0.057	1.161	0.066	-
Power class 2 (HPUE)															
2 680.0	41490	QPSK	20	26.5	26.10	-0.16	Right Tilt	0	1	0	1:2.31	0.094	1.096	0.103	11
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)
When Power reduction is applied to LTE B41 PC 2(HPUE), The power level of LTE B41 PC became same as the reduction power of LTE B41 PC3

LTE Band 66 Head SAR

Frequency		Mode	Band width (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.														
1 745	132322	QPSK	20	24.0	23.40	0.16	Left Cheek	0	1	99	1:1	0.100	1.148	0.115	12
1 745	132322	QPSK	20	23.0	22.48	0.08	Left Cheek	1	50	25	1:1	0.087	1.127	0.098	-
1 745	132322	QPSK	20	24.0	23.40	0.10	Left Tilt	0	1	99	1:1	0.044	1.148	0.051	-
1 745	132322	QPSK	20	23.0	22.48	0.13	Left Tilt	1	50	25	1:1	0.031	1.127	0.035	-
1 745	132322	QPSK	20	24.0	23.40	-0.11	Right Cheek	0	1	99	1:1	0.067	1.148	0.077	-
1 745	132322	QPSK	20	23.0	22.48	0.15	Right Cheek	1	50	25	1:1	0.060	1.127	0.068	-
1 745	132322	QPSK	20	24.0	23.40	-0.11	Right Tilt	0	1	99	1:1	0.034	1.148	0.039	-
1 745	132322	QPSK	20	23.0	22.48	-0.01	Right Tilt	1	50	25	1:1	0.031	1.127	0.035	-
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.															
2 437	6	802.11b	20	1	17.0	16.00	0.10	Left Cheek	Ant1	98.9	0.436	0.288	1.259	1.011	0.367	-
2 437	6	802.11b	20	1	17.0	16.00	0.03	Left Tilt	Ant1	98.9	0.771	0.404	1.259	1.011	0.514	-
2 437	6	802.11b	20	1	17.0	16.00	0.01	Right Cheek	Ant1	98.9	0.622	0.347	1.259	1.011	0.442	-
2 437	6	802.11b	20	1	17.0	16.00	-0.19	Right Tilt	Ant1	98.9	0.722	0.424	1.259	1.011	0.540	13
2 462	11	802.11b	20	1	17.0	15.93		Left Cheek	Ant2	98.9	0.117		1.279	1.011		-
2 462	11	802.11b	20	1	17.0	15.93		Left Tilt	Ant2	98.9	0.114		1.279	1.011		-
2 462	11	802.11b	20	1	17.0	15.93	0.01	Right Cheek	Ant2	98.9	0.287	0.181	1.279	1.011	0.234	-
2 462	11	802.11b	20	1	17.0	15.93		Right Tilt	Ant2	98.9	0.21		1.279	1.011		-
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 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	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.															
2 437	6	802.11b	20	1	14	13.01		Left Cheek	Ant1	98.9	0.266		1.256	1.011		-
2 437	6	802.11b	20	1	14	13.01		Left Tilt	Ant1	98.9	0.400		1.256	1.011		-
2 437	6	802.11b	20	1	14	13.01		Right Cheek	Ant1	98.9	0.312		1.256	1.011		-
2 437	6	802.11b	20	1	14	13.01	0.10	Right Tilt	Ant1	98.9	0.402	0.220	1.256	1.011	0.279	14
2 412	1	802.11b	20	1	14	13.21		Left Cheek	Ant2	98.9	0.0822		1.199	1.011		-
2 412	1	802.11b	20	1	14	13.21		Left Tilt	Ant2	98.9	0.0684		1.199	1.011		-
2 412	1	802.11b	20	1	14	13.21		Right Cheek	Ant2	98.9	0.178		1.199	1.011		-
2 412	1	802.11b	20	1	14	13.21	0.17	Right Tilt	Ant2	98.9	0.195	0.070	1.199	1.011	0.085	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population										Head 1.6 W/kg Averaged over 1 gram						

NII Head SAR – RCV On																
Frequency		Mode	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.															
5 290	58	802.11ac	80	MCS0	15.0	14.32		Left Cheek	Ant1	85.65	0.158		1.169	1.168		-
5 290	58	802.11ac	80	MCS0	15.0	14.32		Left Tilt	Ant1	85.65	0.162		1.169	1.168		-
5 290	58	802.11ac	80	MCS0	15.0	14.32		Right Cheek	Ant1	85.65	0.421		1.169	1.168		-
5 290	58	802.11ac	80	MCS0	15.0	14.32	-0.11	Right Tilt	Ant1	85.65	0.458	0.183	1.169	1.168	0.250	-
5 290	58	802.11ac	80	MCS0	15.0	13.09		Left Cheek	Ant2	85.65	0.121		1.552	1.168		-
5 290	58	802.11ac	80	MCS0	15.0	13.09		Left Tilt	Ant2	85.65	0.0674		1.552	1.168		-
5 290	58	802.11ac	80	MCS0	15.0	13.09	0.17	Right Cheek	Ant2	85.65	0.417	0.141	1.552	1.168	0.256	-
5 290	58	802.11ac	80	MCS0	15.0	13.09		Right Tilt	Ant2	85.65	0.0741		1.552	1.168		-
5 610	122	802.11ac	80	MCS0	15.0	14.38		Left Cheek	Ant1	85.65	0.167		1.153	1.168		-
5 610	122	802.11ac	80	MCS0	15.0	14.38		Left Tilt	Ant1	85.65	0.199		1.153	1.168		-
5 610	122	802.11ac	80	MCS0	15.0	14.38		Right Cheek	Ant1	85.65	0.375		1.153	1.168		-
5 610	122	802.11ac	80	MCS0	15.0	14.38	0.11	Right Tilt	Ant1	85.65	0.424	0.142	1.153	1.168	0.191	-
5 690	138	802.11ac	80	MCS0	15.0	13.77		Left Cheek	Ant2	85.65	0.101		1.327	1.168		-
5 690	138	802.11ac	80	MCS0	15.0	13.77		Left Tilt	Ant2	85.65	0.127		1.327	1.168		-
5 690	138	802.11ac	80	MCS0	15.0	13.77	-0.15	Right Cheek	Ant2	85.65	0.666	0.205	1.327	1.168	0.318	15
5 690	138	802.11ac	80	MCS0	15.0	13.77		Right Tilt	Ant2	85.65	0.291		1.327	1.168		-
5 775	155	802.11ac	80	MCS0	15.0	14.27		Left Cheek	Ant1	85.65	0.488		1.183	1.168		-
5 775	155	802.11ac	80	MCS0	15.0	14.27		Left Tilt	Ant1	85.65	0.333		1.183	1.168		-
5 775	155	802.11ac	80	MCS0	15.0	14.27	0.18	Right Cheek	Ant1	85.65	0.596	0.157	1.183	1.168	0.217	-
5 775	155	802.11ac	80	MCS0	15.0	14.27		Right Tilt	Ant1	85.65	0.518		1.183	1.168		-
5 775	155	802.11ac	80	MCS0	15.0	13.15		Left Cheek	Ant2	85.65	0.117		1.531	1.168		-
5 775	155	802.11ac	80	MCS0	15.0	13.15		Left Tilt	Ant2	85.65	0.0923		1.531	1.168		-
5 775	155	802.11ac	80	MCS0	15.0	13.15	0.17	Right Cheek	Ant2	85.65	0.93	0.162	1.531	1.168	0.290	-
5 775	155	802.11ac	80	MCS0	15.0	13.15		Right Tilt	Ant2	85.65	0.22		1.531	1.168		-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Head 1.6 W/kg Averaged over 1 gram							

DSS Head SAR											
Frequency		Mode	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
MHz	Ch.										
2 441	39	Bluetooth DH5	18	17.51	0.01	Left Cheek	0.388	1.119	1.300	0.564	-
2 441	39	Bluetooth DH5	18	17.51	0.11	Left Tilt	0.478	1.119	1.300	0.695	-
2 441	39	Bluetooth DH5	18	17.51	-0.09	Right Cheek	0.506	1.119	1.300	0.736	16
2 441	39	Bluetooth DH5	18	17.51	0.19	Right Tilt	0.499	1.119	1.300	0.726	-
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	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.			(dB)	(dB)	(dB)							
836.6	190	GSM 850 Voice		34.0	33.56	0.01	Rear	1:8.3	15	0.217	1.107	0.240	17
836.6	190	GSM 850 Voice		34.0	33.56	0.01	Front	1:8.3	15	0.201	1.107	0.223	-
1 880	661	GSM 1900 Voice		31.0	30.44	-0.07	Rear	1:8.3	15	0.186	1.138	0.212	18
1 880	661	GSM 1900 Voice		31.0	30.44	0.04	Front	1:8.3	15	0.161	1.138	0.183	-
836.6	4183	UMTS 850	RMC	25.5	24.62	0.03	Rear	1:1	15	0.236	1.225	0.289	-
836.6	4183	UMTS 850	RMC	25.5	24.62	0.01	Front	1:1	15	0.239	1.225	0.293	19
1 752.6	1513	UMTS 1700	RMC	24.0	23.58	-0.13	Rear	1:1	15	0.299	1.102	0.329	20
1 752.6	1513	UMTS 1700	RMC	24.0	23.58	0.01	Front	1:1	15	0.228	1.102	0.251	-
1 880	9400	UMTS 1900	RMC	24.0	23.14	-0.13	Rear	1:1	15	0.306	1.219	0.373	21
1 880	9400	UMTS 1900	RMC	24.0	23.14	-0.12	Front	1:1	15	0.282	1.219	0.344	-
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	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)		(dB)	(dB)							
836.5	20525	LTE 5 QPSK	10	25.5	24.87	0.01	Rear	0	1	0	1:1	15	0.303	1.156	0.350	22
836.5	20525		10	24.5	23.96	0.11	Rear	1	25	0	1:1	15	0.254	1.132	0.288	-
836.5	20525		10	25.5	24.87	0.02	Front	0	1	0	1:1	15	0.243	1.156	0.281	-
836.5	20525		10	24.5	23.96	0.02	Front	1	25	0	1:1	15	0.199	1.132	0.225	-
707.5	23095	LTE 12 QPSK	10	25.0	23.97	-0.08	Rear	0	1	0	1:1	15	0.173	1.268	0.219	23
707.5	23095		10	24.0	23.09	-0.03	Rear	1	25	12	1:1	15	0.145	1.233	0.179	-
707.5	23095		10	25.0	23.97	-0.06	Front	0	1	0	1:1	15	0.166	1.268	0.210	-
707.5	23095		10	24.0	23.09	-0.05	Front	1	25	12	1:1	15	0.141	1.233	0.174	-
782	23230	LTE 13 QPSK	10	25.0	23.99	-0.01	Rear	0	1	24	1:1	15	0.236	1.262	0.298	24
782	23230		10	24.0	23.19	-0.04	Rear	1	25	0	1:1	15	0.188	1.205	0.227	-
782	23230		10	25.0	23.99	-0.02	Front	0	1	24	1:1	15	0.220	1.262	0.278	-
782	23230		10	24.0	23.19	-0.02	Front	1	25	0	1:1	15	0.181	1.205	0.218	-
1 882.5	26365	LTE25 QPSK	20	24.0	23.09	-0.11	Rear	0	1	0	1:1	15	0.257	1.233	0.317	-
1 882.5	26365		20	23.0	22.17	-0.05	Rear	1	50	0	1:1	15	0.202	1.211	0.245	-
1 882.5	26365		20	24.0	23.09	-0.14	Front	0	1	0	1:1	15	0.260	1.233	0.321	25
1 882.5	26365		20	23.0	22.17	-0.14	Front	1	50	0	1:1	15	0.204	1.211	0.247	-
831.5	26865	LTE26 QPSK	15	25.0	24.13	0.06	Rear	0	1	0	1:1	15	0.276	1.222	0.337	26
831.5	26865		15	24.0	23.20	0.08	Rear	1	36	0	1:1	15	0.232	1.202	0.279	-
831.5	26865		15	25.0	24.13	-0.02	Front	0	1	0	1:1	15	0.219	1.222	0.268	-
831.5	26865		15	24.0	23.20	-0.03	Front	1	36	0	1:1	15	0.184	1.202	0.221	-
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 (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.															
2 680	41490	LTE 41 QPSK	20	25.0	24.72	0.03	Rear	0	1	0	1:1.58	15	0.285	1.067	0.304	27
2 506.0	39750		20	24.0	23.35	0.16	Rear	1	50	0	1:1.58	15	0.223	1.161	0.259	-
2 680	41490		20	25.0	24.72	-0.18	Front	0	1	0	1:1.58	15	0.225	1.067	0.240	-
2 506.0	39750		20	24.0	23.35	0.017	Front	1	50	0	1:1.58	15	0.165	1.161	0.192	-
Power class 2 (HPUE)																
2 680	41490	LTE 41 QPSK	20	26.5	26.10		Rear	0	1	0	1:2.31	15	0.276	1.096	0.302	-
1 745	132322	LTE 66 QPSK	20	24.0	23.40	-0.05	Rear	0	1	99	1:1	15	0.359	1.148	0.412	28
1 745	132322		20	23.0	22.48	-0.11	Rear	1	50	25	1:1	15	0.270	1.127	0.304	-
1 745	132322		20	24.0	23.40	-0.12	Front	0	1	99	1:1	15	0.262	1.148	0.301	-
1 745	132322		20	23.0	22.48	-0.17	Front	1	50	25	1:1	15	0.224	1.127	0.252	-
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.																
2 412	1	802.11b	20	1	21.0	20.06	-0.19	Rear	Ant1	98.9	15	0.146	0.102	1.242	1.011	0.128	29
2 412	1	802.11b	20	1	21.0	20.06		Front	Ant1	98.9	15	0.132		1.242	1.011		-
2 412	1	802.11b	20	1	21.0	19.99	0.17	Rear	Ant2	98.9	15	0.144	0.097	1.262	1.011	0.124	-
2 412	1	802.11b	20	1	21.0	19.99		Front	Ant2	98.9	15	0.0508		1.262	1.011		-
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 (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.																
2 437	6	802.11b	20	1	17	16.00	-0.06	Rear	Ant1	98.9	15	0.0781	0.038	1.259	1.011	0.048	-
2 437	6	802.11b	20	1	17	16.00		Front	Ant1	98.9	15	0.0469		1.259	1.011		-
2 437	6	802.11b	20	1	17	15.89	0.17	Rear	Ant2	98.9	15	0.0697	0.047	1.291	1.011	0.061	30
2 437	6	802.11b	20	1	17	15.89		Front	Ant2	98.9	15	0.0313		1.291	1.011		-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population											Body 1.6 W/kg Averaged over 1 gram						

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.																
5 280	56	802.11a	20	6	18	17.24	0.17	Rear	Ant1	93.63	15	0.484	0.211	1.191	1.068	0.268	-
5 280	56	802.11a	20	6	18	17.24		Front	Ant1	93.63	15	0.0839		1.191	1.068		-
5 600	120	802.11a	20	6	18	17.69	-0.10	Rear	Ant1	93.63	15	0.973	0.422	1.074	1.068	0.484	-
5 600	120	802.11a	20	6	18	17.69	0.13	Front	Ant1	93.63	15	0.143	0.049	1.074	1.068	0.056	-
5 785	157	802.11a	20	6	18	17.64	-0.10	Rear	Ant1	93.63	15	0.668	0.282	1.086	1.068	0.327	-
5 785	157	802.11a	20	6	18	17.64		Front	Ant1	93.63	15	0.125		1.086	1.068		-
5 280	56	802.11a	20	6	18	16.21	-0.18	Rear	Ant2	93.63	15	0.637	0.282	1.510	1.068	0.455	-
5 280	56	802.11a	20	6	18	16.21		Front	Ant2	93.63	15	0.059		1.510	1.068		-
5 620	124	802.11a	20	6	18	17.06	-0.19	Rear	Ant2	93.63	15	1.89	0.822	1.242	1.068	1.090	
5 600	120	802.11a	20	6	18	16.98	-0.15	Rear	Ant2	93.63	15	1.66	0.728	1.265	1.068	0.984	
5 620	124	802.11a	20	6	18	17.06	-0.14	Front	Ant2	93.63	15	0.207	0.075	1.242	1.068	0.099	-
5 785	157	802.11a	20	6	18	16.63	0.14	Rear	Ant2	93.63	15	1.23	0.52	1.371	1.068	0.761	-
5 785	157	802.11a	20	6	18	16.63	0.14	Front	Ant2	93.63	15	0.141	0.05	1.371	1.068	0.073	
5 260	52	802.11n	20	MCS8	21.0	19.71	-0.08	Rear	MIMO	93.20	15	1.14	0.524	1.346	1.073	0.757	-
5 260	52	802.11n	20	MCS8	21.0	19.71	-0.03	Front	MIMO	93.20	15	0.0976	0.036	1.346	1.073	0.052	-
5 600	120	802.11n	20	MCS8	21.0	20.34	-0.11	Rear	MIMO	93.20	15	2	0.872	1.164	1.073	1.089	
5 620	124	802.11n	20	MCS8	21.0	20.25	-0.19	Rear	MIMO	93.20	15	1.98	0.878	1.189	1.073	1.120	31
5 600	120	802.11n	20	MCS8	21.0	20.34	0.05	Front	MIMO	93.20	15	0.219	0.089	1.164	1.073	0.111	
5 785	157	802.11n	20	MCS8	21.0	20.17	-0.10	Rear	MIMO	93.20	15	1.56	0.676	1.211	1.073	0.878	
5 825	165	802.11n	20	MCS8	21.0	20.17	-0.10	Rear	MIMO	93.20	15	1.44	0.626	1.211	1.073	0.813	
5 745	149	802.11n	20	MCS8	21.0	20.11	-0.16	Rear	MIMO	93.20	15	1.62	0.699	1.227	1.073	0.920	-
5 785	157	802.11n	20	MCS8	21.0	20.17		Front	MIMO	93.20	15	0.172		1.211	1.073		-
5 620	124	802.11n	20	MCS8	21.0	20.25	-0.01	Rear	MIMO	93.20	15	1.92	0.853	1.189	1.073	1.088	*
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.

5GHz WLAN 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.																
5 290	58	802.11ac	80	MCS0	14	13.10	0.02	Rear	Ant1	85.65	15	0.15	0.070	1.230	1.168	0.101	-
5 290	58	802.11ac	80	MCS0	14	13.10		Front	Ant1	85.65	15	0.0289		1.230	1.168		
5 610	122	802.11ac	80	MCS0	14	13.15	-0.13	Rear	Ant1	85.65	15	0.239	0.105	1.216	1.168	0.149	
5 610	122	802.11ac	80	MCS0	14	13.15		Front	Ant1	85.65	15	0.0324		1.216	1.168		
5 775	155	802.11ac	80	MCS0	14	13.58	-0.01	Rear	Ant1	85.65	15	0.0948	0.028	1.102	1.168	0.036	
5 775	155	802.11ac	80	MCS0	14	13.58		Front	Ant1	85.65	15	0.0141		1.102	1.168		-
5 290	58	802.11ac	80	MCS0	14	12.07	-0.11	Rear	Ant2	85.65	15	0.166	0.0785	1.560	1.168	0.143	
5 290	58	802.11ac	80	MCS0	14	12.07		Front	Ant2	85.65	15	0.0253		1.560	1.168		
5 690	138	802.11ac	80	MCS0	14	12.68	-0.19	Rear	Ant2	85.65	15	0.332	0.149	1.355	1.168	0.236	32
5 690	138	802.11ac	80	MCS0	14	12.68		Front	Ant2	85.65	15	0.0453		1.355	1.168		
5 775	155	802.11ac	80	MCS0	14	12.09	-0.12	Rear	Ant2	85.65	15	0.2	0.08	1.552	1.168	0.145	
5 775	155	802.11ac	80	MCS0	14	12.09		Front	Ant2	85.65	15	0.0459		1.552	1.168		-
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 (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
MHz	Ch.											
2 441	39	Bluetooth DH5	18.0	17.51	-0.07	Rear	15	0.027	1.119	1.300	0.039	-
2 441	39	Bluetooth DH5	18.0	17.51	-0.14	Front	15	0.028	1.119	1.300	0.041	33
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg (mW/g) 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	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)			(mm)	(W/kg)		(W/kg)	
836.6	190	GPRS 3Tx	31.0	30.38	0.05	Rear	1:2.77	10	0.575	1.153	0.663	34
836.6	190	GPRS 3Tx	31.0	30.38	0.01	Front	1:2.77	10	0.457	1.153	0.527	-
836.6	190	GPRS 3Tx	31.0	30.38	0.18	Left	1:2.77	10	0.082	1.153	0.095	-
836.6	190	GPRS 3Tx	31.0	30.38	0.04	Right	1:2.77	10	0.311	1.153	0.359	-
836.6	190	GPRS 3Tx	31.0	30.38	0.12	Bottom	1:2.77	10	0.442	1.153	0.510	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Body 1.6 W/kg Averaged over 1 gram						

GSM 1900 Hotspot SAR												
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)			(mm)	(W/kg)		(W/kg)	
1 880.0	661	GPRS 3Tx	26.0	25.57	-0.14	Rear	1:2.77	10	0.349	1.104	0.385	-
1 880.0	661	GPRS 3Tx	26.0	25.57	-0.12	Front	1:2.77	10	0.345	1.104	0.381	-
1 880.0	661	GPRS 3Tx	26.0	25.57	-0.10	Left	1:2.77	10	0.062	1.104	0.068	-
1 880.0	661	GPRS 3Tx	26.0	25.57	-0.07	Right	1:2.77	10	0.054	1.104	0.060	-
1850.2	512	GPRS 3Tx	26.0	25.72	-0.16	Bottom	1:2.77	10	0.917	1.067	0.978	-
1 880.0	661	GPRS 3Tx	26.0	25.57	0.12	Bottom	1:2.77	10	0.946	1.104	1.044	35
1909.8	810	GPRS 3Tx	26.0	25.34	0.12	Bottom	1:2.77	10	0.858	1.164	0.999	-
1 880.0	661	GPRS 3Tx	26.0	25.57	0.13	Bottom	1:2.77	10	0.946	1.104	1.044	*
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 850 Hotspot SAR												
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)			(mm)	(W/kg)		(W/kg)	
836.6	4183	RMC	25.5	24.62	0.04	Rear	1:1	10	0.420	1.225	0.515	36
836.6	4183	RMC	25.5	24.62	0.01	Front	1:1	10	0.344	1.225	0.421	-
836.6	4183	RMC	25.5	24.62	0.09	Left	1:1	10	0.079	1.225	0.097	-
836.6	4183	RMC	25.5	24.62	-0.01	Right	1:1	10	0.266	1.225	0.326	-
836.6	4183	RMC	25.5	24.62	0.01	Bottom	1:1	10	0.362	1.225	0.443	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Body 1.6 W/kg Averaged over 1 gram						

UMTS 1700 Hotspot SAR

Frequency		Mode	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.										(W/kg)	
1 752.6	1513	RMC	21.0	20.04	-0.03	Rear	1:1	10	0.238	1.247	0.297	-
1 752.6	1513	RMC	21.0	20.04	-0.14	Front	1:1	10	0.226	1.247	0.282	-
1 752.6	1513	RMC	21.0	20.04	-0.14	Left	1:1	10	0.065	1.247	0.081	-
1 752.6	1513	RMC	21.0	20.04	-0.16	Right	1:1	10	0.028	1.247	0.035	-
1 752.6	1513	RMC	21.0	20.04	0.02	Bottom	1:1	10	0.574	1.247	0.716	37
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 1900 Hotspot SAR

Frequency		Mode	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.										(W/kg)	
1 880.0	9400	RMC	21.0	19.62	-0.18	Rear	1:1	10	0.246	1.374	0.338	-
1 880.0	9400	RMC	21.0	19.62	-0.09	Front	1:1	10	0.270	1.374	0.371	-
1 880.0	9400	RMC	21.0	19.62	0.14	Left	1:1	10	0.041	1.374	0.056	-
1 880.0	9400	RMC	21.0	19.62	0.02	Right	1:1	10	0.035	1.374	0.048	-
1 852.4	9262	RMC	21.0	20.02	-0.05	Bottom	1:1	10	0.556	1.253	0.697	-
1 880.0	9400	RMC	21.0	19.62	0.06	Bottom	1:1	10	0.614	1.374	0.844	-
1 907.6	9538	RMC	21.0	19.81	0.07	Bottom	1:1	10	0.745	1.315	0.980	38
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg Averaged over 1 gram					

LTE Band 5 Hotspot SAR

Frequency		Mode	Band width (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.															
836.5	20525	QPSK	10	25.5	24.87	-0.09	Rear	0	1	0	1:1	10	0.616	1.156	0.712	39
836.5	20525	QPSK	10	24.5	23.96	-0.05	Rear	1	25	0	1:1	10	0.508	1.132	0.575	-
836.5	20525	QPSK	10	25.5	24.87	-0.11	Front	0	1	0	1:1	10	0.457	1.156	0.528	-
836.5	20525	QPSK	10	24.5	23.96	-0.01	Front	1	25	0	1:1	10	0.382	1.132	0.432	-
836.5	20525	QPSK	10	25.5	24.87	-0.10	Left	0	1	0	1:1	10	0.101	1.156	0.117	-
836.5	20525	QPSK	10	24.5	23.96	-0.13	Left	1	25	0	1:1	10	0.083	1.132	0.094	-
836.5	20525	QPSK	10	25.5	24.87	-0.11	Right	0	1	0	1:1	10	0.194	1.156	0.224	-
836.5	20525	QPSK	10	24.5	23.96	0.05	Right	1	25	0	1:1	10	0.149	1.132	0.169	-
836.5	20525	QPSK	10	25.5	24.87	-0.10	Bottom	0	1	0	1:1	10	0.409	1.156	0.473	-
836.5	20525	QPSK	10	24.5	23.96	0.11	Bottom	1	25	0	1:1	10	0.338	1.132	0.383	-
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 (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.															
707.5	23095	QPSK	10	25.0	23.97	-0.01	Rear	0	1	0	1:1	10	0.292	1.268	0.370	40
707.5	23095	QPSK	10	24.0	23.09	-0.03	Rear	1	25	12	1:1	10	0.254	1.233	0.313	-
707.5	23095	QPSK	10	25.0	23.97	0.03	Front	0	1	0	1:1	10	0.224	1.268	0.284	-
707.5	23095	QPSK	10	24.0	23.09	-0.09	Front	1	25	12	1:1	10	0.194	1.233	0.239	-
707.5	23095	QPSK	10	25.0	23.97	-0.02	Left	0	1	0	1:1	10	0.076	1.268	0.096	-
707.5	23095	QPSK	10	24.0	23.09	0.05	Left	1	25	12	1:1	10	0.066	1.233	0.081	-
707.5	23095	QPSK	10	25.0	23.97	-0.03	Right	0	1	0	1:1	10	0.170	1.268	0.216	-
707.5	23095	QPSK	10	24.0	23.09	0.03	Right	1	25	12	1:1	10	0.142	1.233	0.175	-
707.5	23095	QPSK	10	25.0	23.97	0.01	Bottom	0	1	0	1:1	10	0.204	1.268	0.259	-
707.5	23095	QPSK	10	24.0	23.09	0.18	Bottom	1	25	12	1:1	10	0.178	1.233	0.219	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram								

LTE Band 13 Hotspot SAR

Frequency		Mode	Band width (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.															
782	23230	QPSK	10	25.0	23.99	-0.06	Rear	0	1	24	1:1	10	0.460	1.262	0.581	41
782	23230	QPSK	10	24.0	23.19	-0.04	Rear	1	25	0	1:1	10	0.368	1.205	0.443	-
782	23230	QPSK	10	25.0	23.99	-0.01	Front	0	1	24	1:1	10	0.359	1.262	0.453	-
782	23230	QPSK	10	24.0	23.19	-0.06	Front	1	25	0	1:1	10	0.290	1.205	0.349	-
782	23230	QPSK	10	25.0	23.99	-0.01	Left	0	1	24	1:1	10	0.060	1.262	0.076	-
782	23230	QPSK	10	24.0	23.19	-0.05	Left	1	25	0	1:1	10	0.051	1.205	0.061	-
782	23230	QPSK	10	25.0	23.99	0.01	Right	0	1	24	1:1	10	0.253	1.262	0.319	-
782	23230	QPSK	10	24.0	23.19	-0.02	Right	1	25	0	1:1	10	0.211	1.205	0.254	-
782	23230	QPSK	10	25.0	23.99	0.17	Bottom	0	1	24	1:1	10	0.278	1.262	0.351	-
782	23230	QPSK	10	24.0	23.19	0.19	Bottom	1	25	0	1:1	10	0.228	1.205	0.275	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram								

LTE Band 25 Hotspot SAR

Frequency		Mode	Band width (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.															
1 882.5	26365	QPSK	20	21.0	19.94	-0.13	Rear	0	1	49	1:1	10	0.257	1.276	0.328	-
1 882.5	26365	QPSK	20	21.0	20.01	-0.16	Rear	0	50	0	1:1	10	0.263	1.256	0.330	-
1 882.5	26365	QPSK	20	21.0	19.94	-0.17	Front	0	1	49	1:1	10	0.257	1.276	0.328	-
1 882.5	26365	QPSK	20	21.0	20.01	-0.19	Front	0	50	0	1:1	10	0.262	1.256	0.329	-
1 882.5	26365	QPSK	20	21.0	19.94	-0.12	Left	0	1	49	1:1	10	0.041	1.276	0.052	-
1 882.5	26365	QPSK	20	21.0	20.01	-0.08	Left	0	50	0	1:1	10	0.042	1.256	0.053	-
1 882.5	26365	QPSK	20	21.0	19.94	0.02	Right	0	1	49	1:1	10	0.075	1.276	0.096	-
1 882.5	26365	QPSK	20	21.0	20.01	-0.12	Right	0	50	0	1:1	10	0.042	1.256	0.053	-
1 882.5	26365	QPSK	20	21.0	19.94	-0.10	Bottom	0	1	49	1:1	10	0.589	1.276	0.752	-
1 882.5	26365	QPSK	20	21.0	20.01	-0.05	Bottom	0	50	0	1:1	10	0.604	1.256	0.759	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 26 Hotspot SAR																
Frequency		Mode	Band width (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.															
831.5	26865	QPSK	15	25.0	24.13	0.01	Rear	0	1	0	1:1	10	0.561	1.222	0.686	43
831.5	26865	QPSK	15	24.0	23.20	-0.09	Rear	0	36	0	1:1	10	0.472	1.202	0.567	-
831.5	26865	QPSK	15	25.0	24.13	-0.04	Front	0	1	0	1:1	10	0.408	1.222	0.499	-
831.5	26865	QPSK	15	24.0	23.20	-0.06	Front	0	36	0	1:1	10	0.342	1.202	0.411	-
831.5	26865	QPSK	15	25.0	24.13	-0.13	Left	0	1	0	1:1	10	0.085	1.222	0.104	-
831.5	26865	QPSK	15	24.0	23.20	-0.19	Left	0	36	0	1:1	10	0.069	1.202	0.083	-
831.5	26865	QPSK	15	25.0	24.13	-0.07	Right	0	1	0	1:1	10	0.189	1.222	0.231	-
831.5	26865	QPSK	15	24.0	23.20	-0.02	Right	0	36	0	1:1	10	0.149	1.202	0.179	-
831.5	26865	QPSK	15	25.0	24.13	0.15	Bottom	0	1	0	1:1	10	0.346	1.222	0.423	-
831.5	26865	QPSK	15	24.0	23.20	0.11	Bottom	0	36	0	1:1	10	0.287	1.202	0.345	-
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 (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.															
2 549.5	40185	QPSK	20	23.0	22.73	-0.10	Rear	0	1	0	1:1.58	10	0.374	1.064	0.398	-
2 549.5	40185	QPSK	20	23.0	22.83	0.13	Rear	0	50	25	1:1.58	10	0.378	1.040	0.393	-
2 549.5	40185	QPSK	20	23.0	22.73	-0.18	Front	0	1	0	1:1.58	10	0.322	1.064	0.343	-
2 549.5	40185	QPSK	20	23.0	22.83	-0.16	Front	0	50	25	1:1.58	10	0.33	1.040	0.343	-
2 549.5	40185	QPSK	20	23.0	22.73	-0.11	Left	0	1	0	1:1.58	10	0.078	1.064	0.083	-
2 549.5	40185	QPSK	20	23.0	22.83	0.17	Left	0	50	25	1:1.58	10	0.079	1.040	0.082	-
2 506.0	39750	QPSK	20	23.0	22.68	0.05	Bottom	0	1	99	1:1.58	10	0.714	1.076	0.768	-
2 549.5	40185	QPSK	20	23.0	22.73	0.07	Bottom	0	1	0	1:1.58	10	0.798	1.064	0.849	-
2 593.0	40620	QPSK	20	23.0	22.46	0.17	Bottom	0	1	0	1:1.58	10	0.835	1.132	0.945	44
2 636.5	41055	QPSK	20	23.0	22.54	0.04	Bottom	0	1	0	1:1.58	10	0.715	1.112	0.795	-
2 680.0	41490	QPSK	20	23.0	22.69	0.17	Bottom	0	1	0	1:1.58	10	0.659	1.074	0.708	-
2 506.0	39750	QPSK	20	23.0	22.82	0.05	Bottom	0	50	49	1:1.58	10	0.717	1.042	0.747	-
2 549.5	40185	QPSK	20	23.0	22.83	0.03	Bottom	0	50	25	1:1.58	10	0.813	1.040	0.846	-
2 593.0	40620	QPSK	20	23.0	22.55	0.11	Bottom	0	50	0	1:1.58	10	0.841	1.109	0.933	45
2 636.5	41055	QPSK	20	23.0	22.56	0.07	Bottom	0	50	25	1:1.58	10	0.707	1.107	0.783	-
2 680.0	41490	QPSK	20	23.0	22.72	0.08	Bottom	0	50	49	1:1.58	10	0.647	1.067	0.690	-
2 506.0	39750	QPSK	20	23.0	22.82	0.08	Bottom	0	100	0	1:1.58	10	0.713	1.042	0.743	-
2 593.0	40620	QPSK	20	23.0	22.55	0.04	Bottom	0	50	0	1:1.58	10	0.836	1.109	0.927	*
Power class 2 (HPUE)																
2 593.0	40620	QPSK	20	24.5	22.39	0.12	Bottom	0	50	0	1:2.31	10	0.509	1.626	0.828	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg Averaged over 1 gram									

Note: * Data entry indicate Variability measurement.

LTE Band 66 Hotspot SAR																	
Frequency		Mode	Band width (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.	
MHz	Ch.																
1 720	132072	QPSK	20	21.0	20.20	-0.14	Rear	0	1	0	1:1	10	0.330	1.202	0.397		
1 720	132072	QPSK	20	21.0	20.18	-0.13	Rear	0	50	49	1:1	10	0.306	1.208	0.370		
1 720	132072	QPSK	20	21.0	20.20	-0.15	Front	0	1	0	1:1	10	0.262	1.202	0.315	-	
1 720	132072	QPSK	20	21.0	20.18	-0.15	Front	0	50	49	1:1	10	0.245	1.208	0.296	-	
1 720	132072	QPSK	20	21.0	20.20	-0.11	Left	0	1	0	1:1	10	0.075	1.202	0.090	-	
1 720	132072	QPSK	20	21.0	20.18	-0.14	Left	0	50	49	1:1	10	0.070	1.208	0.085	-	
1 720	132072	QPSK	20	21.0	20.20	-0.17	Right	0	1	0	1:1	10	0.036	1.202	0.043	-	
1 720	132072	QPSK	20	21.0	20.18	-0.13	Right	0	50	49	1:1	10	0.027	1.208	0.033	-	
1 720	132072	QPSK	20	21.0	20.20	-0.04	Bottom	0	1	0	1:1	10	0.503	1.202	0.605	-	
1 720	132072	QPSK	20	21.0	20.18	-0.12	Bottom	0	50	49	1:1	10	0.510	1.208	0.616	46	
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 (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.																
2 412	1	802.11b	20	1	21.0	20.06	0.15	Rear	Ant1	98.9	10	0.308	0.204	1.242	1.011	0.256	-
2 412	1	802.11b	20	1	21.0	20.06		Front	Ant1	98.9	10	0.286		1.242	1.011		-
2 412	1	802.11b	20	1	21.0	20.06		Left	Ant1	98.9	10	0.13		1.242	1.011		-
2 412	1	802.11b	20	1	21.0	20.06	0.19	Top	Ant1	98.9	10	0.626	0.437	1.242	1.011	0.549	47
2 412	1	802.11b	20	1	21.0	19.99	0.07	Rear	Ant2	98.9	10	0.354	0.222	1.262	1.011	0.283	-
2 412	1	802.11b	20	1	21.0	19.99		Front	Ant2	98.9	10	0.0921		1.262	1.011		-
2 412	1	802.11b	20	1	21.0	19.99		Left	Ant2	98.9	10	0.294		1.262	1.011		-
2 412	1	802.11b	20	1	21.0	19.99		Top	Ant2	98.9	10	0.0551		1.262	1.011		-
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 - 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.																
2 437	6	802.11b	20	1	17	16.00	0.16	Rear	Ant1	98.9	10	0.137	0.085	1.259	1.011	0.108	-
2 437	6	802.11b	20	1	17	16.00		Front	Ant1	98.9	10	0.0869		1.259	1.011		-
2 437	6	802.11b	20	1	17	16.00		Left	Ant1	98.9	10	0.0227		1.259	1.011		-
2 437	6	802.11b	20	1	17	16.00	0.07	Top	Ant1	98.9	10	0.247	0.16	1.259	1.011	0.204	60
2 437	6	802.11b	20	1	17	15.89	-0.13	Rear	Ant2	98.9	10	0.084	0.055	1.291	1.011	0.072	-
2 437	6	802.11b	20	1	17	15.89		Front	Ant2	98.9	10	0.0302		1.291	1.011		-
2 437	6	802.11b	20	1	17	15.89		Left	Ant2	98.9	10	0.0206		1.291	1.011		-
2 437	6	802.11b	20	1	17	15.89		Top	Ant2	98.9	10	0.0195		1.291	1.011		-
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																	
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.																
5 785	157	802.11a	20	6	18.0	17.64	0.18	Rear	Ant1	93.63	10	1.38	0.584	1.086	1.068	0.677	-
5 785	157	802.11a	20	6	18.0	17.64		Front	Ant1	93.63	10	0.21		1.086	1.068		-
5 785	157	802.11a	20	6	18.0	17.64	0.10	Left	Ant1	93.63	10	0.317	0.146	1.086	1.068	0.169	-
5 785	157	802.11a	20	6	18.0	17.64		Top	Ant1	93.63	10	0.17		1.086	1.068		-
5 785	157	802.11a	20	6	18.0	16.63	-0.01	Rear	Ant2	93.63	10	1.97	0.82	1.371	1.068	1.201	-
5 825	165	802.11a	20	6	18.0	16.57	-0.11	Rear	Ant2	93.63	10	2.01	0.81	1.390	1.068	1.202	-
5 745	149	802.11a	20	6	18.0	16.54	0.06	Rear	Ant2	93.63	10	2.06	0.858	1.400	1.068	1.283	-
5 785	157	802.11a	20	6	18.0	16.63		Front	Ant2	93.63	10	0.189		1.371	1.068		-
5 785	157	802.11a	20	6	18.0	16.63	-0.15	Left	Ant2	93.63	10	0.426	0.167	1.371	1.068	0.245	-
5 785	157	802.11a	20	6	18.0	16.63		Top	Ant2	93.63	10	0.099		1.371	1.068		-
5 785	157	802.11n	20	MCS8	21.0	20.17	-0.18	Rear	MIMO	93.20	10	2.45	0.991	1.211	1.073	1.288	48
5 825	165	802.11n	20	MCS8	21.0	20.17	0.16	Rear	MIMO	93.20	10	2.16	0.906	1.211	1.073	1.177	-
5 745	149	802.11n	20	MCS8	21.0	20.11	0.16	Rear	MIMO	93.20	10	2.35	0.99	1.227	1.073	1.303	49
5 785	157	802.11n	20	MCS8	21.0	20.17		Front	MIMO	93.20	10	0.24		1.211	1.073		-
5 785	157	802.11n	20	MCS8	21.0	20.17	-0.14	Left	MIMO	93.20	10	0.547	0.232	1.211	1.073	0.301	-
5 785	157	802.11n	20	MCS8	21.0	20.17		Top	MIMO	93.20	10	0.169		1.211	1.073		-
5 785	157	802.11n	20	MCS8	21.0	20.17	-0.17	Rear	MIMO	93.20	10	2.33	0.962	1.211	1.073	1.250	*
5 785	157	802.11n	20	MCS8	21.0	20.17	-0.19	Rear	MIMO	93.20	10	2.33	0.946	1.211	1.073	1.229	**
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.

** Data entry indicate Device holder perturbation measurement.

5 GHz WLAN 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)	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.																
5 775	155	802.11ac	80	MCS0	14	13.58		Rear	Ant1	85.65	10	0.143		1.102	1.168		-
5 775	155	802.11ac	80	MCS0	14	13.58		Front	Ant1	85.65	10	0.0539		1.102	1.168		-
5 775	155	802.11ac	80	MCS0	14	13.58	-0.18	Left	Ant1	85.65	10	0.218	0.082	1.102	1.168	0.106	-
5 775	155	802.11ac	80	MCS0	14	13.58		Top	Ant1	85.65	10	0.0311		1.102	1.168		-
5 775	155	802.11ac	80	MCS0	14	11.89	-0.19	Rear	Ant2	85.65	10	0.281	0.117	1.626	1.168	0.222	50
5 775	155	802.11ac	80	MCS0	14	11.89		Front	Ant2	85.65	10	0.0437		1.626	1.168		-
5 775	155	802.11ac	80	MCS0	14	11.89		Left	Ant2	85.65	10	0.22		1.626	1.168		-
5 775	155	802.11ac	80	MCS0	14	11.89		Top	Ant2	85.65	10	0.0921		1.626	1.168		-
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 (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
MHz	Ch.											
2 441	39	Bluetooth DH5	18.0	17.51	-0.02	Rear	10	0.061	1.119	1.300	0.089	-
2 441	39	Bluetooth DH5	18.0	17.51	-0.01	Front	10	0.053	1.119	1.300	0.077	-
2 441	39	Bluetooth DH5	18.0	17.51	0.03	Left	10	0.026	1.119	1.300	0.038	-
2 441	39	Bluetooth DH5	18.0	17.51	0.08	Top	10	0.157	1.119	1.300	0.228	51
2 441	39	Bluetooth DH5	18.0	17.51	0.01	Bottom	10	0.001	1.119	1.300	0.001	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg (mW/g) 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.												
1 880.0	661	GPRS 3Tx	26.5	25.97	-0.06	Rear	OFF	1:2.77	8	0.330	1.130	0.373	-
1 880.0	661	GPRS 3Tx	26.5	25.97	-0.01	Front	OFF	1:2.77	6	0.460	1.130	0.520	-
1 880.0	661	GPRS 3Tx	26.5	25.97	-0.06	Bottom	OFF	1:2.77	12	0.564	1.130	0.637	-
1 880.0	661	GPRS 3Tx	26.5	25.97	-0.13	Left	N/A	1:2.77	0	0.199	1.130	0.225	-
1 880.0	661	GPRS 3Tx	26.5	25.97	-0.13	Right	N/A	1:2.77	0	0.135	1.130	0.153	-
1 880.0	661	GPRS 3Tx	26.0	25.41	-0.16	Rear	ON	1:2.77	0	0.575	1.146	0.659	-
1 880.0	661	GPRS 3Tx	26.0	25.41	-0.05	Front	ON	1:2.77	0	0.910	1.146	1.043	-
1 850.2	512	GPRS 3Tx	26.0	25.54	0.16	Bottom	ON	1:2.77	0	1.91	1.112	2.124	52
1 880.0	661	GPRS 3Tx	26.0	25.41	0.14	Bottom	ON	1:2.77	0	1.8	1.146	2.063	-
1 909.8	810	GPRS 3Tx	26.0	25.27	0.11	Bottom	ON	1:2.77	0	1.66	1.183	1.964	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Hand 4.0 W/kg Averaged over 10 gram						

UMTS 1700 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.												
1 752.6	1513	RMC	24.0	23.58	-0.02	Rear	OFF	1:1	8	0.423	1.102	0.466	-
1 752.6	1513	RMC	24.0	23.58	-0.10	Front	OFF	1:1	6	0.554	1.102	0.611	-
1 752.6	1513	RMC	24.0	23.58	0.12	Bottom	OFF	1:1	12	0.544	1.102	0.599	-
1 752.6	1513	RMC	24.0	23.58	-0.19	Left	N/A	1:1	0	0.170	1.102	0.187	-
1 752.6	1513	RMC	24.0	23.58	0.12	Right	N/A	1:1	0	0.096	1.102	0.106	-
1 752.6	1513	RMC	21.0	19.98	-0.15	Rear	ON	1:1	0	0.987	1.265	1.249	-
1 752.6	1513	RMC	21.0	19.98	-0.11	Front	ON	1:1	0	0.828	1.265	1.047	-
1 752.6	1513	RMC	21.0	19.98	0.17	Bottom	ON	1:1	0	1.240	1.265	1.569	53
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Hand 4.0 W/kg Averaged over 10 gram						

UMTS 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.												
1 880.0	9400	RMC	24.0	23.14	-0.06	Rear	OFF	1:1	8	0.392	1.219	0.478	-
1 880.0	9400	RMC	24.0	23.14	-0.13	Front	OFF	1:1	6	0.580	1.219	0.707	-
1 880.0	9400	RMC	24.0	23.14	0.14	Bottom	OFF	1:1	12	0.597	1.219	0.728	-
1 880.0	9400	RMC	24.0	23.14	-0.11	Left	N/A	1:1	0	0.261	1.219	0.318	-
1 880.0	9400	RMC	24.0	23.14	-0.17	Right	N/A	1:1	0	0.180	1.219	0.219	-
1 880.0	9400	RMC	21.0	19.59	-0.12	Rear	ON	1:1	0	0.921	1.384	1.275	-
1 880.0	9400	RMC	21.0	19.59	-0.11	Front	ON	1:1	0	0.809	1.384	1.120	-
1 880.0	9400	RMC	21.0	19.59	0.12	Bottom	ON	1:1	0	1.41	1.384	1.951	54
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Hand 4.0 W/kg Averaged over 10 gram					

LTE Band 25 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.																
1882.5	26365	QPSK	20	24.0	23.09	-0.01	Rear	OFF	0	1	0	1:1	8	0.462	1.233	0.570	-
1882.5	26365	QPSK	20	23.0	22.17	-0.19	Rear	OFF	1	50	0	1:1	8	0.362	1.211	0.438	-
1882.5	26365	QPSK	20	24.0	23.09	0.02	Front	OFF	0	1	0	1:1	6	0.455	1.233	0.561	-
1882.5	26365	QPSK	20	23.0	22.17	0.17	Front	OFF	1	50	0	1:1	6	0.354	1.211	0.429	-
1882.5	26365	QPSK	20	24.0	23.09	-0.02	Bottom	OFF	0	1	0	1:1	12	0.634	1.233	0.782	-
1882.5	26365	QPSK	20	23.0	22.17	0.16	Bottom	OFF	1	50	0	1:1	12	0.496	1.211	0.601	-
1882.5	26365	QPSK	20	24.0	23.09	-0.01	Left	N/A	0	1	0	1:1	0	0.274	1.233	0.338	-
1882.5	26365	QPSK	20	23.0	22.17	-0.15	Left	N/A	1	50	0	1:1	0	0.210	1.211	0.254	-
1882.5	26365	QPSK	20	24.0	23.09	0.16	Right	N/A	0	1	0	1:1	0	0.183	1.233	0.226	-
1882.5	26365	QPSK	20	23.0	22.17	-0.19	Right	N/A	1	50	0	1:1	0	0.146	1.211	0.177	-
1882.5	26365	QPSK	20	21.0	19.77	0.14	Rear	ON	0	1	0	1:1	0	0.886	1.327	1.176	-
1882.5	26365	QPSK	20	21.0	19.82	-0.16	Rear	ON	0	50	0	1:1	0	0.892	1.312	1.170	-
1882.5	26365	QPSK	20	21.0	19.77	-0.10	Front	ON	0	1	0	1:1	0	0.804	1.327	1.067	-
1882.5	26365	QPSK	20	21.0	19.82	-0.08	Front	ON	0	50	0	1:1	0	0.823	1.312	1.080	-
1882.5	26365	QPSK	20	21.0	19.77	-0.03	Bottom	ON	0	1	0	1:1	0	1.5	1.327	1.991	-
1882.5	26365	QPSK	20	21.0	19.82	-0.12	Bottom	ON	0	50	0	1:1	0	1.54	1.312	2.020	-
1860.0	26140	QPSK	20	21.0	19.72	0.18	Bottom	ON	0	50	0	1:1	0	1.54	1.343	2.068	55
1905.0	26590	QPSK	20	21.0	19.58	0.12	Bottom	ON	0	50	0	1:1	0	1.5	1.387	2.081	56
1882.5	26365	QPSK	20	21.0	19.78	0.12	Bottom	ON	0	100	0	1:1	0	1.41	1.324	1.867	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Hand 4.0 W/kg Averaged over 10 gram									

LTE TDD Band 41 Phablet SAR 10g																	
Frequency		Mode	Band Width	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	MP R (dB)	RB Size	RB Offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.																
2680.0	41490	QPSK	20	25.0	24.72	-0.07	Rear	OFF	0	1	0	1:1.58	8	0.320	1.067	0.341	-
2506.0	39750	QPSK	20	24.0	23.35	-0.16	Rear	OFF	1	50	0	1:1.58	8	0.255	1.161	0.296	-
2680.0	41490	QPSK	20	25.0	24.72	-0.09	Front	OFF	0	1	0	1:1.58	6	0.406	1.067	0.433	-
2506.0	39750	QPSK	20	24.0	23.35	-0.05	Front	OFF	1	50	0	1:1.58	6	0.292	1.161	0.339	-
2680.0	41490	QPSK	20	25.0	24.72	0.05	Bottom	OFF	0	1	0	1:1.58	12	0.375	1.067	0.400	-
2506.0	39750	QPSK	20	24.0	23.35	0.08	Bottom	OFF	1	50	0	1:1.58	12	0.281	1.161	0.326	-
2680.0	41490	QPSK	20	25.0	24.72	-0.15	Left	N/A	0	1	0	1:1.58	0	0.475	1.067	0.507	-
2506.0	39750	QPSK	20	24.0	23.35	-0.17	Left	N/A	1	50	0	1:1.58	0	0.225	1.161	0.261	-
2549.5	40185	QPSK	20	23.0	22.78	-0.17	Rear	ON	0	1	0	1:1.58	0	0.997	1.052	1.049	-
2549.5	40185	QPSK	20	23.0	22.89	-0.12	Rear	ON	0	50	25	1:1.58	0	0.98	1.026	1.005	-
2549.5	40185	QPSK	20	23.0	22.78	0.19	Front	ON	0	1	0	1:1.58	0	0.862	1.052	0.907	-
2549.5	40185	QPSK	20	23.0	22.89	-0.16	Front	ON	0	50	25	1:1.58	0	0.871	1.026	0.894	-
2549.5	40185	QPSK	20	23.0	22.78	0.11	Bottom	ON	0	1	0	1:1.58	0	1.27	1.052	1.336	57
2549.5	40185	QPSK	20	23.0	22.89	-0.16	Bottom	ON	0	50	25	1:1.58	0	1.27	1.026	1.303	-
Power Class 2 (HPUE)																	
2549.5	40185	QPSK	20	24.5	22.64	-0.10	Bottom	ON	0	50	25	1:2.31	0	0.824	1.535	1.265	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Hand 4.0 W/kg Averaged over 10 gram								

LTE Band 66 Phablet SAR 10g																	
Frequency		Mode	Band Width	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	MP R (dB)	RB Size	RB Offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.																
1 745	132322	QPSK	20	24.0	23.40	-0.14	Rear	OFF	0	1	99	1:1	8	0.427	1.148	0.490	-
1 745	132322	QPSK	20	23.0	22.48	-0.09	Rear	OFF	1	50	25	1:1	8	0.366	1.127	0.412	-
1 745	132322	QPSK	20	24.0	23.40	0.01	Front	OFF	0	1	99	1:1	6	0.391	1.148	0.449	-
1 745	132322	QPSK	20	23.0	22.48	0.01	Front	OFF	1	50	25	1:1	6	0.33	1.127	0.372	-
1 745	132322	QPSK	20	24.0	23.40	0.13	Bottom	OFF	0	1	99	1:1	12	0.661	1.148	0.759	-
1 745	132322	QPSK	20	23.0	22.48	0.08	Bottom	OFF	1	50	25	1:1	12	0.496	1.127	0.559	-
1 745	132322	QPSK	20	24.0	23.40	0.01	Left	N/A	0	1	99	1:1	0	0.320	1.148	0.367	-
1 745	132322	QPSK	20	23.0	22.48	-0.10	Left	N/A	1	50	25	1:1	0	0.266	1.127	0.300	-
1 745	132322	QPSK	20	24.0	23.40	0.16	Right	N/A	0	1	99	1:1	0	0.077	1.148	0.088	-
1 745	132322	QPSK	20	23.0	22.48	-0.12	Right	N/A	1	50	25	1:1	0	0.060	1.127	0.068	-
1 720	132072	QPSK	20	21.0	19.92	-0.17	Rear	ON	0	1	0	1:1	0	0.697	1.282	0.894	-
1 720	132072	QPSK	20	21.0	19.97	0.13	Rear	ON	0	50	0	1:1	0	0.718	1.268	0.910	-
1 720	132072	QPSK	20	21.0	19.92	-0.18	Front	ON	0	1	0	1:1	0	0.855	1.282	1.096	-
1 720	132072	QPSK	20	21.0	19.97	-0.01	Front	ON	0	50	0	1:1	0	0.84	1.268	1.065	-
1720	132072	QPSK	20	21.0	19.92	0.13	Bottom	ON	0	1	0	1:1	0	1.39	1.282	1.782	58
1720	132072	QPSK	20	21.0	19.97	0.11	Bottom	ON	0	50	0	1:1	0	1.36	1.268	1.724	-
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.																
5 280	56	802.11a	20	6	18.0	17.24	-0.19	Rear	Ant1	93.63	0	2.76	0.322	1.191	1.068	0.410	
5 280	56	802.11a	20	6	18.0	17.24		Front	Ant1	93.63	0	1.53		1.191	1.068		-
5 280	56	802.11a	20	6	18.0	17.24	0.16	Left	Ant1	93.63	0	9.47	0.673	1.191	1.068	0.856	-
5 280	56	802.11a	20	6	18.0	17.24	-0.17	Top	Ant1	93.63	0	3.93	0.262	1.191	1.068	0.333	-
5 600	120	802.11a	20	6	18.0	17.69	0.01	Rear	Ant1	93.63	0	6.74	0.504	1.074	1.068	0.578	
5 600	120	802.11a	20	6	18.0	17.69	0.01	Front	Ant1	93.63	0	2.63	0.333	1.074	1.068	0.382	-
5 600	120	802.11a	20	6	18.0	17.69		Left	Ant1	93.63	0	6.38	0.625	1.074	1.068	0.717	-
5 600	120	802.11a	20	6	18.0	17.69		Top	Ant1	93.63	0	2.24		1.074	1.068		-
5 280	56	802.11a	20	6	18.0	16.21	-0.10	Rear	Ant2	93.63	0	2.46	0.207	1.510	1.068	0.334	-
5 280	56	802.11a	20	6	18.0	16.21		Front	Ant2	93.63	0	1.6		1.510	1.068		-
5 280	56	802.11a	20	6	18.0	16.21		Left	Ant2	93.63	0	1.42		1.510	1.068		-
5 280	56	802.11a	20	6	18.0	16.21		Top	Ant2	93.63	0	0.136		1.510	1.068		-
5 620	124	802.11a	20	6	18.0	17.06	0.17	Rear	Ant2	93.63	0	9.79	0.734	1.242	1.068	0.974	
5 620	124	802.11a	20	6	18.0	17.06	0.01	Front	Ant2	93.63	0	2.03	0.234	1.242	1.068	0.310	-
5 620	124	802.11a	20	6	18.0	17.06	-0.16	Left	Ant2	93.63	0	4.85	0.523	1.242	1.068	0.694	-
5 620	124	802.11a	20	6	18.0	17.06		Top	Ant2	93.63	0	0.227		1.242	1.068		-
5 745	149	802.11a	20	6	18.0	16.54	0.01	Rear	Ant2	93.63	0	11.9	0.913	1.400	1.068	1.365	**
5 745	149	802.11n	20	MCS8	21.0	20.11	0.05	Rear	MIMO	93.20	0	14.5	1.12	1.227	1.073	1.475	59**
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population												Hand 4.0 W/kg Averaged over 10 gram					

** Per KDB 648474 D04v01r03, When 5GHz U-NII-3 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.

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.. For LTE Band 41, 1 g SAR > 0.9 W/kg ($=1.2*(0.6/0.8)$) is applied.
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. 4.3 The maximum output power allowed for each transmitter and exposure condition was evaluated for SAR compliance based on expected use conditions and simultaneous scenarios.
11. During SAR testing for the Hotspot conditions per KDB 941225 D06v02r01, the actual portable hotspot operation (with actual simultaneous transmission of a transmitter with WiFi) was not activated.

GSM/GPRS Test Notes:

1. This EUT'S GSM and GPRS device class is B.
2. Body-Worn accessory testing is typically associated with voice operations. Therefore, GSM voice was evaluated for body-worn SAR.
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.
5. Justification for reduced test configurations per KDB Publication 941225 D01v03r01 and October 2013 TCB Workshop Notes: The source-based frame-averaged output power

was evaluated for all GPRS/EDGE slot configurations. The configuration with the highest target frame averaged output power was evaluated for hotspot SAR. When the maximum frame-averaged powers are equivalent across two or more slots (within 0.25 dB), the configuration with the most number of time slots was tested.

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. A-MPR was disabled for all SAR tests by setting NS=01 on the base station simulator.
5. 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.
6. TDD LTE 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).
7. 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.
8. 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.

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 GHz WiFi Single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11 g/n) was not required due to the maximum allowed powers and the highest reported DSSS SAR.
3. Per KDB 2482227 D01v02r02 justification for test configurations of 5 GHz WiFi Single transmission chain operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed powers. Other transmission mode were not investigated since the highest reported SAR for initial test configuration adjusted by the ration of maximum output powers is less than 1.2 W/kg for 1g SAR and less than 3.0 W/kg for 10 g SAR.
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 contains transmitters that may operate simultaneously. Therefore, simultaneous transmission analysis is required. Per KDB Publication 447498 D01v06 4.3.2, simultaneous transmission SAR test exclusion may be applied when the sum of 1g SAR and 10g SAR for all the simultaneous transmitting antennas in a specific physical test configuration is ≤ 1.6 W/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 Scenario with 2.4 GHz WLAN (Held to ear)						
Band	WWAN SAR (W/kg)	2.4 GHz WLAN Ant.1 SAR (W/kg)	2.4 GHz WLAN Ant.2 SAR (W/kg)	Σ 1-g SAR (W/kg)	Σ 1-g SAR (W/kg)	Σ 1-g SAR (W/kg)
	1	2	3	1+2	1+3	1+2+3
GSM 850	0.216	0.540	0.234	0.756	0.45	0.99
GSM 1900	0.071	0.540	0.234	0.611	0.305	0.845
UMTS 850	0.255	0.540	0.234	0.795	0.489	1.029
UMTS 1700	0.121	0.540	0.234	0.661	0.355	0.895
UMTS 1900	0.132	0.540	0.234	0.672	0.366	0.906
LTE Band 5	0.228	0.540	0.234	0.768	0.462	1.002
LTE Band 12	0.133	0.540	0.234	0.673	0.367	0.907
LTE Band 13	0.170	0.540	0.234	0.71	0.404	0.944
LTE Band 25	0.110	0.540	0.234	0.65	0.344	0.884
LTE Band 26	0.205	0.540	0.234	0.745	0.439	0.979
LTE Band 41	0.103	0.540	0.234	0.643	0.337	0.877
LTE Band 66	0.115	0.540	0.234	0.655	0.349	0.889

Simultaneous Transmission Scenario with 5 GHz WLAN (Held to ear)						
Band	WWAN SAR (W/kg)	5 GHz WLAN Ant.1 SAR (W/kg)	5 GHz WLAN Ant.2 SAR (W/kg)	Σ 1-g SAR (W/kg)	Σ 1-g SAR (W/kg)	Σ 1-g SAR (W/kg)
	1	2	3	1+2	1+3	1+2+3
GSM 850	0.216	0.250	0.318	0.466	0.534	0.784
GSM 1900	0.071	0.250	0.318	0.321	0.389	0.639
UMTS 850	0.255	0.250	0.318	0.505	0.573	0.823
UMTS 1700	0.121	0.250	0.318	0.371	0.439	0.689
UMTS 1900	0.132	0.250	0.318	0.382	0.45	0.700
LTE Band 5	0.228	0.250	0.318	0.478	0.546	0.796
LTE Band 12	0.133	0.250	0.318	0.383	0.451	0.701
LTE Band 13	0.170	0.250	0.318	0.42	0.488	0.738
LTE Band 25	0.110	0.250	0.318	0.36	0.428	0.678
LTE Band 26	0.205	0.250	0.318	0.455	0.523	0.773
LTE Band 41	0.103	0.250	0.318	0.353	0.421	0.671
LTE Band 66	0.115	0.250	0.318	0.599	0.667	0.683

Simultaneous Transmission Scenario with 5 GHz WLAN (Held to ear)						
Band	WWAN SAR (W/kg)	2.4 GHz WLAN Ant1 RSDB SAR (W/kg)	2.4 GHz WLAN Ant2 RSDB SAR (W/kg)	5 GHz WLAN Ant.1 SAR (W/kg)	5 GHz WLAN Ant.2 SAR (W/kg)	∑ 1-g SAR (W/kg)
	1	2	3	4	5	1+2+3+4+5
GSM 850	0.216	0.279	0.085	0.250	0.318	1.148
GSM 1900	0.071	0.279	0.085	0.250	0.318	1.003
UMTS 850	0.255	0.279	0.085	0.250	0.318	1.187
UMTS 1700	0.121	0.279	0.085	0.250	0.318	1.053
UMTS 1900	0.132	0.279	0.085	0.250	0.318	1.064
LTE Band 5	0.228	0.279	0.085	0.250	0.318	1.16
LTE Band 12	0.133	0.279	0.085	0.250	0.318	1.065
LTE Band 13	0.170	0.279	0.085	0.250	0.318	1.102
LTE Band 25	0.110	0.279	0.085	0.250	0.318	1.042
LTE Band 26	0.205	0.279	0.085	0.250	0.318	1.137
LTE Band 41	0.103	0.279	0.085	0.250	0.318	1.035
LTE Band 66	0.115	0.279	0.085	0.250	0.318	1.047

Simultaneous Transmission Scenario with 5 GHz WLAN (Held to ear)					
Band	WWAN SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant.1 SAR (W/kg)	5 GHz WLAN Ant.2 SAR (W/kg)	∑ 1-g SAR (W/kg)
	1	2	3	4	1+2+3+4
GSM 850	0.216	0.736	0.250	0.318	1.520
GSM 1900	0.071	0.736	0.250	0.318	1.375
UMTS 850	0.255	0.736	0.250	0.318	1.559
UMTS 1700	0.121	0.736	0.250	0.318	1.425
UMTS 1900	0.132	0.736	0.250	0.318	1.436
LTE Band 5	0.228	0.736	0.250	0.318	1.532
LTE Band 12	0.133	0.736	0.250	0.318	1.437
LTE Band 13	0.170	0.736	0.250	0.318	1.474
LTE Band 25	0.110	0.736	0.250	0.318	1.414
LTE Band 26	0.205	0.736	0.250	0.318	1.509
LTE Band 41	0.103	0.736	0.250	0.318	1.407
LTE Band 66	0.115	0.736	0.250	0.318	1.419

14.2 Body-Worn SAR Simultaneous Transmission Analysis.

Simultaneous Transmission Scenario with 2.4 GHz WLAN (15 mm)						
Band	WWAN SAR (W/kg)	2.4 GHz WLAN Ant.1 SAR (W/kg)	2.4 GHz WLAN Ant.2 SAR (W/kg)	Σ 1-g SAR (W/kg)	Σ 1-g SAR (W/kg)	Σ 1-g SAR (W/kg)
	1	2	3	1+2	1+3	1+2+3
GSM 850	0.240	0.128	0.124	0.368	0.364	0.492
GSM 1900	0.212	0.128	0.124	0.34	0.336	0.464
UMTS 850	0.293	0.128	0.124	0.421	0.417	0.545
UMTS 1700	0.329	0.128	0.124	0.457	0.453	0.581
UMTS 1900	0.373	0.128	0.124	0.501	0.497	0.625
LTE Band 5	0.350	0.128	0.124	0.478	0.474	0.602
LTE Band 12	0.219	0.128	0.124	0.347	0.343	0.471
LTE Band 13	0.298	0.128	0.124	0.426	0.422	0.55
LTE Band 25	0.321	0.128	0.124	0.449	0.445	0.573
LTE Band 26	0.337	0.128	0.124	0.465	0.461	0.589
LTE Band 41	0.304	0.128	0.124	0.432	0.428	0.556
LTE Band 66	0.412	0.128	0.124	0.54	0.536	0.664

Simultaneous Transmission Scenario with 5 GHz WLAN and Bluetooth (15 mm)					
Band	WWAN SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Bluetooth SAR (W/kg)	Σ 1-g SAR (W/kg)	Σ 1-g SAR (W/kg)
	1	2	3	1+2	1+2+3
GSM 850	0.240	1.120	0.041	1.36	1.401
GSM 1900	0.212	1.120	0.041	1.332	1.373
UMTS 850	0.293	1.120	0.041	1.413	1.454
UMTS 1700	0.329	1.120	0.041	1.449	1.49
UMTS 1900	0.373	1.120	0.041	1.493	1.534
LTE Band 5	0.350	1.120	0.041	1.47	1.511
LTE Band 12	0.219	1.120	0.041	1.339	1.38
LTE Band 13	0.298	1.120	0.041	1.418	1.459
LTE Band 25	0.321	1.120	0.041	1.441	1.482
LTE Band 26	0.337	1.120	0.041	1.457	1.498
LTE Band 41	0.304	1.120	0.041	1.424	1.465
LTE Band 66	0.412	1.120	0.041	1.532	1.573

Simultaneous Transmission Scenario with Bluetooth (15 mm)			
Band	WWAN SAR (W/kg)	Bluetooth SAR (W/kg)	Σ 1-g SAR (W/kg)
	1	2	1+2
GSM 850	0.240	0.041	0.281
GSM 1900	0.212	0.041	0.253
UMTS 850	0.293	0.041	0.334
UMTS 1700	0.329	0.041	0.370
UMTS 1900	0.373	0.041	0.414
LTE Band 5	0.350	0.041	0.391
LTE Band 12	0.219	0.041	0.260
LTE Band 13	0.298	0.041	0.339
LTE Band 25	0.321	0.041	0.362
LTE Band 26	0.337	0.041	0.378
LTE Band 41	0.304	0.041	0.345
LTE Band 66	0.412	0.041	0.453

Simultaneous Transmission Scenario with 2.4 GHz & 5 GHz WLAN (15 mm) RSDB						
Band	WWAN SAR (W/kg)	2.4 GHz WLAN Ant.1 SAR (W/kg)	2.4 GHz WLAN Ant.2 SAR (W/kg)	5 GHz WLAN Ant1 SAR (W/kg)	5 GHz WLAN Ant2 SAR (W/kg)	Σ 1-g SAR (W/kg)
	1	2	3	4	5	1+2+3+4+5
GSM 850	0.240	0.048	0.061	0.149	0.236	0.734
GSM 1900	0.212	0.048	0.061	0.149	0.236	0.706
UMTS 850	0.293	0.048	0.061	0.149	0.236	0.787
UMTS 1700	0.329	0.048	0.061	0.149	0.236	0.823
UMTS 1900	0.373	0.048	0.061	0.149	0.236	0.867
LTE Band 5	0.350	0.048	0.061	0.149	0.236	0.844
LTE Band 12	0.219	0.048	0.061	0.149	0.236	0.713
LTE Band 13	0.298	0.048	0.061	0.149	0.236	0.792
LTE Band 25	0.321	0.048	0.061	0.149	0.236	0.815
LTE Band 26	0.337	0.048	0.061	0.149	0.236	0.831
LTE Band 41	0.304	0.048	0.061	0.149	0.236	0.798
LTE Band 66	0.412	0.048	0.061	0.149	0.236	0.906

14.3 Hotspot SAR Simultaneous Transmission Analysis.

Simultaneous Transmission Scenario with 2.4 GHz WLAN and 5 GHz WLAN (10 mm)						
Band	WWAN SAR (W/kg)	2.4 GHz WLAN ANT.1 RSDB SAR (W/kg)	2.4 GHz WLAN ANT.2 RSDB SAR (W/kg)	5 GHz WLAN ANT.1 RSDB SAR (W/kg)	5 GHz WLAN ANT.2 RSDB SAR (W/kg)	∑ 1-g SAR (W/kg)
	1	2	3	4	5	1+ 2+ 3+ +4+ 5
GSM 850	0.663	0.108	0.072	0.106	0.222	1.171
GSM 1900	1.044	0.108	0.072	0.106	0.222	1.552
UMTS 850	0.515	0.108	0.072	0.106	0.222	1.023
UMTS 1700	0.716	0.108	0.072	0.106	0.222	1.224
UMTS 1900	0.980	0.108	0.072	0.106	0.222	1.488
LTE Band 5	0.712	0.108	0.072	0.106	0.222	1.22
LTE Band 12	0.370	0.108	0.072	0.106	0.222	0.878
LTE Band 13	0.581	0.108	0.072	0.106	0.222	1.089
LTE Band 25	0.759	0.108	0.072	0.106	0.222	1.267
LTE Band 26	0.686	0.108	0.072	0.106	0.222	1.194
LTE Band 41	0.945	0.108	0.072	0.106	0.222	1.453
LTE Band 66	0.616	0.108	0.072	0.106	0.222	1.124

Simultaneous Transmission Scenario with 5 GHz WLAN MIMO and Bluetooth (10 mm)						
Band		WWAN SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Bluetooth SAR (W/kg)	Σ 1-g SAR (W/kg)	SPLSR
		1	2	3	1+2+3	(Yes/No)
GSM 850	Rear	0.663	1.303	0.089	2.055	Yes
	Front	0.527	0.400	0.077	1.004	No
	Left	0.095	0.301	0.038	0.434	No
	Right	0.359	0.400	0.4	1.159	No
	Top	0.400	0.400	0.228	1.028	No
	Bottom	0.510	0.400	0.001	0.911	No
GSM 1900	Rear	0.385	1.303	0.089	1.777	Yes
	Front	0.381	0.400	0.077	0.858	No
	Left	0.068	0.301	0.038	0.407	No
	Right	0.060	0.400	0.4	0.86	No
	Top	0.400	0.400	0.228	1.028	No
	Bottom	1.044	0.400	0.001	1.445	No
UMTS 850	Rear	0.515	1.303	0.089	1.907	Yes
	Front	0.421	0.400	0.077	0.898	No
	Left	0.097	0.301	0.038	0.436	No
	Right	0.326	0.400	0.4	1.126	No
	Top	0.400	0.400	0.228	1.028	No
	Bottom	0.443	0.400	0.001	0.844	No
UMTS 1700	Rear	0.297	1.303	0.089	1.689	Yes
	Front	0.282	0.400	0.077	0.759	No
	Left	0.081	0.301	0.038	0.42	No
	Right	0.035	0.400	0.4	0.835	No
	Top	0.400	0.400	0.228	1.028	No
	Bottom	0.716	0.400	0.001	1.117	No
UMTS 1900	Rear	0.338	1.303	0.089	1.73	Yes
	Front	0.371	0.400	0.077	0.848	No
	Left	0.056	0.301	0.038	0.395	No
	Right	0.048	0.400	0.4	0.848	No
	Top	0.400	0.400	0.228	1.028	No
	Bottom	0.980	0.400	0.001	1.381	No
LTE Band 5	Rear	0.712	1.303	0.089	2.104	Yes
	Front	0.528	0.400	0.077	1.005	No
	Left	0.117	0.301	0.038	0.456	No
	Right	0.224	0.400	0.4	1.024	No
	Top	0.400	0.400	0.228	1.028	No
	Bottom	0.473	0.400	0.001	0.874	No
LTE Band 12	Rear	0.370	1.303	0.089	1.762	Yes
	Front	0.284	0.400	0.077	0.761	No
	Left	0.096	0.301	0.038	0.435	No
	Right	0.216	0.400	0.4	1.016	No
	Top	0.400	0.400	0.228	1.028	No
	Bottom	0.259	0.400	0.001	0.66	No

Simultaneous Transmission Scenario with 5 GHz WLAN MIMO and Bluetooth (10 mm)						
Band		WWAN SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Bluetooth SAR (W/kg)	Σ 1-g SAR (W/kg)	SPLSR
		1	2	3	1+2+3	(Yes/No)
LTE Band 13	Rear	0.581	1.303	0.089	1.973	Yes
	Front	0.453	0.400	0.077	0.93	No
	Left	0.076	0.301	0.038	0.415	No
	Right	0.319	0.400	0.4	1.119	No
	Top	0.400	0.400	0.228	1.028	No
	Bottom	0.351	0.400	0.001	0.752	No
LTE Band 25	Rear	0.330	1.303	0.089	1.722	Yes
	Front	0.329	0.400	0.077	0.806	No
	Left	0.053	0.301	0.038	0.392	No
	Right	0.096	0.400	0.4	0.896	No
	Top	0.400	0.400	0.228	1.028	No
	Bottom	0.759	0.400	0.001	1.16	No
LTE Band 26	Rear	0.686	1.303	0.089	2.078	Yes
	Front	0.499	0.400	0.077	0.976	No
	Left	0.104	0.301	0.038	0.443	No
	Right	0.231	0.400	0.4	1.031	No
	Top	0.400	0.400	0.228	1.028	No
	Bottom	0.423	0.400	0.001	0.824	No
LTE Band 41	Rear	0.398	1.303	0.089	1.79	Yes
	Front	0.343	0.400	0.077	0.82	No
	Left	0.083	0.301	0.038	0.422	No
	Right	0.400	0.400	0.4	1.2	No
	Top	0.400	0.400	0.228	1.028	No
	Bottom	0.945	0.400	0.001	1.346	No
LTE Band 66	Rear	0.397	1.303	0.089	1.789	Yes
	Front	0.315	0.400	0.077	0.792	No
	Left	0.090	0.301	0.038	0.429	No
	Right	0.043	0.400	0.4	0.843	No
	Top	0.400	0.400	0.228	1.028	No
	Bottom	0.616	0.400	0.001	1.017	No

Simultaneous Transmission Scenario with Bluetooth (10 mm)			
Band	WWAN SAR (W/kg)	Bluetooth SAR (W/kg)	Σ 1-g SAR (W/kg)
	1	2	1+2
GSM 850	0.663	0.228	0.891
GSM 1900	1.044	0.228	1.272
UMTS 850	0.515	0.228	0.743
UMTS 1700	0.716	0.228	0.944
UMTS 1900	0.980	0.228	1.208
LTE Band 5	0.712	0.228	0.940
LTE Band 12	0.370	0.228	0.598
LTE Band 13	0.581	0.228	0.809
LTE Band 25	0.759	0.228	0.987
LTE Band 26	0.686	0.228	0.914
LTE Band 41	0.945	0.228	1.173
LTE Band 66	0.616	0.228	0.844

14.4 Phablet SAR Simultaneous Transmission Analysis

(-) for Phablet SAR for test Positions that were not required to be evaluated for WWAN and WLAN SAR Per FCC KDB 941225 D06v02r01, the devices edges with antennas more than 2.5cm from edge are not required to be evaluated

(#) for WLAN SAR for test Positions that were not required to be evaluated for WLAN SAR Per FCC 248227D01v02r02, the worst case WLAN SAR result was used for simultaneous transmission analysis.

Per KDB Publication 648474 D04 Hand SAR, Phablet SAR tests were not required if wireless router 1g SAR(scaled to the maximum output power, including tolerance) < 1.2 W/kg.

Phablet 10g SAR Simultaneous Transmission Scenario with 5 GHz WLAN					
Band	WWAN SAR (W/kg)	5 GHz WLAN ANT.1 SAR (W/kg)	5 GHz WLAN ANT.2 SAR (W/kg)	Σ 10-g SAR (W/kg)	Σ 10-g SAR (W/kg)
	1	2	3	1+2	1+3
GSM 1900	1.044	0.856	1.365	1.9	2.409
UMTS 1700	0.716	0.856	1.365	1.572	2.081
UMTS 1900	0.980	0.856	1.365	1.836	2.345
LTE Band 25	0.759	0.856	1.365	1.615	2.124
LTE Band 41	0.945	0.856	1.365	1.801	2.31
LTE Band 66	0.616	0.856	1.365	1.472	1.981

Phablet 10g SAR Simultaneous Transmission Scenario with 5 GHz WLAN MIMO			
Band	WWAN SAR (W/kg)	5 GHz WLAN MIMO (W/kg)	Σ 10-g SAR (W/kg)
	1	2	1+2
GSM 1900	1.044	1.475	2.519
UMTS 1700	0.716	1.475	2.191
UMTS 1900	0.980	1.475	2.455
LTE Band 25	0.759	1.475	2.234
LTE Band 41	0.945	1.475	2.42
LTE Band 66	0.616	1.475	2.091

14.4 SAR to Peak Location Separation Ratio (SPLSR)

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

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

Where:

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

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

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

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

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

Per Sec. 14, below simultaneous transmission summations need to be calculated SPLSR.

14.4.1 SPLSR Evaluation

Peak location for SAR Rear side (Active)

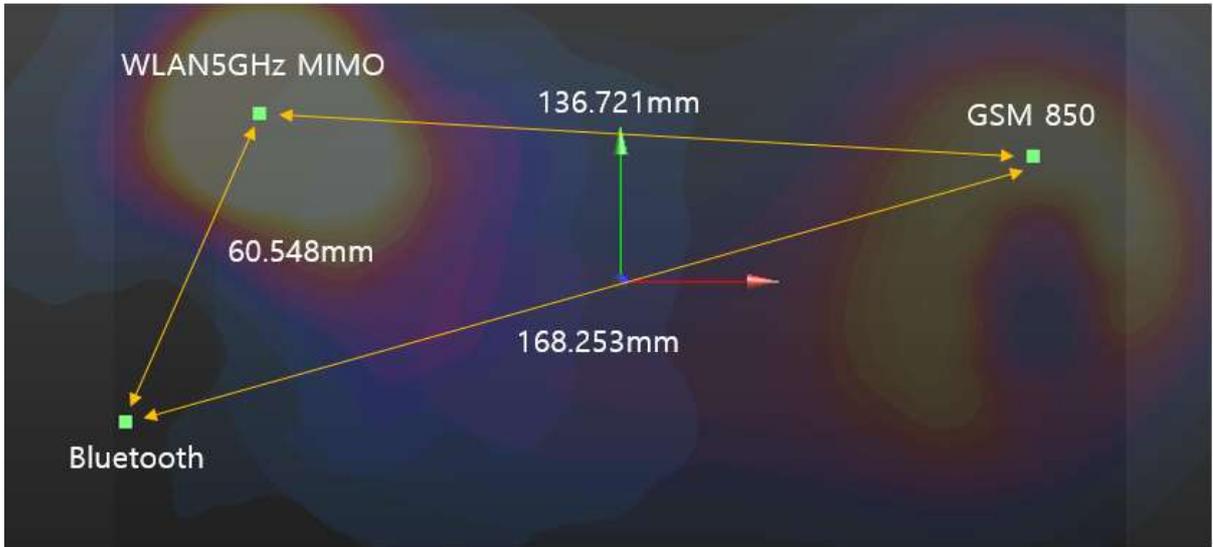
Mode/Band	X(mm)	Y(mm)	Z(mm)	Reported SAR [W/kg]
GSM 850	0.0735	0.0225	-0.169	0.663
GSM 1900	0.086	0.003	-0.172	0.385
UMTS 850	0.0875	0.0135	-0.172	0.515
UMTS 1700	0.0875	0.012	-0.172	0.297
UMTS 1900	0.0855	0.0165	-0.168	0.338
LTE Band 5	0.077	0.0195	-0.172	0.712
LTE Band 12	0.084	0.0195	-0.172	0.370
LTE Band 13	0.0735	0.021	-0.172	0.581
LTE Band 25	0.087	0.003	-0.172	0.330
LTE Band 26	0.077	0.0195	-0.172	0.686
LTE Band 41	0.0822	-0.0168	-0.171	0.398
LTE Band 66	0.0855	0	-0.172	0.397
Bluetooth	-0.0878	-0.0252	-0.173	0.089
WLAN 5GHz MIMO	-0.063	0.03	-0.171	1.303

14.4.2 SAR to Peak Location Ratio (SPLSR) Figures

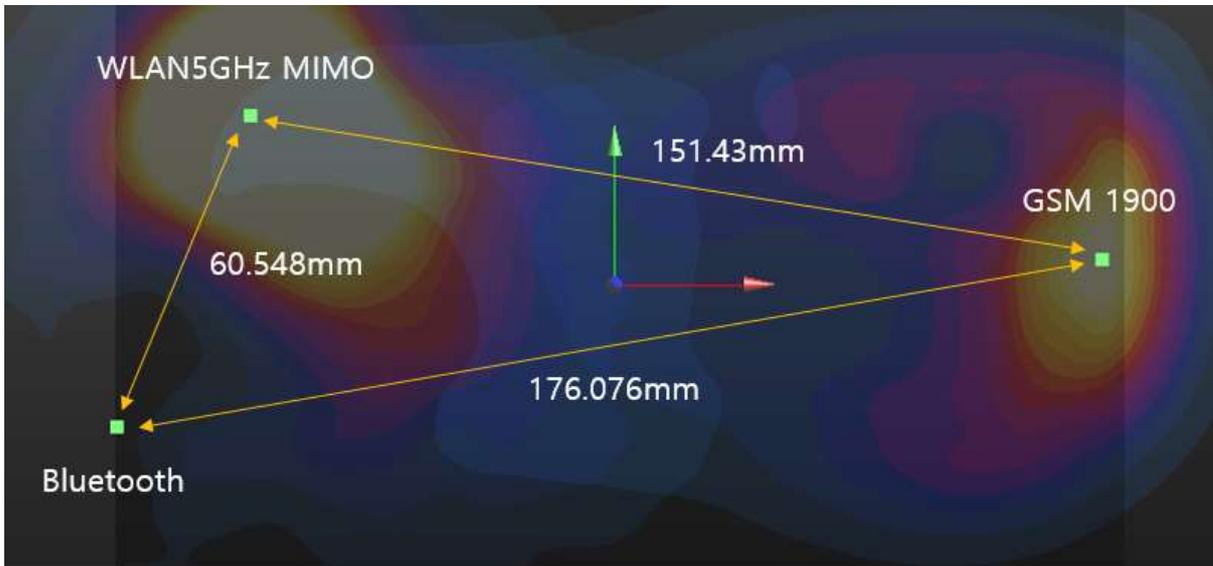
Mode			Sum 1g SAR [W/kg]	Peak SAR Separation Distance (mm)			SPLSR	Plot No
1	2	3	1 + 2+3	1 +2	1 +3	2 +3		
GSM 850	BT	WLAN 5GHz MIMO	2.055	168.253	136.721	60.548	0.022	#1
GSM 1900	BT	WLAN 5GHz MIMO	1.777	176.076	151.430	60.548	0.016	#2
UMTS 850	BT	WLAN 5GHz MIMO	1.731	179.524	151.405	60.548	0.015	#3
UMTS 1700	BT	WLAN 5GHz MIMO	1.689	179.206	151.576	60.548	0.014	#4
UMTS 1900	BT	WLAN 5GHz MIMO	1.907	178.317	149.143	60.548	0.018	#5
LTE Band 5	BT	WLAN 5GHz MIMO	2.104	170.758	140.397	60.548	0.022	#6
LTE Band 12	BT	WLAN 5GHz MIMO	1.762	177.523	147.378	60.548	0.016	#7
LTE Band 13	BT	WLAN 5GHz MIMO	1.973	167.789	136.800	60.548	0.020	#8
LTE Band 25	BT	WLAN 5GHz MIMO	1.722	177.063	152.414	60.548	0.015	#9
LTE Band 26	BT	WLAN 5GHz MIMO	2.078	170.758	140.397	60.548	0.021	#10
LTE Band 41	BT	WLAN 5GHz MIMO	1.790	170.219	152.556	60.548	0.016	#11
LTE Band 66	BT	WLAN 5GHz MIMO	1.789	175.125	151.503	60.548	0.016	#12

14.5 SPLSR Plot

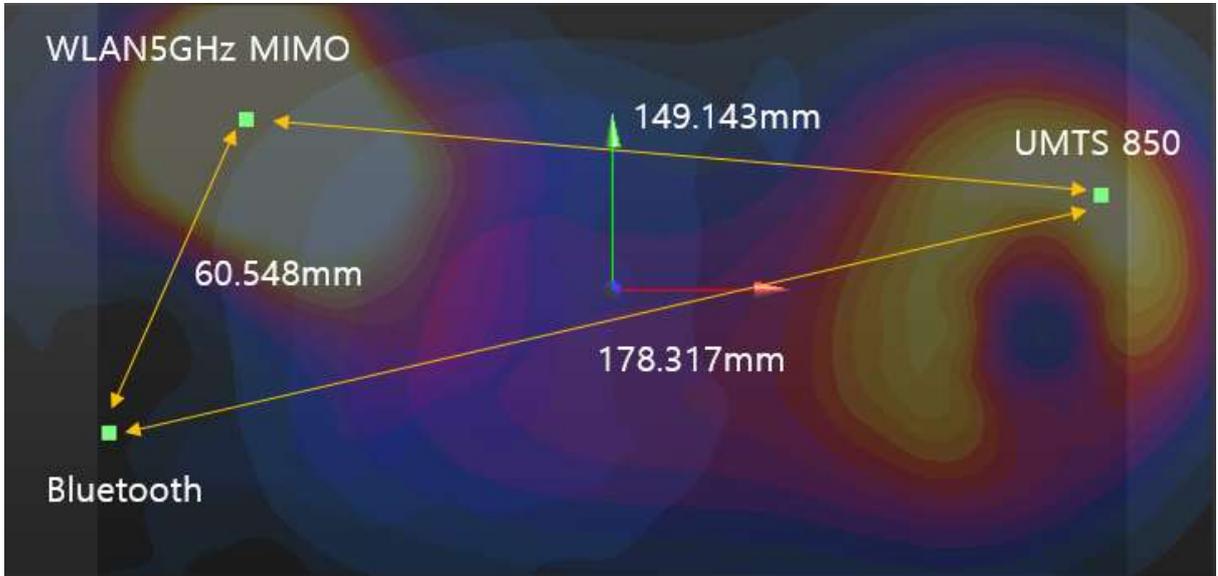
Plot #1 GSM850 + WLAN 5GHz MIMO + Bluetooth



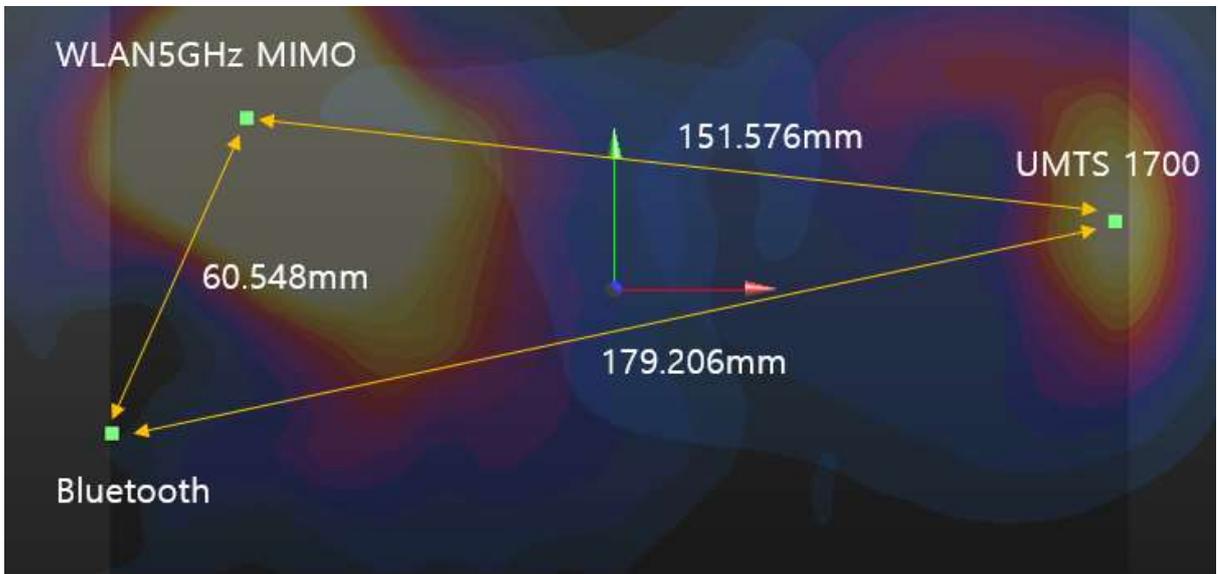
Plot #2 GSM1900 + WLAN 5GHz MIMO + Bluetooth



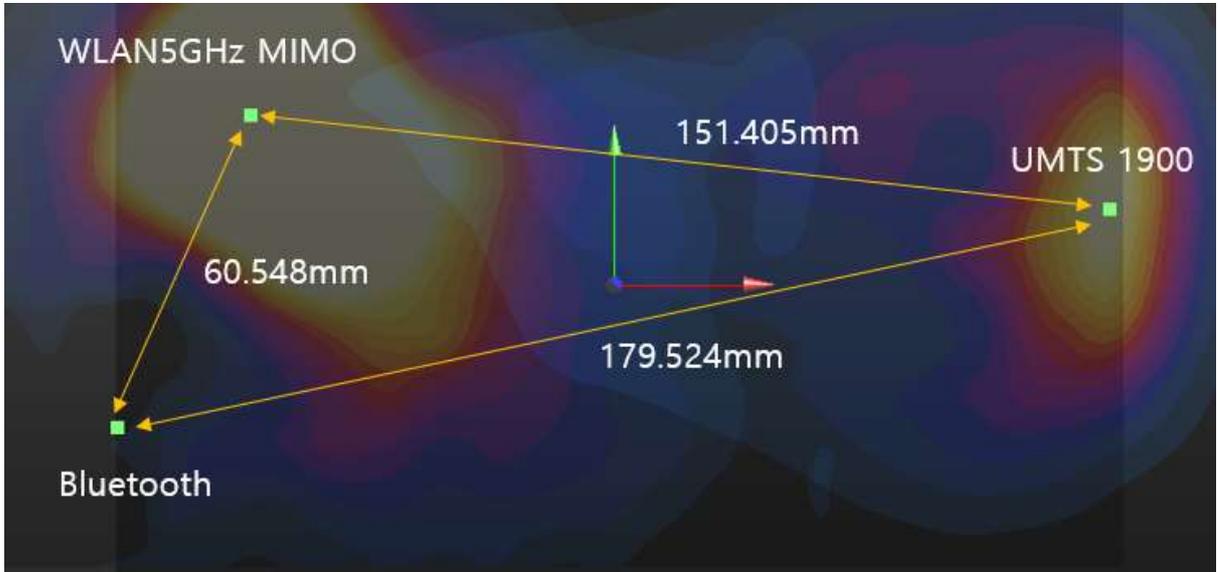
Plot #3 UMTS850 + WLAN 5GHz MIMO + Bluetooth



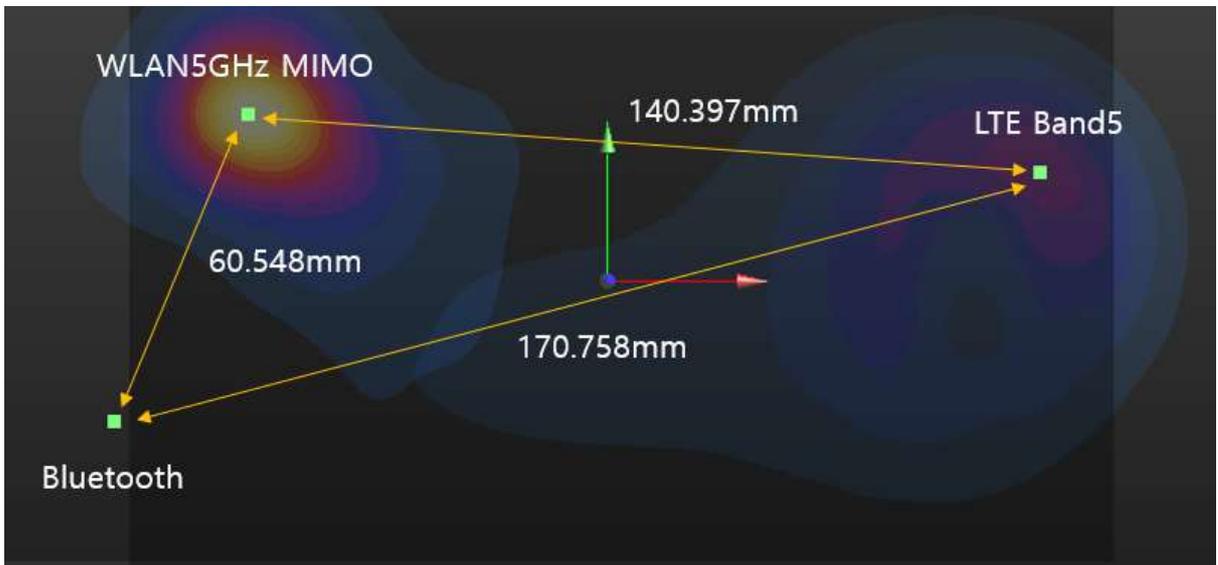
Plot #4 UMTS1700 + WLAN 5GHz MIMO + Bluetooth



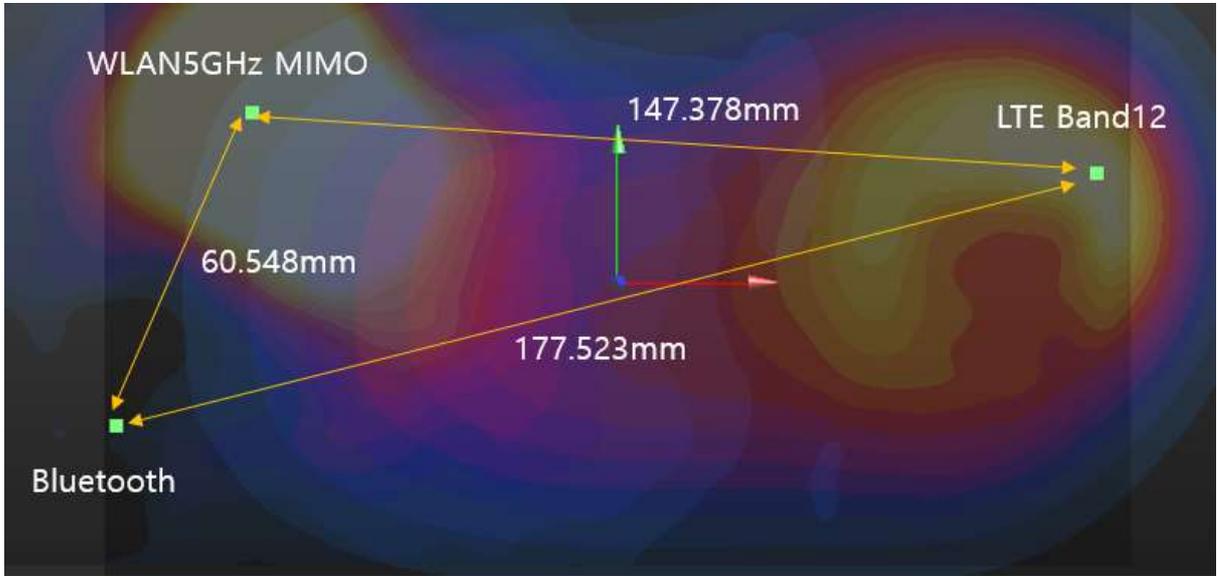
Plot #5 UMTS1900 + WLAN 5GHz MIMO + Bluetooth



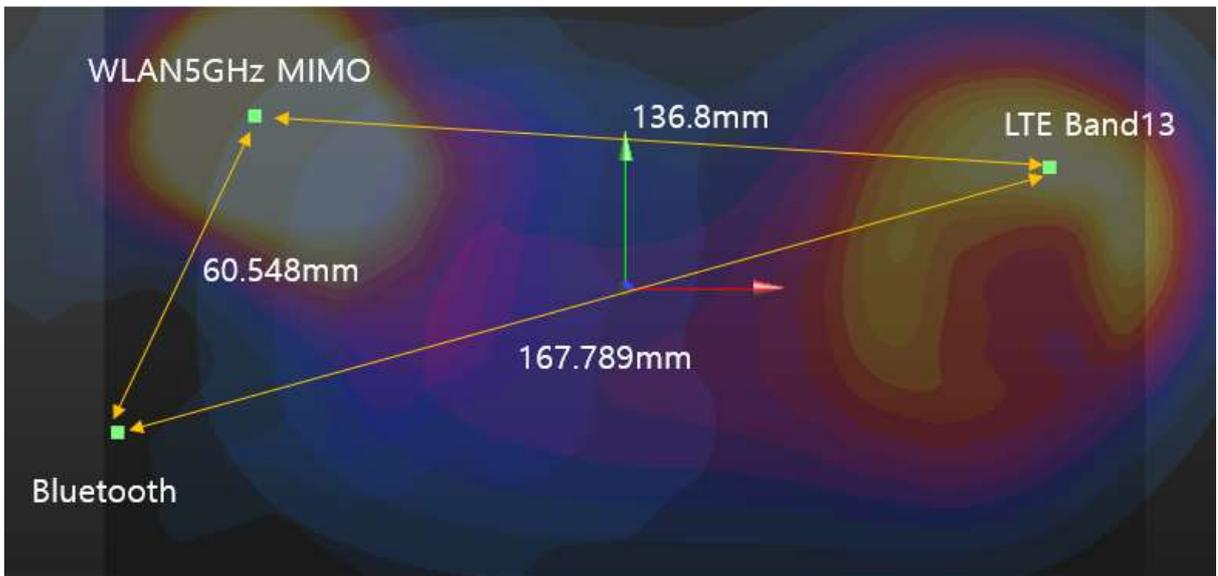
Plot #6 LTE Band5 + WLAN 5GHz MIMO + Bluetooth



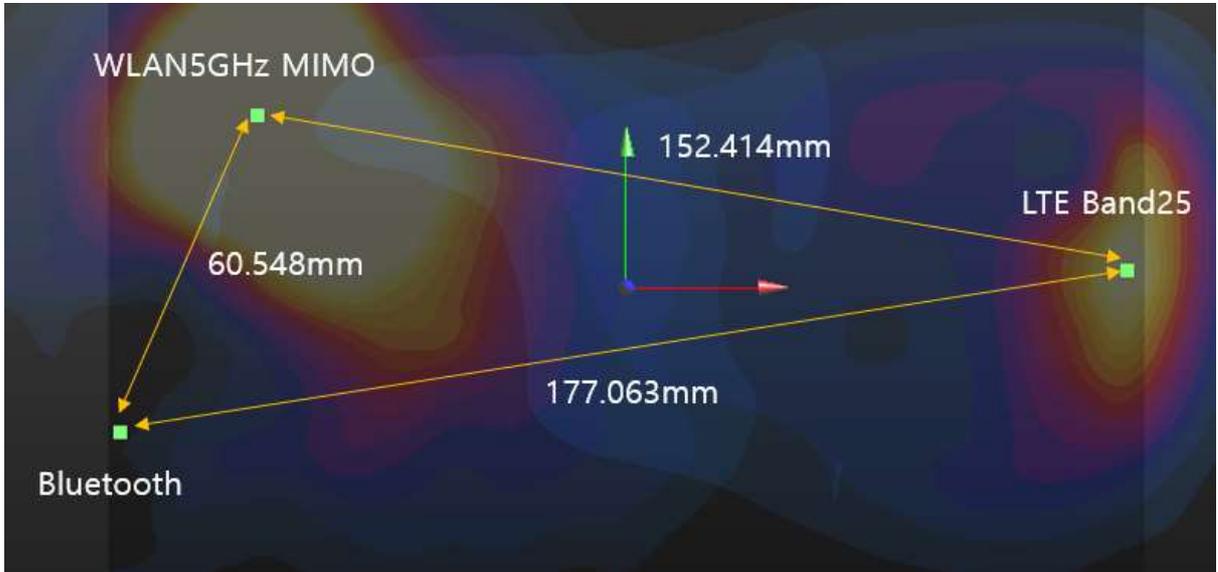
Plot #7 LTE Band12 + WLAN 5GHz MIMO + Bluetooth



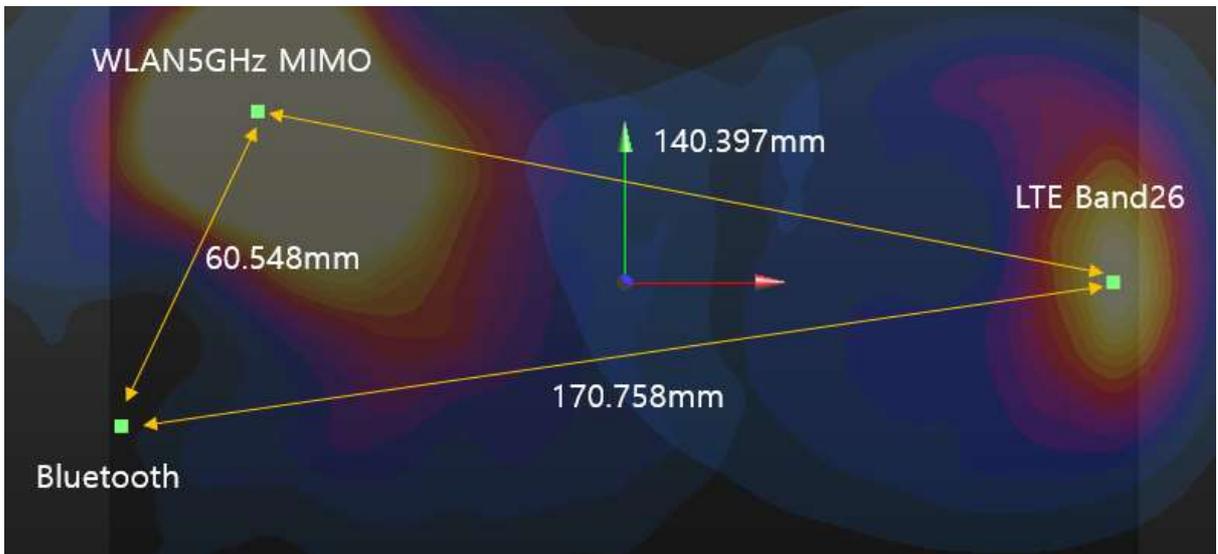
Plot #8 LTE Band13 + WLAN 5GHz MIMO + Bluetooth



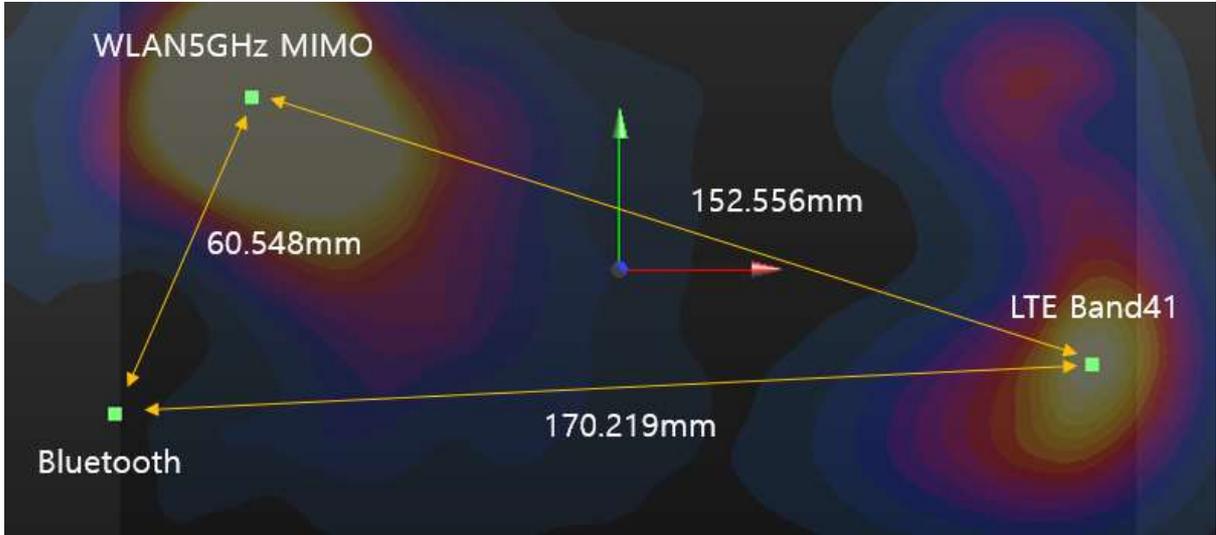
Plot #9 LTE Band25 + WLAN 5GHz MIMO + Bluetooth



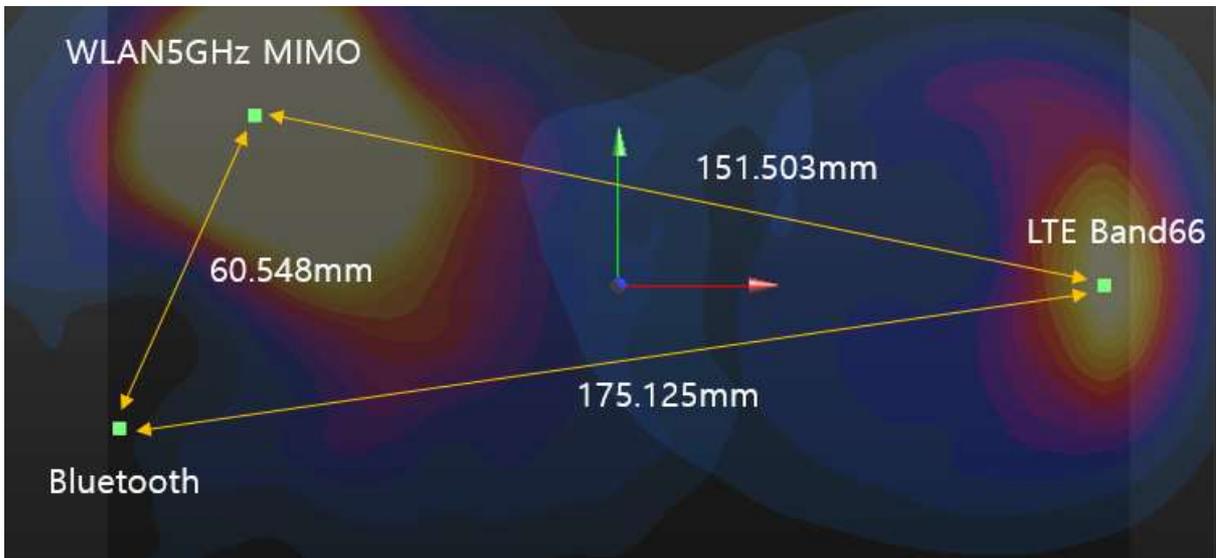
Plot #10 LTE Band26 + WLAN 5GHz MIMO + Bluetooth



Plot #11 LTE Band41 + WLAN 5GHz MIMO + Bluetooth



Plot #12 LTE Band66 + WLAN 5GHz MIMO + Bluetooth



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

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

- 1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg for 1g SAR or < 2.0 W/kg for 10g SAR; steps 2) through 4) do not apply.
- 2) When the original highest measured 1g SAR is ≥ 0.80 W/kg or 10g SAR ≥ 2.0 W/kg, repeat that measurement once.
- 3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg for 1g SAR or ≥ 3.625 W/kg for 10g SAR (~ 10% from the 1-g SAR limit).
- 4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg for 1g SAR or ≥ 3.75 W/kg for 10g SAR and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

Body-Worn SAR measurement variability Results

Frequency		Mode/Band	Configuration	Measured SAR (W/kg)	Repeated SAR (W/kg)	SAR Ratio
MHz	Channel					
5 620	124	802.11n20(MIMO)	Rear	0.878	0.853	1.03

Hotspot SAR measurement variability Results

Frequency		Mode/Band	Configuration	Measured SAR (W/kg)	Repeated SAR (W/kg)	SAR Ratio
MHz	Channel					
1 880.0	661	GSM 1900	Bottom	0.946	0.946	1.00
2 593.0	40620	LTE Band 41	Bottom (50RB, 0 offset)	0.841	0.836	1.01
5 785.0	157	802.11n20(MIMO)	Rear	0.991	0.962	1.03

16. Device Holder Perturbation Verification.

In accordance with published DUT Holder Perturbations in Oct.2016 TCB Workshop.

When Highest reported SAR is over 1.2 W/kg, Holder Perturbation Verification is required for each antenna, using the highest configuration among all applicable frequency bands.

Frequency		Mode/Band	Configuration	Highest Reported SAR		Deviation (%)
MHz	Channel			(without Device Holder) (W/kg)	(with Device Holder) (W/kg)	
5 785	157	5 GHz WLAN Hotspot	802.11n20 MIMO (Rear)	1.303	1.229	1.06

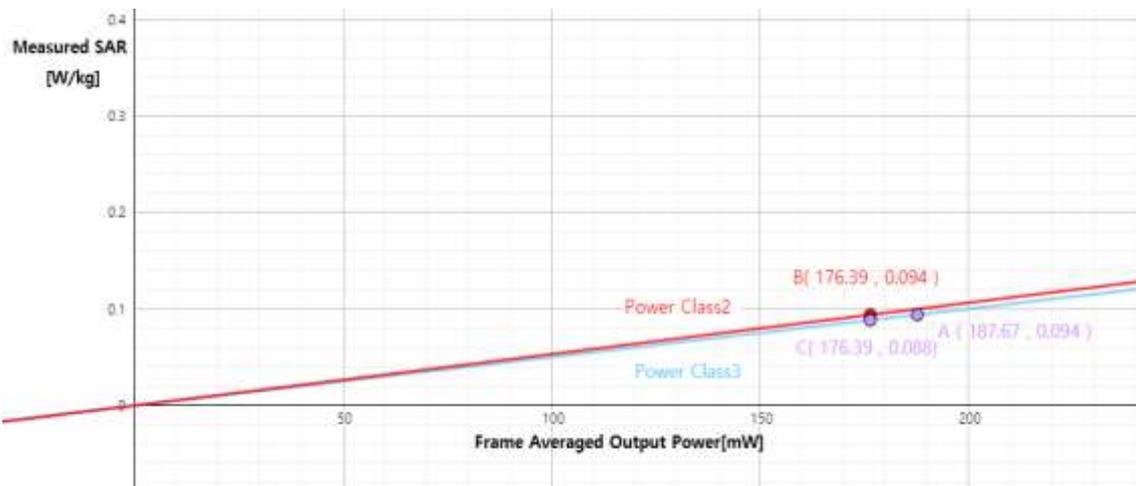
17. LTE Band 41 Power Class 2 and Power class 3 Linearity

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.

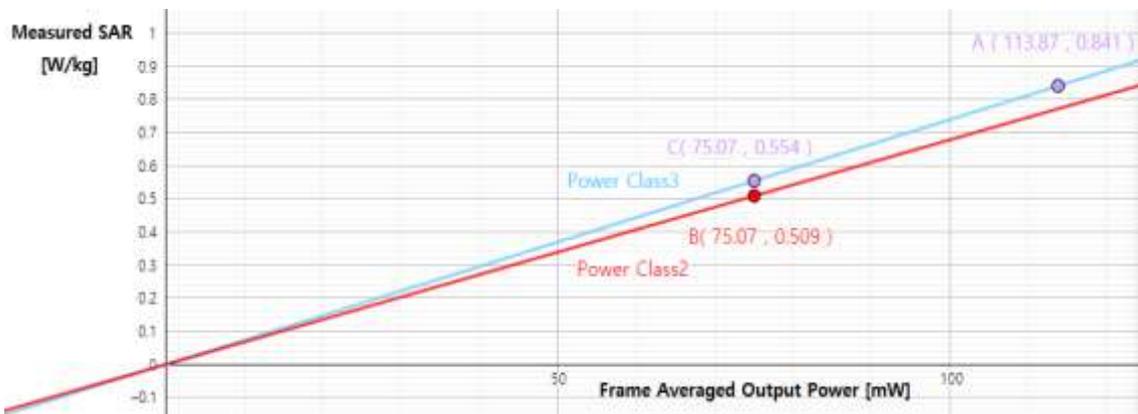
The linearity between the power class 3 and Power class 2 SAR Results and the respective frame averaged powers was calculated to determine the results were linear.

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

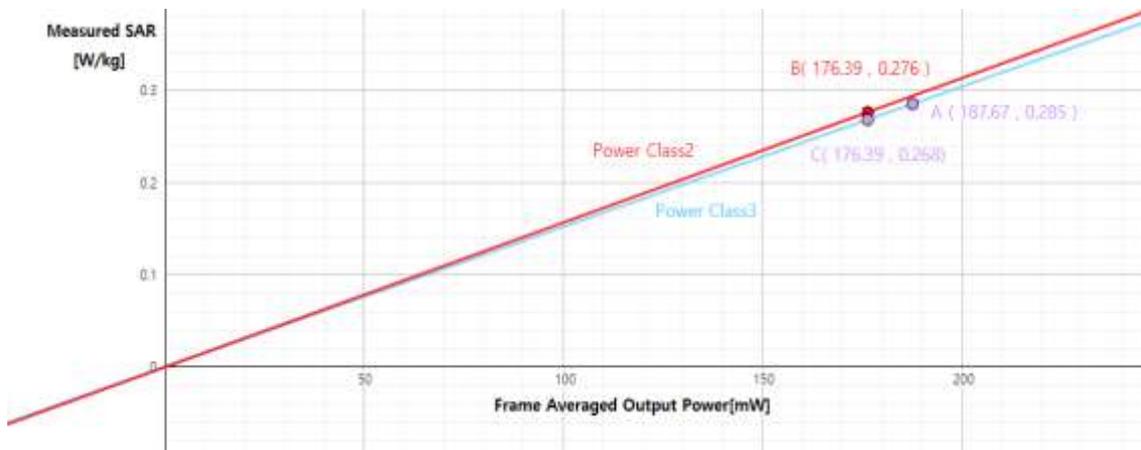
LTE Band 41 Head Linearity Data Table		
Configurations	LTE Band41 PC3	LTE Band41 PC2
Maximum Allowed Output Power[dBm]	25	26.5
Measured Output Power[dBm]	24.72	26.1
Measured SAR[W/kg]	0.094	0.094
Measured Power[mW]	296.483139	407.3802778
Duty Cycle	63.30%	43.30%
Frame Averaged Output Power[mW]	187.673827	176.3956603
deviation from expected linearity(%)	-6.01%	



LTE Band Hotspot Linearity Data Table		
Configurations	LTE Band41 PC3	LTE Band41 PC2
Maximum Allowed Output Power[dBm]	23	24.5
Measured Output Power[dBm]	22.55	22.39
Measured SAR[W/kg]	0.841	0.509
Measured Power[mW]	179.8870915	173.3803998
Duty Cycle	63.30%	43.30%
Frame Averaged Output Power[mW]	113.8685289	75.0737131
deviation from expected linearity(%)	8.93%	



LTE Band Body Worn Linearity Data Table		
Configurations	LTE Band41 PC3	LTE Band41 PC2
Maximum Allowed Output Power[dBm]	25	26.5
Measured Output Power[dBm]	24.72	26.1
Measured SAR[W/kg]	0.285	0.276
Measured Power[mW]	296.483139	407.3802778
Duty Cycle	63.30%	43.30%
Frame Averaged Output Power[mW]	187.673827	176.3956603
deviation from expected linearity(%)	-2.94%	



LTE Band Limb Linearity Data Table		
Configurations	LTE Band41 PC3	LTE Band41 PC2
Maximum Allowed Output Power[dBm]	23	24.5
Measured Output Power[dBm]	22.89	22.64
Measured SAR[W/kg]	1.27	0.824
Measured Power[mW]	194.5360082	183.6538343
Duty Cycle	63.30%	43.30%
Frame Averaged Output Power[mW]	123.1412932	79.52211027
deviation from expected linearity(%)	-0.47%	



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	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	F13/ 5R4XF1/ C/ 01	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F11/5K3RA1/C/01	N/A	N/A	N/A
Staubli	TX60 Lspeag	F10/ 5D1CA1/ 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	F13/ 5R4XF1/ A/ 01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F11/5K3RA1/A/01	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	S-0123	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-1338 1332	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	S-1203 0309	N/A	N/A	N/A
SPEAG	DAE4	1417	01/25/2019	Annual	01/25/2020
SPEAG	DAE3	446	07/18/2019	Annual	07/18/2020
SPEAG	DAE4	868	09/04/2019	Annual	09/04/2020
SPEAG	DAE4	648	05/23/2019	Annual	05/23/2020
SPEAG	DAE4	652	04/17/2019	Annual	04/17/2020
SPEAG	DAE4	1225	11/18/2019	Annual	11/18/2020
SPEAG	E-Field Probe EX3DV4	3903	08/29/2019	Annual	08/29/2020
SPEAG	E-Field Probe ES3DV3	3076	07/23/2019	Annual	07/23/2020
SPEAG	E-Field Probe EX3DV4	7370	08/29/2019	Annual	08/29/2020
SPEAG	E-Field Probe EX3DV4	3863	05/15/2019	Annual	05/15/2020
SPEAG	E-Field Probe EX3DV4	3968	09/27/2019	Annual	09/27/2020
SPEAG	Dipole D750V3	1014	05/27/2019	Annual	05/27/2020
SPEAG	Dipole D835V2	441	08/23/2019	Annual	08/23/2020
SPEAG	Dipole D1800V2	2d015	09/19/2019	Annual	09/19/2020
SPEAG	Dipole D1900V2	5d032	02/21/2019	Annual	02/21/2020
SPEAG	Dipole D2450V2	965	11/21/2019	Annual	11/21/2020
SPEAG	Dipole D2600V2	1106	09/19/2019	Annual	09/19/2020
SPEAG	Dipole 3700V2	1036	04/30/2019	Annual	04/30/2020
SPEAG	Dipole D5GHzV2	1107	09/26/2019	Annual	09/26/2020
Agilent	Power Meter E4419B	MY41291386	10/07/2019	Annual	10/07/2020
Agilent	Power Meter N1911A	MY45101406	09/10/2019	Annual	09/10/2020
Agilent	Power Sensor 8481A	SG1091286	10/07/2019	Annual	10/07/2020
Agilent	Power Sensor 8481A	MY41090873	10/07/2019	Annual	10/07/2020
Agilent	Power Sensor N1921A	MY55220026	09/06/2019	Annual	09/06/2020
SPEAG	DAKS 3.5	1031	04/16/2019	Annual	04/16/2020
SPEAG	VNA-R140	0050813	03/11/2019	Annual	03/11/2020
Agilent	WIRELESS COMMUNICATION E5515C	MY48361100	10/07/2019	Annual	10/07/2020

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
Agilent	Signal Generator N5182A	MY47070230	05/08/2019	Annual	05/08/2020
Agilent	11636B/Power Divider	58698	02/28/2019	Annual	03/06/2020
Narda	4-Way Divider	15298	02/20/2019	Annual	02/20/2020
TESTO	175-H1/Thermometer	40331915309	01/29/2019	Annual	01/29/2020
TESTO	175-H1/Thermometer	40331922309	01/29/2019	Annual	01/29/2020
TESTO	175-H1/Thermometer	40332651310	01/29/2019	Annual	01/29/2020
TESTO	175-H1/Thermometer	40331949309	01/29/2019	Annual	01/29/2020
TESTO	175-H1/Thermometer	40331936309	01/29/2019	Annual	01/29/2020
EMPOWER	RF Power Amplifier	1084	07/23/2019	Annual	07/23/2020
EMPOWER	RF Power Amplifier	1011	10/08/2019	Annual	10/08/2020
MICRO LAB	LP Filter / LA-15N	10453	10/07/2019	Annual	10/07/2020
MICRO LAB	LP Filter / LA-30N	-	10/07/2019	Annual	10/07/2020
MICRO LAB	LP Filter / LA-60N	32011	10/07/2019	Annual	10/07/2020
Apitech	Attenuator (3dB) 18B-03	1	06/04/2019	Annual	06/04/2020
Agilent	Attenuator (20dB) 33340C	1642	05/08/2019	Annual	05/08/2020
Agilent	Directional Bridge	3140A03878	06/12/2019	Annual	06/12/2020
Agilent	MXA Signal Analyzer N9020A	MY50510407	10/29/2019	Annual	10/29/2020
HP	Dual Directional Coupler	16072	10/07/2019	Annual	10/07/2020
Anritsu	Radio Communication Tester MT8820C	6201074225	03/05/2019	Annual	03/05/2020
Anritsu	Radio Communication Tester MT8821C	6201502997	08/09/2019	Annual	08/09/2020
Anritsu	Radio Communication Tester MT8821C	6201588559	02/14/2019	Annual	02/14/2020
R&S	Bluetooth CBT	100272	03/04/2019	Annual	03/04/2020

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

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