HCT Co., Ltd.
74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA
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SAR TEST REPORT

Applicant Name: **SAMSUNG Electronics Co., Ltd.** 129, Samsung-ro, Yeongtong-gu, Suwon-Si, Gyeonggi-do, 16677 Rep. of Korea	**Date of Issue:** June. 26, 2020 **Test Report No.:** HCT-SR-2006-FC007-R1 **Test Site: HCT CO., LTD.**

FCC ID: A3LSMA516V

Equipment Type:	**Mobile Phone**
Application Type	**Certification**
FCC Rule Part(s):	**CFR §2.1093**
Model Name:	**SM-A516V**
Date of Test:	**May. 11, 2020 ~ June. 11. 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

In-Ho Park
Test Engineer
SAR Team
Certification Division

Reviewed By

Yun-jeang, Heo
Technical Manager
SAR Team
Certification Division

REVISION HISTORY

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

Revision No.	Date of Issue	Description
0	June. 22, 2020	Initial Release
1	June. 26, 2020	Sec 12.2 Revised Appendix C. Revised

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

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

Table of Contents

1. Test Regulations

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

- FCC KDB Publication 941225 D01 3G SAR Procedures v03r01
- FCC KDB Publication 941225 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 ㎒ to 6 GHz v01r04
- FCC KDB Publication 865664 D02 SAR Reporting v01r02
- FCC KDB Publication 690783 D01 SAR Listings on Grants v01r03
- FCC KDB Publication 971168 D01 Power Meas License Digital Systems v03r01

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

- October 2013 TCB Workshop Notes (GPRS testing criteria)
- October 2014 TCB Workshop Notes (Overlapping LTE Bands)
- April 2015 TCB Workshop Notes (Simultaneous transmission summation clarified)
- October 2016 TCB Workshop Notes (Bluetooth Duty Factor)
- November 2017 TCBC Workshop Notes (LTE Carrier Aggregation)
- April 2018 TCBC Workshop Notes (LTE DL CA SAR Test Exclusion)

2. Test Location

2.1 Test Laboratory

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

2.2 Test Facilities

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

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

3. Information of the EUT

3.1 General Information of the EUT

Model Name	SM-A516V
Equipment Type	Mobile Phone
FCC ID	A3LSMA516V
Application Type	Certification
Applicant	SAMSUNG Electronics Co., Ltd.

3.2 Attestation of test result of device under test

The Highest Reported SAR						
Band	Tx. Frequency	Equipment Class	Reported SAR (W/kg)			
			1g Head	1g Body-Worn	1g Hotspot	10g Extremity
GSM/GPRS/EDGE 850	824.2 ㎒ ~ 848.8 ㎒	PCE	0.21	0.38	0.72	N/A
GSM/GPRS/EDGE 1900	1 850.2 ㎒ ~ 1 909.8 ㎒	PCE	0.19	0.63	**1.37**	1.74
WCDMA 850	826.4 ㎒ ~ 846.6 ㎒	PCE	0.19	0.32	0.63	N/A
WCDMA 1900	1 852.4 ㎒ ~ 1 907.6 ㎒	PCE	0.22	0.71	1.12	2.48
LTE Band 2 (PCS)	1 850.7 ㎒ ~ 1 909.3 ㎒	PCE	0.32	1.14	1.25	3.00
LTE Band 4 (AWS)	1 710.7 ㎒ ~ 1 754.3 ㎒	PCE	N/A	N/A	N/A	N/A
LTE Band 5 (Cell)	824.7 ㎒ ~ 848.3 ㎒	PCE	0.19	0.29	0.57	N/A
LTE Band 7	2 502.5 ㎒ ~ 2 567.5 ㎒	PCE	< 0.10	0.17	0.23	0.77
LTE Band 12	699.7 ㎒ ~ 715.3 ㎒	PCE	0.13	0.22	0.46	N/A
LTE Band 13	779.5 ㎒ ~ 784.5 ㎒	PCE	0.20	0.34	0.60	N/A
LTE Band 66 (AWS)	1 710.7 ㎒ ~ 1 779.3 ㎒	PCE	0.22	0.88	1.06	2.41
NR Band n2 (PCS)	1 852.5 ㎒ ~ 1 907.5 ㎒	PCE	0.26	**1.32**	1.09	2.79
NR Band n5 (Cell)	826.5 ㎒ ~ 846.5 ㎒	PCE	0.16	0.32	0.68	N/A
NR Band n66	1 712.5 ㎒ ~ 1 777.5 ㎒	PCE	0.26	0.97	1.10	**3.01**
802.11b	2 412 ㎒ ~ 2 462 ㎒	DTS	**0.59**	0.18	0.42	N/A
U-NII-1	5 180 ㎒ ~ 5 240 ㎒	NII	N/A	N/A	N/A	N/A
U-NII-2A	5 260 ㎒ ~ 5 320 ㎒	NII	0.19	0.11	N/A	3.00
U-NII-2C	5 500 ㎒ ~ 5 720 ㎒	NII	0.23	0.43	N/A	0.99
U-NII-3	5 745 ㎒ ~ 5 825 ㎒	NII	0.20	0.28	0.46	N/A
Bluetooth	2 402 ㎒ ~ 2 480 ㎒	DSS	0.38	<0.10	0.11	N/A
Simultaneous SAR per KDB 690783 D01v01r03			0.90	**1.58**	1.48	3.91
Date(s) of Tests:	05/11/2020~06/11/2020					

4. Device Under Test Description

4.1 DUT specification

Device Wireless specification overview		
Band & Mode	**Operating Mode**	**Tx Frequency**
GSM850	Voice / Data	824.2 ㎒ ~ 848.8 ㎒
GSM1900	Voice / Data	1 850.2 ㎒ ~ 1 909.8 ㎒
WCDMA 850	Voice / Data	826.4 ㎒ ~ 846.6 ㎒
WCDMA 1900	Voice / Data	1 852.4 ㎒ ~ 1 907.6 ㎒
LTE Band 2 (PCS)	Voice / Data	1 850.7 ㎒ ~ 1 909.3 ㎒
LTE Band 4 (AWS)	Voice / Data	1 710.7 ㎒ ~ 1 754.3 ㎒
LTE Band 5 (Cell)	Voice / Data	824.7 ㎒ ~ 848.3 ㎒
LTE Band 7	Voice / Data	2 502.5 ㎒ ~ 2 567.5 ㎒
LTE Band 12	Voice / Data	699.7 ㎒ ~ 715.3 ㎒
LTE Band 13	Voice / Data	779.5 ㎒ ~ 784.5 ㎒
LTE Band 66 (AWS)	Voice / Data	1 710.7 ㎒ ~ 1 779.3 ㎒
NR Band n2 (PCS)	Data	1 852.5 ㎒ ~ 1 907.5 ㎒
NR Band n5 (Cell)	Data	826.5 ㎒ ~ 846.5 ㎒
NR Band n66	Data	1 712.5 ㎒ ~ 1 777.5 ㎒
U-NII-1	Voice / Data	5 180 ㎒ ~ 5 240 ㎒
U-NII-2A	Voice / Data	5 260 ㎒ ~ 5 320 ㎒
U-NII-2C	Voice / Data	5 500 ㎒ ~ 5 720 ㎒
U-NII-3	Voice / Data	5 745 ㎒ ~ 5 825 ㎒
2.4 ㎓ WLAN	Voice / Data	2 412 ㎒ ~ 2 462 ㎒
Bluetooth / LE 5.0	Data	2 402 ㎒ ~ 2 480 ㎒
NFC	Data	13.56 ㎒
MST	Data	555 Hz ~8.33 kHz
ANT+	Data	2402 ㎒ ~ 2480 ㎒
NR band n260	Data	37000 ~ 40000 ㎒
NR band n261	Data	27500 ~ 28350 ㎒

<table>
<tr><th colspan="3">Device Description</th></tr>
<tr><td>Device Dimension</td><td colspan="2">Overall (Length x Width): 156 ㎜ x 71 ㎜
Overall Diagonal: 165 ㎜
Display Diagonal: 161 ㎜</td></tr>
<tr><td rowspan="2">Battery Information</td><td colspan="2">Standard (Li-ion Polymer Battery)</td></tr>
<tr><td colspan="2">Battery Model Name: EB-BA516AMY (Samsung SDI)</td></tr>
<tr><td>Ear-jack</td><td colspan="2">Model Name: EHS64AVFWE (ALMUS)</td></tr>
<tr><td>HW version</td><td colspan="2">REV1.0</td></tr>
<tr><td>SW version</td><td colspan="2">A516V.001</td></tr>
<tr><td rowspan="7">Device Serial Numbers</td><td>Mode</td><td>Serial Number</td></tr>
<tr><td>GSM1900/ NR Band n2</td><td>TE60077H</td></tr>
<tr><td>WCDMA 1900/LTE2/LTE 66/ NR Band n5/</td><td>TE60047H</td></tr>
<tr><td>GSM850/ WCDMA 850/ WCDMA 1900/ LTE5/ LTE12/LTE13/ LTE 66</td><td>TE60036H</td></tr>
<tr><td>LTE 7/ NR Band n66</td><td>TE60074H</td></tr>
<tr><td>2.4GHz WLAN /5GHz WLAN/BT</td><td>TE70441M</td></tr>
<tr><td colspan="2">The manufacturer has confirmed that the devices tested have the same physical, mechanical and thermal characteristics are within operational tolerances expected for production units.</td></tr>
</table>

4.2 Time-Averaging Algorithm for RF Exposure Compliance

The SM7250 is the first Qualcomm® Snapdragon™ 700 series processor with integrated 2G/3G/4G/5G modem. It implements the 5G NR standard for millimeter wave (mmW) bands and sub-6 GHz bands

Qualcomm® SM7250 modem is enabled with Qualcomm® Smart Transmit feature. This feature performs time averaging algorithm in real time to control and manage transmitting power and ensure the time-averaged RF exposure is in compliance with FCC requirements all the time. Refer to Compliance Summary document for detailed description of Qualcomm® Smart Transmit feature (report SN could be found in below the table)
Note that WLAN operations are not enabled with Smart Transmit.
The Smart Transmit algorithm maintains the time-averaged transmit power, in turn, time-averaged RF exposure of SAR_design_target or PD_design_target, below the predefined time-averaged power limit (i.e., Plimit for sub-6 radio, and input.power.limit for 5G NR), for each characterized technology and band (see the below the table)

Frequency	Report description	Report Number
Freq. < 6 GHz.	Part 0 SAR Test Report	HCT-SR-2006-FC008-R1
	Part 1 SAR Test Report	HCT-SR-2006-FC007-R1
Freq.> 6 GHz.	Power Density Simulation Report	Power Density Simulation Report Revision A
	Part 0 Power Density Char. Report	HCT-SR-2006-FC009-R1
	Part 1 Power Density Test Report	HCT-SR-2006-FC010-R1
Freq. > 6 GHz.& Freq.< 6 GHz.	RF Exposure Compliance Summary	HCT-SR-2006-FC011-R1
	Part 2 RF Exposure Report	HCT-SR-2006-FC012-R1

Smart Transmit allows the device to transmit at higher power instantaneously, as high as Pmax, when needed, but enforces power limiting to maintain time-averaged transmit power to Plimit. Below table shows Plimit EFS settings and maximum tune up output power Pmax configured for this EUT for various transmit conditions (Device State Index DSI). Note that the device uncertainty for sub-6GHz WWAN is 1.0dB for this EUT.

Device State Index (DSI)	0		1	2	3,4	Maximum Tune up Power
Exposure Scenario	Body-Worn	Phablet	Head	Hotspot	Phablet	
Averaging Volume	1g SAR	10g SAR	1g SAR	1g SAR	10g SAR	
Spacing	15mm	6,9,11mm	0mm	10mm	0mm	
Mode/Band	P*Limit* (dBm)					Pmax (dBm)
GSM/GPRS/EDGE 850 MHz	31.1	33.9	30.3	27.8	29.9	25.5
GSM/GPRS/EDGE 1900 MHz	25.3	26.7	30.3	19.7	21.0	22.5
UMTS B5	30	25.9	32.3	27	27.9	24
UMTS B2	26	25.8	31	18	20.3	23.5
LTE FDD B12	31.5	29.7	33.8	28.5	28.5	24
LTE FDD B13	29.7	33.7	32	27.9	28.3	24
LTE FDD B5	29.9	31.7	31.7	27.6	27.8	24.5
LTE FDD B4/66	25.6	27.7	31.6	19	20.7	24
LTE FDD B2	24.4	26.2	30	18.7	21.2	24
LTE FDD B7	31.8	27.4	38.1	26.3	27.1	23
NR FDD n5	30	34.2	32.9	26.7	31.3	24
NR FDD n2	25.1	25.5	30.9	19.1	21.3	24
NR FDD n66	26.2	27.4	30.8	21.3	21.2	24

*Note all P_{limit} EFS and maximum tune up output power P_{max} levels entered in above Table correspond to average power levels after accounting for duty cycle in the case of TDD modulation schemes (for e.g., GSM).

*Maximum tune up output power Pmax is used to configure EUT during RF tune up procedure. The maximum allowed output power is equal to maximum Tune up output power + 1dB device design uncertainty.
The maximum time-averaged output power (dBm) for any 2G/3G/4G WWAN technology, band, and DSI = minimum of "Plimit EFS" and "Maximum tune up output power Pmax" + 1dB device uncertainty. SAR values in this report were scaled to this maximum time-averaged output power to determine compliance per KDB Publication 447498 D01v06.

The purpose of this report (Part 1 test) is to demonstrate that the EUT meets FCC SAR limits when transmitting in static transmission scenario at maximum allowable time-averaged power levels.
Measurement Condition: All conducted power and SAR measurements in this report were performed by setting Reserve_power_margin (Smart Transmit EFS entry) to 0dB.

4.3 Power Reduction for SAR

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 include in the operational description.

The reduced powers for the power reduction mechanisms were conformed via conducted power measurements at the RF Port
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4.4 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.

4.4.1 Maximum PCE Output Power

GSM/GPRS/EDGE 850

Device State Index		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
Pmax	Maximum	33.5	33.5	32.5	30.5	28.5	27.5	26.5	24.5	23.5
	Nominal	32.5	32.5	31.5	29.5	27.5	26.5	25.5	23.5	22.5
DSI = 0 (Body-Worm or Phablet Max)	Maximum	33.5	33.5	32.5	30.5	28.5	27.5	26.5	24.5	23.5
	Nominal	32.5	32.5	31.5	29.5	27.5	26.5	25.5	23.5	22.5
DSI = 1 (Head)	Maximum	33.5	33.5	32.5	30.5	28.5	27.5	26.5	24.5	23.5
	Nominal	32.5	32.5	31.5	29.5	27.5	26.5	25.5	23.5	22.5
DSI = 2 (Hotspot)	Maximum	33.5	33.5	32.5	30.5	28.5	27.5	26.5	24.5	23.5
	Nominal	32.5	32.5	31.5	29.5	27.5	26.5	25.5	23.5	22.5
DSI = 3 (Phablet Reduced)	Maximum	33.5	33.5	32.5	30.5	28.5	27.5	26.5	24.5	23.5
	Nominal	32.5	32.5	31.5	29.5	27.5	26.5	25.5	23.5	22.5
DSI = 4 (EARJACK)	Maximum	33.5	33.5	32.5	30.5	28.5	27.5	26.5	24.5	23.5
	Nominal	32.5	32.5	31.5	29.5	27.5	26.5	25.5	23.5	22.5

GSM/GPRS/EDGE 1900

Device State Index		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
Pmax	Maximum	30.5	30.5	29.5	25.5	25.5	27.5	25.5	23.5	22.5
	Nominal	29.5	29.5	28.5	24.5	24.5	26.5	24.5	22.5	21.5
DSI = 0 (Body-Worm or Phablet Max)	Maximum	30.5	30.5	29.5	25.5	25.5	27.5	25.5	23.5	22.5
	Nominal	29.5	29.5	28.5	24.5	24.5	26.5	24.5	22.5	21.5
DSI = 1 (Head)	Maximum	30.5	30.5	29.5	25.5	25.5	27.5	25.5	23.5	22.5
	Nominal	29.5	29.5	28.5	24.5	24.5	26.5	24.5	22.5	21.5
DSI = 2 (Hotspot)	Maximum	26	26	24.5	21	21	23.5	21.5	19.5	18.5
	Nominal	25	25	23.5	20	20	22.5	20.5	18.5	17.5
DSI = 3 (Phablet Reduced)	Maximum	27	27	25.5	22.5	22	24.5	22.5	20.5	19.5
	Maximum	26	26	24.5	21.5	21	23.5	21.5	19.5	18.5
DSI = 4 (EARJACK)	Nominal	27	27	25.5	22.5	22	24.5	22.5	20.5	19.5
	Maximum	26	26	24.5	21.5	21	23.5	21.5	19.5	18.5

WCDMA Band 5 (850 ㎒)

Mode / Band		Modulated Average (dBm)		
		3GPP WCDMA	3GPP HSDPA	3GPP HSUPA
Pmax	Maximum	25	24	24
	Nominal	24	23	23
DSI = 0 (Body-Worm or Phablet Max)	Maximum	25	24	24
	Nominal	24	23	23
DSI = 1 (Head)	Maximum	25	24	24
	Nominal	24	23	23
DSI = 2 (Hotspot)	Maximum	25	24	24
	Nominal	24	23	23
DSI = 3 (Phablet Reduced)	Maximum	25	24	24
	Nominal	24	23	23
DSI = 4 (EARJACK)	Maximum	25	24	24
	Nominal	24	23	23

WCDMA Band 2 (1900 ㎒)

Mode / Band		Modulated Average (dBm)		
		3GPP WCDMA	3GPP HSDPA	3GPP HSUPA
Pmax	Maximum	24.5	24	24
	Nominal	23.5	23	23
DSI = 0 (Body-Worm or Phablet Max)	Maximum	24.5	24	24
	Nominal	23.5	23	23
DSI = 1 (Head)	Maximum	24.5	24	24
	Nominal	23.5	23	23
DSI = 2 (Hotspot)	Maximum	19	18	18
	Nominal	18	17	17
DSI = 3 (Phablet Reduced)	Maximum	21	20	20
	Nominal	20	19	19
DSI = 4 (EARJACK)	Maximum	21	20	20
	Nominal	20	19	19

LTE

Mode / Band		Modulated Average (dBm)					
		Pmax	DSI = 0 (Body-Worn or Phablet Max)	DSI = 1 (Head)	DSI = 2 (Hotspot)	DSI = 3 (Phablet Reduced)	DSI = 4 (EARJACK)
LTE Band 2 (PCS)	Maximum	25	25	25	19.5	22	22
	Nominal	24	24	24	18.5	21	21
LTE Band 4 (AWS)	Maximum	25	25	25	20	20	20
	Nominal	24	24	24	19	19	19
LTE Band 5 (Cell)	Maximum	25.5	25.5	25.5	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5	24.5	24.5	24.5
LTE Band 7	Maximum	24	24	24	21.7	21.7	21.7
	Nominal	23	23	23	20.7	20.7	20.7
LTE Band 12	Maximum	25	25	25	25	25	25
	Nominal	24	24	24	24	24	24
LTE Band 13	Maximum	25	25	25	25	25	25
	Nominal	24	24	24	24	24	24
LTE Band 66 (AWS)	Maximum	25	25	25	20	20	20
	Nominal	24	24	24	19	19	19

NR SUB6

Mode / Band		Modulated Average (dBm)					
		Pmax	DSI = 0 (Body-Worn or Phablet Max)	DSI = 1 (Head)	DSI = 2 (Hotspot)	DSI = 3 (Phablet Reduced)	DSI = 4 (EARJACK)
NR Band n2 (PCS)	Maximum	25	25	25	20	22	22
	Nominal	24	24	24	19	21	21
NR Band n5 (Cell)	Maximum	25	25	25	25	25	25
	Nominal	24	24	24	24	24	24
NR Band n66	Maximum	25	25	25	22	22	22
	Nominal	24	24	24	21	21	21

4.4.3 Maximum 2.4 GHz, 5 GHz WIFI output power

IEEE 802.11(in dBm)							
Mode	Protocol	Sensor State	a	b	g	n	ac
2.4GHz Wi-Fi	2.45GHz	Maximum	N/A	20	6~18M:18, 24~54M:16	2~10ch : (MCS0~3:20, MCS4~5:18.5 MCS6~7:17) 1,11ch: (MCS0~5:18, MCS6~7:17)	N/A
		Nominal	N/A	19	6~18M:17, 24~54M:15	2~10ch : (MCS0~3:19, MCS4~5:17.5 MCS6~7:16) 1,11ch: (MCS0~5:17, MCS6~7:16)	N/A
5GHz Wi-Fi (20 MHz BW)	5200 MHz	Maximum	6~18M:18, 24~54M:16	N/A	N/A	MCS0~3:18, MCS4~7:17	MCS0~3:16, MCS4~8:15
		Nominal	6~18M:17, 24~54M:15	N/A	N/A	MCS0~3:17, MCS4~7:16	MCS0~3:15, MCS4~8:14
	5300 MHz	Maximum	6~18M:18, 24~54M:16	N/A	N/A	MCS0~3:18, MCS4~7:17	MCS0~3:16, MCS4~8:15
		Nominal	6~18M:17, 24~54M:15	N/A	N/A	MCS0~3:17, MCS4~7:16	MCS0~3:15, MCS4~8:14
	5500 MHz	Maximum	6~18M:18, 24~54M:16	N/A	N/A	MCS0~3:18, MCS4~7:17	MCS0~3:16, MCS4~8:15
		Nominal	6~18M:17, 24~54M:15	N/A	N/A	MCS0~3:17, MCS4~7:16	MCS0~3:15, MCS4~8:14
	5800 MHz	Maximum	6~18M:18, 24~54M:16	N/A	N/A	MCS0~3:18, MCS4~7:17	MCS0~3:16, MCS8~8:15
		Nominal	6~18M:17, 24~54M:15	N/A	N/A	MCS0~3:17, MCS4~7:16	MCS0~3:15, MCS8~7:14
5GHz Wi-Fi (40 MHz BW)	5200 MHz	Maximum	N/A	N/A	N/A	MCS0~3:15, MCS4~7:14	MCS0~4:15, MCS5~9:14
		Nominal	N/A	N/A	N/A	MCS0~3:14, MCS4~7:13	MCS0~4:14, MCS5~9:13
	5300 MHz	Maximum	N/A	N/A	N/A	MCS0~3:15, MCS4~7:14	MCS0~4:15, MCS5~9:14
		Nominal	N/A	N/A	N/A	MCS0~3:14, MCS4~7:13	MCS0~4:14, MCS5~9:13
	5500 MHz	Maximum	N/A	N/A	N/A	MCS0~3:15, MCS4~7:14	MCS0~4:15, MCS5~9:14
		Nominal	N/A	N/A	N/A	MCS0~3:14, MCS4~7:13	MCS0~4:14, MCS5~9:13
	5800 MHz	Maximum	N/A	N/A	N/A	MCS0~3:15, MCS4~7:14	MCS0~4:15, MCS5~9:14
		Nominal	N/A	N/A	N/A	MCS0~3:14, MCS4~7:13	MCS0~4:14, MCS5~9:13
5GHz Wi-Fi (80 MHz BW)	5200 MHz	Maximum	N/A	N/A	N/A	N/A	MCS0~4:13, MCS5~9:12
		Nominal	N/A	N/A	N/A	N/A	MCS0~4:12, MCS5~9:11
	5300 MHz	Maximum	N/A	N/A	N/A	N/A	MCS0~4:13, MCS5~9:12
		Nominal	N/A	N/A	N/A	N/A	MCS0~4:12, MCS5~9:11
	5500 MHz	Maximum	N/A	N/A	N/A	N/A	MCS0~4:13, MCS5~9:12
		Nominal	N/A	N/A	N/A	N/A	MCS0~4:12, MCS5~9:11
	5800 MHz	Maximum	N/A	N/A	N/A	N/A	MCS0~4:13, MCS5~9:12
		Nominal	N/A	N/A	N/A	N/A	MCS0~4:12, MCS5~9:11

4.4.4 Reduced WLAN Power (Held to ear)

IEEE 802.11(in dBm)							
Mode	Protocol	Sensor State	a	b	g	n	ac
2.4GHz Wi-Fi	2.45GHz	Maximum	N/A	14	14	14	N/A
		Nominal	N/A	13	13	13	N/A
5GHz Wi-Fi (20 MHz BW) (Active)	5200 MHz	Maximum	15	N/A	N/A	15	15
		Nominal	14	N/A	N/A	14	14
	5300 MHz	Maximum	15	N/A	N/A	15	15
		Nominal	14	N/A	N/A	14	14
	5500 MHz	Maximum	15	N/A	N/A	15	15
		Nominal	14	N/A	N/A	14	14
	5800 MHz	Maximum	15	N/A	N/A	15	15
		Nominal	14	N/A	N/A	14	14
5GHz Wi-Fi (40 MHz BW)	5200 MHz	Maximum	N/A	N/A	N/A	MCS0~3:15, MCS4~7:14	MCS0~4:15, MCS5~9:14
		Nominal	N/A	N/A	N/A	MCS0~3:14, MCS4~7:13	MCS0~4:14, MCS5~9:13
	5300 MHz	Maximum	N/A	N/A	N/A	MCS0~3:15, MCS4~7:14	MCS0~4:15, MCS5~9:14
		Nominal	N/A	N/A	N/A	MCS0~3:14, MCS4~7:13	MCS0~4:14, MCS5~9:13
	5500 MHz	Maximum	N/A	N/A	N/A	MCS0~3:15, MCS4~7:14	MCS0~4:15, MCS5~9:14
		Nominal	N/A	N/A	N/A	MCS0~3:14, MCS4~7:13	MCS0~4:14, MCS5~9:13
	5800 MHz	Maximum	N/A	N/A	N/A	MCS0~3:15, MCS4~7:14	MCS0~4:15, MCS5~9:14
		Nominal	N/A	N/A	N/A	MCS0~3:14, MCS4~7:13	MCS0~4:14, MCS5~9:13
5GHz Wi-Fi (80 MHz BW)	5200 MHz	Maximum	N/A	N/A	N/A	N/A	MCS0~4:13 MCS5~9:12
		Nominal	N/A	N/A	N/A	N/A	MCS0~4:12, MCS5~9:11
	5300 MHz	Maximum	N/A	N/A	N/A	N/A	MCS0~4:13 MCS5~9:12
		Nominal	N/A	N/A	N/A	N/A	MCS0~4:12, MCS5~9:11
	5500 MHz	Maximum	N/A	N/A	N/A	N/A	MCS0~4:13 MCS5~9:12
		Nominal	N/A	N/A	N/A	N/A	MCS0~4:12, MCS5~9:11
	5800 MHz	Maximum	N/A	N/A	N/A	N/A	MCS0~4:13 MCS5~9:12
		Nominal	N/A	N/A	N/A	N/A	MCS0~4:12, MCS5~9:11

4.4.5 Maximum Bluetooth Power

Mode / Band			Modulated Average (dBm)
Bluetooth	BR	Maximum	13
		Nominal	12
	EDR	Maximum	10
		Nominal	9
Bluetooth LE		Maximum	8
		Nominal	7

4.5 LTE Information

Item.		Description
Frequency Range	LTE Band 2 (PCS)	1 850.7 ㎒ ~ 1 909.3 ㎒
	LTE Band 4 (AWS)	1 710.7 ㎒ ~ 1 754.3 ㎒
	LTE Band 5 (Cell)	824.7 ㎒ ~ 848.3 ㎒
	LTE Band 7	2 502.5 ㎒ ~ 2 567.5 ㎒
	LTE Band 12	699.7 ㎒ ~ 715.3 ㎒
	LTE Band 13	779.5 ㎒ ~ 784.5 ㎒
	LTE Band 66 (AWS)	1 710.7 ㎒ ~ 1 779.3 ㎒
Channel Bandwidths	LTE Band 2 (PCS)	1.4 ㎒, 3 ㎒, 5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒
	LTE Band 4 (AWS)	1.4 ㎒, 3 ㎒, 5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒
	LTE Band 5 (Cell)	1.4 ㎒, 3 ㎒, 5 ㎒, 10 ㎒
	LTE Band 7	5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒
	LTE Band 12	1.4 ㎒, 3 ㎒, 5 ㎒, 10 ㎒
	LTE Band 13	5 ㎒, 10 ㎒
	LTE Band 66 (AWS)	1.4 ㎒, 3 ㎒, 5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒

Ch. No.& Freq.(㎒)		Low	Mid	High
LTE Band 2 (PCS)	1.4 ㎒	1 850.7 (18607)	1 880.0 (18900)	1 909.3 (19193)
	3 ㎒	1 851.5 (18615)	1 880.0 (18900)	1 908.5 (19185)
	5 ㎒	1 852.5 (18625)	1 880.0 (18900)	1 907.5 (19175)
	10 ㎒	1 855.0 (18650)	1 880.0 (18900)	1 905.0 (19150)
	15 ㎒	1 857.5 (18675)	1 880.0 (18900)	1 902.5 (19125)
	20 ㎒	1 860.0 (18700)	1 880.0 (18900)	1 900.0 (19100)
LTE Band 4 (AWS)	1.4 ㎒	1 710.7 (19957)	1 732.5 (20175)	1 754.3 (20393)
	3 ㎒	1 711.5 (19965)	1 732.5 (20175)	1 753.5 (20385)
	5 ㎒	1 712.5 (19975)	1 732.5 (20175)	1 752.5 (20375)
	10 ㎒	1 715.0 (20000)	1 732.5 (20175)	1 750.0 (20350)
	15 ㎒	1 717.5 (20025)	1 732.5 (20175)	1 747.5 (20325)
	20 ㎒	1 720.0 (20050)	1 732.5 (20175)	1 745.0 (20300)
LTE Band 5 (Cell)	1.4 ㎒	824.7 (20407)	836.5 (20525)	848.3 (20643)
	3 ㎒	825.5 (20415)	836.5 (20525)	847.5 (20635)
	5 ㎒	826.5 (20425)	836.5 (20525)	846.5 (20625)
	10 ㎒	829.0 (20450)	836.5 (20525)	844.0 (20600)
LTE Band 7	5 ㎒	2502.5 (20775)	2535 (21100)	2567.5 (21425)
	10 ㎒	2505 (20800)	2535 (21100)	2565 (21400)
	15 ㎒	2507.5 (20825)	2535 (21100)	2562.5 (21375)
	20 ㎒	2510 (20850)	2535 (21100)	2560 (21350)
LTE Band 12	1.4 ㎒	699.7 (23017)	707.5 (23095)	715.3 (23173)
	3 ㎒	700.5 (23025)	707.5 (23095)	714.5 (23165)
	5 ㎒	701.5 (23035)	707.5 (23095)	713.5 (23155)
	10 ㎒	704.0 (23060)	707.5 (23095)	711.0 (23130)
LTE Band 13	5 ㎒	779.5 (23205)	782 (23230)	784.5 (23255)
	10 ㎒		782 (23230)	

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

UE Category	LTE Rel. 15, DL: Category 16, UL: Category 5	
Modulations Supported in UL	QPSK, 16QAM, 64QAM	
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3	Yes	
A-MPR disabled for SAR Testing.	Yes	
LTE Carrier Aggregation	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.
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 elCI, MDH, cross-carrier Scheduling, Enhanced SC-FDMA.	

Item.		Description
Frequency Range	NR Band n2 (PCS)	1 852.5 ㎒ ~ 1 907.5 ㎒
	NR Band n5 (Cell)	826.5 ㎒ ~ 846.5 ㎒
	NR Band n66 (AWS)	1 712.5 ㎒ ~ 1 777.5 ㎒
Channel Bandwidths	NR Band n2 (PCS)	5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒
	NR Band n5 (Cell)	5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒
	NR Band n66(AWS)	5 ㎒, 10 ㎒, 15 ㎒, 20 ㎒

Ch. No.& Freq.(㎒)		Low	Mid	High
NR Band n2 (PCS)	5 ㎒	1852.5 (370500)	1880 (376000)	1907.5 (381500)
	10 ㎒	1855 (371000)	1880 (376000)	1905 (381000)
	15 ㎒	1857.5 (371500)	1880 (376000)	1902.5 (380500)
	20 ㎒	1860 (372000)	1880 (376000)	1900 (380000)
NR Band n5 (Cell)	5 ㎒	826.5 (165300)	836.5 (167300)	846.5 (169300)
	10 ㎒	829 (165800)		844 (168800)
	15 ㎒	831.5 (166300)	836.5 (167300)	841.5 (168300)
	20 ㎒	834 (166800)	836.5 (167300)	839 (167800)
NR Band n66 (AWS)	5 ㎒	1712.5 (342500	1734.1 (346820)	1755.8 (351160) 1777.5 (355500)
	10 ㎒	1715 (343000)	1735 (347000)	1755 (351000) 1775 (355000)
	15 ㎒	1717.5 (343500	1735.8 (347160)	1754.1 (350820) 1772.5 (354500)
	20 ㎒	1720 (344000)	1745 (349000)	1770 (354000)

NR Band n5/n2/n66 SCS	15 ㎑
A-MPR disabled for SAR Testing.	Yes
Modulations Supported in UL	DFT-s-OFDM: pi/2 BPSK,QPSK, 16QAM, 64QAM , CP-OFDM: QPSK, 16QAM, 64QAM
EN-DC Carrier Aggregation Possible Combinations	The technical description includes all the possible carrier aggregation combinations
LTE Anchor Bands for NR Band n5	LTE Band 2/66
LTE Anchor Bands for NR Band n66	LTE Band 5/13
LTE Anchor Bands for NR Band n2	LTE Band 5/13

4.6 DUT Antenna Locations

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

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

Mode	Rear	Front	Left	Right	Bottom	Top
GSM/GPRS/EDGE 850	Yes	Yes	Yes	Yes	Yes	No
GSM/GPRS/EDGE 1900	Yes	Yes	Yes	Yes	Yes	No
WCDMA 850	Yes	Yes	Yes	Yes	Yes	No
WCDMA 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 7	Yes	Yes	Yes	No	Yes	No
LTE Band 12	Yes	Yes	Yes	Yes	Yes	No
LTE Band 13	Yes	Yes	Yes	Yes	Yes	No
LTE Band 66 (AWS)	Yes	Yes	Yes	Yes	Yes	No
NR Band n2 (PCS)	Yes	Yes	Yes	Yes	Yes	No
NR Band n5 (Cell)	Yes	Yes	Yes	Yes	Yes	No
NR Band n66(AWS)	Yes	Yes	Yes	Yes	Yes	No
2.4 ㎓ WLAN	Yes	Yes	Yes	No	No	Yes
5 ㎓ WLAN	Yes	Yes	Yes	No	No	Yes
Bluetooth	Yes	Yes	Yes	No	No	Yes

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

4.7 Near Field Communications (NFC) Antenna

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

4.8 SAR Summation Scenario

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

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

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

1. Bluetooth cannot transmit simultaneously with WLAN.
2. The device does not support licensed bands simultaneously transmitting.
3. WCDMA +WLAN scenario also represents the WCDMA Voice/DATA + WLAN hotspot scenario.
4. VoIP is supported in GPRS/EDGE .
5. The highest reported SAR for each exposure condition is used for SAR summation purpose.
6. Wi-Fi Hotspot is supported for 2.4 GHz/ UNII-3 of 5 GHz WLAN.
7. This device supports # Bluetooth tethering.
8. 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.
9. LTE + 5G NR FR1 Scenarios are limited to LTE Anchor Bands, LTE Band 2/5/13/66.
10. 5G NR FR2 n260 and n261 cannot transmit simultaneously.
11. LTE + 5G NR FR2 n260 and n261 operations are only possible with LTE Band 2/5/66 under EN-DC mode

4.9 SAR Test Considerations

4.9.1 WiFi

Since wireless router operations are not allowed by the chipset firmware using U-NII-1, U-NII-2A & U-NII-2C WiFi, WiFi Hotspot SAR test and combinations are considered only 2.4 ㎓ 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 ac with the following features:

a) Up to 80 ㎒ Bandwidth only
b) No aggregate channel configurations
c) 1Tx Antenna output
d) 256 QAM is supported
e) TDWR channels are supported.
f) Straddle channels are supported
g) Band gap channels are supported

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

4.9.2 Licensed Transmitter(s)

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

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

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

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

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

LTE Band 4 (1 710.7 ㎒ ~ 1 754.3 ㎒) is covered by LTE Band 66 (1 710.7 ㎒ ~ 1 779.3 ㎒) each both LTE bands have the same target powers

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

This device supports downlink 4x4 MIMO operations for some LTE bands. Per 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 supports 5G NR for Bands n260, and n261. RF Exposure assessment and simultaneous transmission analysis for these bands can be found in test report:Part 1 Power Density Test Report

NR implementation of n5, n66 and n2 is limited to EN-DC operations only, with LTE Band 2/5/13/66 acting as the anchor band. Per FCC Guidance, SAR tests were performed separately for NR Bands and LTE Anchor Bands.

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

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

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

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

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.

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

The Reported SAR for WLAN and Bluetooth
The Reported SAR = The Measured SAR x-$\frac{Maximum\ \ tune-up\ \ (mW)}{Measured\ \ Conducted\ \ Power(mW)}$ x Duty factor

5. Introduction

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

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

SAR Definition

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

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

Figure 1. SAR Mathematical Equation

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

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

Where:

σ = conductivity of the tissue-simulant material (S/m)

ρ = mass density of the tissue-simulant material (kg/㎥)

E = Total RMS electric field strength (V/m)

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

6. Description of test equipment

6.1 SAR MEASUREMENT SETUP

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

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

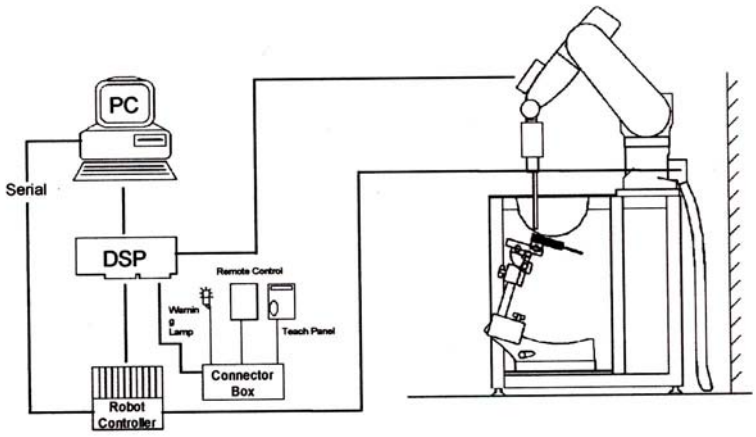


Figure 2. HCT SAR Lab. Test Measurement Set-up

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

7. SAR Measurement Procedure

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

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

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

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

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

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

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

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

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

<table>
<tr><td colspan="3"></td><td>≤ 3 GHz</td><td>> 3 GHz</td></tr>
<tr><td colspan="3">Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface</td><td>5±1 mm</td><td>$^1/_2 \cdot \delta \cdot \ln(2) \pm 0.5$ mm</td></tr>
<tr><td colspan="3">Maximum probe angle from probe axis to phantom surface normal at the measurement location</td><td>30°±1°</td><td>20°±1°</td></tr>
<tr><td colspan="3" rowspan="2">Maximum area scan Spatial resolution: Δx_{Area}, Δy_{Area}</td><td>≤ 2 GHz: ≤15 mm
2-3 GHz: ≤12 mm</td><td>3-4 GHz: ≤12 mm
4-6 GHz: ≤10 mm</td></tr>
<tr><td colspan="2">When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.</td></tr>
<tr><td colspan="3">Maximum zoom scan Spatial resolution: Δx_{zoom}, Δy_{zoom}</td><td>≤ 2 GHz: ≤8mm
2-3 GHz: ≤5mm*</td><td>3-4 GHz: ≤5 mm*
4-6 GHz: ≤4 mm*</td></tr>
<tr><td rowspan="3">Maximum zoom scan Spatial resolution normal to phantom surface</td><td colspan="2">uniform grid: $\Delta z_{zoom}(n)$</td><td>≤ 5 mm</td><td>3-4 GHz: ≤4 mm
4-5 GHz: ≤3 mm
5-6 GHz: ≤2 mm</td></tr>
<tr><td rowspan="2">graded grid</td><td>$\Delta z_{zoom}(1)$: between 1 st two Points closest to phantom surface</td><td>≤ 4 mm</td><td>3-4 GHz: ≤3 mm
4-5 GHz: ≤2.5 mm
5-6 GHz: ≤2 mm</td></tr>
<tr><td>$\Delta z_{zoom}(n>1)$: between subsequent Points</td><td colspan="2">$\leq 1.5 \cdot \Delta z_{zoom}(n-1)$</td></tr>
<tr><td>Minimum zoom scan volume</td><td colspan="2">x, y, z</td><td>≥ 30 mm</td><td>3-4 GHz: ≥28 mm
4-5 GHz: ≥25 mm
5-6 GHz: ≥22 mm</td></tr>
<tr><td colspan="5">Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.
* When zoom scan is required and the reported SAR from the area scan based 1-g SAR estimation procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.</td></tr>
</table>

8. Description of Test Position

8.1 EAR REFERENCE POINT

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

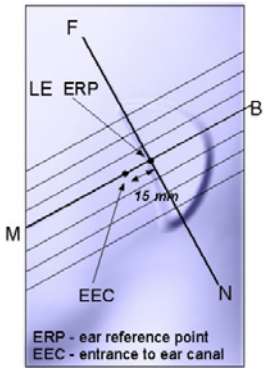


Figure 8-1
Close-up side view of ERP

8.2 HANDSET REFERENCE POINTS

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

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

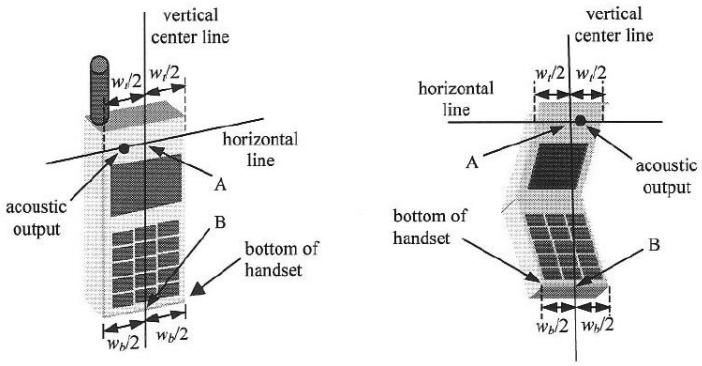


Figure 6-3. Handset vertical and horizontal reference lines

8.3 Device Holder

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

8.4 Position for cheek

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

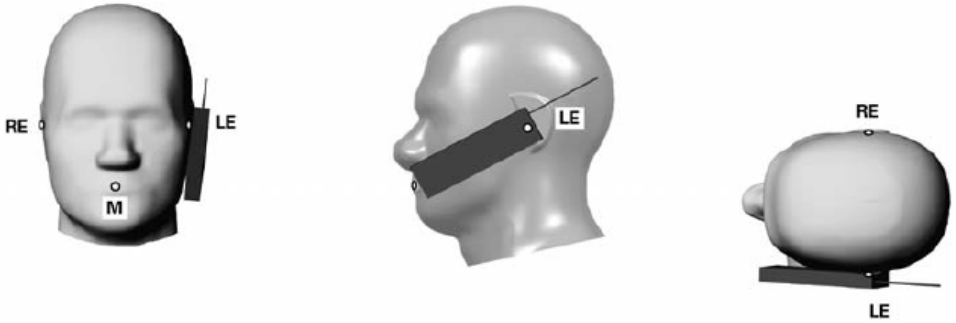


Figure 8.4 Cheek/ Touch position of the wireless device

8.5 Definition of the “tilted” position

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

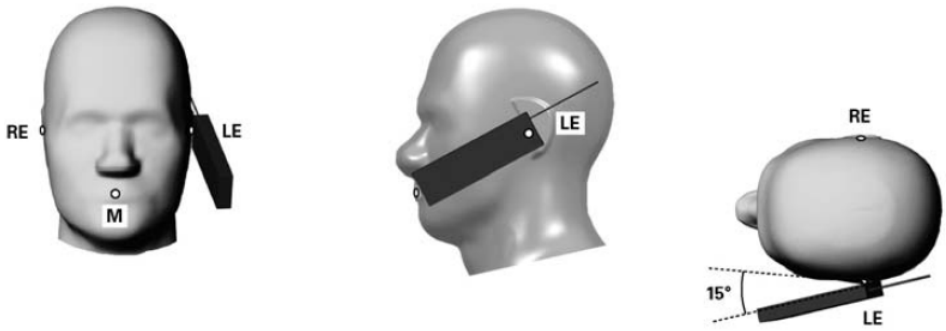


Figure 8.5. Tilt 15°position of the wireless device

8.6 Body-Worn Accessory Configurations

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

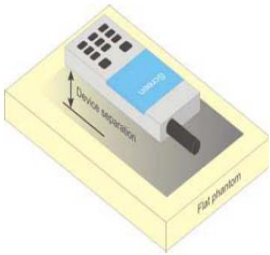


Figure 8-6
Sample Body-Worn Diagram

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

8.7 Wireless Router Configurations

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

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

8.8 Extremity Exposure Configurations

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

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

8.9 Additional Test Positions due to Proximity Conditions

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

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

FCC KDB 616217 D04 v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device at these additional exposure conditions. The smallest separation distance determined by the sensor triggering and sensor coverage for each applicable edge, minus 1 mm. was used as the test separation distance for SAR testing. Sensor triggering distance summary data is included in below table.

Wireless technologies	Position	§6.2 Triggering Distance	§6.3 Coverage	§6.4 Tilt Angle	Worst case distance for Phablet SAR
WWAN (GSM 850/1900/WCDMA B2/B5 LTE B2/B4/B5/B12/B13/B66/7/n2/n5/n66)	Rear	10	N/A	N/A	9
	Front	7	N/A	N/A	6
	Bottom	12	N/A	N/A	11

8.10 Bluetooth tethering Configurations

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

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

9. RF Exposure Limits

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

NOTES:

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

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

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

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

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

10. FCC SAR General Measurement Procedures

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

10.1 Measured and Reported SAR

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

10.2 3G SAR Test Reduction Procedure

10.2.1 GSM, GPRS AND EDGE

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

10.2.2 SAR Test Reduction

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

10.2.3 Procedures Used to Establish RF Signal for SAR

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

10.4 SAR Measurement Conditions for WCDMA

10.4.1 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.

10.4.2 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 and applicable RMC configuration with the corresponding spreading code or DPDCHn, for the highest reported SAR configuration in 12.2 kbps RMC.

10.4.3 SAR Measurements with Rel. 5 HSDPA

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

10.4.4 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.

10.5 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).

10.5.1 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.

10.5.2 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.

10.5.3 A-MPR

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

10.5.4 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.

10.5.5 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.

10.6 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.

10.6.1 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.

10.6.2 U-NII-1 and U-NII-2A

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

10.6.3 U-NII-2C and U-NII-3

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

10.6.4 Initial Test Position Procedure

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

10.6.5 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.

10.6.6 OFDM Transmission Mode and SAR Test Channel Selection

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

10.6.7 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.

10.6.8 Subsequent Test Configuration Procedures

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

11. Output Power Specifications

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

Licensed bands

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

Test Overview

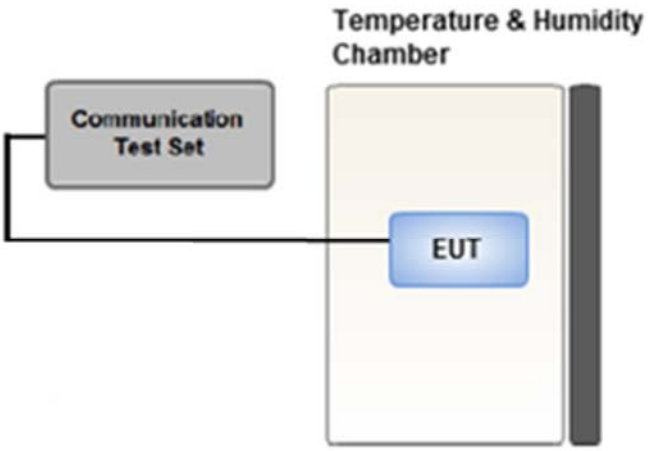
According to ANSI C63.26-2015 Section 5.2.1 when measuring the maximum RF output power from such devices, control over the EUT must be provided either through special test software (provided by manufacturer specifically for compliance testing, but not accessible by an end user) or through use of a base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

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

Test Procedure

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

Test setup



11.2 GSM

11.2.1 GSM Maximum Conducted Output Power

DSI = 0,1 P_{Limit} Calculations - 2G Body-Worn, Phablet Max, Head SAR

Measured P_{max}

Mode / Band		Voice	GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)			
		GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Maximum		**33.5**	**33.5**	**32.5**	**30.5**	**28.5**	**27.5**	**26.5**	**24.5**	**23.5**
Nominal		**32.5**	**32.5**	**31.5**	**29.5**	**27.5**	**26.5**	**25.5**	**23.5**	**22.5**
GSM 850	128	32.90	32.88	31.94	29.87	27.97	26.89	25.57	23.48	22.63
	190	32.89	32.66	31.73	29.67	27.60	26.62	25.27	23.27	22.07
	251	32.86	31.90	31.19	29.15	26.87	25.96	24.62	22.67	21.73
Maximum		**30.5**	**30.5**	**29.5**	**25.5**	**25.5**	**27.5**	**25.5**	**23.5**	**22.5**
Nominal		**29.5**	**29.5**	**28.5**	**24.5**	**24.5**	**26.5**	**24.5**	**22.5**	**21.5**
GSM 1900	512	28.54	28.51	27.53	23.85	23.72	25.01	23.45	21.50	20.52
	661	29.38	29.37	28.20	24.68	24.60	25.77	24.15	22.27	21.31
	810	29.11	29.10	28.02	24.52	24.41	25.56	24.01	22.05	21.05

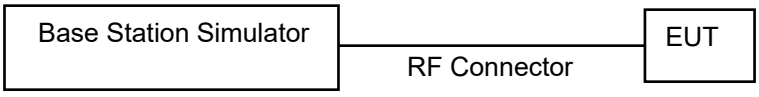
GSM Conducted output powers (Burst-Average)

Mode / Band		Voice	GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)			
		GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Maximum		24.47	24.47	26.48	26.24	25.49	18.47	20.48	20.24	20.49
Nominal		23.47	23.47	25.48	25.24	24.49	17.47	19.48	19.24	19.49
GSM 850	128	23.87	23.85	25.92	25.61	24.96	17.86	19.55	19.22	19.62
	190	23.86	23.63	25.71	25.41	24.59	17.59	19.25	19.01	19.06
	251	23.83	22.87	25.17	24.89	23.86	16.93	18.60	18.41	18.72
Maximum		21.47	21.47	23.48	21.24	22.49	18.47	19.48	19.24	19.49
Nominal		20.47	20.47	22.48	20.24	21.49	17.47	18.48	18.24	18.49
GSM 1900	512	19.51	19.48	21.51	19.59	20.71	15.98	17.43	17.24	17.51
	661	20.35	20.34	22.18	20.42	21.59	16.74	18.13	18.01	18.30
	810	20.08	20.07	22.00	20.26	21.40	16.53	17.99	17.79	18.04

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 12 : Hotspot SAR with GPRS/EDGE
Multi-slot Class 12 with CS 1 (GMSK)



11.2.2 GSM Reduced Conducted Output Power (Hotspot mode activated)

DSI = 2 P_{Limit} Calculations - 2G Hotspot SAR

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		**26.0**	**26.0**	**24.5**	**21.0**	**21.0**	**23.5**	**21.5**	**19.5**	**18.5**
Nominal		**25.0**	**25.0**	**23.5**	**20.0**	**20.0**	**22.5**	**20.5**	**18.5**	**17.5**
GSM 1900	512	24.58	24.58	23.31	19.68	19.61	21.75	19.62	17.64	16.86
	661	25.39	25.36	24.06	20.75	20.64	22.50	20.39	18.53	17.44
	810	25.06	25.04	23.88	20.79	20.63	22.37	20.11	18.20	17.24

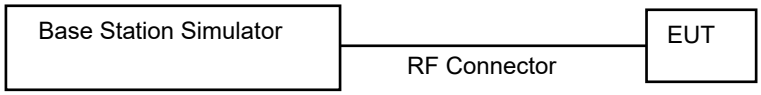
GSM Conducted output powers (Burst-Average)

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		**16.97**	**16.97**	**18.48**	**16.74**	**17.99**	**14.47**	**15.48**	**15.24**	**15.49**
Nominal		**15.97**	**15.97**	**17.48**	**15.74**	**16.99**	**13.47**	**14.48**	**14.24**	**14.49**
GSM 1900	512	15.55	15.55	17.29	15.42	16.60	12.72	13.60	13.38	13.85
	661	16.36	16.33	18.04	16.49	17.63	13.47	14.37	14.27	14.43
	810	16.03	16.01	17.86	16.53	17.62	13.34	14.09	13.94	14.23

GSM Conducted output powers (Frame-Average)

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

GSM Class : B
GSM voice/GPRS VOIP: Head SAR , Body worn SAR
GPRS/EDGE Multi-slots 12 : Hotspot SAR with GPRS/EDGE
Multi-slot Class 12 with CS 1 (GMSK)



11.2.3 GSM Reduced Conducted Output Power (Phablet Reduce activated)

DSI = 3 P_{Limit} Calculations - 2G Phablet, EARJACK Reduced SAR

Mode / Band		Voice	GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)			
		GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Maximum		**27.0**	**27.0**	**25.5**	**22.5**	**22.0**	**24.5**	**22.5**	**20.5**	**19.5**
Nominal		**26.0**	**26.0**	**24.5**	**21.5**	**21.0**	**23.5**	**21.5**	**19.5**	**18.5**
GSM 1900	512	25.62	25.47	24.30	21.40	21.30	22.69	20.59	18.58	17.50
	661	26.45	26.36	25.18	21.89	21.75	23.41	21.50	19.51	18.59
	810	26.17	26.09	24.80	21.70	21.56	23.16	21.11	19.08	18.02

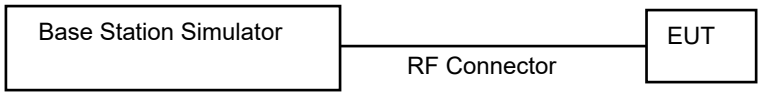
GSM Conducted output powers (Burst-Average)

Mode / Band		Voice	GPRS(GMSK) Data – CS1(dBm)				EDGE Data (dBm)			
		GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot
Maximum		17.97	**17.97**	**19.48**	**18.24**	**18.99**	**15.47**	**16.48**	**16.24**	**16.49**
Nominal		16.97	**16.97**	**18.48**	**17.24**	**17.99**	**14.47**	**15.48**	**15.24**	**15.49**
GSM 1900	512	16.59	16.44	18.28	17.14	18.29	13.66	14.57	14.32	14.49
	661	17.42	17.33	19.16	17.63	18.74	14.38	15.48	15.25	15.58
	810	17.14	17.06	18.78	17.44	18.55	14.13	15.09	14.82	15.01

GSM Conducted output powers (Frame-Average)

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

GSM Class : B
GSM voice/GPRS VOIP: Head SAR , Body worn SAR
GPRS/EDGE Multi-slots 12 : Hotspot SAR with GPRS/EDGE
Multi-slot Class 12 with CS 1 (GMSK)



11.3 WCDMA

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.

11.3.1 WCDMA Maximum Conducted Output Power

DSI = 0,1 P_{Limit} Calculations - 3G Body-Worn, Phablet Max, Head SAR

WCDMA Band 5 Maximum Conducted Output Power(All DSI)

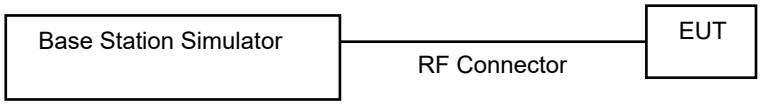
3GPP Release Version	Mode	3GPP 34.121	WCDMA Band 5 [dBm]			3GPP MPR
		Subtest	UL 4132 DL 4357	UL 4183 DL 4408	UL 4233 DL 4458	
99	WCDMA	12.2 kbps RMC	**23.79**	**23.33**	**22.85**	-
99		12.2 kbps AMR	**23.81**	**23.32**	**22.86**	-
5	HSDPA	Subtest 1	**22.67**	**22.18**	**21.72**	0
5		Subtest 2	**22.65**	**22.21**	**21.73**	0
5		Subtest 3	**22.15**	**21.70**	**21.24**	0.5
5		Subtest 4	**22.14**	**21.69**	**21.22**	0.5
6	HSUPA	Subtest 1	**22.63**	**22.16**	**21.75**	0
6		Subtest 2	**20.65**	**20.19**	**19.74**	2
6		Subtest 3	**21.63**	**21.18**	**20.76**	1
6		Subtest 4	**20.66**	**20.20**	**19.75**	2
6		Subtest 5	**22.64**	**22.19**	**22.66**	0

WCDMA Average Conducted output powers

WCDMA Band 2 Maximum Conducted Output Power (**DSI = 0,1**)

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	**23.27**	**23.64**	**23.31**	-
99		12.2 kbps AMR	**23.27**	**23.61**	**23.29**	-
5	HSDPA	Subtest 1	**22.22**	**22.58**	**22.30**	0
5		Subtest 2	**22.24**	**22.60**	**22.32**	0
5		Subtest 3	**21.72**	**22.11**	**21.81**	0.5
5		Subtest 4	**21.73**	**22.10**	**21.82**	0.5
6	HSUPA	Subtest 1	**22.24**	**22.61**	**22.59**	0
6		Subtest 2	**20.24**	**20.62**	**20.32**	2
6		Subtest 3	**21.23**	**21.62**	**21.31**	1
6		Subtest 4	**20.24**	**20.65**	**20.33**	2
6		Subtest 5	**22.23**	**22.61**	**22.32**	0

WCDMA Average Conducted output powers



11.3.2 WCDMA Reduced Conducted Output Power (Hotspot mode activated)

DSI = 2 P_{Limit} Calculations - 3G Hotspot SAR

When DSI=2 of WCDMA B2 of this product, the MPR of HSDPA is set to 0.

WCDMA Band 2 Hotspot Back-off Power

3GPP Release Version	Mode	3GPP 34.121 Subtest	WCDMA Band 2 [dBm] UL 9262 DL 9662	UL 9400 DL 9800	UL 9538 DL 9938	3GPP MPR
99	WCDMA	12.2 kbps RMC	**18.13**	**18.61**	**18.40**	-
99		12.2 kbps AMR	**18.13**	**18.63**	**18.41**	
5	HSDPA	Subtest 1	**16.54**	**17.03**	**16.83**	**0**
5		Subtest 2	**16.54**	**17.02**	**16.84**	**0**
5		Subtest 3	**16.53**	**17.05**	**16.87**	**0**
5		Subtest 4	**16.52**	**17.06**	**16.86**	**0**
6	HSUPA	Subtest 1	**16.53**	**17.02**	**16.84**	**0**
6		Subtest 2	**15.04**	**15.55**	**15.35**	**2**
6		Subtest 3	**15.53**	**16.00**	**15.82**	**1**
6		Subtest 4	**15.03**	**15.55**	**15.34**	**2**
6		Subtest 5	**16.53**	**17.01**	**16.82**	**0**

WCDMA Average Conducted output powers

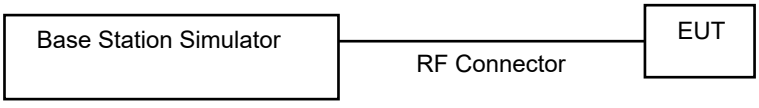
11.3.3 WCDMA Reduced Conducted Output Power – (Grip back off Activated)

DSI = 3 P_{Limit} Calculations - 3G Phablet Reduced SAR

When DSI=3 of WCDMA B2 of this product, the MPR of HSDPA is set to 0.

WCDMA Band 2 Grip back-off Power

3GPP Release Version	Mode	3GPP 34.121 Subtest	WCDMA Band 2 [dBm] UL 9262 DL 9662	UL 9400 DL 9800	UL 9538 DL 9938	3GPP MPR
99	WCDMA	12.2 kbps RMC	**20.11**	**20.60**	**20.38**	-
99		12.2 kbps AMR	**20.12**	**20.58**	**20.37**	
5	HSDPA	Subtest 1	**18.52**	**19.00**	**18.81**	**0**
5		Subtest 2	**18.54**	**19.03**	**18.83**	**0**
5		Subtest 3	**18.51**	**19.00**	**18.83**	**0**
5		Subtest 4	**18.53**	**19.02**	**18.84**	**0**
6	HSUPA	Subtest 1	**18.52**	**19.00**	**18.83**	**0**
6		Subtest 2	**17.04**	**17.52**	**17.34**	**2**
6		Subtest 3	**17.52**	**18.01**	**17.83**	**1**
6		Subtest 4	**17.02**	**17.52**	**17.34**	**2**
6		Subtest 5	**18.51**	**19.00**	**18.84**	**0**



11.4 LTE Maximum Output Power

LTE B4/5/12/13/14/66 at 20 ㎒ Bandwidth does not support three non-overlapping channels. Per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the mid channel of the group of overlapping channels should be selected for testing.

11.4.1 LTE Maximum Conducted Power

DSI = 0,1 PLimit Calculations - 4G Body-Worn, Phablet Max, Head SAR
[LTE Band 2 Conducted Power]

LTE Band 2 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18607 Ch. 1850.7 ㎒	18900 Ch. 1880 ㎒	19193 Ch. 1909.3 ㎒		
1.4 ㎒	QPSK	1	0	24.26	24.15	23.84	0	0
		1	3	24.24	24.22	23.89	0	0
		1	5	24.13	24.16	23.75	0	0
		3	0	24.14	24.11	23.77	0	0
		3	1	24.27	24.16	23.81	0	0
		3	3	24.16	24.22	23.70	0	0
		6	0	23.35	23.30	22.93	0-1	1
	16QAM	1	0	23.68	23.59	23.24	0-1	1
		1	3	23.77	23.53	23.05	0-1	1
		1	5	23.40	23.43	22.97	0-1	1
		3	0	23.25	23.18	22.82	0-1	1
		3	1	23.42	23.47	22.80	0-1	1
		3	3	23.28	23.26	22.82	0-1	1
		6	0	22.47	22.44	22.02	0-2	2
	64QAM	1	0	22.65	22.43	22.04	0-2	2
		1	3	22.45	22.55	22.03	0-2	2
		1	5	22.40	22.45	21.94	0-2	2
		3	0	22.45	22.46	22.03	0-2	2
		3	1	22.51	22.42	22.08	0-2	2
		3	3	22.45	22.38	22.02	0-2	2
		6	0	21.39	21.28	20.98	0-3	3

LTE Band 2 _ 3 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18615 Ch. 1851.5 ㎒	18900 Ch. 1880 ㎒	19185 Ch. 1908.5 ㎒		
3 ㎒	QPSK	1	0	24.41	24.29	23.90	0	0
		1	7	24.20	24.27	23.68	0	0
		1	14	24.08	24.18	23.63	0	0
		8	0	23.48	23.40	23.10	0-1	1
		8	3	23.48	23.47	23.06	0-1	1
		8	7	23.41	23.37	22.97	0-1	1
		15	0	23.42	23.35	23.00	0-1	1
	16QAM	1	0	23.56	23.55	23.46	0-1	1
		1	7	23.46	23.56	23.11	0-1	1
		1	14	23.50	23.43	23.04	0-1	1
		8	0	22.55	22.46	22.11	0-2	2
		8	3	22.48	22.48	22.11	0-2	2
		8	7	22.35	22.39	22.02	0-2	2
		15	0	22.44	22.41	22.05	0-2	2
	64QAM	1	0	22.54	22.44	22.15	0-2	2
		1	7	22.40	22.42	21.98	0-2	2
		1	14	22.44	22.47	21.99	0-2	2
		8	0	21.51	21.48	21.15	0-3	3
		8	3	21.58	21.40	21.12	0-3	3
		8	7	21.42	21.47	21.04	0-3	3
		15	0	21.47	21.44	21.05	0-3	3

LTE Band 2 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18625 Ch. 1852.5 ㎒	18900 Ch. 1880 ㎒	19175 Ch. 1907.5 ㎒		
5 ㎒	QPSK	1	0	24.24	24.17	23.81	0	0
		1	12	24.26	24.30	23.89	0	0
		1	24	24.19	24.20	23.80	0	0
		12	0	23.44	23.39	22.96	0-1	1
		12	6	23.44	23.50	23.02	0-1	1
		12	11	23.37	23.43	23.02	0-1	1
		25	0	23.31	23.35	22.93	0-1	1
	16QAM	1	0	23.60	23.53	23.02	0-1	1
		1	12	23.49	23.46	23.09	0-1	1
		1	24	23.33	23.52	23.02	0-1	1
		12	0	22.43	22.43	22.02	0-2	2
		12	6	22.44	22.47	22.00	0-2	2
		12	11	22.43	22.40	22.00	0-2	2
		25	0	22.44	22.32	21.95	0-2	2
	64QAM	1	0	22.59	22.38	22.13	0-2	2
		1	12	22.44	22.57	22.05	0-2	2
		1	24	22.30	22.32	21.86	0-2	2
		12	0	21.52	21.49	21.03	0-3	3
		12	6	21.54	21.51	21.09	0-3	3
		12	11	21.44	21.43	21.03	0-3	3
		25	0	21.42	21.37	21.01	0-3	3

LTE Band 2 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18650 Ch. 1855 ㎒	18900 Ch. 1880 ㎒	19150 Ch. 1905 ㎒		
10 ㎒	QPSK	1	0	23.89	23.81	23.87	0	0
		1	24	24.11	24.33	24.00	0	0
		1	49	23.68	23.90	23.85	0	0
		25	0	23.32	23.29	22.95	0-1	1
		25	12	23.37	23.32	23.04	0-1	1
		25	24	23.27	23.25	22.90	0-1	1
		50	0	23.30	23.30	22.94	0-1	1
	16QAM	1	0	23.21	23.28	23.32	0-1	1
		1	24	23.75	23.81	23.36	0-1	1
		1	49	23.35	23.47	23.26	0-1	1
		25	0	22.25	22.33	21.93	0-2	2
		25	12	22.37	22.39	22.05	0-2	2
		25	24	22.31	22.29	21.98	0-2	2
		50	0	22.30	22.21	21.91	0-2	2
	64QAM	1	0	22.12	22.03	22.18	0-2	2
		1	24	22.62	22.77	22.30	0-2	2
		1	49	22.48	22.26	22.28	0-2	2
		25	0	21.36	21.27	20.94	0-3	3
		25	12	21.42	21.47	21.03	0-3	3
		25	24	21.23	21.32	20.94	0-3	3
		50	0	21.35	21.29	20.90	0-3	3

LTE Band 2 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18675 Ch. 1857.5 ㎒	18900 Ch. 1880 ㎒	19125 Ch. 1902.5 ㎒		
15 ㎒	QPSK	1	0	23.83	24.06	23.87	0	0
		1	36	23.94	24.02	23.69	0	0
		1	74	23.91	24.04	23.57	0	0
		36	0	23.17	23.21	22.90	0-1	1
		36	18	23.23	23.28	22.97	0-1	1
		36	39	23.18	23.36	22.98	0-1	1
		75	0	23.17	23.28	22.87	0-1	1
	16QAM	1	0	23.36	23.76	23.32	0-1	1
		1	36	23.44	23.57	23.20	0-1	1
		1	74	23.46	23.51	23.27	0-1	1
		36	0	22.16	22.21	21.88	0-2	2
		36	18	22.27	22.29	21.96	0-2	2
		36	39	22.21	22.33	22.03	0-2	2
		75	0	22.23	22.21	21.96	0-2	2
	64QAM	1	0	22.21	22.30	22.09	0-2	2
		1	36	22.57	22.57	22.24	0-2	2
		1	74	22.30	22.39	22.29	0-2	2
		36	0	21.22	21.27	21.00	0-3	3
		36	18	21.26	21.33	20.98	0-3	3
		36	39	21.15	21.31	21.01	0-3	3
		75	0	21.23	21.24	20.95	0-3	3

LTE Band 2 _ 20 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 ㎒	18900 Ch. 1880 ㎒	19100 Ch. 1900 ㎒		
20 ㎒	QPSK	1	0	24.15	24.04	23.92	0	0
		1	49	24.04	24.03	23.79	0	0
		1	99	23.97	23.91	23.69	0	0
		50	0	23.11	23.09	22.86	0-1	1
		50	25	23.17	23.23	23.06	0-1	1
		50	49	23.18	23.26	22.93	0-1	1
		100	0	23.10	23.13	23.00	0-1	1
	16QAM	1	0	23.27	23.43	23.31	0-1	1
		1	49	23.34	23.62	23.32	0-1	1
		1	99	23.62	23.52	23.31	0-1	1
		50	0	22.18	22.19	22.00	0-2	2
		50	25	22.15	22.27	22.02	0-2	2
		50	49	22.15	22.23	22.00	0-2	2
		100	0	22.07	22.13	21.96	0-2	2
	64QAM	1	0	22.38	22.25	22.11	0-2	2
		1	49	22.46	22.32	22.11	0-2	2
		1	99	22.49	22.48	22.14	0-2	2
		50	0	21.18	21.19	20.92	0-3	3
		50	25	21.12	21.32	21.08	0-3	3
		50	49	21.10	21.29	20.94	0-3	3
		100	0	21.16	21.23	20.91	0-3	3

[LTE Band 4 Conducted Power DSI=0,1]

LTE Band 4 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19957 Ch. 1710.7 ㎒	20175 Ch. 1732.5 ㎒	20393 Ch. 1754.3 ㎒		
1.4 ㎒	QPSK	1	0	23.69	23.79	24.33	0	0
		1	3	23.79	23.95	24.55	0	0
		1	5	23.78	23.85	24.40	0	0
		3	0	23.70	23.76	24.30	0	0
		3	1	23.81	23.92	24.43	0	0
		3	3	23.74	23.85	24.38	0	0
		6	0	22.87	23.00	23.50	0-1	1
	16QAM	1	0	23.19	23.20	23.75	0-1	1
		1	3	23.14	23.18	23.82	0-1	1
		1	5	23.01	23.12	23.81	0-1	1
		3	0	23.04	22.92	23.46	0-1	1
		3	1	22.99	23.12	23.61	0-1	1
		3	3	22.80	22.89	23.58	0-1	1
		6	0	21.92	22.07	22.54	0-2	2
	64QAM	1	0	21.89	22.12	22.68	0-2	2
		1	3	22.04	22.18	22.70	0-2	2
		1	5	21.99	22.11	22.59	0-2	2
		3	0	21.97	22.05	22.62	0-2	2
		3	1	22.04	22.10	22.70	0-2	2
		3	3	22.04	22.07	22.66	0-2	2
		6	0	20.92	21.01	21.46	0-3	3

LTE Band 4 _ 3 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19965 Ch. 1711.5 ㎒	20175 Ch. 1732.5 ㎒	20385 Ch. 1753.5 ㎒		
3 ㎒	QPSK	1	0	23.82	23.87	24.38	0	0
		1	7	23.77	23.90	24.36	0	0
		1	14	23.78	23.99	24.51	0	0
		8	0	22.91	22.99	23.57	0-1	1
		8	3	23.12	23.15	23.53	0-1	1
		8	7	22.96	23.12	23.55	0-1	1
		15	0	22.91	23.01	23.61	0-1	1
	16QAM	1	0	22.96	23.39	23.82	0-1	1
		1	7	23.06	23.12	23.72	0-1	1
		1	14	23.09	23.23	23.74	0-1	1
		8	0	21.95	22.08	22.60	0-2	2
		8	3	22.05	22.15	22.65	0-2	2
		8	7	22.00	22.13	22.64	0-2	2
		15	0	21.96	22.08	22.61	0-2	2
	64QAM	1	0	22.13	22.18	22.75	0-2	2
		1	7	22.02	22.12	22.69	0-2	2
		1	14	22.09	22.19	22.65	0-2	2
		8	0	20.95	21.08	21.60	0-3	3
		8	3	21.02	21.15	21.59	0-3	3
		8	7	21.00	21.08	21.62	0-3	3
		15	0	20.98	21.10	21.58	0-3	3

LTE Band 4 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19975 Ch. 1712.5 ㎒	20175 Ch. 1732.5 ㎒	20375 Ch. 1752.5 ㎒		
5 ㎒	QPSK	1	0	23.69	23.78	24.29	0	0
		1	12	23.75	23.87	24.45	0	0
		1	24	23.76	23.76	24.40	0	0
		12	0	22.85	22.99	23.49	0-1	1
		12	6	22.98	23.09	23.59	0-1	1
		12	11	22.96	23.11	23.56	0-1	1
		25	0	22.94	23.01	23.56	0-1	1
	16QAM	1	0	23.11	23.13	23.64	0-1	1
		1	12	23.02	23.19	23.69	0-1	1
		1	24	23.15	23.19	23.70	0-1	1
		12	0	21.90	22.00	22.53	0-2	2
		12	6	22.03	22.14	22.58	0-2	2
		12	11	22.02	22.12	22.57	0-2	2
		25	0	22.00	22.08	22.47	0-2	2
	64QAM	1	0	21.99	22.07	22.66	0-2	2
		1	12	21.97	22.17	22.65	0-2	2
		1	24	22.04	22.11	22.60	0-2	2
		12	0	20.97	21.07	21.55	0-3	3
		12	6	21.09	21.19	21.58	0-3	3
		12	11	21.04	21.20	21.66	0-3	3
		25	0	21.01	21.02	21.44	0-3	3

LTE Band 4 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20000 Ch. 1715 ㎒	20175 Ch. 1732.5 ㎒	20350 Ch. 1750 ㎒		
10 ㎒	QPSK	1	0	23.44	23.55	24.02	0	0
		1	24	24.06	23.99	24.19	0	0
		1	49	23.65	23.75	24.05	0	0
		25	0	22.86	22.93	23.39	0-1	1
		25	12	23.03	23.10	23.51	0-1	1
		25	24	22.89	23.03	23.30	0-1	1
		50	0	22.94	22.97	23.38	0-1	1
	16QAM	1	0	22.80	22.97	23.25	0-1	1
		1	24	23.27	23.27	23.75	0-1	1
		1	49	23.07	22.89	23.62	0-1	1
		25	0	21.84	22.73	22.41	0-2	2
		25	12	21.95	22.08	22.50	0-2	2
		25	24	21.89	22.09	22.39	0-2	2
		50	0	21.89	22.04	22.44	0-2	2
	64QAM	1	0	21.71	21.82	22.11	0-2	2
		1	24	22.23	22.21	22.58	0-2	2
		1	49	21.88	22.25	22.55	0-2	2
		25	0	20.85	20.96	21.35	0-3	3
		25	12	21.02	21.15	21.45	0-3	3
		25	24	20.96	21.03	21.34	0-3	3
		50	0	20.96	21.04	21.45	0-3	3

LTE Band 4 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20025 Ch. 1717.5 ㎒	20175 Ch. 1732.5 ㎒	20325 Ch. 1747.5 ㎒		
15 ㎒	QPSK	1	0	23.50	23.63	23.79	0	0
		1	36	23.80	23.74	24.33	0	0
		1	74	23.72	23.77	24.19	0	0
		36	0	22.80	22.82	23.16	0-1	1
		36	18	22.79	23.02	23.27	0-1	1
		36	39	22.95	23.04	23.49	0-1	1
		75	0	22.92	22.98	23.41	0-1	1
	16QAM	1	0	22.96	23.04	23.33	0-1	1
		1	36	23.15	23.46	23.61	0-1	1
		1	74	22.98	23.30	23.69	0-1	1
		36	0	21.88	21.84	22.21	0-2	2
		36	18	21.90	21.91	22.34	0-2	2
		36	39	21.79	22.11	22.44	0-2	2
		75	0	21.86	22.01	22.29	0-2	2
	64QAM	1	0	21.86	21.82	22.09	0-2	2
		1	36	21.95	22.05	22.48	0-2	2
		1	74	21.84	22.12	22.47	0-2	2
		36	0	20.80	20.96	21.27	0-3	3
		36	18	20.88	21.00	21.41	0-3	3
		36	39	20.93	21.07	21.41	0-3	3
		75	0	20.91	20.93	21.34	0-3	3

LTE Band 4 _ 20 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				20175 Ch. 1732.5 ㎒		
20 ㎒	QPSK	1	0	23.65	0	0
		1	49	23.88	0	0
		1	99	23.73	0	0
		50	0	22.86	0-1	1
		50	25	23.01	0-1	1
		50	49	23.07	0-1	1
		100	0	23.02	0-1	1
	16QAM	1	0	22.82	0-1	1
		1	49	23.33	0-1	1
		1	99	23.32	0-1	1
		50	0	21.86	0-2	2
		50	25	22.06	0-2	2
		50	49	22.04	0-2	2
		100	0	21.98	0-2	2
	64QAM	1	0	21.73	0-2	2
		1	49	22.21	0-2	2
		1	99	22.19	0-2	2
		50	0	20.91	0-3	3
		50	25	21.05	0-3	3
		50	49	21.03	0-3	3
		100	0	20.99	0-3	3

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[LTE Band 5 Conducted Power :All DSI]

LTE Band 5 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20407 Ch. 824.7 ㎒	20525 Ch. 836.5 ㎒	20643 Ch. 848.3 ㎒		
1.4 ㎒	QPSK	1	0	25.21	24.70	24.21	0	0
		1	3	25.24	24.70	24.11	0	0
		1	5	25.06	24.62	24.11	0	0
		3	0	25.19	24.71	24.16	0	0
		3	1	25.23	24.76	24.15	0	0
		3	3	25.13	24.68	24.22	0	0
		6	0	24.25	23.83	23.32	0-1	1
	16QAM	1	0	24.47	24.10	23.51	0-1	1
		1	3	24.45	24.03	23.45	0-1	1
		1	5	24.36	23.94	23.45	0-1	1
		3	0	24.30	23.80	23.26	0-1	1
		3	1	24.27	23.97	23.34	0-1	1
		3	3	24.25	23.73	23.32	0-1	1
		6	0	23.41	22.87	22.47	0-2	2
	64QAM	1	0	22.99	22.97	22.43	0-2	2
		1	3	23.13	22.98	22.45	0-2	2
		1	5	23.10	22.87	22.35	0-2	2
		3	0	22.93	23.00	22.48	0-2	2
		3	1	23.02	22.97	22.44	0-2	2
		3	3	22.99	22.91	22.45	0-2	2
		6	0	21.87	21.86	21.36	0-3	3

LTE Band 5 _ 3 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20415 Ch. 825.5 ㎒	20525 Ch. 836.5 ㎒	20635 Ch. 847.5 ㎒		
3 ㎒	QPSK	1	0	25.31	24.85	24.27	0	0
		1	7	25.24	24.73	24.25	0	0
		1	14	25.02	24.62	24.14	0	0
		8	0	24.38	23.91	23.41	0-1	1
		8	3	24.36	23.91	23.44	0-1	1
		8	7	24.23	23.83	23.38	0-1	1
		15	0	24.29	23.93	23.39	0-1	1
	16QAM	1	0	24.48	24.15	23.63	0-1	1
		1	7	24.41	24.05	23.46	0-1	1
		1	14	24.42	23.98	23.30	0-1	1
		8	0	23.43	22.99	22.47	0-2	2
		8	3	23.43	22.97	22.48	0-2	2
		8	7	23.30	22.84	22.42	0-2	2
		15	0	23.36	22.91	22.44	0-2	2
	64QAM	1	0	23.06	23.10	22.48	0-2	2
		1	7	23.26	23.00	22.59	0-2	2
		1	14	23.22	22.88	22.38	0-2	2
		8	0	22.08	22.00	21.47	0-3	3
		8	3	22.22	21.97	21.47	0-3	3
		8	7	22.19	21.85	21.43	0-3	3
		15	0	22.12	21.91	21.44	0-3	3

LTE Band 5 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20425 Ch. 826.5 ㎒	20525 Ch. 836.5 ㎒	20625 Ch. 846.5 ㎒		
5 ㎒	QPSK	1	0	25.23	24.88	24.29	0	0
		1	12	25.17	24.77	24.36	0	0
		1	24	25.03	24.54	24.19	0	0
		12	0	24.35	23.94	23.49	0-1	1
		12	6	24.33	23.91	23.47	0-1	1
		12	11	24.26	23.82	23.42	0-1	1
		25	0	24.29	23.91	23.45	0-1	1
	16QAM	1	0	24.49	24.11	23.68	0-1	1
		1	12	24.47	24.05	23.47	0-1	1
		1	24	24.29	23.93	23.45	0-1	1
		12	0	23.41	23.00	22.48	0-2	2
		12	6	23.37	22.94	22.51	0-2	2
		12	11	23.19	22.78	22.40	0-2	2
		25	0	23.26	22.88	22.45	0-2	2
	64QAM	1	0	23.05	23.15	22.66	0-2	2
		1	12	23.36	23.08	22.62	0-2	2
		1	24	23.15	22.90	22.35	0-2	2
		12	0	22.22	21.95	21.57	0-3	3
		12	6	22.36	21.97	21.45	0-3	3
		12	11	22.30	21.82	21.43	0-3	3
		25	0	22.20	21.91	21.57	0-3	3

LTE Band 5 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				20525 Ch. 836.5 ㎒		
10 ㎒	QPSK	1	0	25.21	0	0
		1	24	24.80	0	0
		1	49	24.56	0	0
		25	0	23.93	0-1	1
		25	12	23.91	0-1	1
		25	24	23.77	0-1	1
		50	0	23.86	0-1	1
	16QAM	1	0	24.32	0-1	1
		1	24	24.17	0-1	1
		1	49	24.05	0-1	1
		25	0	22.92	0-2	2
		25	12	22.91	0-2	2
		25	24	22.72	0-2	2
		50	0	22.80	0-2	2
	64QAM	1	0	23.16	0-2	2
		1	24	23.19	0-2	2
		1	49	23.08	0-2	2
		25	0	21.95	0-3	3
		25	12	21.92	0-3	3
		25	24	21.75	0-3	3
		50	0	21.89	0-3	3

[LTE Band 7 Conducted Power]

LTE Band 7 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20775 Ch. 2502.5 ㎒	21100 Ch. 2535 ㎒	21425 Ch. 2567.5 ㎒		
5 ㎒	QPSK	1	0	22.95	23.01	23.45	0	0
		1	12	23.17	22.97	23.32	0	0
		1	24	22.98	23.05	23.42	0	0
		12	0	22.00	21.98	22.46	0-1	1
		12	6	22.03	22.03	22.53	0-1	1
		12	11	22.08	22.08	22.47	0-1	1
		25	0	22.04	22.03	22.37	0-1	1
	16QAM	1	0	22.39	22.32	22.73	0-1	1
		1	12	22.26	22.34	22.83	0-1	1
		1	24	22.18	22.41	22.82	0-1	1
		12	0	21.08	21.04	21.48	0-2	2
		12	6	21.07	21.06	21.52	0-2	2
		12	11	21.08	21.10	21.52	0-2	2
		25	0	21.01	21.00	21.46	0-2	2
	64QAM	1	0	21.04	21.33	21.63	0-2	2
		1	12	21.54	21.37	21.76	0-2	2
		1	24	21.47	21.48	21.81	0-2	2
		12	0	20.07	20.01	20.40	0-3	3
		12	6	20.12	20.18	20.57	0-3	3
		12	11	20.16	20.21	20.62	0-3	3
		25	0	20.03	20.07	20.46	0-3	3

LTE Band 7_ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20800 Ch. 2505 ㎒	21100 Ch. 2535 ㎒	21400 Ch. 2565 ㎒		
10 ㎒	QPSK	1	0	22.79	22.99	23.22	0	0
		1	24	22.78	22.96	23.25	0	0
		1	49	22.82	23.13	23.44	0	0
		25	0	21.61	22.05	22.35	0-1	1
		25	12	21.77	22.00	22.40	0-1	1
		25	24	21.84	22.07	22.50	0-1	1
		50	0	21.85	21.88	22.35	0-1	1
	16QAM	1	0	21.99	22.36	22.73	0-1	1
		1	24	22.05	22.14	22.62	0-1	1
		1	49	22.08	22.18	22.61	0-1	1
		25	0	20.77	21.00	21.73	0-2	2
		25	12	20.75	21.02	21.35	0-2	2
		25	24	20.82	21.05	21.36	0-2	2
		50	0	20.73	21.00	21.37	0-2	2
	64QAM	1	0	21.09	21.21	21.56	0-2	2
		1	24	20.97	21.18	21.53	0-2	2
		1	49	21.05	21.35	21.63	0-2	2
		25	0	19.73	20.00	20.34	0-3	3
		25	12	19.84	20.10	20.42	0-3	3
		25	24	19.80	20.15	20.54	0-3	3
		50	0	19.88	19.93	20.29	0-3	3

LTE Band 7 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20825 Ch. 2507.5 ㎒	21100 Ch. 2535 ㎒	21375 Ch. 2562.5 ㎒		
15 ㎒	QPSK	1	0	22.64	23.02	23.34	0	0
		1	36	22.83	22.89	23.32	0	0
		1	74	22.87	22.98	23.44	0	0
		36	0	21.78	21.97	22.30	0-1	1
		36	18	21.84	21.96	22.32	0-1	1
		36	39	21.87	22.09	22.46	0-1	1
		75	0	21.81	21.91	22.30	0-1	1
	16QAM	1	0	21.95	22.33	22.50	0-1	1
		1	36	22.01	22.15	22.51	0-1	1
		1	74	22.06	22.24	22.71	0-1	1
		36	0	20.70	20.90	21.29	0-2	2
		36	18	20.77	20.95	21.26	0-2	2
		36	39	20.84	20.92	21.41	0-2	2
		75	0	20.74	20.89	21.21	0-2	2
	64QAM	1	0	20.99	21.25	21.42	0-2	2
		1	36	20.85	21.10	21.47	0-2	2
		1	74	21.03	21.26	21.42	0-2	2
		36	0	19.71	19.98	20.37	0-3	3
		36	18	19.84	19.99	20.32	0-3	3
		36	39	19.82	19.96	20.47	0-3	3
		75	0	19.77	19.87	20.29	0-3	3

LTE Band 7 _ 20 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20850 Ch. 2510 ㎒	21100 Ch. 2535 ㎒	21350 Ch. 2560 ㎒		
20 ㎒	QPSK	1	0	22.61	23.08	23.25	0	0
		1	49	22.77	22.97	23.41	0	0
		1	99	22.80	22.95	23.33	0	0
		50	0	21.75	21.97	22.19	0-1	1
		50	25	21.81	22.04	22.32	0-1	1
		50	49	21.86	21.95	22.28	0-1	1
		100	0	21.80	21.95	22.25	0-1	1
	16QAM	1	0	21.97	22.24	22.38	0-1	1
		1	49	22.08	22.29	22.49	0-1	1
		1	99	22.02	22.37	22.41	0-1	1
		50	0	20.87	21.00	21.30	0-2	2
		50	25	20.84	20.98	21.33	0-2	2
		50	49	20.76	22.40	21.31	0-2	2
		100	0	20.78	20.89	21.21	0-2	2
	64QAM	1	0	20.80	21.11	21.42	0-2	2
		1	49	20.91	21.28	21.64	0-2	2
		1	99	21.06	21.10	21.34	0-2	2
		50	0	19.87	20.03	20.27	0-3	3
		50	25	19.87	20.02	20.40	0-3	3
		50	49	19.90	20.10	20.38	0-3	3
		100	0	19.80	19.85	20.23	0-3	3

[LTE Band 12 Conducted Power :All DSI]

LTE Band 12 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23017 Ch. 699.7 ㎒	23095 Ch. 707.5 ㎒	23173 Ch. 715.3 ㎒		
1.4 ㎒	QPSK	1	0	24.16	24.17	24.42	0	0
		1	3	24.23	24.33	24.52	0	0
		1	5	24.31	24.36	24.46	0	0
		3	0	23.45	24.21	24.31	0	0
		3	1	24.30	24.32	24.42	0	0
		3	3	24.19	24.29	24.36	0	0
		6	0	23.39	23.49	23.52	0-1	1
	16QAM	1	0	23.55	23.64	23.72	0-1	1
		1	3	23.52	23.84	23.96	0-1	1
		1	5	23.79	23.59	23.83	0-1	1
		3	0	23.48	23.33	23.48	0-1	1
		3	1	23.41	23.58	23.58	0-1	1
		3	3	23.46	23.37	23.58	0-1	1
		6	0	22.47	22.62	22.55	0-2	2
	64QAM	1	0	22.47	22.55	22.61	0-2	2
		1	3	22.62	22.70	22.87	0-2	2
		1	5	22.49	22.65	22.67	0-2	2
		3	0	22.59	22.46	22.53	0-2	2
		3	1	22.90	22.60	22.76	0-2	2
		3	3	22.49	22.59	22.73	0-2	2
		6	0	21.49	21.52	21.58	0-3	3

LTE Band 12 _ 3 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23025 Ch. 700.5 ㎒	23095 Ch. 707.5 ㎒	23165 Ch. 714.5 ㎒		
3 ㎒	QPSK	1	0	24.21	24.35	24.45	0	0
		1	7	24.26	24.31	24.48	0	0
		1	14	24.29	24.42	24.48	0	0
		8	0	23.40	23.51	23.54	0-1	1
		8	3	23.41	23.61	23.58	0-1	1
		8	7	23.45	23.60	23.59	0-1	1
		15	0	23.39	23.49	23.49	0-1	1
	16QAM	1	0	23.70	23.69	23.84	0-1	1
		1	7	23.43	23.70	23.83	0-1	1
		1	14	23.60	23.80	23.74	0-1	1
		8	0	22.41	22.52	22.60	0-2	2
		8	3	22.43	22.60	22.63	0-2	2
		8	7	22.44	22.58	22.60	0-2	2
		15	0	22.41	22.57	22.64	0-2	2
	64QAM	1	0	22.53	22.62	22.71	0-2	2
		1	7	22.50	22.69	22.77	0-2	2
		1	14	22.59	22.67	22.71	0-2	2
		8	0	21.42	21.49	21.61	0-3	3
		8	3	21.55	21.61	21.64	0-3	3
		8	7	21.50	21.55	21.70	0-3	3
		15	0	21.42	21.59	21.57	0-3	3

LTE Band 12 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23035 Ch. 701.5 ㎒	23095 Ch. 707.5 ㎒	23155 Ch. 713.5 ㎒		
5 ㎒	QPSK	1	0	24.24	24.29	24.51	0	0
		1	12	24.26	24.36	24.38	0	0
		1	24	24.17	24.37	24.52	0	0
		12	0	23.41	23.54	23.55	0-1	1
		12	6	23.45	23.62	23.59	0-1	1
		12	11	23.48	23.56	23.66	0-1	1
		25	0	23.42	23.55	23.65	0-1	1
	16QAM	1	0	23.63	23.66	23.82	0-1	1
		1	12	23.48	23.80	23.75	0-1	1
		1	24	23.47	23.78	23.82	0-1	1
		12	0	22.47	22.50	22.62	0-2	2
		12	6	22.47	22.64	22.56	0-2	2
		12	11	22.51	22.58	22.66	0-2	2
		25	0	22.42	22.66	22.65	0-2	2
	64QAM	1	0	22.49	22.55	22.84	0-2	2
		1	12	22.52	22.61	22.79	0-2	2
		1	24	22.45	22.73	22.80	0-2	2
		12	0	21.47	21.53	21.66	0-3	3
		12	6	21.54	21.65	21.61	0-3	3
		12	11	21.54	21.63	21.63	0-3	3
		25	0	21.40	21.66	21.68	0-3	3

LTE Band 12 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				23095 Ch. 707.5 ㎒		
10 ㎒	QPSK	1	0	24.27	0	0
		1	24	24.62	0	0
		1	49	24.48	0	0
		25	0	23.39	0-1	1
		25	12	23.45	0-1	1
		25	24	23.54	0-1	1
		50	0	23.46	0-1	1
	16QAM	1	0	23.75	0-1	1
		1	24	23.78	0-1	1
		1	49	23.82	0-1	1
		25	0	22.41	0-2	2
		25	12	22.52	0-2	2
		25	24	22.57	0-2	2
		50	0	22.40	0-2	2
	64QAM	1	0	22.40	0-2	2
		1	24	22.70	0-2	2
		1	49	22.68	0-2	2
		25	0	21.43	0-3	3
		25	12	21.60	0-3	3
		25	24	21.47	0-3	3
		50	0	21.48	0-3	3

[LTE Band 13 Conducted Power :All DSI]

LTE Band 13 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				23205 Ch. 779.5 ㎒	23230 Ch. 782 ㎒	23255 Ch. 784.5 ㎒		
5 ㎒	QPSK	1	0	24.10	24.08	24.03	0	0
		1	12	24.07	24.04	24.07	0	0
		1	24	24.05	23.95	23.73	0	0
		12	0	23.22	23.15	23.02	0-1	1
		12	6	23.26	23.15	23.04	0-1	1
		12	11	23.08	23.06	23.04	0-1	1
		25	0	23.15	23.09	23.03	0-1	1
	16QAM	1	0	23.52	23.29	23.28	0-1	1
		1	12	23.38	23.32	23.23	0-1	1
		1	24	23.32	23.16	23.15	0-1	1
		12	0	22.27	22.20	22.14	0-2	2
		12	6	22.30	22.17	22.07	0-2	2
		12	11	22.19	22.07	22.01	0-2	2
		25	0	22.21	22.05	22.01	0-2	2
	64QAM	1	0	22.12	22.37	22.43	0-2	2
		1	12	22.26	22.38	22.16	0-2	2
		1	24	22.27	22.18	22.04	0-2	2
		12	0	21.31	21.23	21.08	0-3	3
		12	6	21.33	21.21	21.18	0-3	3
		12	11	21.18	21.14	21.05	0-3	3
		25	0	21.27	21.05	20.98	0-3	3

LTE Band 13 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				23230 Ch. 782 ㎒		
10 ㎒	QPSK	1	0	24.08	0	0
		1	24	24.15	0	0
		1	49	23.72	0	0
		25	0	23.14	0-1	1
		25	12	23.09	0-1	1
		25	24	22.96	0-1	1
		50	0	23.07	0-1	1
	16QAM	1	0	23.45	0-1	1
		1	24	23.47	0-1	1
		1	49	23.14	0-1	1
		25	0	22.17	0-2	2
		25	12	22.13	0-2	2
		25	24	22.05	0-2	2
		50	0	22.06	0-2	2
	64QAM	1	0	22.48	0-2	2
		1	24	22.27	0-2	2
		1	49	21.98	0-2	2
		25	0	21.25	0-3	3
		25	12	21.17	0-3	3
		25	24	21.00	0-3	3
		50	0	21.18	0-3	3

[LTE Band 66 Conducted Power DSI =0,1]

LTE Band 66 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131979Ch. 1710.7 ㎒	132322 Ch. 1745 ㎒	132665 Ch. 1779.3 ㎒		
1.4 ㎒	QPSK	1	0	23.69	24.17	24.31	0	0
		1	3	23.89	24.31	24.27	0	0
		1	5	23.73	24.22	24.31	0	0
		3	0	23.74	24.14	24.24	0	0
		3	1	23.77	24.16	24.36	0	0
		3	3	23.75	24.17	24.32	0	0
		6	0	22.94	23.28	23.44	0-1	1
	16QAM	1	0	23.21	23.64	23.73	0-1	1
		1	3	23.05	23.63	23.69	0-1	1
		1	5	23.28	23.34	23.46	0-1	1
		3	0	22.87	23.23	23.38	0-1	1
		3	1	22.98	23.23	23.48	0-1	1
		3	3	22.90	23.26	23.40	0-1	1
		6	0	21.96	22.36	22.50	0-2	2
	64QAM	1	0	22.13	22.44	22.59	0-2	2
		1	3	22.08	22.60	22.55	0-2	2
		1	5	21.98	22.48	22.56	0-2	2
		3	0	22.16	22.44	22.52	0-2	2
		3	1	22.05	22.37	22.63	0-2	2
		3	3	22.07	22.40	22.57	0-2	2
		6	0	20.98	21.27	21.44	0-3	3

LTE Band 66 _ 3 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131987 Ch. 1711.5 ㎒	132322 Ch. 1745 ㎒	132657 Ch. 1778.5 ㎒		
3 ㎒	QPSK	1	0	23.86	24.18	24.34	0	0
		1	7	23.78	24.21	24.40	0	0
		1	14	23.83	24.30	24.43	0	0
		8	0	23.01	23.36	23.55	0-1	1
		8	3	23.10	23.41	23.64	0-1	1
		8	7	22.99	23.34	23.57	0-1	1
		15	0	23.03	23.29	23.52	0-1	1
	16QAM	1	0	23.41	23.69	23.79	0-1	1
		1	7	23.10	23.50	23.63	0-1	1
		1	14	23.12	23.44	23.47	0-1	1
		8	0	22.05	22.38	22.57	0-2	2
		8	3	22.14	22.44	22.61	0-2	2
		8	7	21.97	22.40	22.61	0-2	2
		15	0	22.05	22.30	22.61	0-2	2
	64QAM	1	0	22.31	22.44	22.65	0-2	2
		1	7	22.14	22.46	22.54	0-2	2
		1	14	22.17	22.53	22.55	0-2	2
		8	0	21.04	21.39	21.55	0-3	3
		8	3	21.13	21.43	21.65	0-3	3
		8	7	21.07	21.39	21.59	0-3	3
		15	0	21.05	21.32	21.53	0-3	3

LTE Band 66 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131997 Ch. 1712.5 ㎒	132322Ch. 1745 ㎒	132647 Ch. 1777.5 ㎒		
5 ㎒	QPSK	1	0	23.90	24.16	24.34	0	0
		1	12	23.87	24.21	24.33	0	0
		1	24	23.82	24.24	24.31	0	0
		12	0	22.93	23.34	23.53	0-1	1
		12	6	23.05	23.42	23.51	0-1	1
		12	11	22.99	23.31	23.48	0-1	1
		25	0	23.05	23.32	23.54	0-1	1
	16QAM	1	0	23.28	23.54	23.71	0-1	1
		1	12	23.25	23.51	23.70	0-1	1
		1	24	23.23	23.63	23.61	0-1	1
		12	0	21.97	22.42	22.52	0-2	2
		12	6	22.07	22.38	22.54	0-2	2
		12	11	22.01	22.39	22.53	0-2	2
		25	0	22.02	22.36	22.45	0-2	2
	64QAM	1	0	22.03	22.48	22.52	0-2	2
		1	12	22.09	22.49	22.65	0-2	2
		1	24	22.14	22.44	22.52	0-2	2
		12	0	21.10	21.41	21.57	0-3	3
		12	6	21.11	21.43	21.59	0-3	3
		12	11	21.04	21.42	21.59	0-3	3
		25	0	21.05	21.33	21.51	0-3	3

LTE Band 66 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132022 Ch. 1715 ㎒	132322 Ch. 1745 ㎒	132622 Ch. 1775 ㎒		
10 ㎒	QPSK	1	0	23.65	23.85	24.05	0	0
		1	24	23.85	24.22	24.38	0	0
		1	49	23.77	24.06	24.17	0	0
		25	0	22.95	23.31	23.40	0-1	1
		25	12	23.04	23.36	23.50	0-1	1
		25	24	22.97	23.36	23.49	0-1	1
		50	0	23.00	23.31	23.40	0-1	1
	16QAM	1	0	22.98	23.23	23.51	0-1	1
		1	24	23.38	23.76	23.75	0-1	1
		1	49	22.96	23.46	23.43	0-1	1
		25	0	21.97	22.29	22.41	0-2	2
		25	12	22.15	22.36	22.56	0-2	2
		25	24	21.95	22.30	22.39	0-2	2
		50	0	22.00	22.27	22.44	0-2	2
	64QAM	1	0	21.79	22.17	22.49	0-2	2
		1	24	22.25	22.79	22.68	0-2	2
		1	49	22.03	22.49	22.51	0-2	2
		25	0	20.95	21.29	21.50	0-3	3
		25	12	21.12	21.34	21.46	0-3	3
		25	24	20.99	21.30	21.46	0-3	3
		50	0	21.08	21.34	21.42	0-3	3

LTE Band 66 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132047 Ch. 1717.5 ㎒	132322 Ch. 1745 ㎒	132597 Ch. 1772.5 ㎒		
15 ㎒	QPSK	1	0	23.64	23.88	24.49	0	0
		1	36	23.98	24.33	24.26	0	0
		1	74	23.91	24.15	24.11	0	0
		36	0	22.95	23.27	23.45	0-1	1
		36	18	23.02	23.30	23.45	0-1	1
		36	39	23.02	23.27	23.39	0-1	1
		75	0	23.05	23.21	23.52	0-1	1
	16QAM	1	0	23.03	23.41	23.82	0-1	1
		1	36	23.42	23.69	23.74	0-1	1
		1	74	23.27	23.46	23.90	0-1	1
		36	0	21.96	22.33	22.42	0-2	2
		36	18	22.04	22.26	22.44	0-2	2
		36	39	22.05	22.21	22.48	0-2	2
		75	0	22.10	22.29	22.54	0-2	2
	64QAM	1	0	21.97	22.24	22.53	0-2	2
		1	36	22.12	22.40	22.56	0-2	2
		1	74	22.21	22.27	22.59	0-2	2
		36	0	21.06	21.41	21.53	0-3	3
		36	18	20.98	21.34	21.49	0-3	3
		36	39	21.04	21.30	21.42	0-3	3
		75	0	21.07	21.33	21.54	0-3	3

LTE Band 66 _ 20 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 ㎒	132322 Ch. 1745 ㎒	132572 Ch. 1770 ㎒		
20 ㎒	QPSK	1	0	23.63	23.77	24.31	0	0
		1	49	23.80	24.17	24.16	0	0
		1	99	23.74	24.10	24.23	0	0
		50	0	23.02	23.24	23.95	0-1	1
		50	25	23.11	23.30	23.40	0-1	1
		50	49	22.95	23.37	23.47	0-1	1
		100	0	23.04	23.28	23.39	0-1	1
	16QAM	1	0	22.81	23.20	23.77	0-1	1
		1	49	23.25	23.62	23.76	0-1	1
		1	99	23.05	23.38	23.82	0-1	1
		50	0	21.97	22.27	22.32	0-2	2
		50	25	22.13	22.22	22.46	0-2	2
		50	49	22.03	22.33	22.46	0-2	2
		100	0	21.96	22.25	22.38	0-2	2
	64QAM	1	0	21.72	22.09	22.43	0-2	2
		1	49	22.22	22.51	22.77	0-2	2
		1	99	22.06	22.31	22.75	0-2	2
		50	0	20.96	21.23	21.38	0-3	3
		50	25	21.14	21.38	21.40	0-3	3
		50	49	21.09	21.29	21.46	0-3	3
		100	0	21.01	21.24	21.38	0-3	3

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

11.4.2 LTE Reduced Conducted Power (Hotspot activated)

DSI = 2 PLimit Calculations - 4G Hotspot SAR

[LTE Band 2 Conducted Power]

LTE Band 2 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18607 Ch. 1850.7 ㎒	18900 Ch. 1880 ㎒	19193 Ch. 1909.3 ㎒		
1.4 ㎒	QPSK	1	0	18.50	18.56	18.21	0	0
		1	3	18.49	18.58	18.25	0	0
		1	5	18.45	18.54	18.17	0	0
		3	0	18.52	18.49	18.20	0	0
		3	1	18.58	18.57	18.24	0	0
		3	3	18.46	18.55	18.19	0	0
		6	0	18.60	18.61	18.28	0-1	0
	16QAM	1	0	18.89	18.88	18.47	0-1	0
		1	3	18.77	18.76	18.50	0-1	0
		1	5	18.87	18.85	18.38	0-1	0
		3	0	18.75	18.61	18.20	0-1	0
		3	1	18.63	18.63	18.22	0-1	0
		3	3	18.57	18.57	18.19	0-1	0
		6	0	18.72	18.64	18.34	0-2	0
	64QAM	1	0	18.79	18.84	18.47	0-2	0
		1	3	18.71	18.81	18.41	0-2	0
		1	5	18.69	18.78	18.35	0-2	0
		3	0	18.69	18.67	18.34	0-2	0
		3	1	18.71	18.75	18.36	0-2	0
		3	3	18.68	18.70	18.35	0-2	0
		6	0	18.60	18.52	18.21	0-3	0

LTE Band 2 _ 3 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18615 Ch. 1851.5 ㎒	18900 Ch. 1880 ㎒	19185 Ch. 1908.5 ㎒		
3 ㎒	QPSK	1	0	18.60	18.56	18.34	0	0
		1	7	18.48	18.60	18.22	0	0
		1	14	18.48	18.53	18.11	0	0
		8	0	18.72	18.73	18.41	0-1	0
		8	3	18.60	18.70	18.46	0-1	0
		8	7	18.61	18.70	18.28	0-1	0
		15	0	18.56	18.67	18.29	0-1	0
	16QAM	1	0	18.95	18.90	18.64	0-1	0
		1	7	18.87	18.91	18.51	0-1	0
		1	14	18.85	18.86	18.50	0-1	0
		8	0	18.75	18.78	18.46	0-2	0
		8	3	18.80	18.77	18.43	0-2	0
		8	7	18.71	18.75	18.35	0-2	0
		15	0	18.64	18.68	18.37	0-2	0
	64QAM	1	0	18.94	18.92	18.59	0-2	0
		1	7	18.77	18.79	18.47	0-2	0
		1	14	18.86	18.86	18.47	0-2	0
		8	0	18.78	18.67	18.42	0-3	0
		8	3	18.76	18.79	18.33	0-3	0
		8	7	18.67	18.67	18.35	0-3	0
		15	0	18.66	18.67	18.35	0-3	0

LTE Band 2 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18625 Ch. 1852.5 ㎒	18900 Ch. 1880 ㎒	19175 Ch. 1907.5 ㎒		
5 ㎒	QPSK	1	0	18.51	18.51	18.20	0	0
		1	12	18.54	18.66	18.32	0	0
		1	24	18.36	18.49	18.15	0	0
		12	0	18.66	18.69	18.34	0-1	0
		12	6	18.63	18.67	18.35	0-1	0
		12	11	18.56	18.68	18.32	0-1	0
		25	0	18.66	18.59	18.24	0-1	0
	16QAM	1	0	18.91	18.79	18.58	0-1	0
		1	12	18.86	18.97	18.66	0-1	0
		1	24	18.82	18.73	18.53	0-1	0
		12	0	18.73	18.66	18.29	0-2	0
		12	6	18.70	18.70	18.33	0-2	0
		12	11	18.62	18.71	18.30	0-2	0
		25	0	18.60	18.61	18.23	0-2	0
	64QAM	1	0	18.78	18.86	18.40	0-2	0
		1	12	18.88	18.82	18.44	0-2	0
		1	24	18.70	18.69	18.36	0-2	0
		12	0	18.72	18.70	18.36	0-3	0
		12	6	18.77	18.76	18.41	0-3	0
		12	11	18.68	18.67	18.41	0-3	0
		25	0	18.58	18.65	18.30	0-3	0

LTE Band 2 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18650 Ch. 1855 ㎒	18900 Ch. 1880 ㎒	19150 Ch. 1905 ㎒		
10 ㎒	QPSK	1	0	18.25	18.30	18.44	0	0
		1	24	18.46	18.52	18.26	0	0
		1	49	18.15	18.27	18.24	0	0
		25	0	18.58	18.57	18.30	0-1	0
		25	12	18.54	18.64	18.33	0-1	0
		25	24	18.44	18.58	18.31	0-1	0
		50	0	18.50	18.61	18.22	0-1	0
	16QAM	1	0	18.58	18.57	18.71	0-1	0
		1	24	18.70	18.98	18.68	0-1	0
		1	49	18.58	18.69	18.50	0-1	0
		25	0	18.52	18.51	18.30	0-2	0
		25	12	18.60	18.63	18.29	0-2	0
		25	24	18.42	18.67	18.20	0-2	0
		50	0	18.53	18.63	18.28	0-2	0
	64QAM	1	0	18.27	18.51	18.53	0-2	0
		1	24	18.70	18.99	18.45	0-2	0
		1	49	18.31	18.64	18.45	0-2	0
		25	0	18.54	18.57	18.31	0-3	0
		25	12	18.58	18.69	18.32	0-3	0
		25	24	18.43	18.61	18.33	0-3	0
		50	0	18.53	18.53	18.21	0-3	0

LTE Band 2 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18675 Ch. 1857.5 ㎒	18900 Ch. 1880 ㎒	19125 Ch. 1902.5 ㎒		
15 ㎒	QPSK	1	0	18.31	18.51	18.27	0	0
		1	36	18.44	18.46	18.25	0	0
		1	74	18.28	18.36	18.15	0	0
		36	0	18.45	18.52	18.26	0-1	0
		36	18	18.51	18.62	18.30	0-1	0
		36	39	18.37	18.62	18.29	0-1	0
		75	0	18.39	18.47	18.23	0-1	0
	16QAM	1	0	18.63	18.83	18.68	0-1	0
		1	36	18.72	18.83	18.51	0-1	0
		1	74	18.62	18.72	18.48	0-1	0
		36	0	18.47	18.49	18.26	0-2	0
		36	18	18.49	18.58	18.31	0-2	0
		36	39	18.45	18.61	18.30	0-2	0
		75	0	18.48	18.51	18.29	0-2	0
	64QAM	1	0	18.51	18.57	18.54	0-2	0
		1	36	18.58	18.63	18.52	0-2	0
		1	74	18.49	18.64	18.44	0-2	0
		36	0	18.50	18.57	18.28	0-3	0
		36	18	18.48	18.64	18.29	0-3	0
		36	39	18.46	18.54	18.32	0-3	0
		75	0	18.38	18.48	18.22	0-3	0

LTE Band 2 _ 20 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 ㎒	18900 Ch. 1880 ㎒	19100 Ch. 1900 ㎒		
20 ㎒	QPSK	1	0	18.39	18.52	18.39	0	0
		1	49	18.29	18.59	18.22	0	0
		1	99	18.24	18.31	18.09	0	0
		50	0	18.43	18.46	18.27	0-1	0
		50	25	18.47	18.54	18.40	0-1	0
		50	49	18.48	18.53	18.34	0-1	0
		100	0	18.41	18.57	18.38	0-1	0
	16QAM	1	0	18.86	18.72	18.80	0-1	0
		1	49	18.66	18.92	18.69	0-1	0
		1	99	18.74	18.77	18.39	0-1	0
		50	0	18.47	18.40	18.26	0-2	0
		50	25	18.47	18.54	18.40	0-2	0
		50	49	18.49	18.62	18.27	0-2	0
		100	0	18.45	18.43	18.38	0-2	0
	64QAM	1	0	18.68	18.69	18.59	0-2	0
		1	49	18.53	18.59	18.58	0-2	0
		1	99	18.58	18.58	18.33	0-2	0
		50	0	18.46	18.54	18.35	0-3	0
		50	25	18.58	18.58	18.45	0-3	0
		50	49	18.50	18.56	18.38	0-3	0
		100	0	18.44	18.50	18.34	0-3	0

[LTE Band 4 Conducted Power]

LTE Band 4 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19957 Ch. 1710.7 ㎒	20175 Ch. 1732.5 ㎒	20393 Ch. 1754.3 ㎒		
1.4 ㎒	QPSK	1	0	18.95	18.97	19.59	0	0
		1	3	18.96	19.11	19.73	0	0
		1	5	19.01	19.03	19.61	0	0
		3	0	18.98	18.98	19.60	0	0
		3	1	19.06	19.03	19.68	0	0
		3	3	18.95	19.05	19.59	0	0
		6	0	19.03	19.07	19.71	0-1	0
	16QAM	1	0	19.32	19.30	19.80	0-1	0
		1	3	19.33	19.44	19.97	0-1	0
		1	5	19.37	19.38	19.94	0-1	0
		3	0	19.12	19.11	19.66	0-1	0
		3	1	19.15	19.17	19.73	0-1	0
		3	3	19.06	19.18	19.72	0-1	0
		6	0	19.14	19.19	19.89	0-2	0
	64QAM	1	0	19.31	19.18	19.77	0-2	0
		1	3	19.46	19.40	19.90	0-2	0
		1	5	19.18	19.28	19.87	0-2	0
		3	0	19.16	19.23	19.75	0-2	0
		3	1	19.28	19.27	19.80	0-2	0
		3	3	19.18	19.27	19.77	0-2	0
		6	0	19.06	19.11	19.63	0-3	0

LTE Band 4 _ 3 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19965 Ch. 1711.5 ㎒	20175 Ch. 1732.5 ㎒	20385 Ch. 1753.5 ㎒		
3 ㎒	QPSK	1	0	19.03	19.09	19.62	0	0
		1	7	19.00	19.10	19.65	0	0
		1	14	19.04	19.07	19.63	0	0
		8	0	19.07	19.21	19.74	0-1	0
		8	3	19.19	19.15	19.73	0-1	0
		8	7	19.10	19.20	19.73	0-1	0
		15	0	19.12	19.19	19.67	0-1	0
	16QAM	1	0	19.43	19.33	19.98	0-1	0
		1	7	19.29	19.32	19.99	0-1	0
		1	14	19.41	19.39	19.98	0-1	0
		8	0	19.15	19.24	19.79	0-2	0
		8	3	19.19	19.28	19.81	0-2	0
		8	7	19.22	19.30	19.83	0-2	0
		15	0	19.13	19.19	19.77	0-2	0
	64QAM	1	0	19.38	19.29	19.79	0-2	0
		1	7	19.28	19.22	19.88	0-2	0
		1	14	19.45	19.38	19.98	0-2	0
		8	0	19.15	19.20	19.83	0-3	0
		8	3	19.19	19.27	19.86	0-3	0
		8	7	19.13	19.26	19.78	0-3	0
		15	0	19.17	19.18	19.70	0-3	0

LTE Band 4 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19975 Ch. 1712.5 ㎒	20175 Ch. 1732.5 ㎒	20375 Ch. 1752.5 ㎒		
5 ㎒	QPSK	1	0	18.93	19.02	19.43	0	0
		1	12	19.16	19.13	19.64	0	0
		1	24	18.94	19.14	19.56	0	0
		12	0	19.07	19.18	19.67	0-1	0
		12	6	19.17	19.23	19.75	0-1	0
		12	11	19.10	19.22	19.75	0-1	0
		25	0	19.18	19.12	19.73	0-1	0
	16QAM	1	0	19.32	19.31	19.86	0-1	0
		1	12	19.46	19.52	19.99	0-1	0
		1	24	19.26	19.32	19.82	0-1	0
		12	0	19.13	19.17	19.74	0-2	0
		12	6	19.24	19.24	19.75	0-2	0
		12	11	19.18	19.21	19.74	0-2	0
		25	0	19.14	19.11	19.71	0-2	0
	64QAM	1	0	19.23	19.23	19.81	0-2	0
		1	12	19.34	19.24	19.84	0-2	0
		1	24	19.27	19.32	19.89	0-2	0
		12	0	19.13	19.27	19.71	0-3	0
		12	6	19.25	19.24	19.73	0-3	0
		12	11	19.18	19.22	19.83	0-3	0
		25	0	19.20	19.18	19.73	0-3	0

LTE Band 4 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20000 Ch. 1715 ㎒	20175 Ch. 1732.5 ㎒	20350 Ch. 1750 ㎒		
10 ㎒	QPSK	1	0	18.71	18.72	19.23	0	0
		1	24	18.98	19.11	19.58	0	0
		1	49	18.73	18.95	19.41	0	0
		25	0	19.02	19.09	19.42	0-1	0
		25	12	19.20	19.16	19.65	0-1	0
		25	24	19.08	19.14	19.51	0-1	0
		50	0	19.09	19.16	19.53	0-1	0
	16QAM	1	0	19.08	19.10	19.47	0-1	0
		1	24	19.18	19.44	19.99	0-1	0
		1	49	19.06	19.36	19.87	0-1	0
		25	0	19.08	19.07	19.46	0-2	0
		25	12	19.19	19.23	19.63	0-2	0
		25	24	19.09	19.15	19.54	0-2	0
		50	0	19.08	19.08	19.50	0-2	0
	64QAM	1	0	19.00	19.00	19.38	0-2	0
		1	24	19.20	19.31	19.66	0-2	0
		1	49	19.18	19.25	19.66	0-2	0
		25	0	19.04	19.09	19.53	0-3	0
		25	12	19.29	19.21	19.64	0-3	0
		25	24	19.07	19.08	19.59	0-3	0
		50	0	19.15	19.13	19.61	0-3	0

LTE Band 4 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20025 Ch. 1717.5 ㎒	20175 Ch. 1732.5 ㎒	20325 Ch. 1747.5 ㎒		
15 ㎒	QPSK	1	0	18.80	18.90	19.10	0	0
		1	36	18.96	18.93	19.51	0	0
		1	74	18.89	19.14	19.60	0	0
		36	0	19.08	18.98	19.43	0-1	0
		36	18	19.15	19.14	19.50	0-1	0
		36	39	19.09	19.19	19.61	0-1	0
		75	0	19.14	19.19	19.45	0-1	0
	16QAM	1	0	19.12	19.10	19.40	0-1	0
		1	36	19.37	19.45	19.66	0-1	0
		1	74	19.18	19.47	19.99	0-1	0
		36	0	19.04	19.02	19.34	0-2	0
		36	18	19.20	19.13	19.57	0-2	0
		36	39	19.13	19.18	19.55	0-2	0
		75	0	19.13	19.17	19.42	0-2	0
	64QAM	1	0	19.00	19.12	19.25	0-2	0
		1	36	19.13	19.26	19.66	0-2	0
		1	74	19.05	19.46	19.70	0-2	0
		36	0	19.05	19.11	19.44	0-3	0
		36	18	19.13	19.12	19.49	0-3	0
		36	39	19.07	19.24	19.58	0-3	0
		75	0	19.08	19.24	19.53	0-3	0

LTE Band 4 _ 20 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				20175 Ch. 1732.5 ㎒		
20 ㎒	QPSK	1	0	18.70	0	0
		1	49	19.00	0	0
		1	99	18.97	0	0
		50	0	19.03	0-1	0
		50	25	19.19	0-1	0
		50	49	19.20	0-1	0
		100	0	19.26	0-1	0
	16QAM	1	0	19.02	0-1	0
		1	49	19.45	0-1	0
		1	99	19.37	0-1	0
		50	0	18.99	0-2	0
		50	25	19.25	0-2	0
		50	49	19.13	0-2	0
		100	0	19.14	0-2	0
	64QAM	1	0	18.87	0-2	0
		1	49	19.16	0-2	0
		1	99	19.33	0-2	0
		50	0	19.07	0-3	0
		50	25	19.26	0-3	0
		50	49	19.22	0-3	0
		100	0	19.19	0-3	0

.

[LTE Band 7 Conducted Power]

LTE Band 7 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20775 Ch. 2502.5 ㎒	21100 Ch. 2535 ㎒	21425 Ch. 2567.5 ㎒		
5 ㎒	QPSK	1	0	20.40	20.29	21.13	0	0
		1	12	20.41	20.44	21.30	0	0
		1	24	20.58	20.50	21.18	0	0
		12	0	20.54	20.55	21.25	0-1	0
		12	6	20.56	20.59	21.30	0-1	0
		12	11	20.60	20.60	21.29	0-1	0
		25	0	20.45	20.48	21.29	0-1	0
	16QAM	1	0	20.88	20.74	21.61	0-1	0
		1	12	20.98	20.95	21.61	0-1	0
		1	24	20.98	20.97	21.68	0-1	0
		12	0	20.61	20.66	21.29	0-2	0
		12	6	20.65	20.63	21.37	0-2	0
		12	11	20.65	20.65	21.35	0-2	0
		25	0	20.53	20.52	21.26	0-2	0
	64QAM	1	0	20.64	20.85	21.22	0-2	0
		1	12	20.89	20.93	21.66	0-2	0
		1	24	21.03	21.02	21.69	0-2	0
		12	0	19.53	19.68	20.48	0-3	1
		12	6	19.63	19.59	20.40	0-3	1
		12	11	19.68	19.59	20.39	0-3	1
		25	0	19.56	19.56	20.26	0-3	1

LTE Band 7_ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20800 Ch. 2505 ㎒	21100 Ch. 2535 ㎒	21400 Ch. 2565 ㎒		
10 ㎒	QPSK	1	0	20.03	20.18	21.20	0	0
		1	24	19.83	20.46	21.23	0	0
		1	49	19.89	20.61	21.15	0	0
		25	0	19.95	20.48	21.21	0-1	0
		25	12	20.05	20.55	21.23	0-1	0
		25	24	20.01	20.61	21.26	0-1	0
		50	0	19.99	20.50	21.09	0-1	0
	16QAM	1	0	20.34	20.90	21.69	0-1	0
		1	24	20.40	20.90	21.40	0-1	0
		1	49	20.17	20.82	21.44	0-1	0
		25	0	19.97	20.49	21.18	0-2	0
		25	12	20.01	20.57	21.29	0-2	0
		25	24	20.01	20.66	21.26	0-2	0
		50	0	19.97	20.46	21.08	0-2	0
	64QAM	1	0	20.21	20.56	21.43	0-2	0
		1	24	20.17	20.52	21.51	0-2	0
		1	49	20.30	20.97	21.69	0-2	0
		25	0	18.91	19.59	20.20	0-3	1
		25	12	18.98	19.56	20.40	0-3	1
		25	24	18.98	19.67	20.34	0-3	1
		50	0	18.92	19.48	20.14	0-3	1

LTE Band 7 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20825 Ch. 2507.5 ㎒	21100 Ch. 2535 ㎒	21375 Ch. 2562.5 ㎒		
15 ㎒	QPSK	1	0	19.89	20.30	21.11	0	0
		1	36	20.01	20.49	21.26	0	0
		1	74	20.01	20.67	21.09	0	0
		36	0	20.00	20.48	21.08	0-1	0
		36	18	20.02	20.53	21.21	0-1	0
		36	39	20.03	20.58	21.26	0-1	0
		75	0	20.10	20.57	21.13	0-1	0
	16QAM	1	0	20.12	20.71	21.47	0-1	0
		1	36	20.24	20.65	21.20	0-1	0
		1	74	20.15	20.91	21.50	0-1	0
		36	0	19.97	20.41	21.16	0-2	0
		36	18	20.06	20.50	21.22	0-2	0
		36	39	20.07	20.64	21.27	0-2	0
		75	0	20.05	20.50	21.15	0-2	0
	64QAM	1	0	20.19	20.56	21.30	0-2	0
		1	36	20.04	20.48	21.13	0-2	0
		1	74	20.16	20.83	21.24	0-2	0
		36	0	18.99	19.51	20.14	0-3	1
		36	18	19.11	19.45	20.16	0-3	1
		36	39	19.10	19.66	20.23	0-3	1
		75	0	18.95	19.51	20.15	0-3	1

LTE Band 7 _ 20 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20850 Ch. 2510 ㎒	21100 Ch. 2535 ㎒	21350 Ch. 2560 ㎒		
20 ㎒	QPSK	1	0	19.96	20.24	21.18	0	0
		1	49	19.90	20.48	21.28	0	0
		1	99	19.95	20.68	21.16	0	0
		50	0	19.97	20.42	21.00	0-1	0
		50	25	20.06	20.56	21.12	0-1	0
		50	49	20.08	20.66	21.13	0-1	0
		100	0	20.12	20.45	21.09	0-1	0
	16QAM	1	0	20.31	20.60	21.14	0-1	0
		1	49	20.32	20.72	21.39	0-1	0
		1	99	20.24	20.85	21.48	0-1	0
		50	0	20.01	20.48	21.06	0-2	0
		50	25	20.06	20.51	21.14	0-2	0
		50	49	20.07	20.64	21.19	0-2	0
		100	0	20.06	20.41	21.03	0-2	0
	64QAM	1	0	20.12	20.48	20.94	0-2	0
		1	49	20.24	20.84	21.31	0-2	0
		1	99	20.08	20.97	21.24	0-2	0
		50	0	19.12	19.54	20.16	0-3	1
		50	25	19.18	19.58	20.16	0-3	1
		50	49	19.10	19.71	20.21	0-3	1
		100	0	19.13	19.46	20.07	0-3	1

[LTE Band 66 Conducted Power]

LTE Band 66 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131979Ch. 1710.7 ㎒	132322 Ch. 1745 ㎒	132665 Ch. 1779.3 ㎒		
1.4 ㎒	QPSK	1	0	18.96	19.42	19.49	0	0
		1	3	19.03	19.48	19.69	0	0
		1	5	18.98	19.44	19.51	0	0
		3	0	19.04	19.33	19.53	0	0
		3	1	19.05	19.44	19.58	0	0
		3	3	18.93	19.35	19.53	0	0
		6	0	19.12	19.48	19.63	0-1	0
	16QAM	1	0	19.25	19.77	19.97	0-1	0
		1	3	19.45	19.73	19.95	0-1	0
		1	5	19.35	19.72	19.85	0-1	0
		3	0	19.17	19.43	19.64	0-1	0
		3	1	19.09	19.47	19.79	0-1	0
		3	3	19.13	19.40	19.73	0-1	0
		6	0	19.18	19.52	19.81	0-2	0
	64QAM	1	0	19.21	19.70	19.79	0-2	0
		1	3	19.37	19.74	19.94	0-2	0
		1	5	19.30	19.57	19.86	0-2	0
		3	0	19.16	19.50	19.74	0-2	0
		3	1	19.31	19.72	19.89	0-2	0
		3	3	19.16	19.61	19.80	0-2	0
		6	0	19.12	19.55	19.66	0-3	0

LTE Band 66 _ 3 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131987 Ch. 1711.5 ㎒	132322 Ch. 1745 ㎒	132657 Ch. 1778.5 ㎒		
3 ㎒	QPSK	1	0	19.06	19.46	19.68	0	0
		1	7	19.28	19.59	19.63	0	0
		1	14	18.99	19.40	19.56	0	0
		8	0	19.11	19.60	19.69	0-1	0
		8	3	19.22	19.55	19.78	0-1	0
		8	7	19.16	19.53	19.75	0-1	0
		15	0	19.20	19.52	19.73	0-1	0
	16QAM	1	0	19.32	19.81	19.97	0-1	0
		1	7	19.47	19.81	19.83	0-1	0
		1	14	19.39	19.71	19.95	0-1	0
		8	0	19.22	19.60	19.77	0-2	0
		8	3	19.29	19.62	19.87	0-2	0
		8	7	19.20	19.64	19.74	0-2	0
		15	0	19.27	19.56	19.77	0-2	0
	64QAM	1	0	19.28	19.70	19.85	0-2	0
		1	7	19.34	19.70	19.85	0-2	0
		1	14	19.36	19.73	19.80	0-2	0
		8	0	19.19	19.62	19.85	0-3	0
		8	3	19.26	19.60	19.93	0-3	0
		8	7	19.15	19.56	19.81	0-3	0
		15	0	19.27	19.53	19.74	0-3	0

LTE Band 66 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131997 Ch. 1712.5 ㎒	132322Ch. 1745 ㎒	132647 Ch. 1777.5 ㎒		
5 ㎒	QPSK	1	0	19.07	19.36	19.54	0	0
		1	12	19.02	19.49	19.64	0	0
		1	24	19.06	19.42	19.59	0	0
		12	0	19.23	19.55	19.70	0-1	0
		12	6	19.21	19.54	19.84	0-1	0
		12	11	19.15	19.53	19.73	0-1	0
		25	0	19.24	19.55	19.73	0-1	0
	16QAM	1	0	19.53	19.74	19.98	0-1	0
		1	12	19.37	19.85	19.94	0-1	0
		1	24	19.40	19.81	19.82	0-1	0
		12	0	19.20	19.60	19.85	0-2	0
		12	6	19.29	19.57	19.80	0-2	0
		12	11	19.21	19.57	19.78	0-2	0
		25	0	19.22	19.52	19.70	0-2	0
	64QAM	1	0	19.26	19.64	19.91	0-2	0
		1	12	19.47	19.74	19.96	0-2	0
		1	24	19.37	19.83	19.83	0-2	0
		12	0	19.22	19.61	19.86	0-3	0
		12	6	19.32	19.59	19.90	0-3	0
		12	11	19.25	19.58	19.80	0-3	0
		25	0	19.22	19.48	19.79	0-3	0

LTE Band 66 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132022 Ch. 1715 ㎒	132322 Ch. 1745 ㎒	132622 Ch. 1775 ㎒		
10 ㎒	QPSK	1	0	18.85	19.27	19.31	0	0
		1	24	19.20	19.48	19.60	0	0
		1	49	18.94	19.40	19.41	0	0
		25	0	19.09	19.50	19.62	0-1	0
		25	12	19.24	19.48	19.67	0-1	0
		25	24	19.17	19.52	19.66	0-1	0
		50	0	19.24	19.45	19.70	0-1	0
	16QAM	1	0	19.19	19.58	19.70	0-1	0
		1	24	19.25	19.71	19.96	0-1	0
		1	49	19.30	19.54	19.94	0-1	0
		25	0	19.18	19.46	19.62	0-2	0
		25	12	19.34	19.55	19.65	0-2	0
		25	24	19.22	19.61	19.70	0-2	0
		50	0	19.11	19.46	19.67	0-2	0
	64QAM	1	0	19.00	19.34	19.49	0-2	0
		1	24	19.31	19.68	19.79	0-2	0
		1	49	19.27	19.51	19.80	0-2	0
		25	0	19.13	19.49	19.68	0-3	0
		25	12	19.23	19.51	19.64	0-3	0
		25	24	19.14	19.57	19.74	0-3	0
		50	0	19.21	19.44	19.67	0-3	0

LTE Band 66 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132047 Ch. 1717.5 ㎒	132322 Ch. 1745 ㎒	132597 Ch. 1772.5 ㎒		
15 ㎒	QPSK	1	0	19.01	19.20	19.60	0	0
		1	36	19.03	19.43	19.62	0	0
		1	74	19.05	19.17	19.51	0	0
		36	0	19.19	19.52	19.72	0-1	0
		36	18	19.18	19.54	19.69	0-1	0
		36	39	19.25	19.46	19.67	0-1	0
		75	0	19.27	19.50	19.66	0-1	0
	16QAM	1	0	19.26	19.54	19.99	0-1	0
		1	36	19.47	19.73	19.90	0-1	0
		1	74	19.34	19.54	19.82	0-1	0
		36	0	19.21	19.43	19.67	0-2	0
		36	18	19.18	19.49	19.73	0-2	0
		36	39	19.31	19.53	19.64	0-2	0
		75	0	19.26	19.47	19.55	0-2	0
	64QAM	1	0	19.02	19.44	19.82	0-2	0
		1	36	19.28	19.73	19.91	0-2	0
		1	74	19.34	19.48	19.92	0-2	0
		36	0	19.20	19.51	19.70	0-3	0
		36	18	19.24	19.51	19.66	0-3	0
		36	39	19.30	19.49	19.72	0-3	0
		75	0	19.31	19.51	19.70	0-3	0

LTE Band 66 _ 20 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 ㎒	132322 Ch. 1745 ㎒	132572 Ch. 1770 ㎒		
20 ㎒	QPSK	1	0	18.81	19.04	19.57	0	0
		1	49	19.14	19.37	19.43	0	0
		1	99	19.04	19.19	19.54	0	0
		50	0	19.18	19.44	19.68	0-1	0
		50	25	19.37	19.51	19.80	0-1	0
		50	49	19.22	19.48	19.64	0-1	0
		100	0	19.23	19.48	19.70	0-1	0
	16QAM	1	0	19.20	19.47	19.92	0-1	0
		1	49	19.48	19.72	19.98	0-1	0
		1	99	19.28	19.55	19.90	0-1	0
		50	0	19.25	19.51	19.63	0-2	0
		50	25	19.32	19.55	19.76	0-2	0
		50	49	19.36	19.63	19.62	0-2	0
		100	0	19.20	19.39	19.65	0-2	0
	64QAM	1	0	19.01	19.32	19.79	0-2	0
		1	49	19.36	19.71	19.76	0-2	0
		1	99	19.27	19.51	19.75	0-2	0
		50	0	19.19	19.49	19.71	0-3	0
		50	25	19.35	19.45	19.77	0-3	0
		50	49	19.20	19.54	19.64	0-3	0
		100	0	19.19	19.45	19.70	0-3	0

11.3.3 LTE Reduced Conducted Power (Grip Sensor-on, EARJACK)

DSI = 3 PLimit Calculations - 4G Phablet Reduced SAR

[LTE Band 2 Conducted Power]

LTE Band 2 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18607 Ch. 1850.7 ㎒	18900 Ch. 1880 ㎒	19193 Ch. 1909.3 ㎒		
1.4 ㎒	QPSK	1	0	21.25	21.19	20.82	0	0
		1	3	21.28	21.27	20.84	0	0
		1	5	21.13	21.22	20.74	0	0
		3	0	21.20	21.22	20.82	0	0
		3	1	21.27	21.27	20.85	0	0
		3	3	21.25	21.23	20.78	0	0
		6	0	21.29	21.30	20.91	0-1	0
	16QAM	1	0	21.57	21.49	21.11	0-1	0
		1	3	21.53	21.69	21.23	0-1	0
		1	5	21.60	21.71	21.17	0-1	0
		3	0	21.38	21.28	20.89	0-1	0
		3	1	21.44	21.34	20.90	0-1	0
		3	3	21.36	21.30	20.93	0-1	0
		6	0	21.48	21.40	21.02	0-2	0
	64QAM	1	0	21.51	21.49	21.17	0-2	0
		1	3	21.48	21.57	21.05	0-2	0
		1	5	21.45	21.44	21.05	0-2	0
		3	0	21.48	21.45	21.03	0-2	0
		3	1	21.56	21.51	21.02	0-2	0
		3	3	21.43	21.42	21.04	0-2	0
		6	0	21.33	21.48	20.94	0-3	0

LTE Band 2 _ 3 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18615 Ch. 1851.5 ㎒	18900 Ch. 1880 ㎒	19185 Ch. 1908.5 ㎒		
3 ㎒	QPSK	1	0	21.29	21.31	20.95	0	0
		1	7	21.20	21.35	20.94	0	0
		1	14	21.21	21.25	20.85	0	0
		8	0	21.42	21.41	21.06	0-1	0
		8	3	21.41	21.40	21.00	0-1	0
		8	7	21.35	21.39	20.91	0-1	0
		15	0	21.39	21.37	20.94	0-1	0
	16QAM	1	0	21.66	21.64	21.21	0-1	0
		1	7	21.50	21.62	21.21	0-1	0
		1	14	21.64	21.53	21.23	0-1	0
		8	0	21.48	21.49	21.06	0-2	0
		8	3	21.47	21.48	21.13	0-2	0
		8	7	21.40	21.39	21.01	0-2	0
		15	0	21.40	21.42	21.00	0-2	0
	64QAM	1	0	21.47	21.55	21.15	0-2	0
		1	7	21.50	21.61	21.03	0-2	0
		1	14	21.55	21.55	21.01	0-2	0
		8	0	21.55	21.45	21.12	0-3	0
		8	3	21.51	21.44	21.10	0-3	0
		8	7	21.45	21.45	21.08	0-3	0
		15	0	21.41	21.37	21.01	0-3	0

LTE Band 2 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18625 Ch. 1852.5 ㎒	18900 Ch. 1880 ㎒	19175 Ch. 1907.5 ㎒		
5 ㎒	QPSK	1	0	21.21	21.22	20.84	0	0
		1	12	21.28	21.31	20.92	0	0
		1	24	21.10	21.19	20.73	0	0
		12	0	21.41	21.40	20.97	0-1	0
		12	6	21.37	21.41	20.98	0-1	0
		12	11	21.34	21.39	21.00	0-1	0
		25	0	21.33	21.36	20.94	0-1	0
	16QAM	1	0	21.54	21.57	21.09	0-1	0
		1	12	21.48	21.64	21.23	0-1	0
		1	24	21.45	21.55	21.14	0-1	0
		12	0	21.40	21.42	21.02	0-2	0
		12	6	21.49	21.47	21.09	0-2	0
		12	11	21.36	21.35	20.96	0-2	0
		25	0	21.35	21.40	20.93	0-2	0
	64QAM	1	0	21.51	21.42	21.09	0-2	0
		1	12	21.43	21.57	21.13	0-2	0
		1	24	21.37	21.32	21.08	0-2	0
		12	0	21.53	21.44	21.06	0-3	0
		12	6	21.50	21.50	21.13	0-3	0
		12	11	21.42	21.46	21.00	0-3	0
		25	0	21.33	21.37	20.94	0-3	0

LTE Band 2 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18650 Ch. 1855 ㎒	18900 Ch. 1880 ㎒	19150 Ch. 1905 ㎒		
10 ㎒	QPSK	1	0	21.08	20.88	21.11	0	0
		1	24	21.10	21.36	21.05	0	0
		1	49	20.82	20.94	20.97	0	0
		25	0	21.23	21.28	20.95	0-1	0
		25	12	21.36	21.31	21.06	0-1	0
		25	24	21.23	21.34	20.92	0-1	0
		50	0	21.26	21.23	20.87	0-1	0
	16QAM	1	0	21.35	21.33	21.43	0-1	0
		1	24	21.57	21.78	21.49	0-1	0
		1	49	21.21	21.31	21.35	0-1	0
		25	0	21.33	21.33	20.95	0-2	0
		25	12	21.27	21.41	21.04	0-2	0
		25	24	21.25	21.35	20.98	0-2	0
		50	0	21.28	21.31	20.92	0-2	0
	64QAM	1	0	21.24	21.11	21.26	0-2	0
		1	24	21.34	21.60	21.11	0-2	0
		1	49	21.26	21.36	20.96	0-2	0
		25	0	21.41	21.33	21.02	0-3	0
		25	12	21.43	21.38	21.01	0-3	0
		25	24	21.34	21.37	20.97	0-3	0
		50	0	21.30	21.24	20.87	0-3	0

LTE Band 2 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18675 Ch. 1857.5 ㎒	18900 Ch. 1880 ㎒	19125 Ch. 1902.5 ㎒		
15 ㎒	QPSK	1	0	21.06	21.11	20.96	0	0
		1	36	21.04	21.10	20.83	0	0
		1	74	21.08	20.99	20.63	0	0
		36	0	21.18	21.18	20.89	0-1	0
		36	18	21.21	21.32	20.92	0-1	0
		36	39	21.12	21.33	20.93	0-1	0
		75	0	21.17	21.22	20.86	0-1	0
	16QAM	1	0	21.30	21.54	21.33	0-1	0
		1	36	21.34	21.58	21.28	0-1	0
		1	74	21.32	21.41	21.14	0-1	0
		36	0	21.19	21.18	20.83	0-2	0
		36	18	21.21	21.21	20.99	0-2	0
		36	39	21.22	21.32	20.96	0-2	0
		75	0	21.17	21.21	21.02	0-2	0
	64QAM	1	0	21.39	21.33	21.13	0-2	0
		1	36	21.37	21.36	21.08	0-2	0
		1	74	21.31	21.52	21.07	0-2	0
		36	0	21.28	21.22	20.96	0-3	0
		36	18	21.33	21.29	20.96	0-3	0
		36	39	21.19	21.31	20.98	0-3	0
		75	0	21.17	21.19	20.99	0-3	0

LTE Band 2 _ 20 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				18700 Ch. 1860 ㎒	18900 Ch. 1880 ㎒	19100 Ch. 1900 ㎒		
20 ㎒	QPSK	1	0	21.14	21.11	21.03	0	0
		1	49	20.98	21.18	20.87	0	0
		1	99	21.12	21.06	20.71	0	0
		50	0	21.11	21.02	20.87	0-1	0
		50	25	21.19	21.27	21.16	0-1	0
		50	49	21.14	21.26	21.00	0-1	0
		100	0	21.19	21.14	21.01	0-1	0
	16QAM	1	0	21.57	21.47	21.41	0-1	0
		1	49	21.32	21.54	21.20	0-1	0
		1	99	21.45	21.49	21.15	0-1	0
		50	0	21.16	21.14	20.95	0-2	0
		50	25	21.15	21.20	21.04	0-2	0
		50	49	21.16	21.29	21.03	0-2	0
		100	0	21.14	21.15	20.99	0-2	0
	64QAM	1	0	21.45	21.26	21.30	0-2	0
		1	49	21.17	21.37	21.04	0-2	0
		1	99	21.35	21.45	21.09	0-2	0
		50	0	21.16	21.18	21.01	0-3	0
		50	25	21.30	21.33	21.05	0-3	0
		50	49	21.18	21.33	20.97	0-3	0
		100	0	21.21	21.16	21.00	0-3	0

[LTE Band 4 Conducted Power]

LTE Band 4 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19957 Ch. 1710.7 ㎒	20175 Ch. 1732.5 ㎒	20393 Ch. 1754.3 ㎒		
1.4 ㎒	QPSK	1	0	18.95	18.97	19.59	0	0
		1	3	18.96	19.11	19.73	0	0
		1	5	19.01	19.03	19.61	0	0
		3	0	18.98	18.98	19.60	0	0
		3	1	19.06	19.03	19.68	0	0
		3	3	18.95	19.05	19.59	0	0
		6	0	19.03	19.07	19.71	0-1	0
	16QAM	1	0	19.32	19.30	19.80	0-1	0
		1	3	19.33	19.44	19.97	0-1	0
		1	5	19.37	19.38	19.94	0-1	0
		3	0	19.12	19.11	19.66	0-1	0
		3	1	19.15	19.17	19.73	0-1	0
		3	3	19.06	19.18	19.72	0-1	0
		6	0	19.14	19.19	19.89	0-2	0
	64QAM	1	0	19.31	19.18	19.77	0-2	0
		1	3	19.46	19.40	19.90	0-2	0
		1	5	19.18	19.28	19.87	0-2	0
		3	0	19.16	19.23	19.75	0-2	0
		3	1	19.28	19.27	19.80	0-2	0
		3	3	19.18	19.27	19.77	0-2	0
		6	0	19.06	19.11	19.63	0-3	0

LTE Band 4 _ 3 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19965 Ch. 1711.5 ㎒	20175 Ch. 1732.5 ㎒	20385 Ch. 1753.5 ㎒		
3 ㎒	QPSK	1	0	19.03	19.09	19.62	0	0
		1	7	19.00	19.10	19.65	0	0
		1	14	19.04	19.07	19.63	0	0
		8	0	19.07	19.21	19.74	0-1	0
		8	3	19.19	19.15	19.73	0-1	0
		8	7	19.10	19.20	19.73	0-1	0
		15	0	19.12	19.19	19.67	0-1	0
	16QAM	1	0	19.43	19.33	19.98	0-1	0
		1	7	19.29	19.32	19.99	0-1	0
		1	14	19.41	19.39	19.98	0-1	0
		8	0	19.15	19.24	19.79	0-2	0
		8	3	19.19	19.28	19.81	0-2	0
		8	7	19.22	19.30	19.83	0-2	0
		15	0	19.13	19.19	19.77	0-2	0
	64QAM	1	0	19.38	19.29	19.79	0-2	0
		1	7	19.28	19.22	19.88	0-2	0
		1	14	19.45	19.38	19.98	0-2	0
		8	0	19.15	19.20	19.83	0-3	0
		8	3	19.19	19.27	19.86	0-3	0
		8	7	19.13	19.26	19.78	0-3	0
		15	0	19.17	19.18	19.70	0-3	0

LTE Band 4 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				19975 Ch. 1712.5 ㎒	20175 Ch. 1732.5 ㎒	20375 Ch. 1752.5 ㎒		
5 ㎒	QPSK	1	0	18.93	19.02	19.43	0	0
		1	12	19.16	19.13	19.64	0	0
		1	24	18.94	19.14	19.56	0	0
		12	0	19.07	19.18	19.67	0-1	0
		12	6	19.17	19.23	19.75	0-1	0
		12	11	19.10	19.22	19.75	0-1	0
		25	0	19.18	19.12	19.73	0-1	0
	16QAM	1	0	19.32	19.31	19.86	0-1	0
		1	12	19.46	19.52	19.99	0-1	0
		1	24	19.26	19.32	19.82	0-1	0
		12	0	19.13	19.17	19.74	0-2	0
		12	6	19.24	19.24	19.75	0-2	0
		12	11	19.18	19.21	19.74	0-2	0
		25	0	19.14	19.11	19.71	0-2	0
	64QAM	1	0	19.23	19.23	19.81	0-2	0
		1	12	19.34	19.24	19.84	0-2	0
		1	24	19.27	19.32	19.89	0-2	0
		12	0	19.13	19.27	19.71	0-3	0
		12	6	19.25	19.24	19.73	0-3	0
		12	11	19.18	19.22	19.83	0-3	0
		25	0	19.20	19.18	19.73	0-3	0

LTE Band 4 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20000 Ch. 1715 ㎒	20175 Ch. 1732.5 ㎒	20350 Ch. 1750 ㎒		
10 ㎒	QPSK	1	0	18.71	18.72	19.23	0	0
		1	24	18.98	19.11	19.58	0	0
		1	49	18.73	18.95	19.41	0	0
		25	0	19.02	19.09	19.42	0-1	0
		25	12	19.20	19.16	19.65	0-1	0
		25	24	19.08	19.14	19.51	0-1	0
		50	0	19.09	19.16	19.53	0-1	0
	16QAM	1	0	19.08	19.10	19.47	0-1	0
		1	24	19.18	19.44	19.99	0-1	0
		1	49	19.06	19.36	19.87	0-1	0
		25	0	19.08	19.07	19.46	0-2	0
		25	12	19.19	19.23	19.63	0-2	0
		25	24	19.09	19.15	19.54	0-2	0
		50	0	19.08	19.08	19.50	0-2	0
	64QAM	1	0	19.00	19.00	19.38	0-2	0
		1	24	19.20	19.31	19.66	0-2	0
		1	49	19.18	19.25	19.66	0-2	0
		25	0	19.04	19.09	19.53	0-3	0
		25	12	19.29	19.21	19.64	0-3	0
		25	24	19.07	19.08	19.59	0-3	0
		50	0	19.15	19.13	19.61	0-3	0

LTE Band 4 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20025 Ch. 1717.5 ㎒	20175 Ch. 1732.5 ㎒	20325 Ch. 1747.5 ㎒		
15 ㎒	QPSK	1	0	18.80	18.90	19.10	0	0
		1	36	18.96	18.93	19.51	0	0
		1	74	18.89	19.14	19.60	0	0
		36	0	19.08	18.98	19.43	0-1	0
		36	18	19.15	19.14	19.50	0-1	0
		36	39	19.09	19.19	19.61	0-1	0
		75	0	19.14	19.19	19.45	0-1	0
	16QAM	1	0	19.12	19.10	19.40	0-1	0
		1	36	19.37	19.45	19.66	0-1	0
		1	74	19.18	19.47	19.99	0-1	0
		36	0	19.04	19.02	19.34	0-2	0
		36	18	19.20	19.13	19.57	0-2	0
		36	39	19.13	19.18	19.55	0-2	0
		75	0	19.13	19.17	19.42	0-2	0
	64QAM	1	0	19.00	19.12	19.25	0-2	0
		1	36	19.13	19.26	19.66	0-2	0
		1	74	19.05	19.46	19.70	0-2	0
		36	0	19.05	19.11	19.44	0-3	0
		36	18	19.13	19.12	19.49	0-3	0
		36	39	19.07	19.24	19.58	0-3	0
		75	0	19.08	19.24	19.53	0-3	0

LTE Band 4 _ 20 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]	MPR Allowed Per 3GPP [dB]	MPR [dB]
				20175 Ch. 1732.5 ㎒		
20 ㎒	QPSK	1	0	18.70	0	0
		1	49	19.00	0	0
		1	99	18.97	0	0
		50	0	19.03	0-1	0
		50	25	19.19	0-1	0
		50	49	19.20	0-1	0
		100	0	19.26	0-1	0
	16QAM	1	0	19.02	0-1	0
		1	49	19.45	0-1	0
		1	99	19.37	0-1	0
		50	0	18.99	0-2	0
		50	25	19.25	0-2	0
		50	49	19.13	0-2	0
		100	0	19.14	0-2	0
	64QAM	1	0	18.87	0-2	0
		1	49	19.16	0-2	0
		1	99	19.33	0-2	0
		50	0	19.07	0-3	0
		50	25	19.26	0-3	0
		50	49	19.22	0-3	0
		100	0	19.19	0-3	0

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[LTE Band 7 Conducted Power]

LTE Band 7 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20775 Ch. 2502.5 ㎒	21100 Ch. 2535 ㎒	21425 Ch. 2567.5 ㎒		
5 ㎒	QPSK	1	0	19.98	20.47	21.18	0	0
		1	12	19.85	20.54	21.30	0	0
		1	24	20.06	20.58	21.21	0	0
		12	0	19.99	20.51	21.30	0-1	0
		12	6	20.10	20.57	21.31	0-1	0
		12	11	20.02	20.69	21.26	0-1	0
		25	0	20.06	20.57	21.23	0-1	0
	16QAM	1	0	20.25	20.75	21.68	0-1	0
		1	12	20.34	20.93	21.63	0-1	0
		1	24	20.43	20.87	21.61	0-1	0
		12	0	19.96	20.56	21.23	0-2	0
		12	6	20.08	20.67	21.41	0-2	0
		12	11	20.07	20.69	21.29	0-2	0
		25	0	20.03	20.58	21.27	0-2	0
	64QAM	1	0	20.04	20.52	21.22	0-2	0
		1	12	20.48	21.07	21.63	0-2	0
		1	24	20.52	21.09	21.65	0-2	0
		12	0	19.07	19.60	20.34	0-3	1
		12	6	19.09	19.65	20.41	0-3	1
		12	11	19.04	19.67	20.42	0-3	1
		25	0	18.94	19.62	20.34	0-3	1

LTE Band 7_ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20800 Ch. 2505 ㎒	21100 Ch. 2535 ㎒	21400 Ch. 2565 ㎒		
10 ㎒	QPSK	1	0	20.06	20.57	21.37	0	0
		1	24	19.90	20.38	21.34	0	0
		1	49	19.99	20.50	21.12	0	0
		25	0	20.11	20.55	21.19	0-1	0
		25	12	20.11	20.63	21.27	0-1	0
		25	24	20.07	20.63	21.30	0-1	0
		50	0	19.97	20.44	21.14	0-1	0
	16QAM	1	0	20.25	20.78	21.52	0-1	0
		1	24	20.18	20.83	21.48	0-1	0
		1	49	20.33	20.84	21.61	0-1	0
		25	0	19.95	20.46	21.25	0-2	0
		25	12	20.02	20.60	21.34	0-2	0
		25	24	20.06	20.57	21.34	0-2	0
		50	0	19.97	20.44	21.12	0-2	0
	64QAM	1	0	20.26	20.78	21.44	0-2	0
		1	24	20.14	20.57	21.47	0-2	0
		1	49	20.06	20.79	21.48	0-2	0
		25	0	18.95	19.52	20.28	0-3	1
		25	12	19.04	19.63	20.32	0-3	1
		25	24	19.11	19.70	20.28	0-3	1
		50	0	18.95	19.46	20.10	0-3	1

LTE Band 7 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20825 Ch. 2507.5 ㎒	21100 Ch. 2535 ㎒	21375 Ch. 2562.5 ㎒		
15 ㎒	QPSK	1	0	20.08	20.34	21.06	0	0
		1	36	20.07	20.52	21.27	0	0
		1	74	20.08	20.72	21.23	0	0
		36	0	20.01	20.49	21.19	0-1	0
		36	18	20.14	20.50	21.19	0-1	0
		36	39	20.04	20.72	21.34	0-1	0
		75	0	20.05	20.59	21.15	0-1	0
	16QAM	1	0	20.23	20.75	21.49	0-1	0
		1	36	20.23	20.72	21.35	0-1	0
		1	74	20.32	21.05	21.40	0-1	0
		36	0	19.98	20.55	21.16	0-2	0
		36	18	20.08	20.60	21.14	0-2	0
		36	39	20.11	20.66	21.32	0-2	0
		75	0	20.06	20.54	21.23	0-2	0
	64QAM	1	0	20.20	20.53	21.49	0-2	0
		1	36	20.20	20.74	21.19	0-2	0
		1	74	20.22	20.75	21.36	0-2	0
		36	0	19.10	19.50	20.18	0-3	1
		36	18	19.11	19.52	20.25	0-3	1
		36	39	19.04	19.67	20.34	0-3	1
		75	0	19.05	19.49	20.12	0-3	1

LTE Band 7 _ 20 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				20850 Ch. 2510 ㎒	21100 Ch. 2535 ㎒	21350 Ch. 2560 ㎒		
20 ㎒	QPSK	1	0	20.02	20.35	21.15	0	0
		1	49	20.04	20.46	21.03	0	0
		1	99	20.30	20.60	21.23	0	0
		50	0	19.99	20.42	21.03	0-1	0
		50	25	20.17	20.48	21.15	0-1	0
		50	49	20.11	20.69	21.24	0-1	0
		100	0	20.03	20.55	21.07	0-1	0
	16QAM	1	0	20.20	20.58	21.31	0-1	0
		1	49	20.27	20.81	21.30	0-1	0
		1	99	20.34	20.75	21.31	0-1	0
		50	0	20.04	20.47	21.08	0-2	0
		50	25	20.05	20.50	21.11	0-2	0
		50	49	20.12	20.65	21.22	0-2	0
		100	0	20.08	20.48	21.02	0-2	0
	64QAM	1	0	20.08	20.58	21.26	0-2	0
		1	49	20.11	20.49	21.47	0-2	0
		1	99	20.29	20.72	21.26	0-2	0
		50	0	19.07	19.52	20.12	0-3	1
		50	25	19.17	19.58	20.16	0-3	1
		50	49	19.10	19.60	20.24	0-3	1
		100	0	19.00	19.44	20.09	0-3	1

[LTE Band 66 Conducted Power]

LTE Band 66 _ 1.4 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131979Ch. 1710.7 ㎒	132322 Ch. 1745 ㎒	132665 Ch. 1779.3 ㎒		
1.4 ㎒	QPSK	1	0	18.99	19.32	19.64	0	0
		1	3	19.06	19.41	19.69	0	0
		1	5	19.03	19.30	19.60	0	0
		3	0	19.06	19.34	19.58	0	0
		3	1	19.07	19.39	19.68	0	0
		3	3	18.97	19.36	19.61	0	0
		6	0	19.10	19.42	19.73	0-1	0
	16QAM	1	0	19.38	19.68	19.85	0-1	0
		1	3	19.58	19.61	19.97	0-1	0
		1	5	19.49	19.51	19.99	0-1	0
		3	0	19.09	19.35	19.71	0-1	0
		3	1	19.21	19.45	19.83	0-1	0
		3	3	18.99	19.40	19.66	0-1	0
		6	0	19.21	19.57	19.86	0-2	0
	64QAM	1	0	19.32	19.66	19.88	0-2	0
		1	3	19.27	19.69	19.99	0-2	0
		1	5	19.31	19.60	19.89	0-2	0
		3	0	19.22	19.56	19.82	0-2	0
		3	1	19.33	19.59	19.84	0-2	0
		3	3	19.20	19.61	19.76	0-2	0
		6	0	19.07	19.46	19.76	0-3	0

LTE Band 66 _ 3 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131987 Ch. 1711.5 ㎒	132322 Ch. 1745 ㎒	132657 Ch. 1778.5 ㎒		
3 ㎒	QPSK	1	0	19.16	19.43	19.75	0	0
		1	7	19.16	19.39	19.64	0	0
		1	14	19.07	19.33	19.62	0	0
		8	0	19.17	19.51	19.79	0-1	0
		8	3	19.26	19.50	19.85	0-1	0
		8	7	19.17	19.50	19.80	0-1	0
		15	0	19.18	19.47	19.81	0-1	0
	16QAM	1	0	19.48	19.77	19.98	0-1	0
		1	7	19.52	19.67	19.90	0-1	0
		1	14	19.38	19.78	19.98	0-1	0
		8	0	19.26	19.56	19.83	0-2	0
		8	3	19.29	19.61	19.95	0-2	0
		8	7	19.19	19.59	19.83	0-2	0
		15	0	19.30	19.53	19.84	0-2	0
	64QAM	1	0	19.16	19.81	19.99	0-2	0
		1	7	19.47	19.78	19.87	0-2	0
		1	14	19.46	19.73	19.95	0-2	0
		8	0	19.30	19.52	19.86	0-3	0
		8	3	19.27	19.59	19.89	0-3	0
		8	7	19.20	19.49	19.85	0-3	0
		15	0	19.27	19.52	19.90	0-3	0

LTE Band 66 _ 5 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				131997 Ch. 1712.5 ㎒	132322Ch. 1745 ㎒	132647 Ch. 1777.5 ㎒		
5 ㎒	QPSK	1	0	19.04	19.41	19.63	0	0
		1	12	19.04	19.40	19.65	0	0
		1	24	18.96	19.37	19.64	0	0
		12	0	19.21	19.53	19.77	0-1	0
		12	6	19.24	19.53	19.85	0-1	0
		12	11	19.16	19.53	19.74	0-1	0
		25	0	19.26	19.46	19.74	0-1	0
	16QAM	1	0	19.42	19.76	19.99	0-1	0
		1	12	19.42	19.77	19.90	0-1	0
		1	24	19.51	19.66	19.91	0-1	0
		12	0	19.23	19.63	19.85	0-2	0
		12	6	19.33	19.53	19.82	0-2	0
		12	11	19.25	19.52	19.75	0-2	0
		25	0	19.25	19.47	19.84	0-2	0
	64QAM	1	0	19.37	19.65	19.92	0-2	0
		1	12	19.42	19.72	19.92	0-2	0
		1	24	19.41	19.68	19.92	0-2	0
		12	0	19.20	19.61	19.87	0-3	0
		12	6	19.34	19.54	19.90	0-3	0
		12	11	19.28	19.55	19.83	0-3	0
		25	0	19.23	19.53	19.76	0-3	0

LTE Band 66 _ 10 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132022 Ch. 1715 ㎒	132322 Ch. 1745 ㎒	132622 Ch. 1775 ㎒		
10 ㎒	QPSK	1	0	18.94	19.09	19.42	0	0
		1	24	19.06	19.52	19.66	0	0
		1	49	18.92	19.25	19.48	0	0
		25	0	19.17	19.43	19.68	0-1	0
		25	12	19.23	19.51	19.72	0-1	0
		25	24	19.11	19.45	19.64	0-1	0
		50	0	19.22	19.35	19.68	0-1	0
	16QAM	1	0	19.06	19.54	19.67	0-1	0
		1	24	19.59	19.83	19.99	0-1	0
		1	49	19.29	19.57	19.80	0-1	0
		25	0	19.13	19.46	19.66	0-2	0
		25	12	19.31	19.46	19.77	0-2	0
		25	24	19.17	19.50	19.73	0-2	0
		50	0	19.28	19.35	19.65	0-2	0
	64QAM	1	0	19.02	19.27	19.48	0-2	0
		1	24	19.33	19.60	19.88	0-2	0
		1	49	19.14	19.56	19.75	0-2	0
		25	0	19.12	19.44	19.64	0-3	0
		25	12	19.30	19.55	19.80	0-3	0
		25	24	19.20	19.43	19.77	0-3	0
		50	0	19.18	19.42	19.77	0-3	0

LTE Band 66 _ 15 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132047 Ch. 1717.5 ㎒	132322 Ch. 1745 ㎒	132597 Ch. 1772.5 ㎒		
15 ㎒	QPSK	1	0	18.86	19.08	19.60	0	0
		1	36	19.19	19.30	19.57	0	0
		1	74	19.15	19.27	19.64	0	0
		36	0	19.27	19.47	19.68	0-1	0
		36	18	19.21	19.49	19.71	0-1	0
		36	39	19.22	19.37	19.68	0-1	0
		75	0	19.25	19.43	19.75	0-1	0
	16QAM	1	0	19.19	19.53	19.91	0-1	0
		1	36	19.49	19.80	19.96	0-1	0
		1	74	19.37	19.72	19.89	0-1	0
		36	0	19.12	19.43	19.73	0-2	0
		36	18	19.32	19.46	19.67	0-2	0
		36	39	19.28	19.53	19.70	0-2	0
		75	0	19.31	19.43	19.64	0-2	0
	64QAM	1	0	19.02	19.29	19.87	0-2	0
		1	36	19.37	19.61	19.92	0-2	0
		1	74	19.32	19.38	19.80	0-2	0
		36	0	19.17	19.49	19.75	0-3	0
		36	18	19.22	19.44	19.76	0-3	0
		36	39	19.25	19.48	19.68	0-3	0
		75	0	19.19	19.39	19.70	0-3	0

LTE Band 66 _ 20 ㎒ Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Reduced Power [dBm]			MPR Allowed Per 3GPP [dB]	MPR [dB]
				132072 Ch. 1720 ㎒	132322 Ch. 1745 ㎒	132572 Ch. 1770 ㎒		
20 ㎒	QPSK	1	0	18.83	18.92	19.64	0	0
		1	49	19.10	19.27	19.56	0	0
		1	99	19.01	19.15	19.62	0	0
		50	0	19.16	19.35	19.56	0-1	0
		50	25	19.33	19.44	19.78	0-1	0
		50	49	19.27	19.47	19.66	0-1	0
		100	0	19.28	19.36	19.74	0-1	0
	16QAM	1	0	19.13	19.31	19.82	0-1	0
		1	49	19.37	19.69	19.92	0-1	0
		1	99	19.38	19.48	19.99	0-1	0
		50	0	19.21	19.42	19.60	0-2	0
		50	25	19.26	19.45	19.76	0-2	0
		50	49	19.25	19.53	19.70	0-2	0
		100	0	19.25	19.41	19.69	0-2	0
	64QAM	1	0	18.96	19.26	19.69	0-2	0
		1	49	19.25	19.61	19.82	0-2	0
		1	99	19.15	19.44	19.85	0-2	0
		50	0	19.21	19.40	19.67	0-3	0
		50	25	19.32	19.52	19.81	0-3	0
		50	49	19.25	19.47	19.64	0-3	0
		100	0	19.23	19.41	19.68	0-3	0

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

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

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.

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

CA Combinations

Single DL 2 CA & 3CA

Index	2CC	Index	3CC	Index	3CC
2CC #1	2A-2A	3CC #1	2A-2A-4A	3CC #22	5A-2A-66A
2CC #2	2C	3CC #2	2A-2A-5A	3CC #23	5A-4A-4A
2CC #3	2A-4A	3CC #3	2A-2A-66A	3CC #24	5B-2A
2CC #4	2A-5A	3CC #4	2A-4A-4A	3CC #25	5B-4A
2CC #5	2A-13A	3CC #5	2A-5B	3CC #26	5A-5A-66A
2CC #6	2A-66A	3CC #6	2A-4A-5A	3CC #27	5B-66A
2CC #7	4A-2A	3CC #7	2A-13A-66A	3CC #28	5A-66A-66A
2CC #8	4A-4A	3CC #8	2A-4A-13A	3CC #29	5A-66B
2CC #9	4A-5A	3CC #9	2A-5A-66A	3CC #30	5A-66C
2CC #10	4A-13A	3CC #10	2A-66A-66A	3CC #31	13A-2A-2A
2CC #11	5A-5A	3CC #11	2A-66B	3CC #32	13A-2A-4A
2CC #12	5B	3CC #12	2A-66C	3CC #33	13A-2A-66A
2CC #13	5A-66A	3CC #13	4A-2A-2A	3CC #34	13A-4A-4A
2CC #14	13A-2A	3CC #14	4A-2A-5A	3CC #35	13A-66A-66A
2CC #15	13A-4A	3CC #15	4A-4A-2A	3CC #36	13A-66B
2CC #16	13A-66A	3CC #16	4A-2A-13A	3CC #37	13A-66C
2CC #17	66A-2A	3CC #17	4A-4A-5A		
2CC #18	66A-13A	3CC #18	4A-4A-13A		
2CC #19	66A-66A	3CC #19	4A-5B		
2CC #20	66B	3CC #20	5A-2A-2A		
2CC #21	66C	3CC #21	5A-2A-4A		

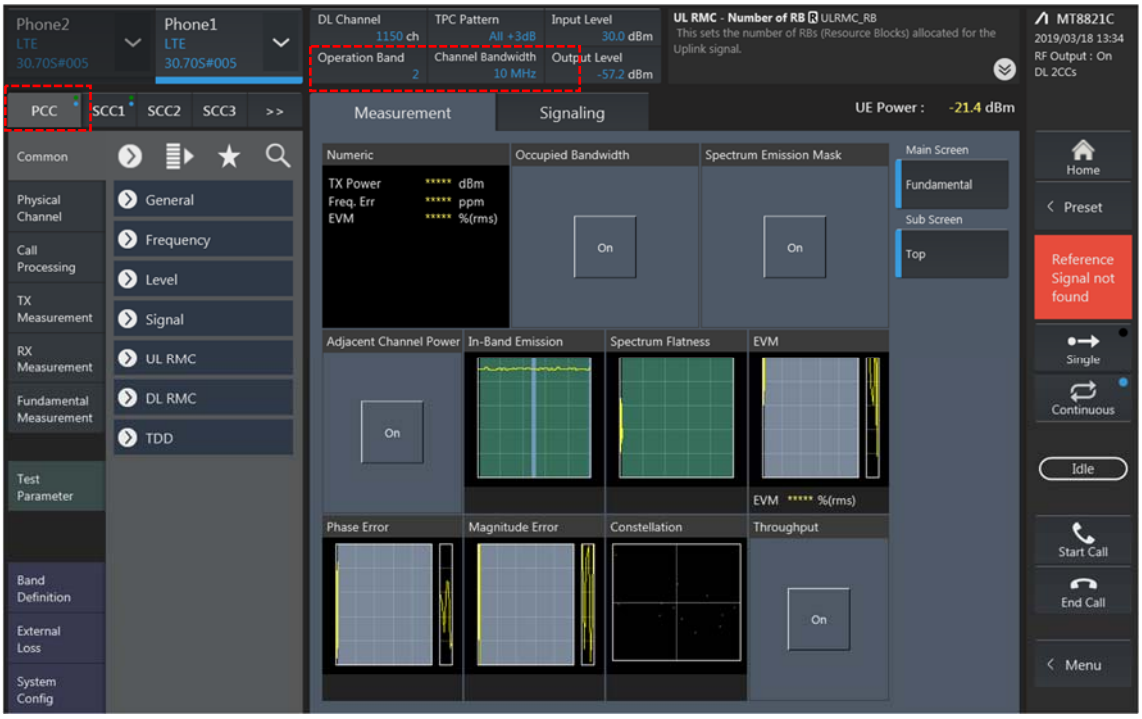
4x4 MIMO LTE DL 2CA & 3CA Combinations

Index	CA combos	`	CA combos	Index	CA combos	Index	CA combos	Index	CA combos
3CC #M1	2A-2A-[4A]	3CC #M37	2A-[66A]-66A	3CC #M73	5A-2A-[66A]	3CC #M109	[66A]-[2A]-13A	2CC #M1	2A-[2A]
3CC #M2	2A-[2A]-4A	3CC #M38	[2A]-66A-66A	3CC #M74	5A-[2A]-66A	3CC #M110	[66A]-5A-5A	2CC #M2	[2A]-2A
3CC #M3	[2A]-2A-4A	3CC #M39	2A-[66A]-[66A]	3CC #M75	5A-[2A]-[66A]	3CC #M111	[66A]-5B	2CC #M3	[2A]-[2A]
3CC #M4	2A-[2A]-[4A]	3CC #M40	[2A]-[66A]-66A	3CC #M76	5A-[4A]-4A	3CC #M112	66A-66A-[2A]	2CC #M4	[2C]
3CC #M5	[2A]-2A-[4A]	3CC #M41	2A-[66B]	3CC #M77	5A-[4A]-[4A]	3CC #M113	66A-[66A]-2A	2CC #M5	2A-[4A]
3CC #M6	[2A]-[2A]-4A	3CC #M42	[2A]-66B	3CC #M78	5B-[2A]	3CC #M114	[66A]-66A-2A	2CC #M6	[2A]-4A
3CC #M7	2A-[2A]-5A	3CC #M43	2A-[66C]	3CC #M79	5B-[4A]	3CC #M115	66A-[66A]-[2A]	2CC #M7	[2A]-[4A]
3CC #M8	[2A]-2A-5A	3CC #M44	[2A]-66C	3CC #M80	5A-5A-[66A]	3CC #M116	[66A]-66A-[2A]	2CC #M8	[2A]-5A
3CC #M9	[2A]-[2A]-5A	3CC #M45	4A-[2A]-2A	3CC #M81	5B-[66A]	3CC #M117	[66A]-[66A]-2A	2CC #M9	[2A]-13A
3CC #M10	2A-2A-13A	3CC #M46	[4A]-2A-2A	3CC #M82	5A-[66A]-66A	3CC #M118	66B-[2A]	2CC #M10	2A-[66A]
3CC #M11	[2A]-2A-13A	3CC #M47	4A-[2A]-[2A]	3CC #M83	5A-[66A]-[66A]	3CC #M119	[66B]-2A	2CC #M11	[2A]-66A
3CC #M12	2A-[2A]-13A	3CC #M48	[4A]-[2A]-2A	3CC #M84	5A-[66B]	3CC #M120	66C-[2A]	2CC #M12	[2A]-[66A]
3CC #M13	[2A]-[2A]-13A	3CC #M49	4A-[2A]-5A	3CC #M85	5A-[66C]	3CC #M121	[66C]-2A	2CC #M13	4A-[2A]
3CC #M14	2A-2A-[66A]	3CC #M50	[4A]-2A-5A	3CC #M86	13A-[2A]-2A	3CC #M122	66A-66A-5A	2CC #M14	[4A]-2A
3CC #M15	2A-[2A]-66A	3CC #M51	[4A]-[2A]-5A	3CC #M87	13A-[2A]-[2A]	3CC #M123	66A-[66A]-5A	2CC #M15	[4A]-[2A]
3CC #M16	[2A]-2A-66A	3CC #M52	4A-[2A]-13A	3CC #M88	13A-2A-[4A]	3CC #M124	[66A]-66A-5A	2CC #M16	4A-[4A]
3CC #M17	2A-[2A]-[66A]	3CC #M53	[4A]-2A-13A	3CC #M89	13A-[2A]-4A	3CC #M125	[66A]-[66A]-5A	2CC #M17	[4A]-4A
3CC #M18	[2A]-2A-[66A]	3CC #M54	[4A]-[2A]-13A	3CC #M90	13A-[2A]-[4A]	3CC #M126	[66B]-5A	2CC #M18	[4A]-[4A]
3CC #M19	[2A]-[2A]-66A	3CC #M55	4A-4A-[2A]	3CC #M91	13A-2A-[66A]	3CC #M127	66C-5A	2CC #M19	[4A]-5A
3CC #M20	2A-[4A]-4A	3CC #M56	4A-[4A]-2A	3CC #M92	13A-[2A]-66A	3CC #M128	[66C]-5A	2CC #M20	[4A]-13A
3CC #M21	[2A]-4A-4A	3CC #M57	[4A]-4A-2A	3CC #M93	13A-[2A]-[66A]	3CC #M129	66A-[66A]-13A	2CC #M21	5A-[2A]
3CC #M22	2A-[4A]-[4A]	3CC #M58	4A-[4A]-[2A]	3CC #M94	13A-[4A]-4A	3CC #M130	[66A]-66A-13A	2CC #M22	5A-[4A]
3CC #M23	[2A]-[4A]-4A	3CC #M59	[4A]-4A-[2A]	3CC #M95	13A-[4A]-[4A]	3CC #M131	[66A]-[66A]-13A	2CC #M23	5A-[66A]
3CC #M24	2A-[4A]-5A	3CC #M60	[4A]-[4A]-2A	3CC #M96	13A-[66A]-66A	3CC #M132	[66B]-13A	2CC #M24	13A-[2A]
3CC #M25	[2A]-4A-5A	3CC #M61	4A-[4A]-5A	3CC #M97	13A-[66A]-[66A]	3CC #M133	[66C]-13A	2CC #M25	13A-[4A]
3CC #M26	[2A]-[4A]-5A	3CC #M62	[4A]-4A-5A	3CC #M98	13A-[66B]	3CC #M134	66A-[66C]	2CC #M26	13A-[66A]
3CC #M27	2A-[4A]-13A	3CC #M63	[4A]-[4A]-5A	3CC #M99	13A-[66C]	3CC #M135	[66A]-66C	2CC #M27	66A-[2A]
3CC #M28	[2A]-4A-13A	3CC #M64	4A-[4A]-13A	3CC #M100	66A-[2A]-2A	3CC #M136	66C-[66A]	2CC #M28	[66A]-2A
3CC #M29	[2A]-[4A]-13A	3CC #M65	[4A]-4A-13A	3CC #M101	[66A]-2A-2A	3CC #M137	[66C]-66A	2CC #M29	[66A]-[2A]
3CC #M30	[2A]-5B	3CC #M66	[4A]-[4A]-13A	3CC #M102	66A-[2A]-[2A]			2CC #M30	[66A]-5A
3CC #M31	2A-5A-[66A]	3CC #M67	[4A]-5B	3CC #M103	[66A]-[2A]-2A			2CC #M31	[66A]-13A
3CC #M32	[2A]-5A-66A	3CC #M68	5A-[2A]-2A	3CC #M104	66A-[2A]-5A			2CC #M32	66A-[66A]
3CC #M33	[2A]-5A-[66A]	3CC #M69	5A-[2A]-[2A]	3CC #M105	[66A]-2A-5A			2CC #M33	[66A]-66A
3CC #M34	2A-13A-[66A]	3CC #M70	5A-2A-[4A]	3CC #M106	[66A]-[2A]-5A			2CC #M34	[66A]-[66A]
3CC #M35	[2A]-13A-66A	3CC #M71	5A-[2A]-4A	3CC #M107	66A-[2A]-13A			2CC #M35	[66B]
3CC #M36	[2A]-13A-[66A]	3CC #M72	5A-[2A]-[4A]	3CC #M108	[66A]-2A-13A			2CC #M36	[66C]

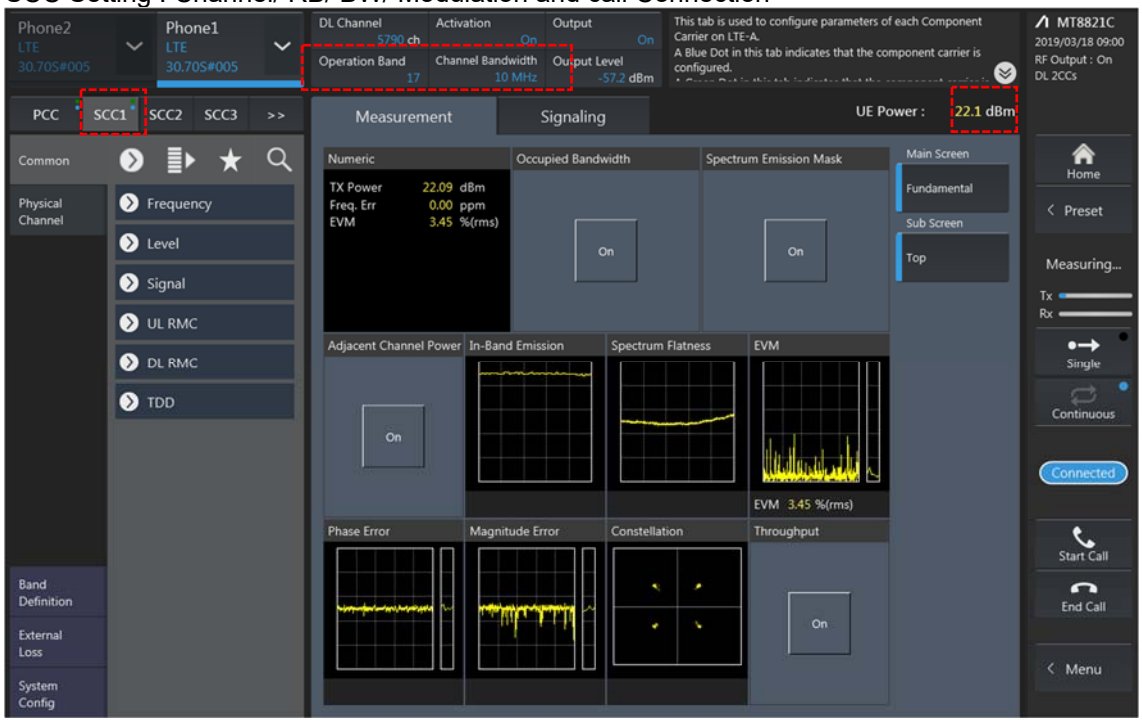
[*] is 4X4 MIMO configuration

LTE Down Link 2CA Call Setup

PCC Setting : Channel/ RB/ BW/ Modulation



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



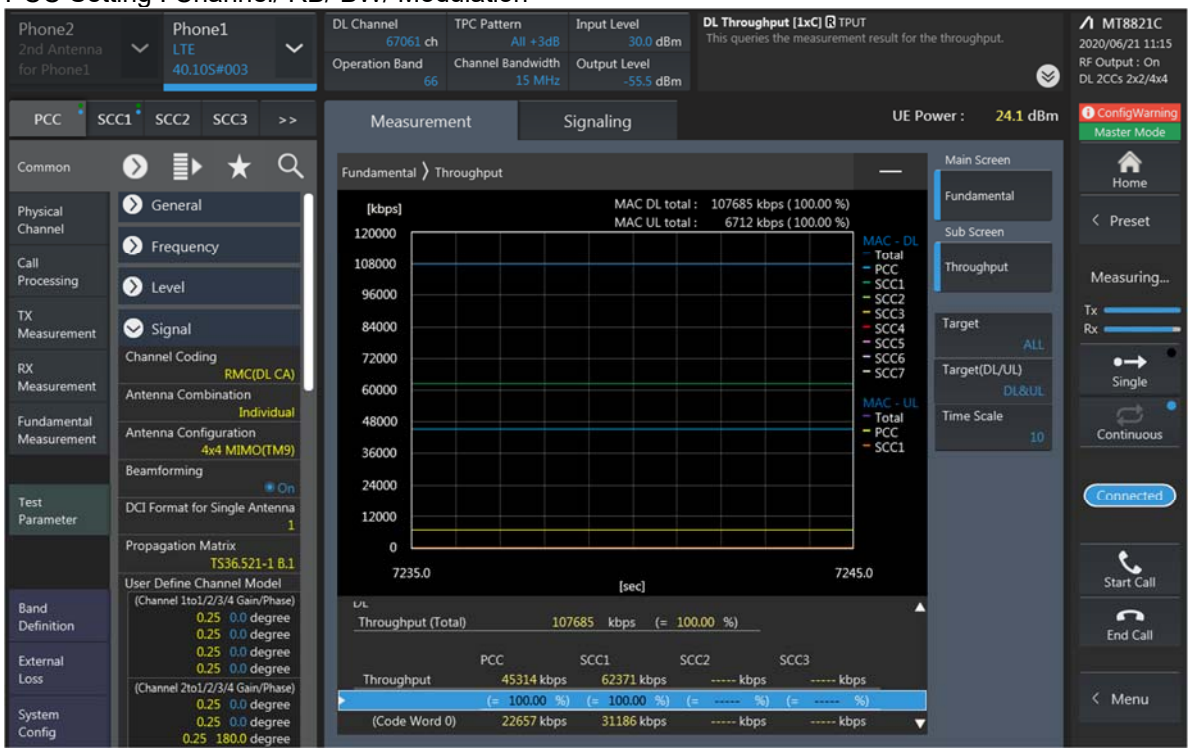
2CA Downlink Carrier aggregation conducted Powers

LTE Downlink 2CA Maximum Conducted Power

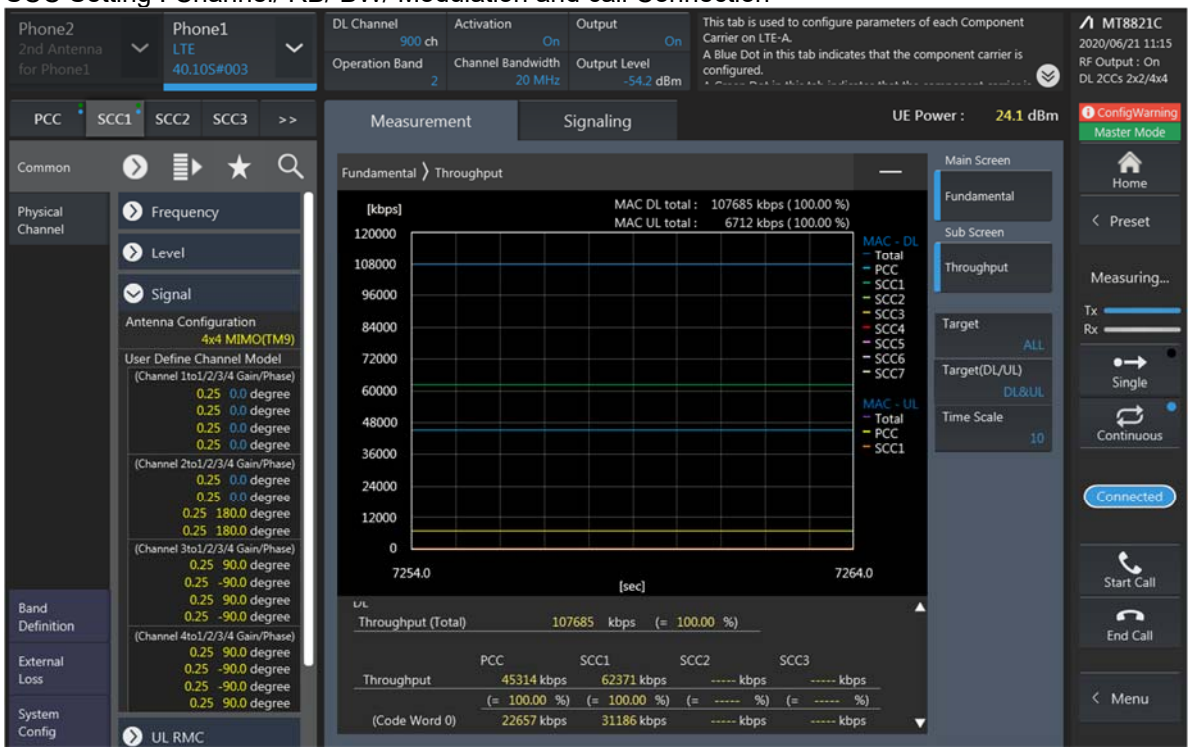
Combination	PCC									SCC				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled(dBm) (2)	Deviaion (2)-(1)
2A-2A	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	24.33	24.25	-0.08
2C	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1044	1974.4	24.33	24.43	0.1
2A-4A(0,2)	2	10	18900	1880	900	1960	QPSK	1	24	4	20	2175	2132.5	24.33	24.25	-0.08
2A-4A(1)	2	10	18900	1880	900	1960	QPSK	1	0	4	10	2175	21325	24.33	24.38	0.05
2A-4A(0,2)	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	2	20	900	1960	24.45	24.59	0.14
2A-4A(1)	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	2	10	900	1960	24.45	24.65	0.2
2A-5A	2	10	18900	1880	900	1960	QPSK	1	24	5	10	2525	881.5	24.33	24.39	0.06
2A-5A(0)	5	5	20425	826.5	2425	871.5	QPSK	1	0	2	20	900	1960	25.25	25.31	0.06
2A-5A(1)	5	5	20425	826.5	2425	871.5	QPSK	1	0	2	10	900	1960	25.25	25.34	0.09
2A-13A(1)	2	10	18900	1880	900	1960	QPSK	1	24	13	10	5230	751	24.33	24.38	0.05
2A-13A(0)	13	10	23230	782	5230	751	QPSK	1	24	2	20	900	1960	24.15	24.08	-0.07
2A-13A(1)	13	10	23230	782	5230	751	QPSK	1	24	2	10	900	1960	24.15	24.27	0.12
2A-66A(0,2)	2	10	18900	1880	900	1960	QPSK	1	24	66	20	66786	2145	24.33	24.34	0.01
2A-66A(1)	2	10	18900	1880	900	1960	QPSK	1	24	66	10	66786	2145	24.33	24.33	0
2A-66A(0,2)	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	2	20	900	1960	24.49	24.69	0.2
2A-66A(1)	66	10	132622	1775	67086	2175	QPSK	1	24	2	10	900	1960	24.38	24.62	0.24
4A-4A(0)	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	4	20	2050	2120	24.45	24.68	0.23
4A-4A(1)	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	4	10	2000	2115	24.45	24.67	0.22
4A-5A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	5	10	2525	881.5	24.45	24.69	0.24
4A-5A(0)	5	5	20425	826.5	2425	871.5	QPSK	1	0	4	10	2175	2132.5	25.25	25.23	-0.02
4A-5A(1)	5	5	20425	826.5	2425	871.5	QPSK	1	0	4	20	2175	2132.5	25.25	25.4	0.15
5A-5A(0)	5	5	20425	826.5	2425	871.5	QPSK	1	0	5	10	2600	889	25.25	25.37	0.12
5A-5A(1)	5	3	20415	825.5	2415	870.5	QPSK	1	0	5	5	2625	891.5	25.31	25.49	0.18
5B(0)	5	5	20425	826.5	2425	871.5	QPSK	1	0	5	10	2497	878.7	25.25	25.19	-0.06
5B(1)	5	5	20425	826.5	2425	871.5	QPSK	1	0	5	3	2464	875.4	25.25	25.24	-0.01
5A-66A	5	5	20425	826.5	2425	871.5	QPSK	1	0	66	20	66786	2145	25.25	25.33	0.08
5A-66A	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	5	10	2525	881.5	24.49	24.65	0.16
13A-66A	13	10	23230	782	5230	751	QPSK	1	24	66	20	66786	2145	24.15	24.31	0.16
13A-66A	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	13	10	5230	751	24.49	24.7	0.21
66A-66A	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66536	2120	24.49	24.66	0.17
66B	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	5	66968	2163.2	24.49	24.68	0.19
66C	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66890	2155.4	24.49	24.64	0.15

LTE Down Link 2CA 4x4 MIMO Call Setup

PCC Setting : Channel/ RB/ BW/ Modulation



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

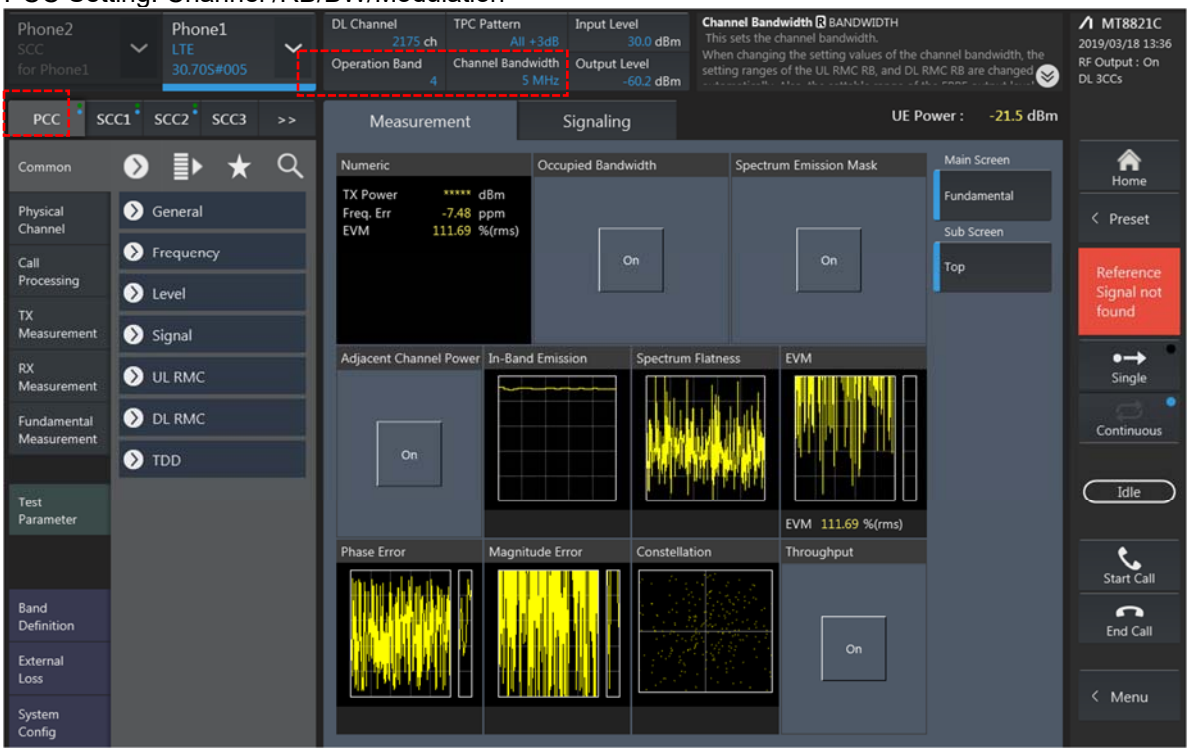


LTE Downlink 2CA 4X4 MIMO Maximum Conducted Power

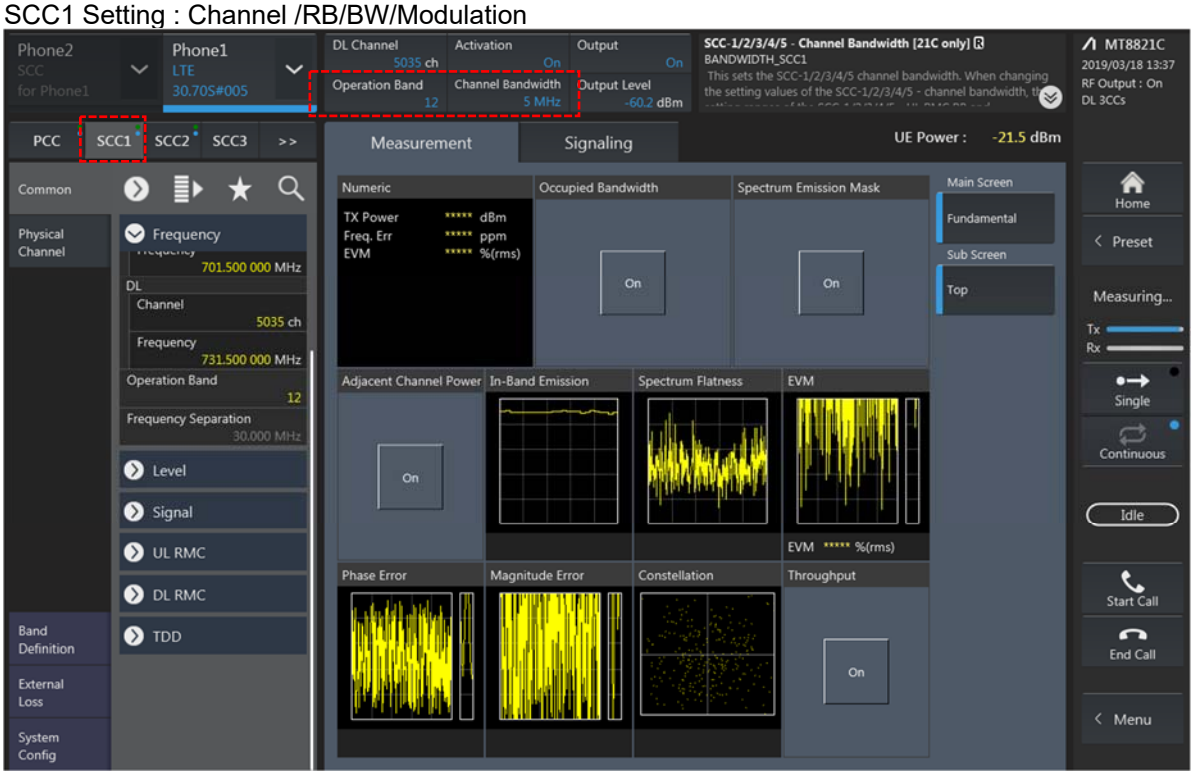
Combination	PCC									SCC				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled(dBm) (2)	Deviaion (2)-(1)
2A-[2A]	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	24.33	24.37	0.04
[2A]-2A	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	24.33	24.35	0.02
[2A]-[2A]	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	24.33	24.37	0.04
[2C]	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1044	1974.4	24.33	24.34	0.01
2A-[4A](0,2)	2	10	18900	1880	900	1960	QPSK	1	24	4	20	2175	2132.5	24.33	24.36	0.03
[2A]-4A(0,2)	2	10	18900	1880	900	1960	QPSK	1	24	4	20	2175	2132.5	24.33	24.42	0.09
[2A]-[4A](0,2)	2	10	18900	1880	900	1960	QPSK	1	24	4	20	2175	2132.5	24.33	24.39	0.06
2A-[4A](1)	2	10	18900	1880	900	1960	QPSK	1	0	4	10	2175	21325	24.33	24.41	0.08
[2A]-4A(1)	2	10	18900	1880	900	1960	QPSK	1	0	4	10	2175	21325	24.33	24.37	0.04
[2A]-[4A](1)	2	10	18900	1880	900	1960	QPSK	1	0	4	10	2175	21325	24.33	24.42	0.09
2A-[4A](0,2)	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	2	20	900	1960	24.45	24.48	0.03
[2A]-4A(0,2)	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	2	20	900	1960	24.45	24.49	0.04
[2A]-[4A](0,2)	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	2	20	900	1960	24.45	24.53	0.08
2A-[4A](1)	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	2	10	900	1960	24.45	24.6	0.15
[2A]-4A(1)	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	2	10	900	1960	24.45	24.38	-0.07
[2A]-[4A](1)	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	2	10	900	1960	24.45	24.47	0.02
[2A]-5A	2	10	18900	1880	900	1960	QPSK	1	24	5	10	2525	881.5	24.33	24.39	0.06
[2A]-5A(0)	5	5	20425	826.5	2425	871.5	QPSK	1	0	2	20	900	1960	25.25	25.39	0.14
[2A]-5A(1)	5	5	20425	826.5	2425	871.5	QPSK	1	0	2	10	900	1960	25.25	25.37	0.12
[2A]-13A(1)	2	10	18900	1880	900	1960	QPSK	1	24	13	10	5230	751	24.33	24.42	0.09
[2A]-13A(0)	13	10	23230	782	5230	751	QPSK	1	24	2	20	900	1960	24.15	24.3	0.15
[2A]-13A(1)	13	10	23230	782	5230	751	QPSK	1	24	2	10	900	1960	24.15	24.27	0.12
2A-[66A](0,2)	2	10	18900	1880	900	1960	QPSK	1	24	66	20	66786	2145	24.33	24.33	0
[2A]-66A(0,2)	2	10	18900	1880	900	1960	QPSK	1	24	66	20	66786	2145	24.33	24.42	0.09
[2A]-[66A](0,2)	2	10	18900	1880	900	1960	QPSK	1	24	66	20	66786	2145	24.33	24.37	0.04
2A-[66A](1)	2	10	18900	1880	900	1960	QPSK	1	24	66	10	66786	2145	24.33	24.39	0.06
[2A]-66A(1)	2	10	18900	1880	900	1960	QPSK	1	24	66	10	66786	2145	24.33	24.32	-0.01
[2A]-[66A](1)	2	10	18900	1880	900	1960	QPSK	1	24	66	10	66786	2145	24.33	24.43	0.1
2A-[66A](0,2)	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	2	20	900	1960	24.49	24.48	-0.01
[2A]-66A(0,2)	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	2	20	900	1960	24.49	24.54	0.05
[2A]-[66A](0,2)	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	2	20	900	1960	24.49	24.59	0.1
2A-[66A](1)	66	10	132622	1775	67086	2175	QPSK	1	24	2	10	900	1960	24.38	24.39	0.01
[2A]-66A(1)	66	10	132622	1775	67086	2175	QPSK	1	24	2	10	900	1960	24.38	24.42	0.04
[2A]-[66A](1)	66	10	132622	1775	67086	2175	QPSK	1	24	2	10	900	1960	24.38	24.45	0.07
4A-[4A](0)	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	4	20	2050	2120	24.45	24.47	0.02
[4A]-4A(0)	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	4	20	2050	2120	24.45	24.48	0.03
[4A]-[4A](0)	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	4	20	2050	2120	24.45	24.45	0
4A-[4A](1)	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	4	10	2000	2115	24.45	24.55	0.1
[4A]-4A(1)	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	4	10	2000	2115	24.45	24.57	0.12
[4A]-[4A](1)	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	4	10	2000	2115	24.45	24.43	-0.02
[4A]-5A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	5	10	2525	881.5	24.45	24.56	0.11
[4A]-5A(0)	5	5	20425	826.5	2425	871.5	QPSK	1	0	4	10	2175	2132.5	25.25	25.39	0.14
[4A]-5A(1)	5	5	20425	826.5	2425	871.5	QPSK	1	0	4	20	2175	2132.5	25.25	25.42	0.17
5A-[66A]	5	5	20425	826.5	2425	871.5	QPSK	1	0	66	20	66786	2145	25.25	25.39	0.14
5A-[66A]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	5	10	2525	881.5	24.49	24.53	0.04
13A-[66A]	13	10	23230	782	5230	751	QPSK	1	24	66	20	66786	2145	24.15	24.19	0.04
13A-[66A]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	13	10	5230	751	24.49	24.49	0
66A-[66A]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66536	2120	24.49	24.57	0.08
[66A]-66A	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66536	2120	24.49	24.53	0.04
[66A]-[66A]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66536	2120	24.49	24.51	0.02
[66B]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	5	66968	2163.2	24.49	24.48	-0.01
[66C]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66890	2155.4	24.49	24.52	0.03

LTE Down Link 3CA Call Setup

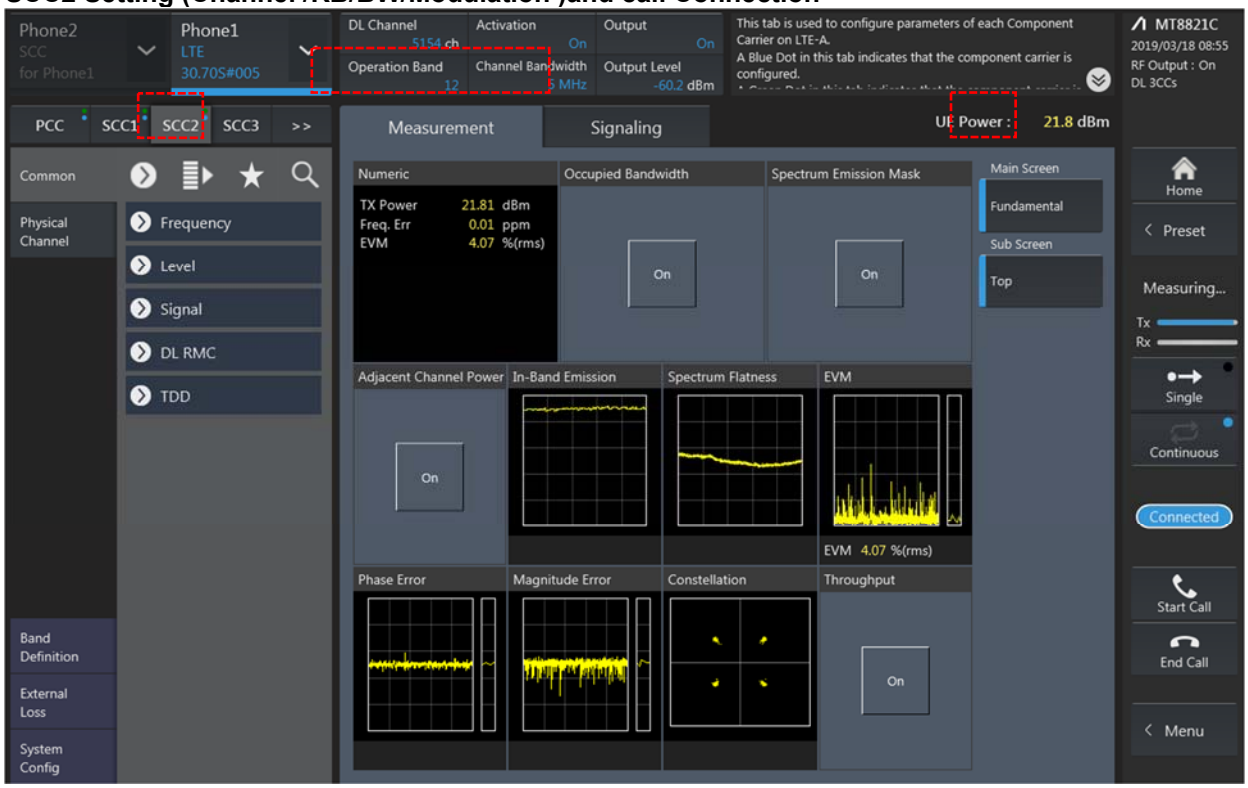
PCC Setting: Channel /RB/BW/Modulation



SCC1 Setting : Channel /RB/BW/Modulation



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



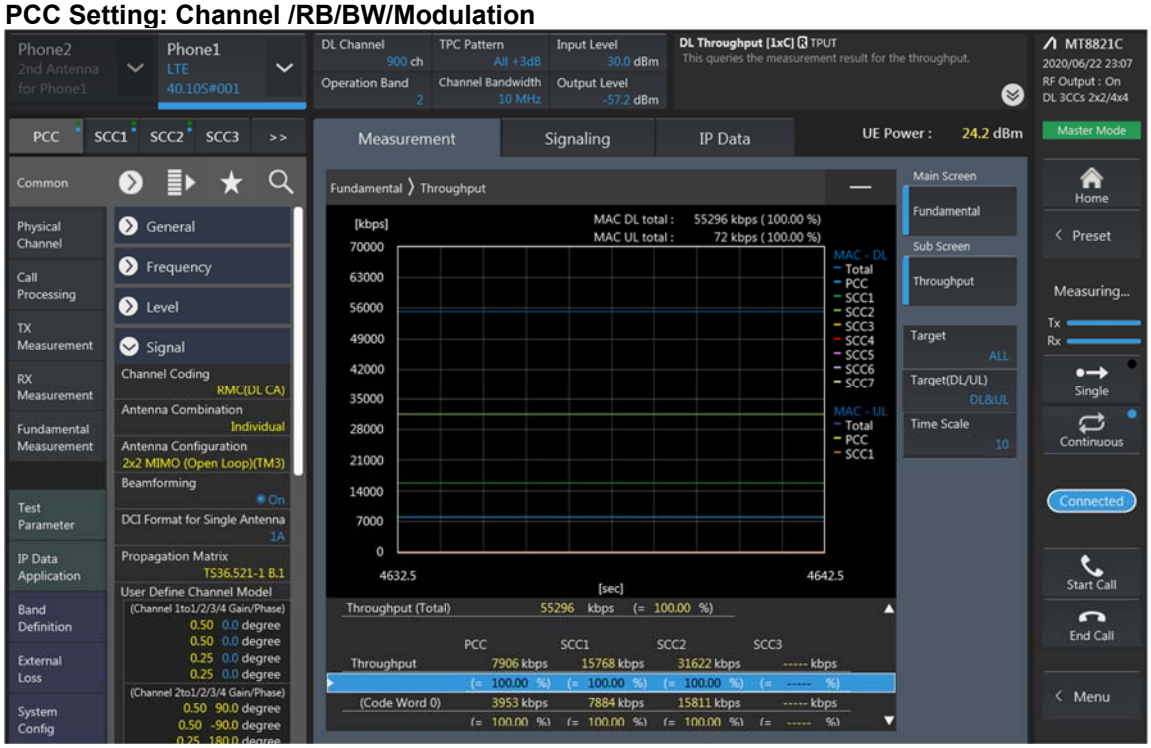
3CA Downlink Carrier aggregation conducted Powers

LTE Downlink 3CA Maximum Conducted Power

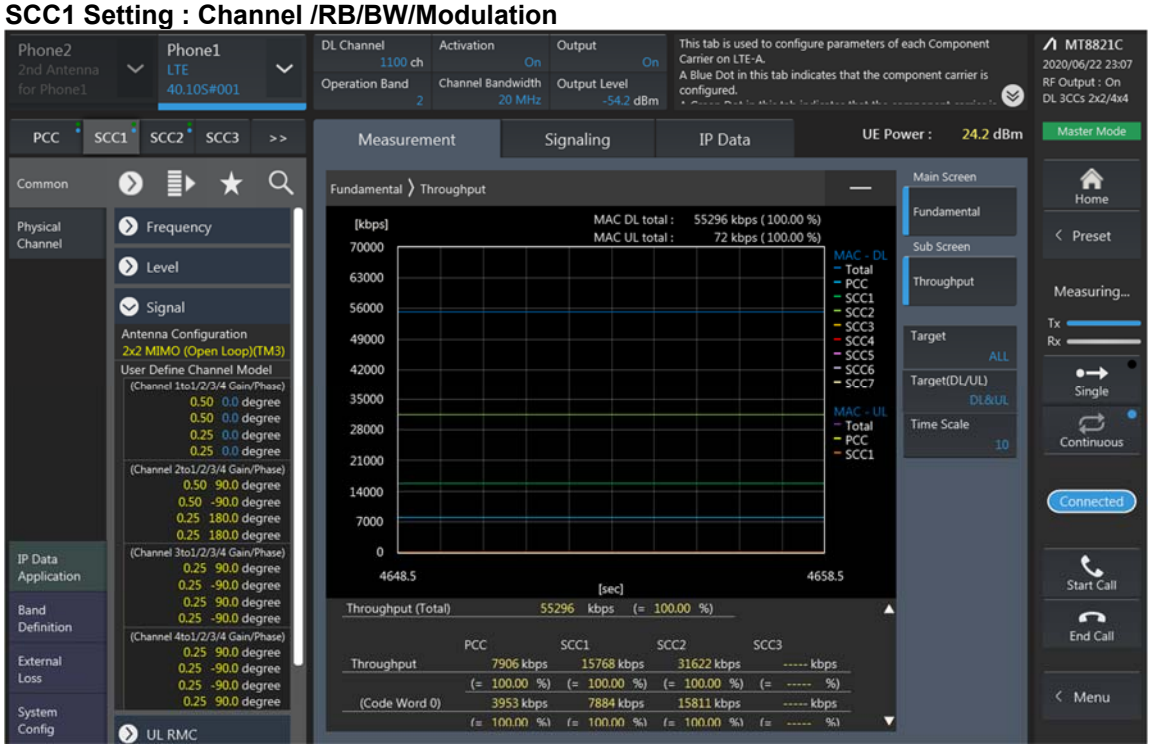
Combination	PCC									SCC				SCC				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled(dBm) (2)	Deviaion (2)-(1)
2A-2A-4A	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	4	20	2175	2132.5	24.33	24.34	0.01
2A-2A-4A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	2	20	900	1960	2	20	1100	1980	24.45	24.69	0.24
2A-2A-5A	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	5	10	2525	881.5	24.33	24.37	0.04
2A-2A-5A	5	5	20425	826.5	2425	871.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	25.25	25.21	-0.04
2A-2A-13A	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	13	10	5230	751	24.33	24.41	0.08
2A-2A-13A	13	10	23230	782	5230	751	QPSK	1	24	2	20	900	1960	2	20	1100	1980	24.15	24.03	-0.12
2A-2A-66A	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	66	20	66786	2145	24.33	24.31	-0.02
2A-2A-66A	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	24.49	24.56	0.07
2A-4A-4A	2	10	18900	1880	900	1960	QPSK	1	24	4	20	2175	2132.5	4	10	2350	2150	24.33	24.36	0.03
2A-4A-4A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	4	20	2050	2120	2	20	900	1960	24.45	24.68	0.23
2A-4A-5A	2	10	18900	1880	900	1960	QPSK	1	24	4	20	2175	2132.5	5	10	2525	881.5	24.33	24.38	0.05
2A-4A-5A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	2	20	900	1960	5	10	2525	881.5	24.45	24.69	0.24
2A-4A-5A	5	5	20425	826.5	2425	871.5	QPSK	1	0	2	20	900	1960	4	20	2175	2132.5	25.25	25.17	-0.08
2A-4A-13A	2	10	18900	1880	900	1960	QPSK	1	24	4	20	2175	2132.5	13	10	5230	751	24.33	24.34	0.01
2A-4A-13A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	2	20	900	1960	13	10	5230	751	24.45	24.68	0.23
2A-4A-13A	13	10	23230	782	5230	751	QPSK	1	24	2	20	900	1960	4	20	2175	2132.5	24.15	24.26	0.11
2A-5B	2	10	18900	1880	900	1960	QPSK	1	24	5	10	2525	881.5	5	5	2453	874.3	24.33	24.28	-0.05
2A-5B	5	5	20425	826.5	2425	871.5	QPSK	1	0	5	10	2497	878.7	2	20	900	1960	25.25	25.2	-0.05
2A-5A-66A	2	10	18900	1880	900	1960	QPSK	1	24	5	10	2525	881.5	66	20	66786	2145	24.33	24.36	0.03
2A-5A-66A	5	5	20425	826.5	2425	871.5	QPSK	1	0	2	20	900	1960	66	20	66786	2145	25.25	25.23	-0.02
2A-5A-66A	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	2	20	900	1960	5	10	2525	881.5	24.49	24.44	-0.05
2A-13A-66A	2	10	18900	1880	900	1960	QPSK	1	24	13	10	5230	751	66	20	66786	2145	24.33	24.31	-0.02
2A-13A-66A	13	10	23230	782	5230	751	QPSK	1	24	2	20	900	1960	66	20	66786	2145	24.15	24.2	0.05
2A-13A-66A	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	2	20	900	1960	13	10	5230	751	24.49	24.63	0.14
2A-66A-66A	2	10	18900	1880	900	1960	QPSK	1	24	66	20	66786	2145	66	20	67236	2190	24.33	24.38	0.05
2A-66A-66A	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66536	2120	2	20	900	1960	24.49	24.55	0.06
2A-66B	2	10	18900	1880	900	1960	QPSK	1	24	66	15	66786	2145	66	5	66879	2154.3	24.33	24.28	-0.05
2A-66B	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	5	66968	2163.2	2	20	900	1960	24.49	24.61	0.12
2A-66C	2	10	18900	1880	900	1960	QPSK	1	24	66	20	66786	2145	66	20	66984	2164.8	24.33	24.13	-0.2
2A-66C	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66890	2155.4	2	20	900	1960	24.49	24.6	0.11
4A-4A-5A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	4	20	2050	2120	5	10	2525	881.5	24.45	24.68	0.23
4A-4A-5A	5	5	20425	826.5	2425	871.5	QPSK	1	0	4	20	2175	2132.5	4	10	2350	2150	25.25	25.2	-0.05
4A-4A-13A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	4	20	2050	2120	13	10	5230	751	24.45	24.71	0.26
4A-4A-13A	13	10	23230	782	5230	751	QPSK	1	24	4	20	2175	2132.5	4	10	2350	2150	24.15	24.2	0.05
4A-5B	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	5	10	2525	881.5	5	5	2453	874.3	24.45	24.68	0.23
4A-5B	5	5	20425	826.5	2425	871.5	QPSK	1	0	5	10	2497	878.7	4	20	2175	2132.5	25.25	25.2	-0.05
5A-5A-66A(0)	5	5	20425	826.5	2425	871.5	QPSK	1	0	5	10	2600	889	66	20	66786	2145	25.25	25.24	-0.01
5A-5A-66A	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	5	10	2525	881.5	5	5	2425	871.5	24.49	24.6	0.11
5B-66A	5	5	20425	826.5	2425	871.5	QPSK	1	0	5	10	2497	878.7	66	20	66786	2145	25.25	25.23	-0.02
5B-66A	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	5	10	2525	881.5	5	5	2453	874.3	24.49	24.59	0.1
5A-66A-66A	5	5	20425	826.5	2425	871.5	QPSK	1	0	66	20	66786	2145	66	20	67236	2190	25.25	25.2	-0.05
5A-66A-66A	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66536	2120	5	10	2525	881.5	24.49	24.56	0.07
5A-66B	5	5	20425	826.5	2425	871.5	QPSK	1	0	66	15	66786	2145	66	5	66879	2154.3	25.25	25.25	0
5A-66B	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	5	66968	2163.2	5	10	2525	881.5	24.49	24.59	0.1
5A-66C	5	5	20425	826.5	2425	871.5	QPSK	1	0	66	20	66786	2145	66	20	66984	2164.8	25.25	25.19	-0.06
5A-66C	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66890	2155.4	5	10	2525	881.5	24.49	24.57	0.08
13A-66A-66A	13	10	23230	782	5230	751	QPSK	1	24	66	20	66786	2145	66	20	67236	2190	24.15	24.33	0.18
13A-66A-66A	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66536	2120	13	10	5230	751	24.49	24.64	0.15
13A-66B	13	10	23230	782	5230	751	QPSK	1	24	66	15	66786	2145	66	5	66879	2154.3	24.15	24.65	0.5
13A-66B	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	5	66968	2163.2	13	10	5230	751	24.49	24.51	0.02
13A-66C	13	10	23230	782	5230	751	QPSK	1	24	66	20	66786	2145	66	20	66984	2164.8	24.15	24.72	0.57
13A-66C	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66890	2155.4	13	10	5230	751	24.49	24.55	0.06
66A-66C	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66734	2139.8	66	20	66536	2120	24.49	24.59	0.1
66A-66C	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66890	2155.4	66	20	66536	2120	24.49	24.55	0.06

LTE Down Link 3CA 4x4 MIMO Call Setup

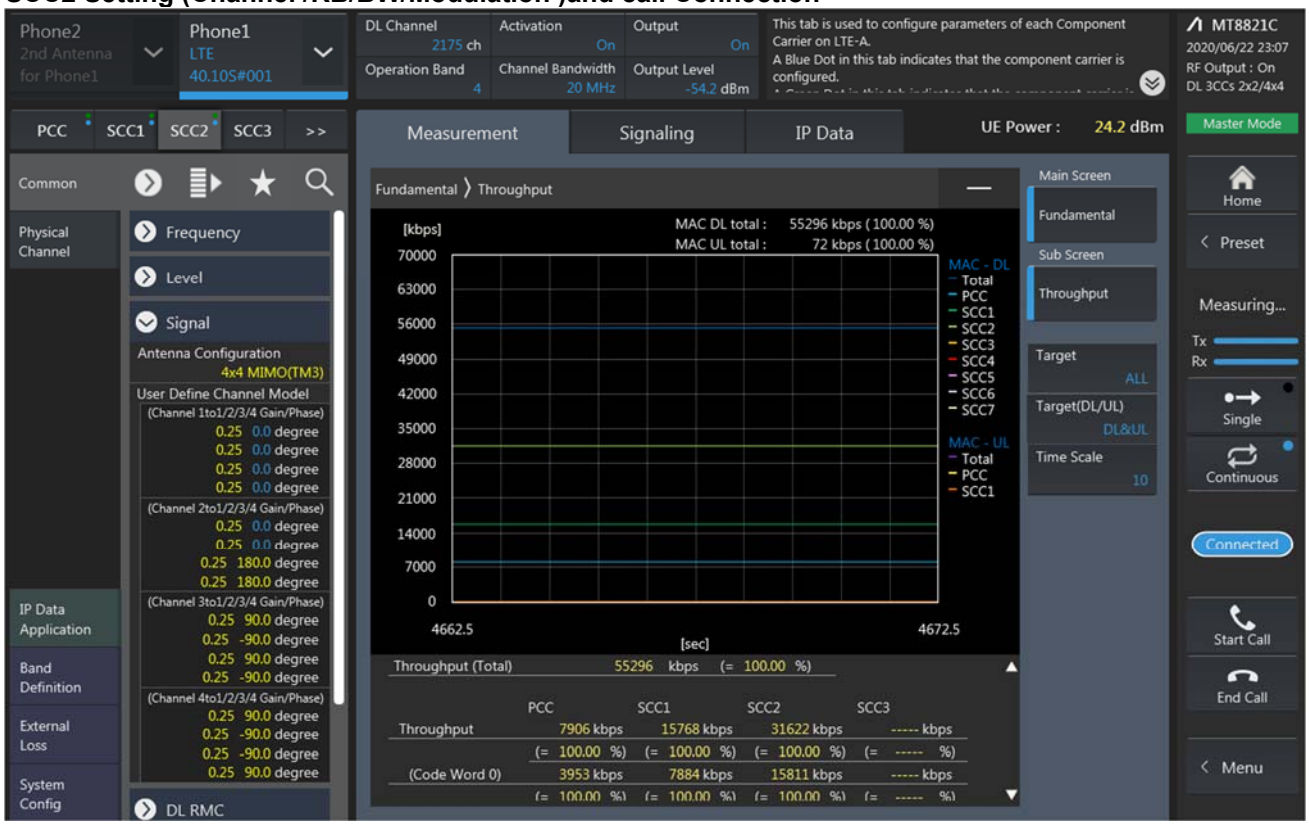
PCC Setting: Channel /RB/BW/Modulation



SCC1 Setting : Channel /RB/BW/Modulation



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



LTE Downlink 3CA 4X4 MIMO Maximum Conducted Power

Combination	PCC									SCC				SCC				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled(dBm) (2)	Deviaion (2)-(1)
2A-2A-[4A]	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	4	20	2175	2132.5	24.33	24.3	-0.03
2A-[2A]-4A	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	4	20	2175	2132.5	24.33	24.42	0.09
[2A]-2A-4A	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	4	20	2175	2132.5	24.33	24.26	-0.07
2A-[2A]-[4A]	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	4	20	2175	2132.5	24.33	24.37	0.04
[2A]-2A-[4A]	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	4	20	2175	2132.5	24.33	24.23	-0.1
[2A]-[2A]-4A	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	4	20	2175	2132.5	24.33	24.27	-0.06
2A-2A-[4A]	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	2	20	900	1960	2	20	1100	1980	24.45	24.38	-0.07
2A-[2A]-4A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	2	20	900	1960	2	20	1100	1980	24.45	24.43	-0.02
[2A]-2A-4A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	2	20	900	1960	2	20	1100	1980	24.45	24.52	0.07
2A-[2A]-[4A]	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	2	20	900	1960	2	20	1100	1980	24.45	24.63	0.18
[2A]-2A-[4A]	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	2	20	900	1960	2	20	1100	1980	24.45	24.51	0.06
[2A]-[2A]-4A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	2	20	900	1960	2	20	1100	1980	24.45	24.47	0.02
2A-[2A]-5A	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	5	10	2525	881.5	24.33	24.32	-0.01
[2A]-2A-5A	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	5	10	2525	881.5	24.33	24.2	-0.13
[2A]-[2A]-5A	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	5	10	2525	881.5	24.33	24.23	-0.1
2A-[2A]-5A	5	5	20425	826.5	2425	871.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	25.25	25.15	-0.1
[2A]-2A-5A	5	5	20425	826.5	2425	871.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	25.25	25.37	0.12
[2A]-[2A]-5A	5	5	20425	826.5	2425	871.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	25.25	25.3	0.05
[2A]-2A-13A	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	13	10	5230	751	24.33	24.25	-0.08
2A-[2A]-13A	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	13	10	5230	751	24.33	24.3	-0.03
[2A]-[2A]-13A	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	13	10	5230	751	24.33	24.24	-0.09
[2A]-2A-13A	13	10	23230	782	5230	751	QPSK	1	24	2	20	900	1960	2	20	1100	1980	24.15	24.14	-0.01
2A-[2A]-13A	13	10	23230	782	5230	751	QPSK	1	24	2	20	900	1960	2	20	1100	1980	24.15	24.2	0.05
[2A]-[2A]-13A	13	10	23230	782	5230	751	QPSK	1	24	2	20	900	1960	2	20	1100	1980	24.15	24.26	0.11
2A-2A-[66A]	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	66	20	66786	2145	24.33	24.31	-0.02
2A-[2A]-66A	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	66	20	66786	2145	24.33	24.36	0.03
[2A]-2A-66A	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	66	20	66786	2145	24.33	24.3	-0.03
2A-[2A]-[66A]	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	66	20	66786	2145	24.33	24.33	0
[2A]-2A-[66A]	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	66	20	66786	2145	24.33	24.26	-0.07
[2A]-[2A]-66A	2	10	18900	1880	900	1960	QPSK	1	24	2	20	1100	1980	66	20	66786	2145	24.33	24.36	0.03
2A-2A-[66A]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	24.49	24.61	0.12
2A-[2A]-66A	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	24.49	24.54	0.05
[2A]-2A-66A	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	24.49	24.56	0.07
2A-[2A]-[66A]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	24.49	24.54	0.05
[2A]-2A-[66A]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	24.49	24.61	0.12
[2A]-[2A]-66A	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	2	20	900	1960	2	20	1100	1980	24.49	24.58	0.09
2A-[4A]-4A	2	10	18900	1880	900	1960	QPSK	1	24	4	20	2175	2132.5	4	10	2350	2150	24.33	24.38	0.05
[2A]-4A-4A	2	10	18900	1880	900	1960	QPSK	1	24	4	20	2175	2132.5	4	10	2350	2150	24.33	24.4	0.07
2A-[4A]-[4A]	2	10	18900	1880	900	1960	QPSK	1	24	4	20	2175	2132.5	4	10	2350	2150	24.33	24.34	0.01
[2A]-[4A]-4A	2	10	18900	1880	900	1960	QPSK	1	24	4	20	2175	2132.5	4	10	2350	2150	24.33	24.31	-0.02
2A-[4A]-4A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	4	20	2050	2120	2	20	900	1960	24.45	24.45	0
[2A]-4A-4A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	4	20	2050	2120	2	20	900	1960	24.45	24.48	0.03
2A-[4A]-[4A]	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	4	20	2050	2120	2	20	900	1960	24.45	24.36	-0.09
[2A]-[4A]-4A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	4	20	2050	2120	2	20	900	1960	24.45	24.38	-0.07
2A-[4A]-5A	2	10	18900	1880	900	1960	QPSK	1	24	4	20	2175	2132.5	5	10	2525	881.5	24.33	24.31	-0.02
[2A]-4A-5A	2	10	18900	1880	900	1960	QPSK	1	24	4	20	2175	2132.5	5	10	2525	881.5	24.33	24.31	-0.02
[2A]-[4A]-5A	2	10	18900	1880	900	1960	QPSK	1	24	4	20	2175	2132.5	5	10	2525	881.5	24.33	24.28	-0.05
2A-[4A]-5A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	2	20	900	1960	4	20	2175	2132.5	24.45	24.47	0.02
[2A]-4A-5A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	2	20	900	1960	4	20	2175	2132.5	24.45	24.43	-0.02
[2A]-[4A]-5A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	2	20	900	1960	4	20	2175	2132.5	24.45	24.38	-0.07
2A-[4A]-5A	5	5	20425	826.5	2425	871.5	QPSK	1	0	2	20	900	1960	4	20	2175	2132.5	25.25	25.34	0.09
[2A]-4A-5A	5	5	20425	826.5	2425	871.5	QPSK	1	0	2	20	900	1960	4	20	2175	2132.5	25.25	25.46	0.21
[2A]-[4A]-5A	5	5	20425	826.5	2425	871.5	QPSK	1	0	2	20	900	1960	4	20	2175	2132.5	25.25	25.39	0.14
2A-[4A]-13A	2	10	18900	1880	900	1960	QPSK	1	24	4	20	2175	2132.5	13	10	5230	751	24.33	24.21	-0.12
[2A]-4A-13A	2	10	18900	1880	900	1960	QPSK	1	24	4	20	2175	2132.5	13	10	5230	751	24.33	24.27	-0.06
[2A]-[4A]-13A	2	10	18900	1880	900	1960	QPSK	1	24	4	20	2175	2132.5	13	10	5230	751	24.33	24.33	0
2A-[4A]-13A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	2	20	900	1960	13	10	5230	751	24.45	24.49	0.04
[2A]-4A-13A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	2	20	900	1960	13	10	5230	751	24.45	24.47	0.02
[2A]-[4A]-13A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	2	20	900	1960	13	10	5230	751	24.45	24.51	0.06
2A-[4A]-13A	13	10	23230	782	5230	751	QPSK	1	24	2	20	900	1960	4	20	2175	2132.5	24.15	24.18	0.03
[2A]-4A-13A	13	10	23230	782	5230	751	QPSK	1	24	2	20	900	1960	4	20	2175	2132.5	24.15	24.23	0.08
[2A]-[4A]-13A	13	10	23230	782	5230	751	QPSK	1	24	2	20	900	1960	4	20	2175	2132.5	24.15	24.2	0.05
[2A]-5B	2	10	18900	1880	900	1960	QPSK	1	24	5	10	2525	881.5	5	5	2453	874.3	24.33	24.25	-0.08
[2A]-5B	5	5	20425	826.5	2425	871.5	QPSK	1	0	5	10	2497	878.7	2	20	900	1960	25.25	25.37	0.12
2A-5A-[66A]	2	10	18900	1880	900	1960	QPSK	1	24	5	10	2525	881.5	66	20	66786	2145	24.33	24.31	-0.02
[2A]-5A-66A	2	10	18900	1880	900	1960	QPSK	1	24	5	10	2525	881.5	66	20	66786	2145	24.33	24.35	0.02
[2A]-5A-[66A]	2	10	18900	1880	900	1960	QPSK	1	24	5	10	2525	881.5	66	20	66786	2145	24.33	24.37	0.04
2A-5A-[66A]	5	5	20425	826.5	2425	871.5	QPSK	1	0	2	20	900	1960	66	20	66786	2145	25.25	25.33	0.08
[2A]-5A-66A	5	5	20425	826.5	2425	871.5	QPSK	1	0	2	20	900	1960	66	20	66786	2145	25.25	25.19	-0.06
[2A]-5A-[66A]	5	5	20425	826.5	2425	871.5	QPSK	1	0	2	20	900	1960	66	20	66786	2145	25.25	25.28	0.03
2A-5A-[66A]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	2	20	900	1960	5	10	2525	881.5	24.49	24.6	0.11
[2A]-5A-66A	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	2	20	900	1960	5	10	2525	881.5	24.49	24.57	0.08
[2A]-5A-[66A]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	2	20	900	1960	5	10	2525	881.5	24.49	24.6	0.11
2A-13A-[66A]	2	10	18900	1880	900	1960	QPSK	1	24	13	10	5230	751	66	20	66786	2145	24.33	24.21	-0.12
[2A]-13A-66A	2	10	18900	1880	900	1960	QPSK	1	24	13	10	5230	751	66	20	66786	2145	24.33	24.26	-0.07
[2A]-13A-[66A]	2	10	18900	1880	900	1960	QPSK	1	24	13	10	5230	751	66	20	66786	2145	24.33	24.41	0.08
2A-13A-[66A]	13	10	23230	782	5230	751	QPSK	1	24	2	20	900	1960	66	20	66786	2145	24.15	24.26	0.11
[2A]-13A-66A	13	10	23230	782	5230	751	QPSK	1	24	2	20	900	1960	66	20	66786	2145	24.15	24.24	0.09

Combination	PCC									SCC				SCC				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled(dBm) (2)	Deviaion (2)-(1)
[2A]-13A-[66A]	13	10	23230	782	5230	751	QPSK	1	24	2	20	900	1960	66	20	66786	2145	24.15	24.28	0.13
2A-13A-[66A]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	2	20	900	1960	13	10	520	751	24.49	24.52	0.03
[2A]-13A-66A	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	2	20	900	1960	13	10	520	751	24.49	24.55	0.06
[2A]-13A-[66A]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	2	20	900	1960	13	10	520	751	24.49	24.42	-0.07
2A-[66A]-66A	2	10	18900	1880	900	1960	QPSK	1	24	66	20	66786	2145	66	20	67236	2190	24.33	24.37	0.04
[2A]-66A-66A	2	10	18900	1880	900	1960	QPSK	1	24	66	20	66786	2145	66	20	67236	2190	24.33	24.27	-0.06
2A-[66A]-[66A]	2	10	18900	1880	900	1960	QPSK	1	24	66	20	66786	2145	66	20	67236	2190	24.33	24.37	0.04
[2A]-[66A]-66A	2	10	18900	1880	900	1960	QPSK	1	24	66	20	66786	2145	66	20	67236	2190	24.33	24.31	-0.02
2A-[66A]-66A	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66536	2120	2	20	900	1960	24.49	24.45	-0.04
[2A]-66A-66A	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66536	2120	2	20	900	1960	24.49	24.6	0.11
2A-[66A]-[66A]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66536	2120	2	20	900	1960	24.49	24.49	0
[2A]-[66A]-66A	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66536	2120	2	20	900	1960	24.49	24.5	0.01
2A-[66B]	2	10	18900	1880	900	1960	QPSK	1	24	66	15	66786	2145	66	5	66879	2154.3	24.33	24.35	0.02
[2A]-66B	2	10	18900	1880	900	1960	QPSK	1	24	66	15	66786	2145	66	5	66879	2154.3	24.33	24.22	-0.11
2A-[66B]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	5	66968	2163.2	2	20	900	1960	24.49	24.52	0.03
[2A]-66B	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	5	66968	2163.2	2	20	900	1960	24.49	24.44	-0.05
2A-[66C]	2	10	18900	1880	900	1960	QPSK	1	24	66	20	66786	2145	66	20	66984	2164.8	24.33	24.34	0.01
[2A]-66C	2	10	18900	1880	900	1960	QPSK	1	24	66	20	66786	2145	66	20	66984	2164.8	24.33	24.31	-0.02
2A-[66C]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66890	2155.4	2	20	900	1960	24.49	24.55	0.06
[2A]-66C	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66890	2155.4	2	20	900	1960	24.49	24.59	0.1
4A-[4A]-5A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	4	20	2050	2120	5	10	2525	881.5	24.45	24.52	0.07
[4A]-4A-5A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	4	20	2050	2120	5	10	2525	881.5	24.45	24.48	0.03
[4A]-[4A]-5A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	4	20	2050	2120	5	10	2525	881.5	24.45	24.53	0.08
4A-[4A]-5A	5	5	20425	826.5	2425	871.5	QPSK	1	0	4	20	2175	2132.5	4	10	2350	2150	25.25	25.11	-0.14
[4A]-4A-5A	5	5	20425	826.5	2425	871.5	QPSK	1	0	4	20	2175	2132.5	4	10	2350	2150	25.25	25.11	-0.14
[4A]-[4A]-5A	5	5	20425	826.5	2425	871.5	QPSK	1	0	4	20	2175	2132.5	4	10	2350	2150	25.25	25.09	-0.16
4A-[4A]-13A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	4	20	2050	2120	13	10	5230	751	24.45	24.46	0.01
[4A]-4A-13A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	4	20	2050	2120	13	10	5230	751	24.45	24.36	-0.09
[4A]-[4A]-13A	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	4	20	2050	2120	13	10	5230	751	24.45	24.41	-0.04
4A-[4A]-13A	13	10	23230	782	5230	751	QPSK	1	24	4	20	2175	2132.5	4	10	2350	2150	24.15	24.24	0.09
[4A]-4A-13A	13	10	23230	782	5230	751	QPSK	1	24	4	20	2175	2132.5	4	10	2350	2150	24.15	24.22	0.07
[4A]-[4A]-13A	13	10	23230	782	5230	751	QPSK	1	24	4	20	2175	2132.5	4	10	2350	2150	24.15	24.25	0.1
[4A]-5B	4	5	20375	1752.5	2375	2152.5	QPSK	1	12	5	10	2525	881.5	5	5	2453	874.3	24.45	24.36	-0.09
[4A]-5B	5	5	20425	826.5	2425	871.5	QPSK	1	0	5	10	2497	878.7	4	20	2175	2132.5	25.25	25.3	0.05
5A-5A-[66A](0)	5	5	20425	826.5	2425	871.5	QPSK	1	0	5	10	2600	889	66	20	66786	2145	25.25	25.29	0.04
5A-5A-[66A]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	5	10	2525	881.5	5	5	2425	871.5	24.49	24.55	0.06
5B-[66A]	5	5	20425	826.5	2425	871.5	QPSK	1	0	5	10	2497	878.7	66	20	66786	2145	25.25	25.4	0.15
5B-[66A]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	5	10	2525	881.5	5	5	2453	874.3	24.49	24.55	0.06
5A-[66A]-66A	5	5	20425	826.5	2425	871.5	QPSK	1	0	66	20	66786	2145	66	20	67236	2190	25.25	25.41	0.16
5A-[66A]-[66A]	5	5	20425	826.5	2425	871.5	QPSK	1	0	66	20	66786	2145	66	20	67236	2190	25.25	25.44	0.19
5A-[66A]-66A	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66536	2120	5	10	2525	881.5	24.49	24.61	0.12
5A-[66A]-[66A]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66536	2120	5	10	2525	881.5	24.49	24.5	0.01
5A-[66B]	5	5	20425	826.5	2425	871.5	QPSK	1	0	66	15	66786	2145	66	5	66879	2154.3	25.25	25.46	0.21
5A-[66B]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	5	66968	2163.2	5	10	2525	881.5	24.49	24.61	0.12
5A-[66C]	5	5	20425	826.5	2425	871.5	QPSK	1	0	66	20	66786	2145	66	20	66984	2164.8	25.25	25.4	0.15
5A-[66C]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66890	2155.4	5	10	2525	881.5	24.49	24.55	0.06
13A-[66A]-66A	13	10	23230	782	5230	751	QPSK	1	24	66	20	66786	2145	66	20	67236	2190	24.15	24.17	0.02
13A-[66A]-[66A]	13	10	23230	782	5230	751	QPSK	1	24	66	20	66786	2145	66	20	67236	2190	24.15	24.21	0.06
13A-[66A]-66A	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66536	2120	13	10	5230	751	24.49	24.53	0.04
13A-[66A]-[66A]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66536	2120	13	10	5230	751	24.49	24.55	0.06
13A-[66B]	13	10	23230	782	5230	751	QPSK	1	24	66	15	66786	2145	66	5	66879	2154.3	24.15	24.24	0.09
13A-[66B]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	5	66968	2163.2	13	10	5230	751	24.49	24.5	0.01
13A-[66C]	13	10	23230	782	5230	751	QPSK	1	24	66	20	66786	2145	66	20	66984	2164.8	24.15	24.24	0.09
13A-[66C]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66890	2155.4	13	10	5230	751	24.49	24.57	0.08
66A-[66C]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66734	2139.8	66	20	66536	2120	24.49	24.57	0.08
[66A]-66C	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66734	2139.8	66	20	66536	2120	24.49	24.6	0.11
66A-[66C]	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66890	2155.4	66	20	66536	2120	24.49	24.51	0.02
[66A]-66C	66	15	132597	1772.5	67061	2172.5	QPSK	1	0	66	20	66890	2155.4	66	20	66536	2120	24.49	24.46	-0.03

11.5 NR Maximum Output Power

11.5.1 5G NR Call Box Setup

11.5.1.1 Procedure used to establish output Power measurement for NR Bands

- Select operating band, BW and Channel.
- Click Cell on button in the right of Test application screen.
- Turn the LTE Cell On using “ON/OFF” Key.

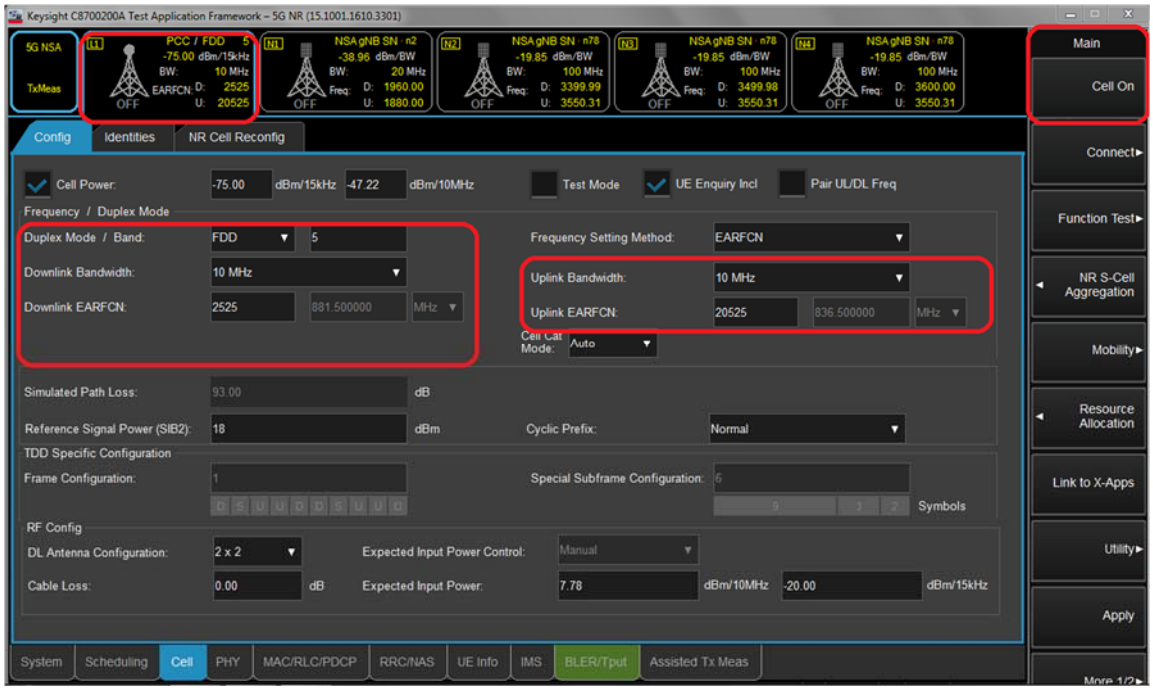


Figure-1

- Turn the Airplane Mode On and then turn the Airplane mode off.
- Select All down bits for UL Power control Mode in LTE.

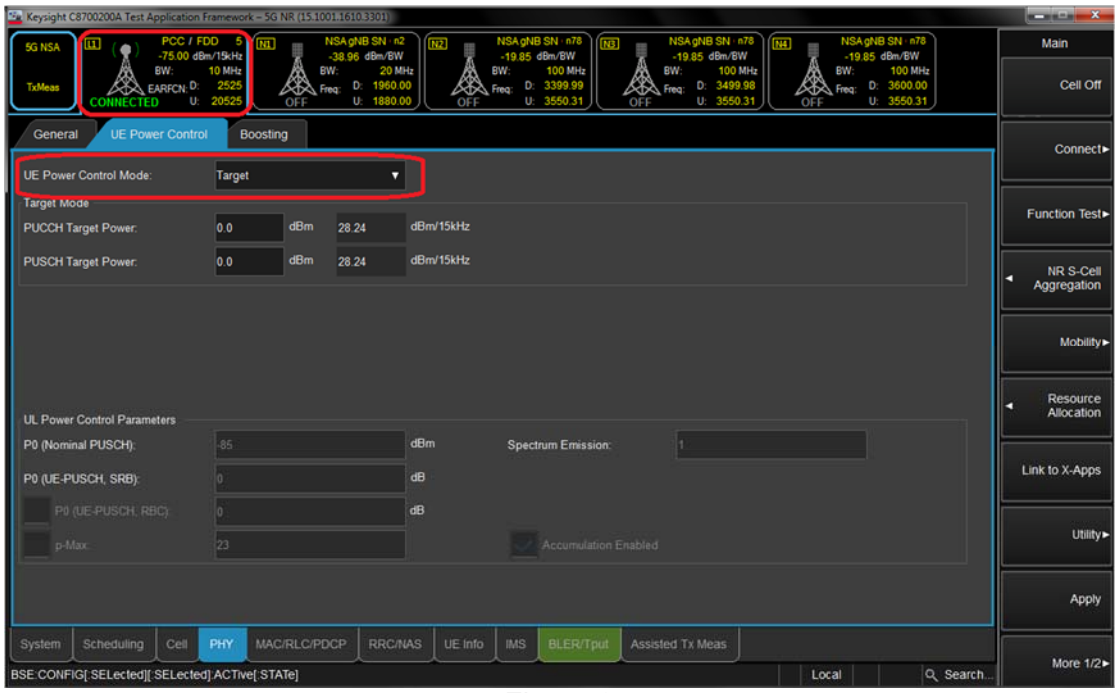


Figure-2

11.5.5.2 Setup for NR Band

- Select waveform for Setting NR Band (PHY->PUSCH->Enable Transform Precoder)
  - Enable : DFT-s-OFDM, Disable : CP-OFDM

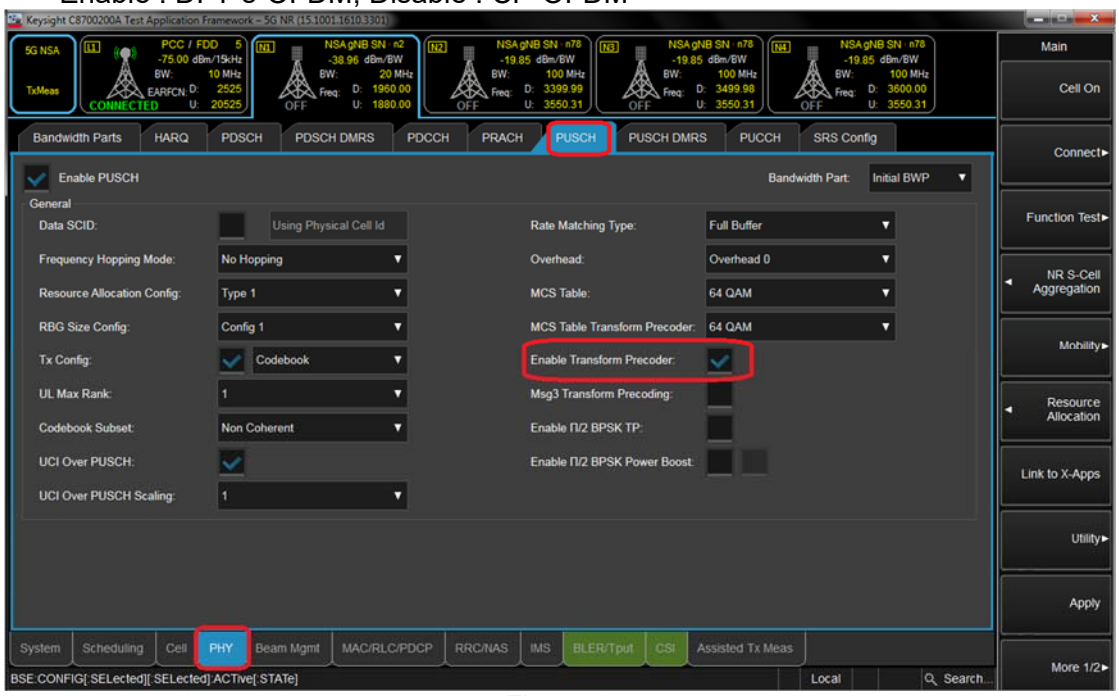


Figure-3

- Select operating band, BW, SCS and Channel.
- Turn the NR Cell On using “ON/OFF” Key.

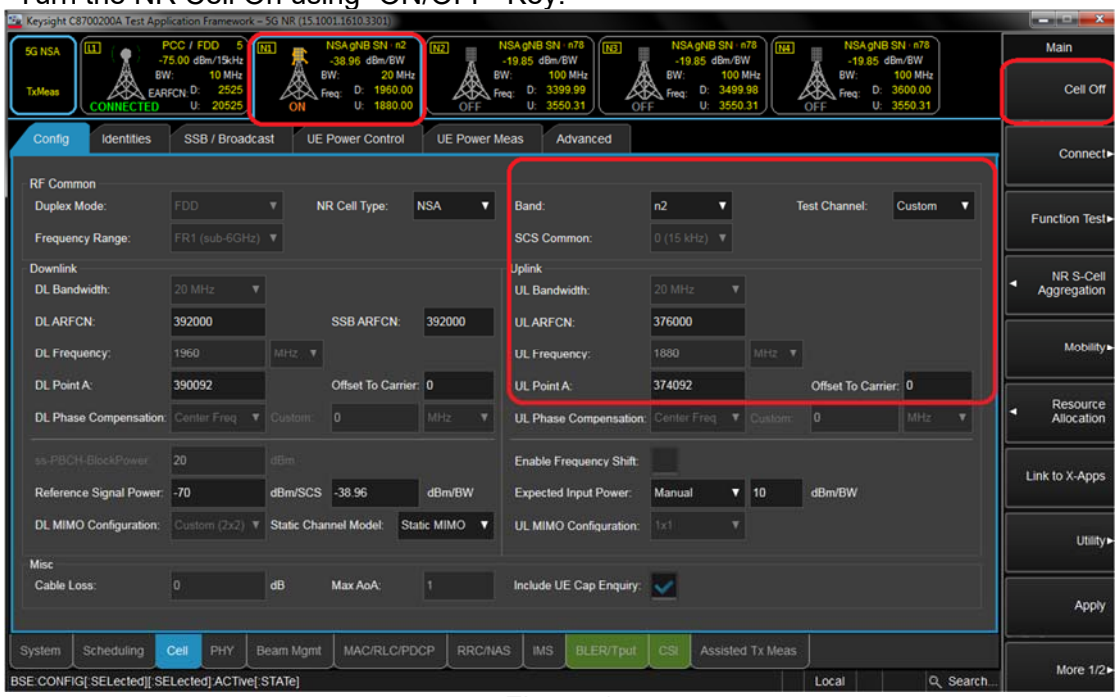


Figure-4

11.5.5.3 Connect NR S-Cell Aggregation

- Click NR S-Cell Aggregation
- Check the Cell 1's DL and UL box(PCC) and than Click Apply.
- Check the message summary If message shows NR Msg 5, It is connected.

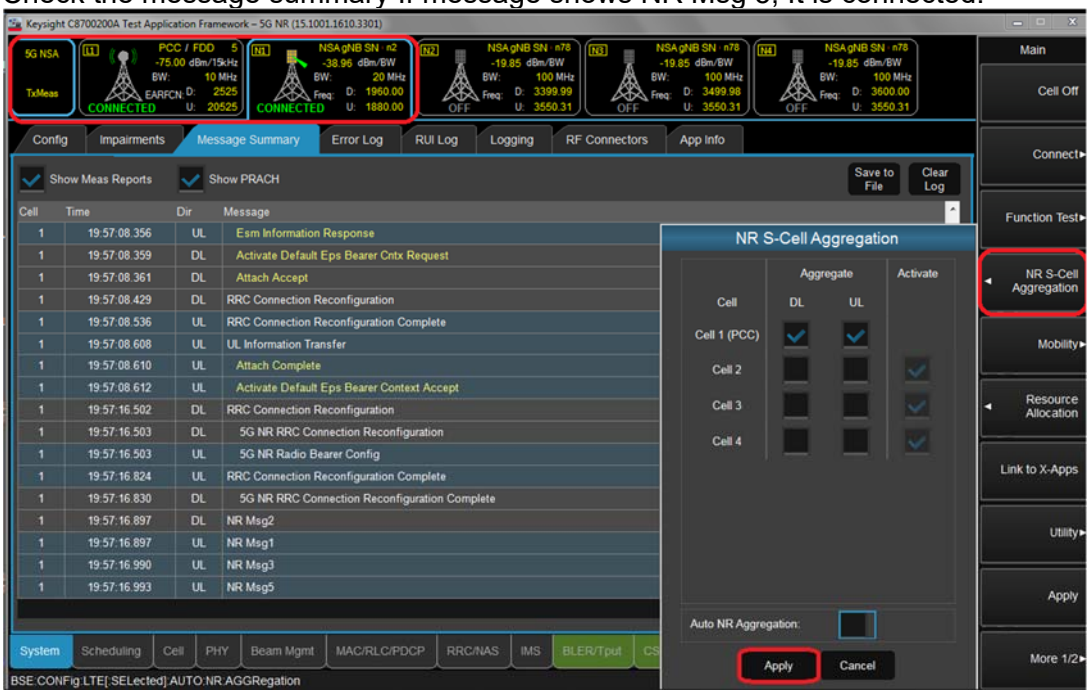


Figure-5