FCC TEST REPORT

Product Name:	Mobile Phone
Trade Mark:	MI
Model No.:	MDE5
Report Number:	170726002RFM-4
Test Standards:	FCC 47 CFR Part 27 FCC 47 CFR Part 2
FCC ID:	2AFZZ-XMSD5
Test Result:	PASS
Date of Issue:	September 4, 2017

Prepared for:

Xiaomi Communications Co., Ltd.
The Rainbow City of China Resources, NO.68,Qinghe Middle Street, Haidian District, Beijing, China

Prepared by:

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Tested by: _____ Reviewed by: _____

Kevin Liang
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Approved by: _____ Date: September 4, 2017

Billy Li
Technical Director

Version

Version No.	Date	Description
V1.0	September 4, 2017	Original

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1. GENERAL INFORMATION

1.1 CLIENT INFORMATION

Applicant:	Xiaomi Communications Co., Ltd.
Address of Applicant:	The Rainbow City of China Resources, NO.68,Qinghe Middle Street, Haidian District, Beijing, China
Manufacturer:	Xiaomi Communications Co., Ltd.
Address of Manufacturer:	The Rainbow City of China Resources, NO.68,Qinghe Middle Street, Haidian District, Beijing, China

1.2 EUT INFORMATION

1.2.1 General Description of EUT

Product Name:	Mobile Phone		
Model No.:	MDE5		
Add. Model No.:	N/A		
Trade Mark:	MI		
DUT Stage:	Identical Prototype		
EUT Supports Function:	GSM Bands:	GSM 850/ PCS 1900	
	UTRA Bands:	Band II/ Band IV/ Band V	
	CDMA Band:	BC0/ BC1/ BC10	
	E-UTRA Bands:	FDD Band 2/ Band 4/ Band 5/ Band 7/ Band 12/ Band 13/ Band 17/ Band 25/ Band 26/ Band 30	
		TDD Band 38/ Band 41	
	2.4 GHz ISM Band:	IEEE 802.11b/g/n	
		Bluetooth V3.0+EDR/ Bluetooth V4.1 LE/ Bluetooth V5.0 LE	
	5 GHz U-NII Bands:	5 150 MHz to 5 250 MHz	IEEE 802.11a/n/ac
		5 250 MHz to 5 350 MHz	IEEE 802.11a/n/ac
		5 470 MHz to 5 725 MHz	IEEE 802.11a/n/ac
		5 725 MHz to 5 850 MHz	IEEE 802.11a/n/ac
	RNSS Bands:	1559 MHz to 1610 MHz	GPS/GLONASS/Galileo
	NFC:	13.553 MHz to 13.567 MHz	
Software Version:	MIUI 8		
Hardware Version:	P2.0		
Sample Received Date:	July 27, 2017		
Sample Tested Date:	July 27, 2017 to September 3, 2017		

1.2.2 Description of Accessories

Adapter	
Trade Mark:	XIAOMI
Model No.:	MDY-08-EY
Input:	100-240V~50/60 Hz 0.5A
Output:	5V ⎓ 3A/9V ⎓ 2A/12V ⎓ 1.5A
AC Cable:	N/A
DC Cable:	N/A

Battery	
Trade Mark:	MI
Model No.:	BM3B
Battery Type:	Lithium-ion Polymer Rechargeable Battery
Rated Voltage:	3.85 Vdc
Limited Charge Voltage:	4.4 Vdc
Rated Capacity:	3300 mAh

Cable(1)	
Trade Mark:	MI
Model No.:	L6BU2018-CS-H
Description:	USB Type-C Plug Cable
Cable Type:	Shielded without ferrite
Length:	1.0 Meter

Cable(2)	
Trade Mark:	MI
Model No.:	KLC-2588-1
Description:	USB Type-C Plug Cable
Cable Type:	Shielded without ferrite
Length:	1.0 Meter

Cable(3)	
Trade Mark:	MI
Model No.:	KLC-2469
Description:	USB Type-C to 3.5 mm Headphone Jack Adapter
Cable Type:	Unshielded without ferrite

Cable(4)	
Trade Mark:	MI
Model No.:	0QT000XI0007
Description:	USB Type-C to 3.5 mm Headphone Jack Adapter
Cable Type:	Unshielded without ferrite

1.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD

Support Networks:	WCDMA, HSDPA, HSUPA, DC-HSDPA, HSPA+, LTE	
Type of Modulation:	WCDMA Band IV	BPSK
	HSDPA/DC-HSDPA Band IV:	QPSK
	HSUPA Band IV:	QPSK
	DC-HSDPA Band IV:	16QAM, 64QAM
	LTE Band 4/7/12/13/17/30/38/41:	QPSK, 16QAM, 64QAM
IEMI:	Conducted: 865736030026044, 865736030026051	
	Radiation: 865736030023801, 865736030023819	
Antenna Type:	PIFA Antenna	
Antenna Gain:	WCDMA Band IV:	-0.92dBi
	LTE Band 4:	-0.92 dBi
	LTE Band 7:	0.76 dBi
	LTE Band 12:	-4.1dBi
	LTE Band 13:	-4.2 dBi
	LTE Band 17:	-4.1 dBi
	LTE Band 30:	-2.57 dBi
	LTE Band 38:	0.67 dBi
	LTE Band 41:	0.76 dBi
Normal Test Voltage:	3.85 Vdc	
Extreme Test Voltage:	3.7 to 4.4Vdc	
Extreme Test Temperature:	-30 °C to +50 °C	

Summary of Results:

Band	BW (MHz)	Frequency Range (MHz)	Max RF Output Power (dBm)		Type of Emission		
			Conducted (Average)	ERP/EIRP (Average)	QPSK	16QAM	64QAM
WCDMA Band IV	N/A	1712.4-1752.6	23.72	21.89	4M15F9W	N/A	N/A
LTE Band 4	1.4	1710.7-1754.3	22.64	21.91	1M10G7W	1M09D7W	1M09D7W
	3	1711.5-1753.5	22.65	21.81	2M71G7W	2M71D7W	2M71D7W
	5	1712.5-1752.5	22.68	22.04	4M50G7W	4M52D7W	4M53D7W
	10	1715-1750	22.72	22.11	8M97G7W	9M00D7W	9M00D7W
	15	1717.5-1747.5	22.78	22.30	13M5G7W	13M5D7W	13M5D7W
	20	1720-1745	22.81	22.25	18M0G7W	18M0D7W	18M1D7W
LTE Band 7	5	2502.5-2567.5	21.20	22.09	4M52G7W	4M52D7W	4M53D7W
	10	2505-2565	21.24	22.37	8M95G7W	8M99D7W	9M00D7W
	15	2507.5-2562.5	21.30	22.09	13M4G7W	13M5D7W	13M5D7W
	20	2510-2560	21.33	22.39	18M0G7W	18M0D7W	18M0D7W

Summary of Results:							
Band	BW (MHz)	Frequency Range (MHz)	Max RF Output Power (dBm)		Type of Emission		
			Conducted (Average)	ERP/EIRP (Average)	QPSK	16QAM	64QAM
LTE Band 12	1.4	699.7-715.3	22.64	18.88	1M09G7W	1M10D7W	1M10D7W
	3	700.5-714.5	22.68	18.78	2M71G7W	2M70D7W	2M70D7W
	5	701.5-713.5	22.74	18.72	4M51G7W	4M52D7W	4M52D7W
	10	704-711	22.77	18.99	8M99G7W	8M99D7W	8M99D7W
LTE Band 13	5	779.5-784.5	22.87	18.79	4M51G7W	4M51D7W	4M52D7W
	10	782-782	22.92	19.09	8M94G7W	8M94D7W	8M95D7W
LTE Band 17	5	706.5-713.5	22.73	19.01	4M52G7W	4M51D7W	4M52D7W
	10	709-711	22.77	19.02	9M00G7W	9M00D7W	8M98D7W
LTE Band 30	5	2307.5-2312.5	22.43	18.76	4M51G7W	4M51D7W	4M52D7W
	10	2310-2310	22.42	18.53	8M98G7W	8M98D7W	8M98D7W
LTE Band 38	5	2572.5-2617.5	23.03	24.01	4M50G7W	4M50D7W	4M50D7W
	10	2575-2615	23.07	24.05	8M98G7W	8M98D7W	8M99D7W
	15	2577.5-2612.5	23.10	24.08	13M5G7W	13M5D7W	13M5D7W
	20	2580-2610	23.17	24.29	18M0G7W	17M9D7W	18M0D7W
LTE Band 41	5	2557.5-2562.5	24.30	24.49	4M50G7W	4M50D7W	4M50D7W
	10	2560-2650	24.33	24.32	8M99G7W	8M99D7W	8M97D7W
	15	2562.5-2647.5	24.37	24.51	13M5G7W	13M5D7W	13M5D7W
	20	2565-2645	24.43	24.55	18M0G7W	17M9D7W	17M9D7W
CA_7C	10+20	2502.5-2567.5	20.91	21.02	28M1G7W	28M1D7W	28M1D7W
	20+10		20.88	21.15	28M2G7W	28M2D7W	28M1D7W
	15+10		20.74	21.01	23M7G7W	23M7D7W	23M6D7W
	15+15		20.75	21.20	28M7G7W	28M7D7W	28M7D7W
	15+20		21.01	21.27	32M9G7W	32M9D7W	32M8D7W
	20+15		21.03	21.45	33M0G7W	33M0D7W	32M9D7W
	20+20		21.23	21.65	37M8G7W	37M7D7W	37M7D7W
CA_38C	15+15	2572.5-2617.5	23.07	23.51	28M5G7W	28M5D7W	28M6D7W
	20+20		23.16	23.63	37M5G7W	37M5D7W	37M5D7W
CA_41C	5+20	2557.5-2562.5	23.91	24.07	23M2G7W	23M1D7W	23M1D7W
	20+5		23.81	24.21	23M3G7W	23M3D7W	23M3D7W
	10+15		23.77	24.10	23M4G7W	23M4D7W	23M4D7W
	15+10		23.79	24.28	23M5G7W	23M4D7W	23M5D7W
	10+20		23.83	24.22	27M9G7W	28M0D7W	27M9D7W
	20+10		23.78	23.92	28M0G7W	28M0D7W	28M0D7W
	15+15		24.03	24.31	28M5G7W	28M6D7W	28M5D7W
	15+20		23.81	24.02	32M7G7W	32M8D7W	32M7D7W
	20+15		23.68	23.84	32M8G7W	32M8D7W	32M8D7W
	20+20		24.40	24.37	37M7G7W	37M5D7W	37M5D7W

1.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested with associated equipment below.

1) Support Equipment

Description	Manufacturer	Model No.	Serial Number	Supplied by
N/A	N/A	N/A	N/A	N/A

2) Support Cable

Cable No.	Description	Connector	Length	Supplied by
1	Antenna Cable	SMA	0.30 Meter	UnionTrust

1.5 TEST LOCATION

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: 16/F, Block A, Building 6, Baoneng Science and Technology Park, Qingxiang Road No.1, Longhua New District, Shenzhen, China 518109
Telephone: +86 (0) 755 2823 0888
Fax: +86 (0) 755 2823 0886

1.6 TEST FACILITY

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L9069
The measuring equipment utilized to perform the tests documented in this report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable under the ISO/IEC/EN 17025 to international or national standards. Equipment has been calibrated by accredited calibration laboratories.

IC-Registration No.: 21600-1
The 3m Semi-anechoic chamber of Shenzhen UnionTrust Quality and Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 21600-1.

A2LA-Lab Certificate No.: 4312.01
Shenzhen UnionTrust Quality and Technology Co., Ltd. has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC Accredited Lab.
Designation Number: CN1194
Test Firm Registration Number: 259480

1.7 DEVIATION FROM STANDARDS

None.

1.8 ABNORMALITIES FROM STANDARD CONDITIONS

None.

1.9 OTHER INFORMATION REQUESTED BY THE CUSTOMER

None.

1.10 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

No.	Item	Measurement Uncertainty
1	Conducted emission 9KHz-150KHz	±3.8 dB
2	Conducted emission 150KHz-30MHz	±3.4 dB
3	Radiated emission 9KHz-30MHz	±4.9 dB
4	Radiated emission 30MHz-1GHz	±4.7 dB
5	Radiated emission 1GHz-18GHz	±5.1 dB
6	Radiated emission 18GHz-26GHz	±5.2 dB
7	Radiated emission 26GHz-40GHz	±5.2 dB

2. TEST SUMMARY

FCC 47 CFR Part 27 Test Cases (WCDMA Band IV & LTE Band 4)			
Test Item	**Test Requirement**	**Test Method**	**Result**
Equivalent Isotropic Radiated Power (EIRP)	FCC 47 CFR Part 2.1046(a) & FCC 47 CFR Part 27.50(d)(4)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Conducted Output Power	FCC 47 CFR Part 2.1046(a) & FCC 47 CFR Part 27.50(d)(4)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Peak-to-average ratio	FCC 47 CFR Part 27.50(d)(5)	KDB 971168 D01v02r02	PASS
99%&26dB Bandwidth	FCC 47 CFR Part 2.1049(h) FCC 47 CFR Part 27.53(h)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Band Edge at antenna terminals	FCC 47 CFR Part 27.53(h)(1)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Spurious emissions at antenna terminals	FCC 47 CFR Part 2.1051 & FCC 47 CFR Part 27.53(h)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Field strength of spurious radiation	FCC 47 CFR Part 2.1053 & FCC 47 CFR Part 27.53(h)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Frequency stability	FCC 47 CFR Part 2.1055 & FCC 47 CFR Part 27.54	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS

FCC 47 CFR Part 27 Test Cases (LTE Band 13)			
Test Item	**Test Requirement**	**Test Method**	**Result**
Effective Radiated Power (ERP)	FCC 47 CFR Part 2.1046(a) & FCC 47 CFR Part 27.50(b)(10)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Conducted Output Power	FCC 47 CFR Part 2.1046(a) & FCC 47 CFR Part 27.50(b)(10)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Peak-to-average ratio	FCC 47 CFR Part 27.50(d)(5)	KDB 971168 D01v02r02	PASS
99%&26dB Bandwidth	FCC 47 CFR Part 2.1049(h)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Band Edge at antenna terminals	FCC 47 CFR Part 27.53(c)(2)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Spurious emissions at antenna terminals	FCC 47 CFR Part 2.1051 & FCC 47 CFR Part 27.53(c)(2)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Field strength of spurious radiation	FCC 47 CFR Part 2.1053 & FCC 47 CFR Part 27.53(c)(2)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Frequency stability	FCC 47 CFR Part 2.1055 & FCC 47 CFR Part 27.54	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS

FCC 47 CFR Part 27 Test Cases (LTE Band 12 & Band 17)			
Test Item	**Test Requirement**	**Test Method**	**Result**
Effective Radiated Power (ERP)	FCC 47 CFR Part 2.1046(a) & FCC 47 CFR Part 27.50(c)(10)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Conducted Output Power	FCC 47 CFR Part 2.1046(a) & FCC 47 CFR Part 27.50(c)(10)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Peak-to-average ratio	FCC 47 CFR Part 27.50(d)(5)	KDB 971168 D01v02r02	PASS
99%&26dB Bandwidth	FCC 47 CFR Part 2.1049(h) FCC 47 CFR Part 27.53(g)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Band Edge at antenna terminals	FCC 47 CFR Part 27.53(g)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Spurious emissions at antenna terminals	FCC 47 CFR Part 2.1051 & FCC 47 CFR Part 27.53(g)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Field strength of spurious radiation	FCC 47 CFR Part 2.1053 & FCC 47 CFR Part 27.53(g)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Frequency stability	FCC 47 CFR Part 2.1055 & FCC 47 CFR Part 27.54	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS

FCC 47 CFR Part 27 Test Cases (LTE Band 30)			
Test Item	**Test Requirement**	**Test Method**	**Result**
Equivalent Isotropic Radiated Power (EIRP)	FCC 47 CFR Part 2.1046(a) & FCC 47 CFR Part 27.50(a)(3)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Conducted Output Power	FCC 47 CFR Part 2.1046(a) & FCC 47 CFR Part 27.50(a)(3)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Peak-to-average ratio	FCC 47 CFR Part 27.50(a)(B)	KDB 971168 D01v02r02	PASS
99%&26dB Bandwidth	FCC 47 CFR Part 2.1049(h) FCC 47 CFR Part 27.50(a)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Band Edge at antenna terminals	FCC 47 CFR Part 27.53(a)(4)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Spurious emissions at antenna terminals	FCC 47 CFR Part 2.1051 & FCC 47 CFR Part 27.53(a) (4)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Field strength of spurious radiation	FCC 47 CFR Part 2.1053 & FCC 47 CFR Part 27.53(a) (4)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Frequency stability	FCC 47 CFR Part 2.1055 & FCC 47 CFR Part 27.54	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS

FCC 47 CFR Part 27 Test Cases (LTE Band 7 & Band 38 & Band 41)			
Test Item	**Test Requirement**	**Test Method**	**Result**
Equivalent Isotropic Radiated Power (EIRP)	FCC 47 CFR Part 2.1046(a) & FCC 47 CFR Part 27.50(h)(2)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Conducted Output Power	FCC 47 CFR Part 2.1046(a) & FCC 47 CFR Part 27.50(h)(2)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Peak-to-average ratio	FCC 47 CFR Part 27.50(d)(5)	KDB 971168 D01v02r02	PASS
99%&26dB Bandwidth	FCC 47 CFR Part 2.1049(h)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Band Edge at antenna terminals	FCC 47 CFR Part 27.53(m)(4)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Spurious emissions at antenna terminals	FCC 47 CFR Part 2.1051 & FCC 47 CFR Part 27.53(m)(4)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Field strength of spurious radiation	FCC 47 CFR Part 2.1053 & FCC 47 CFR Part 27.53(m)(4)	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS
Frequency stability	FCC 47 CFR Part 2.1055 & FCC 47 CFR Part 27.54	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02	PASS

3. EQUIPMENT LIST

Radiated Emission Test Equipment List						
Used	Equipment	Manufacturer	Model No.	Serial Number	Cal. date (mm dd, yyyy)	Cal. Due date (mm dd, yyyy)
☑	3M Chamber & Accessory Equipment	ETS-LINDGREN	3M	N/A	Dec. 20, 2015	Dec. 19, 2018
☑	Receiver	R&S	ESIB26	100114	Dec. 22, 2016	Dec. 22, 2017
☑	EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY51440197	Dec. 22, 2016	Dec. 22, 2017
☐	Loop Antenna	ETS-LINDGREN	6502	00202525	Jun. 24, 2015	Jun. 23, 2018
☑	Broadband Antenna	ETS-LINDGREN	3142E	00201566	Jul. 24, 2015	Jul. 23, 2018
☑	Preamplifier	HP	8447F	2805A02960	Dec. 22, 2016	Dec. 22, 2017
☑	Broadband Antenna (Pre-amplifier)	ETS-LINDGREN	3142E-PA	00201891	Dec. 30, 2016	Dec. 30, 2017
☑	Horn Antenna	ETS-LINDGREN	3117	00164202	Jul. 24, 2015	Jul. 23, 2018
☑	Horn Antenna (Pre-amplifier)	ETS-LINDGREN	3117-PA	00201874	Dec. 30, 2016	Dec. 30, 2017
☑	Horn Antenna	ETS-LINDGREN	3116C	00200180	Jul. 28, 2015	Jul. 27, 2018
☑	Horn Antenna (Pre-amplifier)	ETS-LINDGREN	3116C-PA	00202652	Jul. 29, 2015	Jul. 28, 2018
☑	Multi device Controller	ETS-LINDGREN	7006-001	00160105	N/A	N/A
☐	Highpass Filter (1.2GHz~18GHz)	Micro-Tronics	HPM50108	G552	Jan. 19, 2017	Jan. 19, 2018
☐	Highpass Filter (3GHz~18GHz)	Micro-Tronics	HPM50117	G005	Jan. 30, 2017	Jan. 30, 2018
☑	Test Software	Audix	e3	Software Version: 9.160323		

2/3/4G RF Test System Equipment List						
Used	Equipment	Manufacturer	Model No.	Serial Number	Cal. date (mm dd, yyyy)	Cal. Due date (mm dd, yyyy)
☐	Spectrum Analyzer	R&S	FSP 13	1164.4391.13	Mar. 22, 2017	Mar. 21, 2018
☐	Receiver	R&S	ESR7	1316.3003K07 -101181-K3	Dec. 22, 2016	Dec. 22, 2017
☑	Spectrum Analyzer	R&S	FSV 13	1307.9002K13 -101620-cJ	Aug. 09, 2017	Aug. 08, 2018
☑	EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY51440197	Dec. 22, 2016	Dec. 22, 2017
☑	Wideband Radio Communication Tester	R&S	CMW500	116254	Mar. 22, 2017	Mar. 21, 2018
☑	Universal Radio Communication Tester	R&S	CMU200	114713	Dec. 22, 2016	Dec. 22, 2017
☑	DC Source	KIKUSUI	PWR400L	LK003024	Sep. 21, 2016	Sep. 20, 2017
☑	Temp & Humidity chamber	Votisch	VT4002	58566133290 020	Jun. 19, 2017	Jun. 18, 2018
☐	Temp & Humidity chamber	Ispec	GL(U)04KA(W)	1692H201P3	Sep. 21, 2016	Sep. 20, 2017
☑	Test Software	ECIT	AutomationTestSystem		Software Version: 2.170530	

4. TEST CONFIGURATION

4.1 ENVIRONMENTAL CONDITIONS FOR TESTING

4.1.1 Normal or Extreme Test Conditions

Test Environment	Selected Values During Tests		
Test Condition	Ambient		
	Temperature (°C)	Voltage (V)	Relative Humidity (%)
TN/VN	+15 to +35	3.85	20 to 75
TL/VL	-30	3.7	20 to 75
TH/VL	+50	3.7	20 to 75
TL/VH	-30	4.4	20 to 75
TH/VH	+50	4.4	20 to 75

Remark:

1) The EUT just work in such extreme temperature of -30 °C to +50 °C and the extreme voltage of 3.7 V to 4.4 V, so here the EUT is tested in the temperature of -30 °C to +50 °C and the voltage of 3.7 V to 4.4 V.
2) VN: Normal Voltage; TN: Normal Temperature;
TL: Low Extreme Test Temperature; TH: High Extreme Test Temperature;
VL: Low Extreme Test Voltage; VH: High Extreme Test Voltage.

4.2 TEST SETUP

4.2.1 For Radiated Emissions test setup

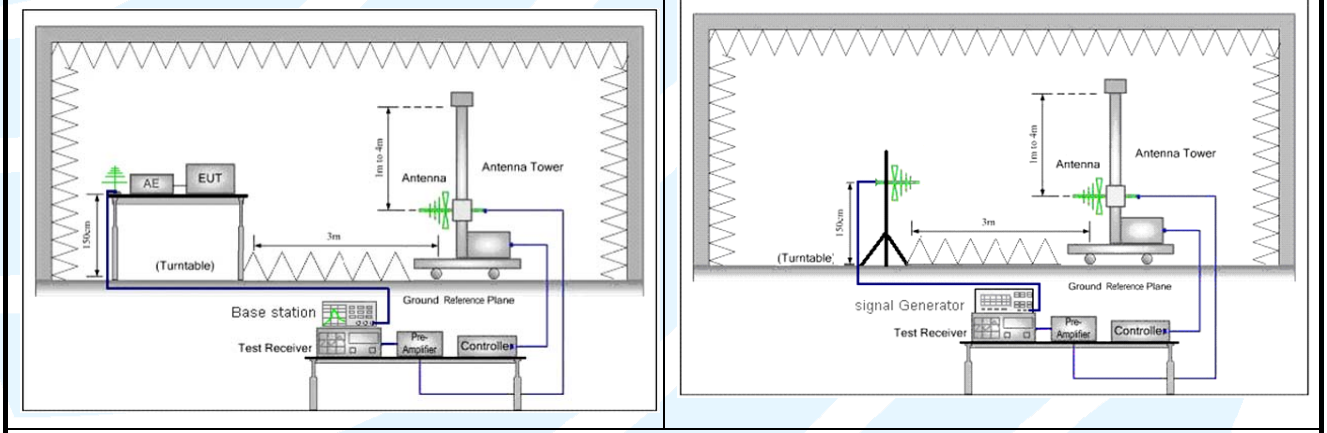


Figure 1. 30MHz to 1GHz

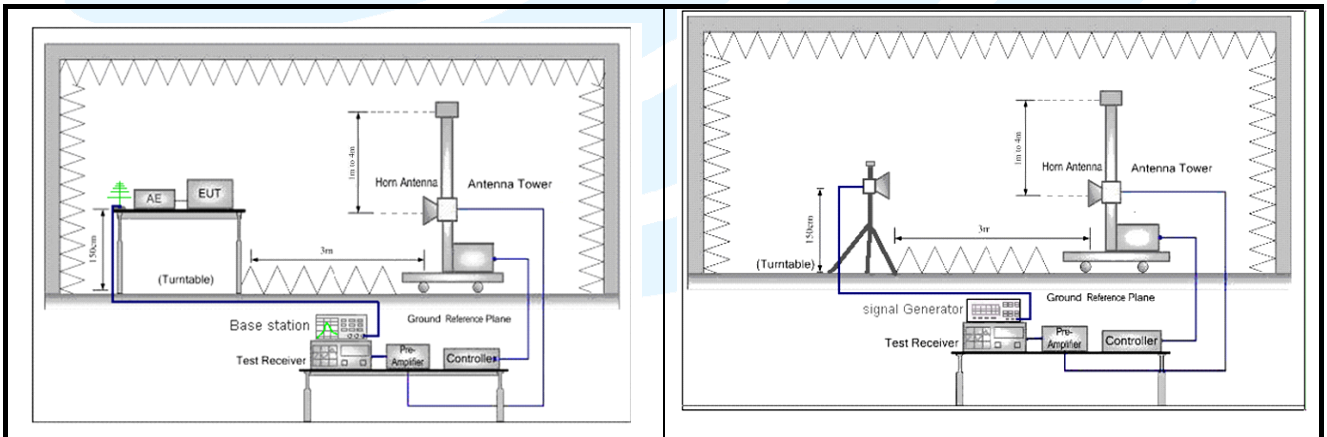
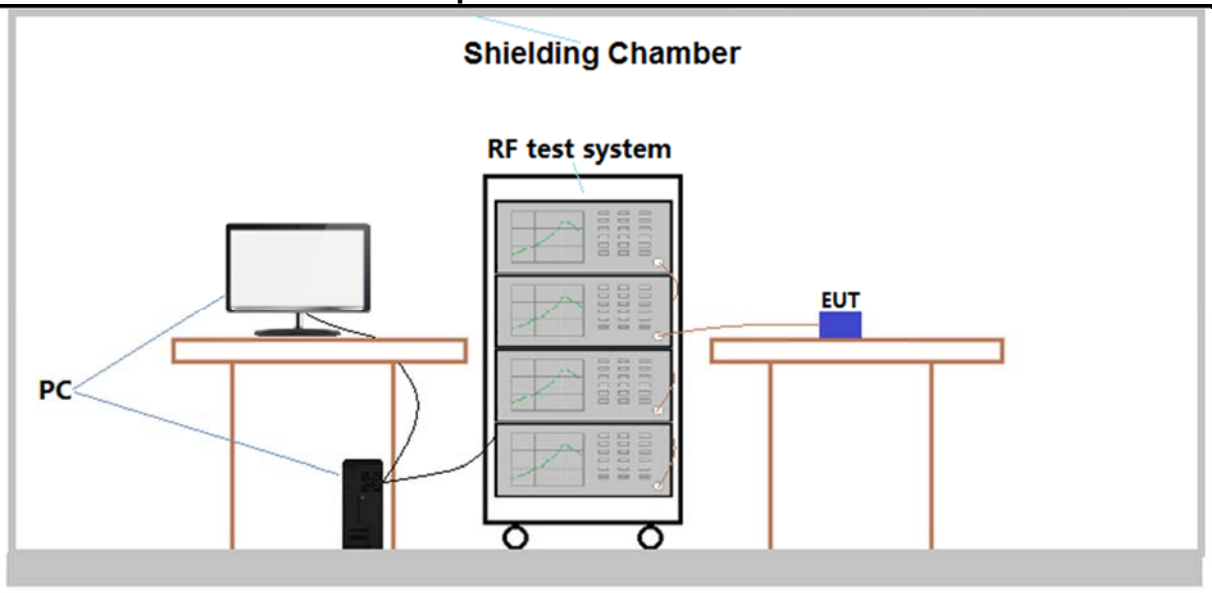
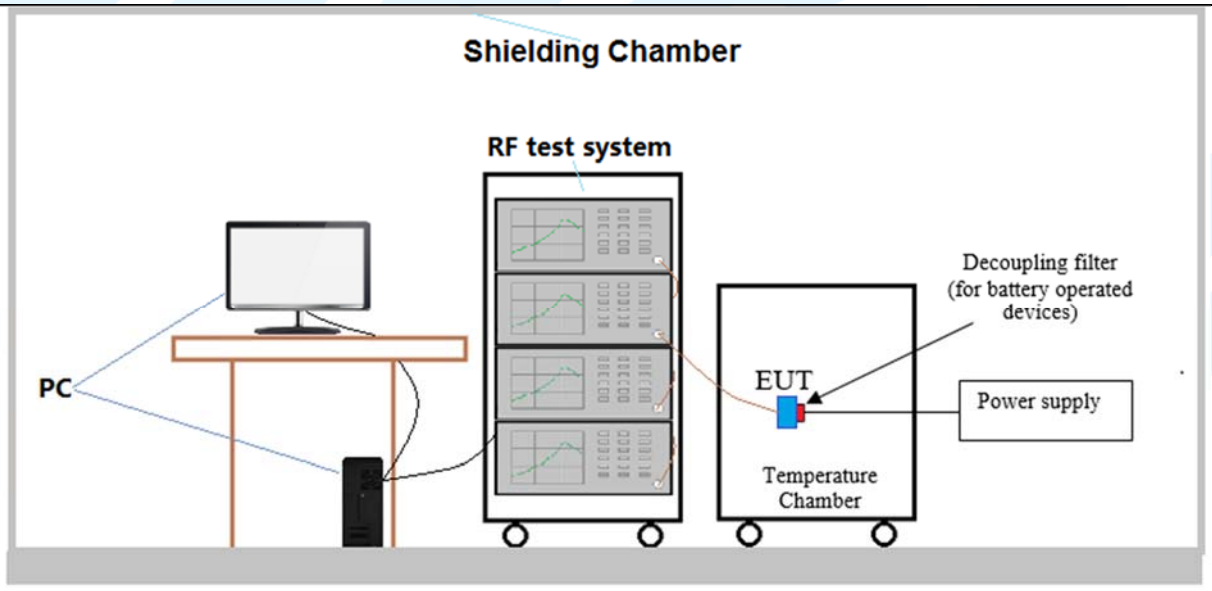


Figure 2. Above 1GHz

4.2.2 For Conducted RF test setup



Normal Environment



Extreme Environment

4.3 TEST CHANNELS

Band	Tx/Rx Frequency	RF Channel		
		Low(L)	Middle(M)	High(H)
WCDMA Band IV	Tx (1850 MHz-1910 MHz)	Channel 1312	Channel 1412	Channel 1513
		1712.4 MHz	1732.4 MHz	1752.6 MHz

Band	Test Frequency ID	Bandwidth (MHz)	Number [UL]	Frequency of Uplink (MHz)
LTE Band 4 TX:1710-1755MHz	Low Range	1.4	19957	1710.7
		3	19965	1711.5
		5	19975	1712.5
		10	20000	1715
		15	20025	1717.5
		20	20050	1720
	Middle Range	1.4/3/5/10/ 15/20	20175	1732.5
	High Range	1.4	20393	1754.3
		3	20385	1753.5
		5	20375	1752.5
		10	20350	1750
		15	20325	1747.5
		20	20300	1745
LTE Band 7 TX:2500-2570MHz	Low Range	5	20775	2502.5
		10	20800	2505
		15	20825	2507.5
		20	20850	2510
	Middle Range	5/10/15/20	21100	2535
	High Range	5	21425	2567.5
		10	21400	2565
		15	21375	2562.5
		20	21350	2560
LTE Band 12 TX:699-716MHz	Low Range	1.4	23017	699.7
		3	23025	700.5
		5	23035	701.5
		10	23060	704
	Middle Range	1.4/3/5/10	23095	707.5
	High Range	1.4	23173	715.3
		3	23165	714.5
		5	23155	713.5
		10	23130	711
LTE Band 13 TX:777-787MHz	Low Range	5	23205	779.5
		10	/	/
	Middle Range	5/10	23230	782
	High Range	5	23255	784.5
		10	/	/

Band	Test Frequency ID	Bandwidth (MHz)	Number [UL]	Frequency of Uplink (MHz)
LTE Band 17 TX:704-716MHz	Low Range	5	23755	706.5
		10	23780	709
	Middle Range	5/10	23790	710
	High Range	5	23825	713.5
		10	23800	711
LTE Band 30 TX:2305-2315MHz	Low Range	5	27685	2307.5
		10	/	/
	Middle Range	5/10	27710	2310
	High Range	5	27735	2312.5
		10	/	/
LTE Band 38 TX:2570-2620MHz	Low Range	5	37775	2572.5
		10	37800	2575
		15	37825	2577.5
		20	37850	2580
	Middle Range	5/10/ 15/20	38000	2595
	High Range	5	38225	2617.5
		10	38200	2615
		15	38175	2612.5
		20	38150	2610
LTE Band 41 TX:2496-2690MHz	Low Range	5	39675	2498.5
		10	39700	2501
		15	39725	2503.5
		20	39750	2506
	Middle Range	5/10/ 15/20	40620	2593
	High Range	5	41565	2687.5
		10	41540	2685
		15	41515	2682.5
		20	41490	2680

CA Band	Test Frequency ID	Channel Bandwidth	PCC			SCC1		
			BW (RB)	Number (UL)	Frequency of Uplink (MHz)	BW (RB)	Number (UL)	Frequency of Uplink (MHz)
CA_7C	Low Range	10+20	50	20805	2505.5	100	20949	2519.9
		20+10	100	20850	2510	50	20994	2524.4
		15+10	75	20825	2507.5	50	20945	2519.5
		15+15	75	20825	2507.5	75	20975	2522.5
		15+20	75	20828	2507.8	100	20999	2524.9
		20+15	100	20850	2510	75	21021	2527.1
		20+20	100	20850	2510	100	21048	2529.8
	Middle Range	10+20	50	21006	2525.6	100	21150	2540
		20+10	100	21051	2530.1	50	21195	2544.5
		15+10	75	21051	2530.1	50	21171	2542.1
		15+15	75	21025	2527.5	75	21175	2542.5
		15+20	75	21003	2525.3	100	21174	2542.4
		20+15	100	21026	2527.6	75	21197	2544.7
		20+20	100	21001	2525.1	100	21199	2544.9
	High Range	10+20	50	21206	2545.6	100	21350	2560
		20+10	100	21251	2550.1	50	21395	2564.5
		15+10	75	21277	2552.7	50	21397	2564.7
		15+15	75	21225	2547.5	75	21375	2562.5
		15+20	75	21179	2542.9	100	21350	2560
		20+15	100	21201	2545.1	75	21372	2562.2
		20+20	100	21152	2540.2	100	21350	2560
CA_38C	Low Range	15+15	75	37825	2577.5	75	37975	2592.5
		20+20	100	37850	2580	100	38048	2599.8
	Middle Range	15+15	75	37925	2587.5	75	38075	2602.5
		20+20	100	37901	2585.1	100	38099	2604.9
	High Range	15+15	75	38025	2597.5	75	38175	2612.5
		20+20	100	37952	2590.2	100	38150	2610

CA Band	Test Frequency ID	Channel Bandwidth	PCC			SCC1		
			BW (RB)	Number (UL)	Frequency of Uplink (MHz)	BW (RB)	Number (UL)	Frequency of Uplink (MHz)
CA_41C	Low Range	5+20	25	39683	2499.3	100	39800	2511
		20+5	100	39750	2506	25	39867	2517.7
		10+15	50	39703	2501.3	75	39823	2513.3
		15+10	75	39725	2503.5	50	39845	2515.5
		10+20	50	39705	2501.5	100	39849	2515.9
		20+10	100	39750	2506	50	39894	2520.4
		15+15	75	39725	2503.5	75	39875	2518.5
		15+20	75	39728	2503.8	100	39899	2520.9
		20+15	100	39750	2506	75	39921	2523.1
		20+20	100	39750	2506	100	39948	2525.8
	Middle Range	5+20	25	40528	2583.8	100	40645	2595.5
		20+5	100	40595	2590.5	25	40712	2602.2
		10+15	50	40549	2585.9	75	40669	2597.9
		15+10	75	40571	2588.1	50	40691	2600.1
		10+20	50	40526	2583.6	100	40670	2598.0
		20+10	100	40571	2588.1	50	40715	2602.5
		15+15	75	40545	2585.5	75	40695	2600.5
		15+20	75	40523	2583.3	100	40694	2600.4
		20+15	100	40546	2585.6	75	40717	2602.7
		20+20	100	40521	2583.1	100	40719	2602.9
	High Range	5+20	25	41373	2668.3	100	41490	2680
		20+5	100	41440	2675	25	41557	2686.7
		10+15	50	41395	2670.5	75	41515	2682.5
		15+10	75	41417	2672.7	50	41537	2684.7
		10+20	50	41346	2665.6	100	41490	2680
		20+10	100	41391	2670.1	50	41535	2684.5
		15+15	75	41365	2667.5	75	41515	2682.5
		15+20	75	41319	2662.9	100	41490	2680
		20+15	100	41341	2665.1	75	41512	2682.2
		20+20	100	41292	2660.2	100	41490	2680

4.4 SYSTEM TEST CONFIGURATION

For emissions testing, the equipment under test (EUT) setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, radiated emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario. It was powered by a 3.85Vdc rechargeable Li-on battery. Only the worst case data were recorded in this test report.

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, X/Y/Z axis, and antenna ports.
The worst case was found when positioned as the table below.

Band	Mode	Antenna Port	Worst-case axis positioning
WCDMA Band IV	1TX	Chain 0	Y axis
LTE Band 4	1TX	Chain 0	Y axis
LTE Band 7	1TX	Chain 0	Y axis
LTE Band 12	1TX	Chain 0	Y axis
LTE Band 13	1TX	Chain 0	Y axis
LTE Band 17	1TX	Chain 0	Y axis
LTE Band 30	1TX	Chain 0	Y axis
LTE Band 38	1TX	Chain 0	Y axis
LTE Band 41	1TX	Chain 0	Y axis

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater for frequencies below 1000MHz. The resolution is 1 MHz or greater for frequencies above 1000MHz. The spurious emissions more than 20 dB below the permissible value are not reported.

Radiated emission measurement were performed from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

4.5 PRE-SCAN

Pre-scan under all rate at lowest middle and highest channel, find the transmitter power as below.

4.5.1 WCDMA Band IV

WCDMA Band IV Maximum Average Power (dBm)			
Channel	**1312**	**1412**	**1513**
Frequency(MHz)	**1712.4 MHz**	**1732.4 MHz**	**1752.6 MHz**
RMC 12.2K	23.67	23.66	**23.72**
HSDPA Subtest-1	22.3	22.24	22.16
HSDPA Subtest-2	22.24	22.26	22.22
HSDPA Subtest-3	21.77	21.78	21.75
HSDPA Subtest-4	21.7	21.72	21.8
HSUPA Subtest-1	22.41	22.42	22.39
HSUPA Subtest-2	20.47	20.43	20.44
HSUPA Subtest-3	21.40	21.52	21.39
HSUPA Subtest-4	20.52	20.44	20.46
HSUPA Subtest-5	22.43	22.46	22.40
DC-HSDPA Subtest-1	22.35	22.36	22.42
DC-HSDPA Subtest-2	22.48	22.47	22.36
DC-HSDPA Subtest-3	21.87	21.90	21.88
DC-HSDPA Subtest-4	21.88	21.84	21.91

4.5.2 LTE Band 4

LTE Band 4 Maximum Average Power (dBm)										
Modulation	**RB**		**Test Channel**			**RB**		**Test Channel**		
	Size	**Offset**	**Low**	**Mid**	**High**	**Size**	**Offset**	**Low**	**Mid**	**High**
	Channel Bandwidth: 1.4 MHz					**Channel Bandwidth: 3 MHz**				
QPSK	1	0	22.60	22.55	**22.64**	1	0	22.61	22.56	**22.65**
	1	2	22.56	22.51	22.60	1	7	22.57	22.52	22.61
	1	5	22.50	22.45	22.54	1	14	22.51	22.46	22.55
	3	0	22.58	22.53	22.62	8	0	21.66	21.61	21.70
	3	1	22.54	22.49	22.58	8	3	21.62	21.57	21.66
	3	3	22.48	22.43	22.52	8	7	21.57	21.52	21.61
	6	0	21.71	21.66	21.75	15	0	21.72	21.67	21.76
16QAM	1	0	21.75	21.70	21.79	1	0	21.76	21.71	21.80
	1	2	21.72	21.67	21.76	1	7	21.73	21.68	21.77
	1	5	21.69	21.64	21.73	1	14	21.70	21.65	21.74
	3	0	21.74	21.69	21.78	8	0	20.68	20.63	20.72
	3	1	21.71	21.66	21.75	8	3	20.62	20.57	20.66
	3	3	21.68	21.63	21.72	8	7	20.57	20.52	20.61
	6	0	20.72	20.67	20.76	15	0	20.73	20.68	20.77
64QAM	1	0	20.78	20.73	20.82	1	0	20.79	20.74	20.83
	1	2	20.75	20.70	20.79	1	7	20.76	20.71	20.80
	1	5	20.71	20.66	20.75	1	14	20.72	20.67	20.76
	3	0	20.77	20.72	20.81	8	0	19.72	19.67	19.76
	3	1	20.74	20.69	20.78	8	3	19.69	19.64	19.73
	3	3	20.70	20.65	20.74	8	7	19.61	19.56	19.65
	6	0	19.66	19.61	19.70	15	0	19.67	19.62	19.71

LTE Band 4 Maximum Average Power (dBm)										
Modulation	RB		Test Channel			RB		Test Channel		
	Size	Offset	Low	Mid	High	Size	Offset	Low	Mid	High
	Channel Bandwidth: 5 MHz					Channel Bandwidth: 10 MHz				
QPSK	1	0	22.64	22.59	**22.68**	1	0	22.68	22.63	**22.72**
	1	12	22.60	22.55	22.64	1	24	22.64	22.59	22.68
	1	24	22.54	22.49	22.58	1	49	22.58	22.53	22.62
	12	0	21.69	21.64	21.73	25	0	21.73	21.68	21.77
	12	6	21.65	21.60	21.69	25	12	21.69	21.64	21.73
	12	13	21.60	21.55	21.64	25	25	21.64	21.59	21.68
	25	0	21.75	21.70	21.79	50	0	21.79	21.74	21.83
16QAM	1	0	21.79	21.74	21.83	1	0	21.83	21.78	21.87
	1	12	21.76	21.71	21.80	1	24	21.80	21.75	21.84
	1	24	21.73	21.68	21.77	1	49	21.77	21.72	21.81
	12	0	20.71	20.66	20.75	25	0	20.75	20.70	20.79
	12	6	20.65	20.60	20.69	25	12	20.69	20.64	20.73
	12	13	20.60	20.55	20.64	25	25	20.64	20.59	20.68
	25	0	20.76	20.71	20.80	50	0	20.80	20.75	20.84
64QAM	1	0	20.82	20.77	20.86	1	0	20.86	20.81	20.90
	1	12	20.79	20.74	20.83	1	24	20.83	20.78	20.87
	1	24	20.75	20.70	20.79	1	49	20.79	20.74	20.83
	12	0	19.75	19.70	19.79	25	0	19.79	19.74	19.83
	12	6	19.72	19.67	19.76	25	12	19.76	19.71	19.80
	12	13	19.64	19.59	19.68	25	25	19.68	19.63	19.72
	25	0	19.70	19.65	19.74	50	0	19.74	19.69	19.78
	Channel Bandwidth: 15 MHz					Channel Bandwidth: 20 MHz				
QPSK	1	0	22.74	22.69	**22.78**	1	0	22.77	22.72	**22.81**
	1	37	22.70	22.65	22.74	1	50	22.73	22.68	22.77
	1	74	22.64	22.59	22.68	1	99	22.67	22.62	22.71
	37	0	21.79	21.74	21.83	50	0	21.82	21.77	21.86
	37	19	21.75	21.70	21.79	50	25	21.78	21.73	21.82
	37	39	21.70	21.65	21.74	50	50	21.73	21.68	21.77
	75	0	21.85	21.80	21.89	100	0	21.88	21.83	21.92
16QAM	1	0	21.89	21.84	21.93	1	0	21.92	21.87	21.96
	1	37	21.86	21.81	21.90	1	50	21.89	21.84	21.93
	1	74	21.83	21.78	21.87	1	99	21.86	21.81	21.90
	37	0	20.81	20.76	20.85	50	0	20.84	20.79	20.88
	37	19	20.75	20.70	20.79	50	25	20.78	20.73	20.82
	37	39	20.70	20.65	20.74	50	50	20.73	20.68	20.77
	75	0	20.86	20.81	20.90	100	0	20.89	20.84	20.93
64QAM	1	0	20.92	20.87	20.96	1	0	20.95	20.90	20.99
	1	37	20.89	20.84	20.93	1	50	20.92	20.87	20.96
	1	74	20.85	20.80	20.89	1	99	20.88	20.83	20.92
	37	0	19.85	19.80	19.89	50	0	19.88	19.83	19.92
	37	19	19.82	19.77	19.86	50	25	19.85	19.80	19.89
	37	39	19.74	19.69	19.78	50	50	19.77	19.72	19.81
	75	0	19.80	19.75	19.84	100	0	19.83	19.78	19.87

4.5.3 LTE Band 7

LTE Band 7 Maximum Average Power (dBm)										
Modulation	RB		Test Channel			RB		Test Channel		
	Size	Offset	Low	Mid	High	Size	Offset	Low	Mid	High
Channel Bandwidth: 5 MHz						Channel Bandwidth: 10 MHz				
QPSK	1	0	20.90	21.01	**21.20**	1	0	20.94	21.05	**21.24**
	1	12	20.86	20.97	21.16	1	24	20.90	21.01	21.20
	1	24	20.83	20.94	21.13	1	49	20.87	20.98	21.17
	12	0	20.06	20.17	20.36	25	0	20.10	20.21	20.40
	12	6	20.03	20.14	20.33	25	12	20.07	20.18	20.37
	12	13	19.99	20.10	20.29	25	25	20.03	20.14	20.33
	25	0	20.05	20.16	20.35	50	0	20.09	20.20	20.39
16QAM	1	0	20.05	20.16	20.35	1	0	20.09	20.20	20.39
	1	12	20.01	20.12	20.31	1	24	20.05	20.16	20.35
	1	24	19.97	20.08	20.27	1	49	20.01	20.12	20.31
	12	0	19.06	19.17	19.36	25	0	19.10	19.21	19.40
	12	6	19.03	19.14	19.33	25	12	19.07	19.18	19.37
	12	13	19.00	19.11	19.30	25	25	19.04	19.15	19.34
	25	0	19.06	19.17	19.36	50	0	19.10	19.21	19.40
64QAM	1	0	19.05	19.16	19.35	1	0	19.09	19.20	19.39
	1	12	19.00	19.11	19.30	1	24	19.04	19.15	19.34
	1	24	18.97	19.08	19.27	1	49	19.01	19.12	19.31
	12	0	18.04	18.15	18.34	25	0	18.08	18.19	18.38
	12	6	18.01	18.12	18.31	25	12	18.05	18.16	18.35
	12	13	17.97	18.08	18.27	25	25	18.01	18.12	18.31
	25	0	18.07	18.18	18.37	50	0	18.11	18.22	18.41
Channel Bandwidth: 15 MHz						Channel Bandwidth: 20 MHz				
QPSK	1	0	21.00	21.11	**21.30**	1	0	21.03	21.14	**21.33**
	1	37	20.96	21.07	21.26	1	50	20.99	21.10	21.29
	1	74	20.93	21.04	21.23	1	99	20.96	21.07	21.26
	37	0	20.16	20.27	20.46	50	0	20.19	20.30	20.49
	37	19	20.13	20.24	20.43	50	25	20.16	20.27	20.46
	37	39	20.09	20.20	20.39	50	50	20.12	20.23	20.42
	75	0	20.15	20.26	20.45	100	0	20.18	20.29	20.48
16QAM	1	0	20.15	20.26	20.45	1	0	20.18	20.29	20.48
	1	37	20.11	20.22	20.41	1	50	20.14	20.25	20.44
	1	74	20.07	20.18	20.37	1	99	20.10	20.21	20.40
	37	0	19.16	19.27	19.46	50	0	19.19	19.30	19.49
	37	19	19.13	19.24	19.43	50	25	19.16	19.27	19.46
	37	39	19.10	19.21	19.40	50	50	19.13	19.24	19.43
	75	0	19.16	19.27	19.46	100	0	19.19	19.30	19.49
64QAM	1	0	19.15	19.26	19.45	1	0	19.18	19.29	19.48
	1	37	19.10	19.21	19.40	1	50	19.13	19.24	19.43
	1	74	19.07	19.18	19.37	1	99	19.10	19.21	19.40
	37	0	18.14	18.25	18.44	50	0	18.17	18.28	18.47
	37	19	18.11	18.22	18.41	50	25	18.14	18.25	18.44
	37	39	18.07	18.18	18.37	50	50	18.10	18.21	18.40
	75	0	18.17	18.28	18.47	100	0	18.20	18.31	18.50

4.5.4 LTE Band 12

LTE Band 12 Maximum Average Power (dBm)										
Modulation	RB		Test Channel			RB		Test Channel		
	Size	Offset	Low	Mid	High	Size	Offset	Low	Mid	High
Channel Bandwidth: 1.4 MHz						Channel Bandwidth: 3 MHz				
QPSK	1	0	22.58	**22.64**	22.49	1	0	22.62	**22.68**	22.53
	1	2	22.55	22.61	22.46	1	7	22.59	22.65	22.50
	1	5	22.50	22.56	22.41	1	14	22.54	22.60	22.45
	3	0	22.56	22.62	22.47	8	0	21.73	21.79	21.64
	3	1	22.53	22.59	22.44	8	3	21.68	21.74	21.59
	3	3	22.48	22.54	22.39	8	7	21.61	21.67	21.52
	6	0	21.64	21.70	21.55	15	0	21.68	21.74	21.59
16QAM	1	0	21.79	21.85	21.70	1	0	21.83	21.89	21.74
	1	2	21.76	21.82	21.67	1	7	21.80	21.86	21.71
	1	5	21.72	21.78	21.63	1	14	21.76	21.82	21.67
	3	0	21.78	21.84	21.69	8	0	20.72	20.78	20.63
	3	1	21.75	21.81	21.66	8	3	20.68	20.74	20.59
	3	3	21.71	21.77	21.62	8	7	20.63	20.69	20.54
	6	0	20.69	20.75	20.60	15	0	20.73	20.79	20.64
64QAM	1	0	20.77	20.83	20.68	1	0	20.81	20.87	20.72
	1	2	20.75	20.81	20.66	1	7	20.79	20.85	20.70
	1	5	20.72	20.78	20.63	1	14	20.76	20.82	20.67
	3	0	20.76	20.82	20.67	8	0	19.74	19.80	19.65
	3	1	20.74	20.80	20.65	8	3	19.69	19.75	19.60
	3	3	20.71	20.77	20.62	8	7	19.65	19.71	19.56
	6	0	19.69	19.75	19.60	15	0	19.73	19.79	19.64
Channel Bandwidth: 5 MHz						Channel Bandwidth: 10 MHz				
QPSK	1	0	22.68	**22.74**	22.59	1	0	22.71	**22.77**	22.62
	1	12	22.65	22.71	22.56	1	24	22.68	22.74	22.59
	1	24	22.60	22.66	22.51	1	49	22.63	22.69	22.54
	12	0	21.79	21.85	21.70	25	0	21.82	21.88	21.73
	12	6	21.74	21.80	21.65	25	12	21.77	21.83	21.68
	12	13	21.67	21.73	21.58	25	25	21.70	21.76	21.61
	25	0	21.74	21.80	21.65	50	0	21.77	21.83	21.68
16QAM	1	0	21.89	21.95	21.80	1	0	21.92	21.98	21.83
	1	12	21.86	21.92	21.77	1	24	21.89	21.95	21.80
	1	24	21.82	21.88	21.73	1	49	21.85	21.91	21.76
	12	0	20.78	20.84	20.69	25	0	20.81	20.87	20.72
	12	6	20.74	20.80	20.65	25	12	20.77	20.83	20.68
	12	13	20.69	20.75	20.60	25	25	20.72	20.78	20.63
	25	0	20.79	20.85	20.70	50	0	20.82	20.88	20.73
64QAM	1	0	20.87	20.93	20.78	1	0	20.90	20.96	20.81
	1	12	20.85	20.91	20.76	1	24	20.88	20.94	20.79
	1	24	20.82	20.88	20.73	1	49	20.85	20.91	20.76
	12	0	19.80	19.86	19.71	25	0	19.83	19.89	19.74
	12	6	19.75	19.81	19.66	25	12	19.78	19.84	19.69
	12	13	19.71	19.77	19.62	25	25	19.74	19.80	19.65
	25	0	19.79	19.85	19.70	50	0	19.82	19.88	19.73

4.5.5 LTE Band 13

LTE Band 13 Maximum Average Power (dBm)										
Modulation	RB		Test Channel			RB		Test Channel		
	Size	Offset	Low	Mid	High	Size	Offset	Low	Mid	High
	Channel Bandwidth: 5 MHz					Channel Bandwidth: 10 MHz				
QPSK	1	0	22.83	22.79	**22.87**	1	0	/	**22.92**	/
	1	12	22.78	22.74	22.82	1	24	/	22.87	/
	1	24	22.74	22.70	22.78	1	49	/	22.83	/
	12	0	21.97	21.93	22.01	25	0	/	22.06	/
	12	6	21.92	21.88	21.96	25	12	/	22.01	/
	12	13	21.88	21.84	21.92	25	25	/	21.97	/
	25	0	21.89	21.85	21.93	50	0	/	21.98	/
16QAM	1	0	21.88	21.84	21.92	1	0	/	21.98	/
	1	12	21.85	21.81	21.89	1	24	/	21.95	/
	1	24	21.81	21.77	21.85	1	49	/	21.91	/
	12	0	20.96	20.92	21.00	25	0	/	21.05	/
	12	6	20.90	20.86	20.94	25	12	/	20.99	/
	12	13	20.86	20.82	20.90	25	25	/	20.95	/
	25	0	20.88	20.84	20.92	50	0	/	20.97	/
64QAM	1	0	20.92	20.88	20.96	1	0	/	20.95	/
	1	12	20.88	20.84	20.92	1	24	/	20.93	/
	1	24	20.83	20.79	20.87	1	49	/	20.91	/
	12	0	19.97	19.93	20.01	25	0	/	20.08	/
	12	6	19.90	19.86	19.94	25	12	/	20.02	/
	12	13	19.84	19.80	19.88	25	25	/	19.96	/
	25	0	19.89	19.85	19.93	50	0	/	19.98	/

4.5.6 LTE Band 17

LTE Band 17 Maximum Average Power (dBm)										
Modulation	RB		Test Channel			RB		Test Channel		
	Size	Offset	Low	Mid	High	Size	Offset	Low	Mid	High
	Channel Bandwidth: 5 MHz					Channel Bandwidth: 10 MHz				
QPSK	1	0	**22.73**	22.70	22.58	1	0	**22.77**	22.74	22.62
	1	12	22.72	22.69	22.57	1	24	22.76	22.73	22.61
	1	24	22.68	22.65	22.53	1	49	22.72	22.69	22.57
	12	0	21.87	21.84	21.72	25	0	21.91	21.88	21.76
	12	6	21.82	21.79	21.67	25	12	21.86	21.83	21.71
	12	13	21.75	21.72	21.60	25	25	21.79	21.76	21.64
	25	0	21.94	21.91	21.79	50	0	21.98	21.95	21.83
16QAM	1	0	21.94	21.91	21.79	1	0	21.98	21.95	21.83
	1	12	21.90	21.87	21.75	1	24	21.94	21.91	21.79
	1	24	21.84	21.81	21.69	1	49	21.88	21.85	21.73
	12	0	20.84	20.81	20.69	25	0	20.88	20.85	20.73
	12	6	20.80	20.77	20.65	25	12	20.84	20.81	20.69
	12	13	20.75	20.72	20.60	25	25	20.79	20.76	20.64
	25	0	20.93	20.90	20.78	50	0	20.97	20.94	20.82
64QAM	1	0	20.96	20.93	20.81	1	0	21.00	20.97	20.85
	1	12	20.93	20.90	20.78	1	24	20.97	20.94	20.82
	1	24	20.86	20.83	20.71	1	49	20.90	20.87	20.75
	12	0	19.85	19.82	19.70	25	0	19.89	19.86	19.74
	12	6	19.82	19.79	19.67	25	12	19.86	19.83	19.71
	12	13	19.74	19.71	19.59	25	25	19.78	19.75	19.63
	25	0	19.88	19.85	19.73	50	0	19.92	19.89	19.77

4.5.7 LTE Band 30

LTE Band 30 Maximum Average Power (dBm)										
Modulation	RB		Test Channel			RB		Test Channel		
	Size	Offset	Low	Mid	High	Size	Offset	Low	Mid	High
	Channel Bandwidth: 5 MHz					Channel Bandwidth: 10 MHz				
QPSK	1	0	22.41	**22.43**	22.23	1	0	/	**22.42**	/
	1	12	22.41	22.41	22.18	1	24	/	22.29	/
	1	24	22.33	22.34	21.96	1	49	/	22.07	/
	12	0	21.36	21.38	21.27	25	0	/	21.41	/
	12	6	21.37	21.38	21.25	25	12	/	21.40	/
	12	13	21.34	21.51	21.24	25	25	/	21.32	/
	25	0	21.39	21.36	21.21	50	0	/	21.33	/
16QAM	1	0	21.38	21.56	21.74	1	0	/	21.97	/
	1	12	21.55	21.37	21.63	1	24	/	21.85	/
	1	24	21.55	21.47	21.62	1	49	/	20.69	/
	12	0	20.48	20.37	20.29	25	0	/	20.53	/
	12	6	20.46	20.33	20.40	25	12	/	20.43	/
	12	13	20.44	20.34	20.36	25	25	/	20.44	/
	25	0	20.43	20.30	20.39	50	0	/	20.42	/
64QAM	1	0	20.36	20.55	20.7	1	0	/	20.91	/
	1	12	20.53	20.29	20.62	1	24	/	20.84	/
	1	24	20.47	20.43	20.57	1	49	/	19.62	/
	12	0	19.46	19.29	19.28	25	0	/	19.51	/
	12	6	19.38	19.29	19.35	25	12	/	19.41	/
	12	13	19.41	19.28	19.34	25	25	/	19.36	/
	25	0	19.41	19.23	19.34	50	0	/	19.4	/

4.5.8 LTE Band 38

LTE Band 38 Maximum Average Power (dBm)										
Modulation	RB		Test Channel			RB		Test Channel		
	Size	Offset	Low	Mid	High	Size	Offset	Low	Mid	High
Channel Bandwidth: 5 MHz						Channel Bandwidth: 10 MHz				
QPSK	1	0	**23.03**	22.87	22.88	1	0	**23.07**	22.91	22.92
	1	12	23.00	22.84	22.85	1	24	23.04	22.88	22.89
	1	24	22.94	22.78	22.79	1	49	22.98	22.82	22.83
	12	0	22.16	22.00	22.01	25	0	22.20	22.04	22.05
	12	6	22.13	21.97	21.98	25	12	22.17	22.01	22.02
	12	13	22.09	21.93	21.94	25	25	22.13	21.97	21.98
	25	0	22.20	22.04	22.05	50	0	22.24	22.08	22.09
16QAM	1	0	22.11	21.95	21.96	1	0	22.15	21.99	22.00
	1	12	22.06	21.90	21.91	1	24	22.10	21.94	21.95
	1	24	21.99	21.83	21.84	1	49	22.03	21.87	21.88
	12	0	21.23	21.07	21.08	25	0	21.27	21.11	21.12
	12	6	21.19	21.03	21.04	25	12	21.23	21.07	21.08
	12	13	21.15	20.99	21.00	25	25	21.19	21.03	21.04
	25	0	21.25	21.09	21.10	50	0	21.29	21.13	21.14
64QAM	1	0	21.04	20.88	20.89	1	0	21.08	20.92	20.93
	1	12	21.01	20.85	20.86	1	24	21.05	20.89	20.90
	1	24	20.99	20.83	20.84	1	49	21.03	20.87	20.88
	12	0	20.13	19.97	19.98	25	0	20.17	20.01	20.02
	12	6	20.09	19.93	19.94	25	12	20.13	19.97	19.98
	12	13	20.05	19.89	19.90	25	25	20.09	19.93	19.94
	25	0	20.15	19.99	20.00	50	0	20.19	20.03	20.04
Channel Bandwidth: 15 MHz						Channel Bandwidth: 20 MHz				
QPSK	1	0	**23.10**	22.94	22.95	1	0	**23.17**	23.01	23.02
	1	37	23.07	22.91	22.92	1	50	23.14	22.98	22.99
	1	74	23.01	22.85	22.86	1	99	23.08	22.92	22.93
	37	0	22.23	22.07	22.08	50	0	22.30	22.14	22.15
	37	19	22.20	22.04	22.05	50	25	22.27	22.11	22.12
	37	39	22.16	22.00	22.01	50	50	22.23	22.07	22.08
	75	0	22.27	22.11	22.12	100	0	22.34	22.18	22.19
16QAM	1	0	22.18	22.02	22.03	1	0	22.25	22.09	22.10
	1	37	22.13	21.97	21.98	1	50	22.20	22.04	22.05
	1	74	22.06	21.90	21.91	1	99	22.13	21.97	21.98
	37	0	21.30	21.14	21.15	50	0	21.37	21.21	21.22
	37	19	21.26	21.10	21.11	50	25	21.33	21.17	21.18
	37	39	21.22	21.06	21.07	50	50	21.29	21.13	21.14
	75	0	21.32	21.16	21.17	100	0	21.39	21.23	21.24
64QAM	1	0	21.11	20.95	20.96	1	0	21.18	21.02	21.03
	1	37	21.08	20.92	20.93	1	50	21.15	20.99	21.00
	1	74	21.06	20.90	20.91	1	99	21.13	20.97	20.98
	37	0	20.20	20.04	20.05	50	0	20.27	20.11	20.12
	37	19	20.16	20.00	20.01	50	25	20.23	20.07	20.08
	37	39	20.12	19.96	19.97	50	50	20.19	20.03	20.04
	75	0	20.22	20.06	20.07	100	0	20.29	20.13	20.14

4.5.9 LTE Band 41

LTE Band 41 Maximum Average Power (dBm)										
Modulation	RB		Test Channel			RB		Test Channel		
	Size	Offset	Low	Mid	High	Size	Offset	Low	Mid	High
Channel Bandwidth: 5 MHz						Channel Bandwidth: 10 MHz				
QPSK	1	0	23.02	23.09	**24.30**	1	0	23.05	23.12	**24.33**
	1	12	22.87	22.99	22.64	1	24	22.90	23.02	22.67
	1	24	22.84	22.87	23.94	1	49	22.87	22.90	23.97
	12	0	22.02	22.11	21.79	25	0	22.05	22.14	21.82
	12	6	21.95	21.99	21.69	25	12	21.98	22.02	21.72
	12	13	21.96	22.10	21.65	25	25	21.99	22.13	21.68
	25	0	21.90	21.91	21.77	50	0	21.93	21.94	21.80
16QAM	1	0	22.20	21.80	23.30	1	0	22.23	21.83	23.33
	1	12	21.99	22.00	21.89	1	24	22.02	22.03	21.92
	1	24	21.96	21.99	23.28	1	49	21.99	22.02	23.31
	12	0	21.07	21.10	20.88	25	0	21.10	21.13	20.91
	12	6	20.98	20.99	20.76	25	12	21.01	21.02	20.79
	12	13	20.96	21.05	20.77	25	25	20.99	21.08	20.80
	25	0	20.95	20.96	20.74	50	0	20.98	20.99	20.77
64QAM	1	0	21.12	20.76	22.25	1	0	21.15	20.79	22.28
	1	12	20.96	20.94	20.87	1	24	20.99	20.97	20.90
	1	24	20.95	20.94	22.20	1	49	20.98	20.97	22.23
	12	0	20.01	20.07	19.84	25	0	20.04	20.10	19.87
	12	6	19.96	19.92	19.71	25	12	19.99	19.95	19.74
	12	13	19.90	19.97	19.75	25	25	19.93	20.00	19.78
	25	0	19.94	19.94	19.66	50	0	19.97	19.97	19.69
Channel Bandwidth: 15 MHz						Channel Bandwidth: 20 MHz				
QPSK	1	0	23.09	23.16	**24.37**	1	0	23.15	23.22	**24.43**
	1	37	22.94	23.06	22.71	1	50	23.00	23.12	22.77
	1	74	22.91	22.94	24.01	1	99	22.97	23.00	24.07
	37	0	22.09	22.18	21.86	50	0	22.15	22.24	21.92
	37	19	22.02	22.06	21.76	50	25	22.08	22.12	21.82
	37	39	22.03	22.17	21.72	50	50	22.09	22.23	21.78
	75	0	21.97	21.98	21.84	100	0	22.03	22.04	21.90
16QAM	1	0	22.27	21.87	23.37	1	0	22.33	21.93	23.43
	1	37	22.06	22.07	21.96	1	50	22.12	22.13	22.02
	1	74	22.03	22.06	23.35	1	99	22.09	22.12	23.41
	37	0	21.14	21.17	20.95	50	0	21.20	21.23	21.01
	37	19	21.05	21.06	20.83	50	25	21.11	21.12	20.89
	37	39	21.03	21.12	20.84	50	50	21.09	21.18	20.90
	75	0	21.02	21.03	20.81	100	0	21.08	21.09	20.87
64QAM	1	0	21.19	20.83	22.32	1	0	21.25	20.89	22.38
	1	37	21.03	21.01	20.94	1	50	21.09	21.07	21.00
	1	74	21.02	21.01	22.27	1	99	21.08	21.07	22.33
	37	0	20.08	20.14	19.91	50	0	20.14	20.20	19.97
	37	19	20.03	19.99	19.78	50	25	20.09	20.05	19.84
	37	39	19.97	20.04	19.82	50	50	20.03	20.10	19.88
	75	0	20.01	20.01	19.73	100	0	20.07	20.07	19.79

4.5.10 LTE CA_7C

LTE CA_7C Maximum Average Power (dBm)							
Channel		Modulation	PCC		SCC		Average Power (dBm)
PCC	SCC		RB Size	RB offset	RB Size	RB offset	
Combination 10MHz+20MHz							
20805	20949	QPSK	1	49	1	0	20.77
		16QAM	1	49	1	0	19.63
		64QAM	1	49	1	0	17.75
21006	21150	QPSK	1	49	1	0	20.48
		16QAM	1	49	1	0	19.21
		64QAM	1	49	1	0	17.69
21206	21350	QPSK	1	49	0	0	**20.91**
		16QAM	1	49	1	0	19.79
		64QAM	1	49	1	0	17.83
Combination 20MHz+10MHz							
20850	20994	QPSK	1	99	1	0	**20.88**
		16QAM	1	99	1	0	20.01
		64QAM	1	99	1	0	17.69
21051	21195	QPSK	1	99	1	0	20.85
		16QAM	1	99	1	0	19.75
		64QAM	1	99	1	0	17.73
21251	21395	QPSK	1	0	0	0	20.79
		16QAM	1	99	1	0	19.64
		64QAM	1	99	1	0	17.81
Combination 15MHz+10MHz							
20825	20945	QPSK	1	74	1	0	20.56
		16QAM	1	74	1	0	19.41
		64QAM	1	74	1	0	17.57
21051	21171	QPSK	1	74	1	0	20.60
		16QAM	1	74	1	0	19.37
		64QAM	1	74	1	0	17.64
21277	21397	QPSK	1	74	1	0	**20.74**
		16QAM	1	74	1	0	19.55
		64QAM	1	74	1	0	17.73
Combination 15MHz+15MHz							
20825	20975	QPSK	1	0	0	0	20.57
		16QAM	1	0	0	0	19.42
		64QAM	1	0	0	0	17.61
21025	21175	QPSK	1	0	0	0	20.63
		16QAM	1	0	0	0	19.38
		64QAM	1	0	0	0	17.65
21225	21375	QPSK	1	0	0	0	**20.75**
		16QAM	1	0	0	0	19.59
		64QAM	1	0	0	0	17.74
Combination 15MHz+20MHz							
20828	20999	QPSK	1	74	1	0	20.99
		16QAM	1	74	1	0	19.84
		64QAM	1	74	1	0	18.03
21003	21174	QPSK	1	74	1	0	**21.01**
		16QAM	1	74	1	0	19.88
		64QAM	1	74	1	0	18.11
21179	21350	QPSK	1	74	1	0	20.7
		16QAM	1	74	1	0	19.65
		64QAM	1	74	1	0	17.32

LTE CA_7C Maximum Average Power (dBm)							
Channel		Modulation	PCC		SCC		Average Power (dBm)
PCC	SCC		RB Size	RB offset	RB Size	RB offset	
Combination 20MHz+15MHz							
20850	21021	QPSK	1	99	1	0	**21.03**
		16QAM	1	99	1	0	20.36
		64QAM	1	99	1	0	17.91
21026	21197	QPSK	1	99	1	0	20.96
		16QAM	1	99	1	0	19.62
		64QAM	1	99	1	0	18.15
21201	21372	QPSK	1	0	0	0	20.68
		16QAM	1	99	1	0	19.81
		64QAM	1	99	1	0	18.31
Combination 20MHz+20MHz							
20850	21048	QPSK	0	0	1	99	20.56
			1	0	0	0	20.62
			100	0	0	0	19.65
			100	0	100	0	18.61
			1	0	1	99	12.84
			1	0	1	0	16.91
			1	99	1	0	21.2
			100	0	1	99	17.9
		16QAM	0	0	1	99	19.68
			1	0	0	0	19.79
			100	0	0	0	19.31
			100	0	100	0	18.39
			1	0	1	99	12.71
			1	0	1	0	16.31
			1	99	1	0	20.37
			100	0	1	99	17.76
		64QAM	0	0	1	99	18.85
			1	0	0	0	19.24
			100	0	0	0	17.61
			100	0	100	0	18.41
			1	0	1	99	12.73
			1	0	1	0	16.66
			1	99	1	0	18.44
			100	0	1	99	17.09
21001	21199	QPSK	0	0	1	99	21.11
			1	0	0	0	20.86
			100	0	0	0	19.67
			100	0	100	0	18.64
			1	0	1	99	12.94
			1	0	1	0	16.21
			1	99	1	0	21.22
			100	0	1	99	17.53
		16QAM	0	0	1	99	20.31
			1	0	0	0	20.06
			100	0	0	0	19.45
			100	0	100	0	17.67
			1	0	1	99	12.72
			1	0	1	0	16.74
			1	99	1	0	20.46
			100	0	1	99	17.57

LTE CA_7C Maximum Average Power (dBm)							
Channel		Modulation	PCC		SCC		Average Power (dBm)
PCC	SCC		RB Size	RB offset	RB Size	RB offset	
Combination 20MHz+20MHz							
21001	21199	64QAM	0	0	1	99	18.68
			1	0	0	0	19.05
			100	0	0	0	17.71
			100	0	100	0	18.41
			1	0	1	99	12.89
			1	0	1	0	16.57
			1	99	1	0	18.32
			100	0	1	99	17.75
21152	21350	QPSK	0	0	1	99	20.78
			1	0	0	0	20.63
			100	0	0	0	19.68
			100	0	100	0	18.55
			1	0	1	99	12.77
			1	0	1	0	16.17
			1	99	1	0	**21.23**
			100	0	1	99	17.83
		16QAM	0	0	1	99	20.26
			1	0	0	0	20.05
			100	0	0	0	19.05
			100	0	100	0	17.91
			1	0	1	99	12.43
			1	0	1	0	16.36
			1	99	1	0	20.32
			100	0	1	99	17.87
		64QAM	0	0	1	99	18.85
			1	0	0	0	18.95
			100	0	0	0	17.84
			100	0	100	0	18.44
			1	0	1	99	12.27
			1	0	1	0	16.41
			1	99	1	0	18.45
			100	0	1	99	17.79

4.5.11 LTE CA_38C

CA_38C Maximum Average Power (dBm)							
Channel		Modulation	PCC		SCC		Measured Power (dBm)
PCC	SCC		RB Size	RB offset	RB Size	RB offset	
Combination 15MHz+15MHz							
37825	37975	QPSK	1	0	0	0	**23.07**
		16QAM	1	0	0	0	22.12
		64QAM	1	0	0	0	19.88
37925	38075	QPSK	1	0	0	0	23.03
		16QAM	1	0	0	0	22.18
		64QAM	1	0	0	0	20.05
38025	38175	QPSK	1	0	0	0	23.05
		16QAM	1	0	0	0	22.09
		64QAM	1	0	0	0	20.04
Combination 20MHz+20MHz							
37850	38048	QPSK	0	0	1	99	23.03
			1	0	0	0	23.01
			100	0	0	0	22.19
			100	0	100	0	21.07
			1	0	1	99	14.87
			1	0	1	0	18.7
			1	99	1	0	**23.16**
			100	0	1	99	19.55
		16QAM	0	0	1	99	21.88
			1	0	0	0	22.2
			100	0	0	0	20.69
			100	0	100	0	20.33
			1	0	1	99	14.87
			1	0	1	0	18.44
			1	99	1	0	22.02
			100	0	1	99	18.61
		64QAM	0	0	1	99	21.33
			1	0	0	0	21.46
			100	0	0	0	20.13
			100	0	100	0	20.41
			1	0	1	99	14.86
			1	0	1	0	18.09
			1	99	1	0	20.27
			100	0	1	99	19.81
37901	38099	QPSK	0	0	1	99	23.01
			1	0	0	0	23.05
			100	0	0	0	22.42
			100	0	100	0	21.49
			1	0	1	99	14.81
			1	0	1	0	18.86
			1	99	1	0	23.14
			100	0	1	99	19.87
		16QAM	0	0	1	99	22.43
			1	0	0	0	22.36
			100	0	0	0	21.25
			100	0	100	0	20.12
			1	0	1	99	14.88
			1	0	1	0	18.84
			1	99	1	0	22.28
			100	0	1	99	19.72

CA_38C Maximum Average Power (dBm)							
Channel		Modulation	PCC		SCC		Measured Power (dBm)
PCC	SCC		RB Size	RB offset	RB Size	RB offset	
Combination 20MHz+20MHz							
37901	38099	64QAM	0	0	1	99	21.41
			1	0	0	0	21.26
			100	0	0	0	20.31
			100	0	100	0	20.15
			1	0	1	99	14.79
			1	0	1	0	18.72
			1	99	1	0	20.39
			100	0	1	99	19.86
37952	38150	QPSK	0	0	1	99	23.07
			1	0	0	0	23.04
			100	0	0	0	22.18
			100	0	100	0	21.19
			1	0	1	99	14.94
			1	0	1	0	18.73
			1	99	1	0	23.08
			100	0	1	99	19.98
		16QAM	0	0	1	99	22.27
			1	0	0	0	22.43
			100	0	0	0	21.25
			100	0	100	0	20.42
			1	0	1	99	14.88
			1	0	1	0	18.67
			1	99	1	0	22.36
			100	0	1	99	19.76
		64QAM	0	0	1	99	21.36
			1	0	0	0	21.15
			100	0	0	0	20.26
			100	0	100	0	20.11
			1	0	1	99	14.65
			1	0	1	0	18.52
			1	99	1	0	20.32
			100	0	1	99	19.86

4.5.12 LTE CA_41C

CA_41C Maximum Average Power (dBm)							
Channel		Modulation	PCC		SCC		Average Power (dBm)
PCC	SCC		RB Size	RB offset	RB Size	RB offset	
Combination 5MHz+20MHz							
39675	39792	QPSK	1	24	1	0	23.81
		16QAM	1	24	1	0	22.63
		64QAM	1	24	1	0	20.72
40620	40737	QPSK	1	24	1	0	**23.91**
		16QAM	1	24	1	0	22.96
		64QAM	1	24	1	0	20.78
41373	41490	QPSK	1	24	1	0	23.81
		16QAM	1	24	1	0	22.76
		64QAM	1	24	1	0	20.83
Combination 20MHz+5MHz							
39750	39867	QPSK	1	99	1	0	**23.81**
		16QAM	1	99	1	0	22.69
		64QAM	1	99	1	0	20.82
40620	40737	QPSK	1	99	1	0	23.7
		16QAM	1	99	1	0	22.62
		64QAM	1	99	1	0	20.68
41448	41565	QPSK	1	99	1	0	23.62
		16QAM	1	99	1	0	22.74
		64QAM	1	99	1	0	20.66
Combination 10MHz+15MHz							
39703	39823	QPSK	1	49	1	0	**23.77**
		16QAM	1	49	1	0	22.66
		64QAM	1	49	1	0	20.78
40549	40669	QPSK	1	49	1	0	23.69
		16QAM	1	49	1	0	22.59
		64QAM	1	49	1	0	20.64
41395	41515	QPSK	1	49	1	0	23.61
		16QAM	1	49	1	0	22.73
		64QAM	1	49	1	0	20.66
Combination 15MHz+10MHz							
39725	39845	QPSK	1	74	1	0	**23.79**
		16QAM	1	74	1	0	22.71
		64QAM	1	74	1	0	20.89
40571	40691	QPSK	1	74	1	0	23.79
		16QAM	1	74	1	0	22.68
		64QAM	1	74	1	0	20.79
41417	41537	QPSK	1	74	1	0	23.81
		16QAM	1	74	1	0	22.73
		64QAM	1	74	1	0	20.69
Combination 10MHz+20MHz							
39700	39844	QPSK	1	49	1	0	**23.83**
		16QAM	1	49	1	0	22.74
		64QAM	1	49	1	0	20.91
40620	40764	QPSK	1	49	1	0	23.81
		16QAM	1	49	1	0	22.69
		64QAM	1	49	1	0	20.84
41346	41490	QPSK	1	49	1	0	23.82
		16QAM	1	49	1	0	22.73
		64QAM	1	49	1	0	20.71

CA_41C Maximum Average Power (dBm)							
Channel		Modulation	PCC		SCC		Average Power (dBm)
PCC	SCC		RB Size	RB offset	RB Size	RB offset	
Combination 20MHz+10MHz							
39750	39894	QPSK	1	99	1	0	**23.78**
		16QAM	1	99	1	0	22.69
		64QAM	1	99	1	0	20.56
40620	40764	QPSK	1	0	0	0	23.55
		16QAM	1	99	1	0	22.61
		64QAM	1	99	1	0	20.63
41396	41540	QPSK	1	99	1	0	23.41
		16QAM	1	99	1	0	22.36
		64QAM	1	99	1	0	20.25
Combination 15MHz+15MHz							
39725	39875	QPSK	1	74	1	0	23.92
		16QAM	1	74	1	0	22.85
		64QAM	1	74	1	0	20.91
40620	40770	QPSK	1	74	1	0	**24.03**
		16QAM	1	74	1	0	22.96
		64QAM	1	74	1	0	21.08
41169	41319	QPSK	1	74	1	0	23.86
		16QAM	1	74	1	0	22.79
		64QAM	1	74	1	0	20.88
Combination 15MHz+20MHz							
39725	39896	QPSK	1	74	1	0	**23.81**
		16QAM	1	74	1	0	22.64
		64QAM	1	74	1	0	20.96
40620	40791	QPSK	1	74	1	0	23.69
		16QAM	1	74	1	0	22.49
		64QAM	1	74	1	0	20.72
41319	41490	QPSK	1	74	1	0	23.74
		16QAM	1	74	1	0	22.54
		64QAM	1	74	1	0	20.68
Combination 20MHz+15MHz							
39750	39921	QPSK	1	99	0	0	23.31
		16QAM	1	99	0	0	22.15
		64QAM	1	99	0	0	20.36
40620	40791	QPSK	1	99	1	0	23.58
		16QAM	1	99	0	0	22.63
		64QAM	1	99	0	0	20.72
41344	41515	QPSK	1	99	1	0	**23.68**
		16QAM	1	99	0	0	22.73
		64QAM	1	99	0	0	20.66
Combination 20MHz+20MHz							
39750	39948	QPSK	0	0	1	99	23.11
			1	0	0	0	23.25
			100	0	0	0	22.20
			100	0	100	0	20.65
			1	0	1	99	15.65
			1	0	1	0	19.52
			1	99	1	0	23.70
			100	0	1	99	20.42

CA_41C Maximum Average Power (dBm)							
Channel		Modulation	PCC		SCC		Average Power (dBm)
PCC	SCC		RB Size	RB offset	RB Size	RB offset	
Combination 20MHz+20MHz							
39750	39948	16QAM	0	0	1	99	22.51
			1	0	0	0	23.14
			100	0	0	0	21.15
			100	0	100	0	20.15
			1	0	1	99	16
			1	0	1	0	19.94
			1	99	1	0	23.08
			100	0	1	99	20.46
		64QAM	0	0	1	99	21.29
			1	0	0	0	21.18
			100	0	0	0	21.33
			100	0	100	0	21.36
			1	0	1	99	15.68
			1	0	1	0	19.71
			1	99	1	0	20.92
			100	0	1	99	20.39
40620	40818	QPSK	0	0	1	99	23.30
			1	0	0	0	23.22
			100	0	0	0	22.41
			100	0	100	0	21.23
			1	0	1	99	15.63
			1	0	1	0	19.63
			1	99	1	0	23.63
			100	0	1	99	20.81
		16QAM	0	0	1	99	23.34
			1	0	0	0	23.28
			100	0	0	0	21.42
			100	0	100	0	19.79
			1	0	1	99	15.56
			1	0	1	0	19.97
			1	99	1	0	23.41
			100	0	1	99	20.67
		64QAM	0	0	1	99	20.56
			1	0	0	0	22.33
			100	0	0	0	20.52
			100	0	100	0	21.15
			1	0	1	99	15.31
			1	0	1	0	19.27
			1	99	1	0	20.46
			100	0	1	99	20.14
41292	41490	QPSK	0	0	1	99	23.41
			1	0	0	0	23.32
			100	0	0	0	22.61
			100	0	100	0	22.07
			1	0	1	99	15.00
			1	0	1	0	19.87
			1	99	1	0	**24.40**
			100	0	1	99	20.32

CA_41C Maximum Average Power (dBm)							
Channel		Modulation	PCC		SCC		Average Power (dBm)
PCC	SCC		RB Size	RB offset	RB Size	RB offset	
Combination 20MHz+20MHz							
41292	41490	16QAM	0	0	1	99	22.55
			1	0	0	0	22.09
			100	0	0	0	21.39
			100	0	100	0	20.01
			1	0	1	99	15.96
			1	0	1	0	19.96
			1	99	1	0	23.13
			100	0	1	99	19.86
		64QAM	0	0	1	99	20.85
			1	0	0	0	20.82
			100	0	0	0	20.33
			100	0	100	0	21.15
			1	0	1	99	15.56
			1	0	1	0	19.47
			1	99	1	0	20.59
			100	0	1	99	20.74

Pre-scan all bandwidth and RB, find worse case mode are chosen to the report, the worse mode applicability and tested channel detail as below:

Band	Radiated	Conducted
WCDMA Band IV	RMC 12.2Kbps Link	RMC 12.2Kbps Link

LTE worse case mode applicability and tested channel detail as below:

Item	Band	Bandwidth(MHz)						Modulation			RB			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
ERP/EIRP	4	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒
	7	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒
	12	☒	☒	☒	☒	-	-	☒	☒	☒	☒	☐	☐	☒	☒	☒
	13	-	-	☒	☒	-	-	☒	☒	☒	☒	☐	☐	☒	☒	☒
	17	-	-	☒	☒	-	-	☒	☒	☒	☒	☐	☐	☒	☒	☒
	30	-	-	☒	☒	-	-	☒	☒	☒	☒	☐	☐	☒	☒	☒
	38	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒
	41	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒
Conducted output power	4	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
	7	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
	12	☒	☒	☒	☒	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☒
	13	-	-	☒	☒	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☒
	17	-	-	☒	☒	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☒
	30	-	-	☒	☒	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☒
	38	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
	41	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
99%&26dB Bandwidth	4	☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒	☒
	7	-	-	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒	☒
	12	☒	☒	☒	☒	-	-	☒	☒	☒	☐	☐	☒	☒	☒	☒
	13	-	-	☒	☒	-	-	☒	☒	☒	☐	☐	☒	☒	☒	☒
	17	-	-	☒	☒	-	-	☒	☒	☒	☐	☐	☒	☒	☒	☒
	30	-	-	☒	☒	-	-	☒	☒	☒	☐	☐	☒	☒	☒	☒
	38	-	-	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒	☒
	41	-	-	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒	☒

Item	Band	Bandwidth(MHz)						Modulation			RB			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
peak-to-average ratio	4	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☒	☒	☒	☒
	7	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☐	☒	☒	☒	☒
	12	☒	☒	☒	☒	-	-	☒	☒	☒	☒	☐	☒	☒	☒	☒
	13	-	-	☒	☒	-	-	☒	☒	☒	☒	☐	☒	☒	☒	☒
	17	-	-	☒	☒	-	-	☒	☒	☒	☒	☐	☒	☒	☒	☒
	30	-	-	☒	☒	-	-	☒	☒	☒	☒	☐	☒	☒	☒	☒
	38	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☐	☒	☒	☒	☒
	41	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☐	☒	☒	☒	☒
Band Edge at antenna terminals	4	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☒	☒	☐	☒
	7	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☐	☒	☒	☐	☒
	12	☒	☒	☒	☒	-	-	☒	☒	☒	☒	☐	☒	☒	☐	☒
	13	-	-	☒	☒	-	-	☒	☒	☒	☒	☐	☒	☒	☐	☒
	17	-	-	☒	☒	-	-	☒	☒	☒	☒	☐	☒	☒	☐	☒
	30	-	-	☒	☒	-	-	☒	☒	☒	☒	☐	☒	☒	☐	☒
	38	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☐	☒	☒	☐	☒
	41	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☐	☒	☒	☐	☒
Spurious emissions at antenna terminals	4	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒
	7	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒
	12	☒	☒	☒	☒	-	-	☒	☒	☒	☒	☐	☐	☒	☒	☒
	13	-	-	☒	☒	-	-	☒	☒	☒	☒	☐	☐	☒	☒	☒
	17	-	-	☒	☒	-	-	☒	☒	☒	☒	☐	☐	☒	☒	☒
	30	-	-	☒	☒	-	-	☒	☒	☒	☒	☐	☐	☒	☒	☒
	38	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒
	41	-	-	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒

Item	Band	Bandwidth(MHz)						Modulation			RB			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Field strength of spurious radiation	4	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☐	☐	☐	☒	☐
	7	-	-	☒	☒	☒	☒	☒	☐	☐	☒	☐	☐	☐	☒	☐
	12	☒	☒	☒	☒	-	-	☒	☐	☐	☒	☐	☐	☐	☒	☐
	13	-	-	☒	☒	-	-	☒	☐	☐	☒	☐	☐	☐	☒	☐
	17	-	-	☒	☒	-	-	☒	☐	☐	☒	☐	☐	☐	☒	☐
	30	-	-	☒	☒	-	-	☒	☐	☐	☒	☐	☐	☐	☒	☐
	38	-	-	☒	☒	☒	☒	☒	☐	☐	☒	☐	☐	☐	☒	☐
	41	-	-	☒	☒	☒	☒	☒	☐	☐	☒	☐	☐	☐	☒	☐
Frequency stability	4	☒	☒	☒	☒	☒	☒	☒	☐	☐	☐	☐	☒	☐	☒	☐
	7	-	-	☒	☒	☒	☒	☒	☐	☐	☐	☐	☒	☐	☒	☐
	12	☒	☒	☒	☒	-	-	☒	☐	☐	☐	☐	☒	☐	☒	☐
	13	-	-	☒	☒	-	-	☒	☐	☐	☐	☐	☒	☐	☒	☐
	17	-	-	☒	☒	-	-	☒	☐	☐	☐	☐	☒	☐	☒	☐
	30	-	-	☒	☒	-	-	☒	☐	☐	☐	☐	☒	☐	☒	☐
	38	-	-	☒	☒	☒	☒	☒	☐	☐	☐	☐	☒	☐	☒	☐
	41	-	-	☒	☒	☒	☒	☒	☐	☐	☐	☐	☒	☐	☒	☐
Remark: The mark "☒" means is chosen for testing; The mark "☐" means is not chosen for testing; The mark "-" means is not supported bandwidth																

5. RADIO TECHNICAL REQUIREMENTS SPECIFICATION

5.1 REFERENCE DOCUMENTS FOR TESTING

No.	Identity	Document Title
1	FCC 47 CFR Part 2 Subpart J	Frequency allocations and radio treaty matters; general rules and regulations
2	FCC 47 CFR Part 27	Miscellaneous Wireless Communications Services
3	ANSI/TIA-603-D 2010	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards
4	KDB 971168 D01	KDB 971168 D01 Power Meas License Digital Systems v02r02

5.2 ERP OR EIRP

Test Requirement: FCC 47 CFR Part 2.1046(a)
WCDMA Band IV & LTE Band 4: FCC 47 CFR Part 27.50(d)(4)
LTE Band 7 & Band 38 & Band 41: FCC 47 CFR Part 27.50(h)(2)
LTE Band 12 & Band 17: FCC 47 CFR Part 27.50(c)(10)
LTE Band 13: FCC 47 CFR Part 27.50(b)(10)
LTE Band 30: FCC 47 CFR Part 27.50(a)(3)

Test Method: KDB 971168 D01v02r02 & ANSI/TIA/EIA-603-D 2010

Limit:

FCC 47 CFR Part 27.50(a)(3): For mobile and portable stations transmitting in the 2305-2315 MHz band or the 2350-2360 MHz band, the average EIRP must not exceed 50 milliwatts within any 1 megahertz of authorized bandwidth, except that for mobile and portable stations compliant with 3GPP LTE standards or another advanced mobile broadband protocol that avoids concentrating energy at the edge of the operating band the average EIRP must not exceed 250 milliwatts within any 5 megahertz of authorized bandwidth but may exceed 50 milliwatts within any 1 megahertz of authorized bandwidth. For mobile and portable stations using time division duplexing (TDD) technology, the duty cycle must not exceed 38 percent in the 2305-2315 MHz and 2350-2360 MHz bands. Mobile and portable stations using FDD technology are restricted to transmitting in the 2305-2315 MHz band. Power averaging shall not include intervals in which the transmitter is off.

FCC 47 CFR Part 27.50(b)(10): Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.

FCC 47 CFR Part 27.50(c)(10): Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

FCC 47 CFR Part 27.50(d)(4): Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

FCC 47 CFR Part 27.50(h)(2): Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

Test Procedure:

Test procedure as below:

1) The EUT was powered ON and placed on a 0.8/1.5m high table at a 3 meter semi/fully Anechoic Chamber. The antenna of the transmitter was extended to its maximum length. Modulation mode and the measuring receiver shall be tuned to the frequency of the transmitter under test.
2) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3) The disturbance of the transmitter was maximized on the test receiver display by raising and lowering from 1m to 4m the receive antenna and by rotating through 360° the turntable. After the fundamental emission was maximized, a field strength measurement was made.
4) Steps 1) to 3) were performed with the EUT and the receive antenna in both vertical and horizontal polarization.
5) The transmitter was then removed and replaced with another antenna. The center of the antenna was approximately at the same location as the center of the transmitter.

6) A signal at the disturbance was fed to the substitution antenna by means of a non-radiating cable. With both the substitution and the receive antennas horizontally polarized, the receive antenna was raised and lowered to obtain a maximum reading at the test receiver. The level of the signal generator was adjusted until the measured field strength level in step 3) is obtained for this set of conditions.
7) The output power into the substitution antenna was then measured.
8) Steps 6) and 7) were repeated with both antennas polarized.
9) Calculate power in dBm by the following formula:

ERP(dBm) = Pg(dBm) – cable loss (dB) + antenna gain (dBd)
EIRP(dBm) = Pg(dBm) – cable loss (dB) + antenna gain (dBi)
EIRP=ERP+2.15dB

where:
Pg is the generator output power into the substitution antenna.
10) Test the EUT in the lowest channel, the middle channel the Highest channel
11) The radiation measurements are performed in X, Y, Z axis positioning for EUT operation mode, and found the Y axis positioning which it is worse case.
12) Repeat above procedures until all frequencies measured was complete.

Receiver Setup:

Frequency	Detector	RBW	VBW	Remark
30MHz-1GHz	Peak	100kHz	300kHz	Peak
Above 1GHz	Peak	1MHz	3MHz	Peak

Test Setup: Refer to section 4.2.1 for details.
Instruments Used: Refer to section 3 for details
Test Mode: Link mode
Test Results: Pass
Test Data: See table below

5.2.1 WCDMA Band IV

Channel	WCDMA RMC 12.2Kbps Maximum EIRP (dBm)	Limit (dBm)	Result
Lowest	21.39	30.00	Pass
Middle	21.73	30.00	Pass
Highest	21.89	30.00	Pass

5.2.2 LTE Band 4

Maximum EIRP (dBm)					
Channel	QPSK; RB:1	16QAM; RB:1	64QAM; RB:1	Limit (dBm)	Result
Channel Bandwidth: 1.4MHz					
Lowest	21.75	21.27	20.05	30.00	Pass
Middle	21.82	20.95	20.07	30.00	Pass
Highest	21.91	20.91	20.11	30.00	Pass
Channel Bandwidth: 3MHz					
Lowest	21.81	21.17	20.04	30.00	Pass
Middle	21.75	20.82	19.84	30.00	Pass
Highest	21.79	21.37	20.14	30.00	Pass
Channel Bandwidth: 5MHz					
Lowest	21.87	21.17	20.07	30.00	Pass
Middle	21.68	20.96	19.99	30.00	Pass
Highest	22.04	21.25	20.05	30.00	Pass
Channel Bandwidth: 10MHz					
Lowest	22.11	20.92	20.23	30.00	Pass
Middle	21.72	21.14	20.24	30.00	Pass
Highest	22.10	21.16	20.01	30.00	Pass
Channel Bandwidth: 15MHz					
Lowest	21.82	21.22	20.05	30.00	Pass
Middle	22.06	20.93	20.44	30.00	Pass
Highest	22.30	21.10	20.16	30.00	Pass
Channel Bandwidth: 20MHz					
Lowest	22.20	21.35	20.46	30.00	Pass
Middle	22.25	21.44	20.17	30.00	Pass
Highest	22.25	21.18	20.22	30.00	Pass

5.2.3 LTE Band 7

Maximum EIRP (dBm)					
Channel	QPSK; RB:1	16QAM; RB:1	64QAM; RB:1	Limit (dBm)	Result
Channel Bandwidth: 5MHz					
Lowest	21.77	21.17	20.26	33.01	Pass
Middle	21.85	21.03	20.03	33.01	Pass
Highest	22.09	21.44	20.58	33.01	Pass
Channel Bandwidth: 10MHz					
Lowest	21.79	21.10	20.16	33.01	Pass
Middle	22.06	21.05	20.03	33.01	Pass
Highest	22.37	21.22	20.54	33.01	Pass
Channel Bandwidth: 15MHz					
Lowest	22.09	21.30	19.93	33.01	Pass
Middle	21.93	21.08	20.20	33.01	Pass
Highest	22.08	21.54	20.27	33.01	Pass
Channel Bandwidth: 20MHz					
Lowest	22.19	21.23	20.26	33.01	Pass
Middle	21.98	21.15	20.13	33.01	Pass
Highest	22.39	21.72	20.61	33.01	Pass

5.2.4 LTE Band 12

Maximum ERP (dBm)					
Channel	QPSK; RB:1	16QAM; RB:1	64QAM; RB:1	Limit (dBm)	Result
Channel Bandwidth: 1.4MHz					
Lowest	18.55	17.88	16.88	34.77	Pass
Middle	18.63	17.75	16.89	34.77	Pass
Highest	18.88	17.93	16.82	34.77	Pass
Channel Bandwidth: 3MHz					
Lowest	18.52	18.10	17.20	34.77	Pass
Middle	18.59	18.18	16.89	34.77	Pass
Highest	18.78	17.76	16.96	34.77	Pass
Channel Bandwidth: 5MHz					
Lowest	18.59	18.15	16.90	34.77	Pass
Middle	18.67	17.93	16.85	34.77	Pass
Highest	18.72	17.85	17.02	34.77	Pass
Channel Bandwidth: 10MHz					
Lowest	18.83	18.16	17.09	34.77	Pass
Middle	18.86	18.19	17.32	34.77	Pass
Highest	18.99	18.13	16.80	34.77	Pass

5.2.5 LTE Band 13

Maximum ERP (dBm)					
Channel	QPSK; RB:1	16QAM; RB:1	64QAM; RB:1	Limit (dBm)	Result
Channel Bandwidth: 5MHz					
Lowest	18.64	17.71	17.14	34.77	Pass
Middle	18.65	17.73	16.81	34.77	Pass
Highest	18.79	17.88	16.84	34.77	Pass
Channel Bandwidth: 10MHz					
Middle	19.09	17.99	17.18	34.77	Pass

5.2.6 LTE Band 17

Maximum ERP (dBm)					
Channel	QPSK; RB:1	16QAM; RB:1	64QAM; RB:1	Limit (dBm)	Result
Channel Bandwidth: 5MHz					
Lowest	19.01	18.04	17.08	34.77	Pass
Middle	18.61	18.02	17.07	34.77	Pass
Highest	18.76	17.80	16.86	34.77	Pass
Channel Bandwidth: 10MHz					
Lowest	18.97	18.01	16.97	34.77	Pass
Middle	19.02	17.98	17.16	34.77	Pass
Highest	18.96	18.10	17.13	34.77	Pass

5.2.7 LTE Band 30

Maximum EIRP (dBm)					
Channel	QPSK; RB:1	16QAM; RB:1	64QAM; RB:1	Limit (dBm)	Result
Channel Bandwidth: 5MHz					
Lowest	18.76	17.74	16.75	23.98	Pass
Middle	18.67	17.63	16.93	23.98	Pass
Highest	18.35	17.94	16.68	23.98	Pass
Channel Bandwidth: 10MHz					
Middle	18.53	18.36	17.30	23.98	Pass

5.2.8 LTE Band 38

Maximum EIRP (dBm)					
Channel	QPSK; RB:1	16QAM; RB:1	64QAM; RB:1	Limit (dBm)	Result
Channel Bandwidth: 5MHz					
Lowest	23.96	23.18	21.99	33.01	Pass
Middle	24.01	22.79	21.87	33.01	Pass
Highest	23.81	22.93	21.63	33.01	Pass
Channel Bandwidth: 10MHz					
Lowest	23.83	22.86	22.10	33.01	Pass
Middle	24.05	22.70	21.73	33.01	Pass
Highest	23.64	22.75	21.67	33.01	Pass
Channel Bandwidth: 15MHz					
Lowest	24.02	23.19	22.10	33.01	Pass
Middle	24.08	22.86	21.71	33.01	Pass
Highest	23.68	23.02	21.79	33.01	Pass
Channel Bandwidth: 20MHz					
Lowest	24.29	23.22	22.17	33.01	Pass
Middle	24.08	23.06	21.89	33.01	Pass
Highest	23.69	23.16	21.74	33.01	Pass

5.2.9 LTE Band 41

Maximum EIRP (dBm)					
Channel	QPSK; RB:1	16QAM; RB:1	64QAM; RB:1	Limit (dBm)	Result
Channel Bandwidth: 5MHz					
Lowest	23.92	22.98	22.23	33.01	Pass
Middle	24.04	23.05	21.92	33.01	Pass
Highest	24.49	23.09	22.36	33.01	Pass
Channel Bandwidth: 10MHz					
Lowest	23.97	23.19	22.11	33.01	Pass
Middle	24.08	22.92	21.89	33.01	Pass
Highest	24.32	23.45	22.06	33.01	Pass
Channel Bandwidth: 15MHz					
Lowest	23.85	23.15	22.25	33.01	Pass
Middle	24.11	22.90	21.76	33.01	Pass
Highest	24.51	23.37	22.24	33.01	Pass
Channel Bandwidth: 20MHz					
Lowest	24.20	23.13	22.23	33.01	Pass
Middle	24.08	23.14	22.06	33.01	Pass
Highest	24.55	23.39	22.39	33.01	Pass

5.2.10 LTE CA_7C

LTE CA_7C Maximum EIRP (dBm)									
Channel		Modulation	PCC		SCC		EIRP (dBm)	Limit (dBm)	Result
PCC	SCC		RB Size	RB offset	RB Size	RB offset			
Combination 10MHz+20MHz									
20805	20949	QPSK	1	49	1	0	**21.02**	33.01	Pass
		16QAM	1	49	1	0	20.73	33.01	Pass
		64QAM	1	49	1	0	20.94	33.01	Pass
21006	21150	QPSK	1	49	1	0	19.89	33.01	Pass
		16QAM	1	49	1	0	19.46	33.01	Pass
		64QAM	1	49	1	0	20.24	33.01	Pass
21206	21350	QPSK	1	49	0	0	17.77	33.01	Pass
		16QAM	1	49	1	0	17.90	33.01	Pass
		64QAM	1	49	1	0	17.87	33.01	Pass
Combination 20MHz+10MHz									
20850	20994	QPSK	1	99	1	0	**21.15**	33.01	Pass
		16QAM	1	99	1	0	21.03	33.01	Pass
		64QAM	1	99	1	0	20.92	33.01	Pass
21051	21195	QPSK	1	99	1	0	20.04	33.01	Pass
		16QAM	1	99	1	0	20.10	33.01	Pass
		64QAM	1	99	1	0	19.88	33.01	Pass
21251	21395	QPSK	1	0	0	0	17.82	33.01	Pass
		16QAM	1	99	1	0	18.16	33.01	Pass
		64QAM	1	99	1	0	17.86	33.01	Pass
Combination 15MHz+10MHz									
20825	20945	QPSK	1	74	1	0	20.66	33.01	Pass
		16QAM	1	74	1	0	20.98	33.01	Pass
		64QAM	1	74	1	0	**21.01**	33.01	Pass
21051	21171	QPSK	1	74	1	0	19.71	33.01	Pass
		16QAM	1	74	1	0	19.40	33.01	Pass
		64QAM	1	74	1	0	19.82	33.01	Pass
21277	21397	QPSK	1	74	1	0	17.61	33.01	Pass
		16QAM	1	74	1	0	17.94	33.01	Pass
		64QAM	1	74	1	0	18.14	33.01	Pass
Combination 15MHz+15MHz									
20825	20975	QPSK	1	0	0	0	20.63	33.01	Pass
		16QAM	1	0	0	0	20.86	33.01	Pass
		64QAM	1	0	0	0	**21.20**	33.01	Pass
21025	21175	QPSK	1	0	0	0	19.88	33.01	Pass
		16QAM	1	0	0	0	19.41	33.01	Pass
		64QAM	1	0	0	0	20.01	33.01	Pass
21225	21375	QPSK	1	0	0	0	17.80	33.01	Pass
		16QAM	1	0	0	0	18.08	33.01	Pass
		64QAM	1	0	0	0	18.06	33.01	Pass

LTE CA_7C EIRP (dBm)									
Channel		Modulation	PCC		SCC		EIRP (dBm)	Limit (dBm)	Result
PCC	SCC		RB Size	RB offset	RB Size	RB offset			
Combination 15MHz+20MHz									
20828	20999	QPSK	1	74	1	0	21.01	33.01	Pass
		16QAM	1	74	1	0	**21.27**	33.01	Pass
		64QAM	1	74	1	0	21.09	33.01	Pass
21003	21174	QPSK	1	74	1	0	20.16	33.01	Pass
		16QAM	1	74	1	0	20.12	33.01	Pass
		64QAM	1	74	1	0	20.08	33.01	Pass
21179	21350	QPSK	1	74	1	0	18.44	33.01	Pass
		16QAM	1	74	1	0	18.13	33.01	Pass
		64QAM	1	74	1	0	17.50	33.01	Pass
Combination 20MHz+15MHz									
20850	21021	QPSK	1	99	1	0	**21.45**	33.01	Pass
		16QAM	1	99	1	0	21.18	33.01	Pass
		64QAM	1	99	1	0	20.90	33.01	Pass
21026	21197	QPSK	1	99	1	0	20.83	33.01	Pass
		16QAM	1	99	1	0	20.03	33.01	Pass
		64QAM	1	99	1	0	20.02	33.01	Pass
21201	21372	QPSK	1	0	0	0	18.24	33.01	Pass
		16QAM	1	99	1	0	18.24	33.01	Pass
		64QAM	1	99	1	0	18.45	33.01	Pass
Combination 20MHz+20MHz									
20850	21048	QPSK	1	99	1	0	21.04	33.01	Pass
		16QAM	1	99	1	0	21.13	33.01	Pass
		64QAM	1	0	0	0	**21.65**	33.01	Pass
21001	21199	QPSK	1	99	1	0	19.85	33.01	Pass
		16QAM	1	99	1	0	20.35	33.01	Pass
		64QAM	1	0	0	0	**20.74**	33.01	Pass
21152	21350	QPSK	1	99	1	0	**19.67**	33.01	Pass
		16QAM	1	99	1	0	19.17	33.01	Pass
		64QAM	1	0	0	0	19.36	33.01	Pass

5.2.11 LTE CA_38C

LTE CA_38C EIRP (dBm)									
Channel		Modulation	PCC		SCC		EIRP (dBm)	Limit (dBm)	Result
PCC	SCC		RB Size	RB offset	RB Size	RB offset			
Combination 15MHz+15MHz									
37825	37975	QPSK	1	0	0	0	23.23	33.01	Pass
		16QAM	1	0	0	0	23.04	33.01	Pass
		64QAM	1	0	0	0	**23.51**	33.01	Pass
37925	38075	QPSK	1	0	0	0	22.12	33.01	Pass
		16QAM	1	0	0	0	22.25	33.01	Pass
		64QAM	1	0	0	0	22.51	33.01	Pass
38025	38175	QPSK	1	0	0	0	20.32	33.01	Pass
		16QAM	1	0	0	0	20.25	33.01	Pass
		64QAM	1	0	0	0	20.46	33.01	Pass
Combination 20MHz+20MHz									
37850	38048	QPSK	1	99	1	0	23.19	33.01	Pass
		16QAM	1	0	0	0	**23.63**	33.01	Pass
		64QAM	1	0	0	0	23.26	33.01	Pass
37901	38099	QPSK	1	99	1	0	22.48	33.01	Pass
		16QAM	0	0	1	99	22.46	33.01	Pass
		64QAM	0	0	1	99	22.54	33.01	Pass
37952	38150	QPSK	1	99	1	0	21.94	33.01	Pass
		16QAM	1	0	0	0	21.62	33.01	Pass
		64QAM	0	0	1	99	21.38	33.01	Pass

5.2.12 LTE CA_41C

LTE CA_41C EIRP (dBm)									
Channel		Modulation	PCC		SCC		EIRP (dBm)	Limit (dBm)	Result
PCC	SCC		RB Size	RB offset	RB Size	RB offset			
Combination 5MHz+20MHz									
39675	39792	QPSK	1	24	1	0	24.03	33.01	Pass
		16QAM	1	24	1	0	24.03	33.01	Pass
		64QAM	1	24	1	0	**24.07**	33.01	Pass
40620	40737	QPSK	1	24	1	0	23.10	33.01	Pass
		16QAM	1	24	1	0	23.30	33.01	Pass
		64QAM	1	24	1	0	22.78	33.01	Pass
41373	41490	QPSK	1	24	1	0	20.95	33.01	Pass
		16QAM	1	24	1	0	20.82	33.01	Pass
		64QAM	1	24	1	0	21.08	33.01	Pass
Combination 20MHz+5MHz									
39750	39867	QPSK	1	99	1	0	**24.21**	33.01	Pass
		16QAM	1	99	1	0	23.73	33.01	Pass
		64QAM	1	99	1	0	23.69	33.01	Pass
40620	40737	QPSK	1	99	1	0	22.95	33.01	Pass
		16QAM	1	99	1	0	23.03	33.01	Pass
		64QAM	1	99	1	0	22.80	33.01	Pass
41448	41565	QPSK	1	99	1	0	21.21	33.01	Pass
		16QAM	1	99	1	0	21.12	33.01	Pass
		64QAM	1	99	1	0	20.96	33.01	Pass

LTE CA_41C EIRP (dBm)									
Channel		Modulation	PCC		SCC		EIRP (dBm)	Limit (dBm)	Result
PCC	SCC		RB Size	RB offset	RB Size	RB offset			
Combination 10MHz+15MHz									
39703	39823	QPSK	1	49	1	0	23.97	33.01	Pass
		16QAM	1	49	1	0	**24.10**	33.01	Pass
		64QAM	1	49	1	0	23.73	33.01	Pass
40549	40669	QPSK	1	49	1	0	22.84	33.01	Pass
		16QAM	1	49	1	0	22.97	33.01	Pass
		64QAM	1	49	1	0	22.99	33.01	Pass
41395	41515	QPSK	1	49	1	0	20.95	33.01	Pass
		16QAM	1	49	1	0	20.93	33.01	Pass
		64QAM	1	49	1	0	20.91	33.01	Pass
Combination 15MHz+10MHz									
39725	39845	QPSK	1	74	1	0	23.81	33.01	Pass
		16QAM	1	74	1	0	**24.28**	33.01	Pass
		64QAM	1	74	1	0	24.12	33.01	Pass
40571	40691	QPSK	1	74	1	0	23.17	33.01	Pass
		16QAM	1	74	1	0	22.98	33.01	Pass
		64QAM	1	74	1	0	22.79	33.01	Pass
41417	41537	QPSK	1	74	1	0	21.04	33.01	Pass
		16QAM	1	74	1	0	20.91	33.01	Pass
		64QAM	1	74	1	0	20.85	33.01	Pass
Combination 10MHz+20MHz									
39700	39844	QPSK	1	49	1	0	23.94	33.01	Pass
		16QAM	1	49	1	0	**24.22**	33.01	Pass
		64QAM	1	49	1	0	24.04	33.01	Pass
40620	40764	QPSK	1	49	1	0	23.10	33.01	Pass
		16QAM	1	49	1	0	22.79	33.01	Pass
		64QAM	1	49	1	0	22.87	33.01	Pass
41346	41490	QPSK	1	49	1	0	21.24	33.01	Pass
		16QAM	1	49	1	0	21.10	33.01	Pass
		64QAM	1	49	1	0	21.17	33.01	Pass
Combination 20MHz+10MHz									
39750	39894	QPSK	1	99	1	0	**23.92**	33.01	Pass
		16QAM	1	99	1	0	23.57	33.01	Pass
		64QAM	1	99	1	0	23.51	33.01	Pass
40620	40764	QPSK	1	0	0	0	23.15	33.01	Pass
		16QAM	1	99	1	0	22.62	33.01	Pass
		64QAM	1	99	1	0	22.63	33.01	Pass
41396	41540	QPSK	1	99	1	0	20.65	33.01	Pass
		16QAM	1	99	1	0	21.09	33.01	Pass
		64QAM	1	99	1	0	20.37	33.01	Pass

LTE CA_41C EIRP (dBm)									
Channel		Modulation	PCC		SCC		EIRP (dBm)	Limit (dBm)	Result
PCC	SCC		RB Size	RB offset	RB Size	RB offset			
Combination 15MHz+15MHz									
39725	39875	QPSK	1	74	1	0	24.00	33.01	Pass
		16QAM	1	74	1	0	24.29	33.01	Pass
		64QAM	1	74	1	0	**24.31**	33.01	Pass
40620	40770	QPSK	1	74	1	0	23.13	33.01	Pass
		16QAM	1	74	1	0	22.97	33.01	Pass
		64QAM	1	74	1	0	22.97	33.01	Pass
41169	41319	QPSK	1	74	1	0	21.33	33.01	Pass
		16QAM	1	74	1	0	21.35	33.01	Pass
		64QAM	1	74	1	0	21.33	33.01	Pass
Combination 15MHz+20MHz									
39725	39896	QPSK	1	74	1	0	**24.02**	33.01	Pass
		16QAM	1	74	1	0	23.80	33.01	Pass
		64QAM	1	74	1	0	23.90	33.01	Pass
40620	40791	QPSK	1	74	1	0	23.00	33.01	Pass
		16QAM	1	74	1	0	22.51	33.01	Pass
		64QAM	1	74	1	0	22.82	33.01	Pass
41319	41490	QPSK	1	74	1	0	21.43	33.01	Pass
		16QAM	1	74	1	0	21.21	33.01	Pass
		64QAM	1	74	1	0	20.95	33.01	Pass
Combination 20MHz+15MHz									
39750	39921	QPSK	1	99	0	0	23.60	33.01	Pass
		16QAM	1	99	0	0	23.64	33.01	Pass
		64QAM	1	99	0	0	**23.84**	33.01	Pass
40620	40791	QPSK	1	99	1	0	22.38	33.01	Pass
		16QAM	1	99	0	0	22.70	33.01	Pass
		64QAM	1	99	0	0	23.16	33.01	Pass
41344	41515	QPSK	1	99	1	0	20.46	33.01	Pass
		16QAM	1	99	0	0	20.95	33.01	Pass
		64QAM	1	99	0	0	20.84	33.01	Pass
Combination 20MHz+20MHz									
39750	39948	QPSK	1	99	1	0	23.51	33.01	Pass
		16QAM	1	0	0	0	23.92	33.01	Pass
		64QAM	100	0	100	0	**24.37**	33.01	Pass
40620	40818	QPSK	1	99	1	0	23.64	33.01	Pass
		16QAM	1	99	1	0	23.66	33.01	Pass
		64QAM	1	99	1	0	23.15	33.01	Pass
41292	41490	QPSK	1	99	1	0	21.74	33.01	Pass
		16QAM	1	99	1	0	22.72	33.01	Pass
		64QAM	100	0	100	0	21.32	33.01	Pass

5.3 CONDUCTED OUTPUT POWER

Test Requirement: FCC 47 CFR Part 2.1046(a)
WCDMA Band IV & LTE Band 4: FCC 47 CFR Part 27.50(d)(4)
LTE Band 7 & Band 38 & Band 41: FCC 47 CFR Part 27.50(h)(2)
LTE Band 12 & Band 17: FCC 47 CFR Part 27.50(c)(10)
LTE Band 13: FCC 47 CFR Part 27.50(b)(10)
LTE Band 30: FCC 47 CFR Part 27.50(a)(3)

Test Method: KDB 971168 D01v02r02 & ANSI/TIA/EIA-603-D 2010

Limit:

FCC 47 CFR Part 27.50(a)(3): For mobile and portable stations transmitting in the 2305-2315 MHz band or the 2350-2360 MHz band, the average EIRP must not exceed 50 milliwatts within any 1 megahertz of authorized bandwidth, except that for mobile and portable stations compliant with 3GPP LTE standards or another advanced mobile broadband protocol that avoids concentrating energy at the edge of the operating band the average EIRP must not exceed 250 milliwatts within any 5 megahertz of authorized bandwidth but may exceed 50 milliwatts within any 1 megahertz of authorized bandwidth. For mobile and portable stations using time division duplexing (TDD) technology, the duty cycle must not exceed 38 percent in the 2305-2315 MHz and 2350-2360 MHz bands. Mobile and portable stations using FDD technology are restricted to transmitting in the 2305-2315 MHz band. Power averaging shall not include intervals in which the transmitter is off.

FCC 47 CFR Part 27.50(b)(10): Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.

FCC 47 CFR Part 27.50(c)(10): Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

FCC 47 CFR Part 27.50(d)(4): Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

FCC 47 CFR Part 27.50(h)(2): Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

Test Procedure:

The EUT was set up for the maximum power with WCDMA and LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

Test Setup: Refer to section 4.2.2 for details.

Instruments Used: Refer to section 3 for details

Test Mode: Link mode

Test Results: Pass

Test Data: The full result refer to section 4.5 for details.

5.4 PEAK-TO-AVERAGE RATIO

Test Requirement: FCC 47 CFR Part 27.53

Test Method: KDB 971168 D01v02r02

Limit: In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB

Test Procedure:

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer.

a) Set resolution/measurement bandwidth ≥ signal's occupied bandwidth
b) Set the number of counts to a value that stabilizes the measured CCDF curve
c) Record the maximum PAPR level associated with a probability of 0.1 %

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

Test Setup: Refer to section 4.2.2 for details.

Instruments Used: Refer to section 3 for details

Test Mode: Link mode

Test Results: Pass

Test Data: See table below

5.4.1 WCDMA Band IV

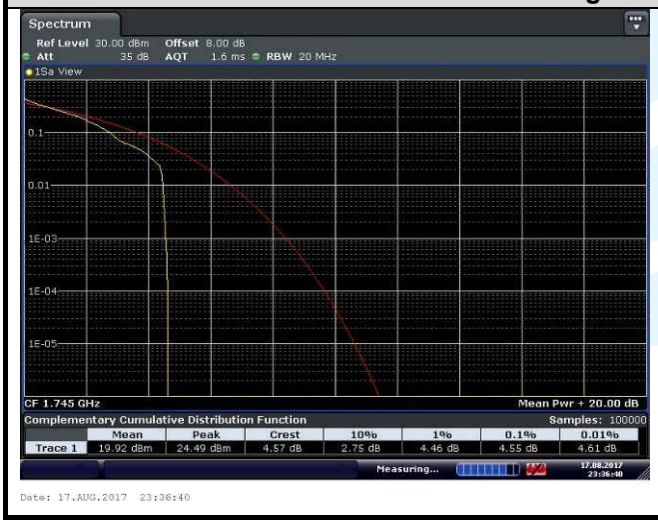
Peak-to-average ratio (dB)			
Channel	**RMC 12.2Kbps**	**Limit (dB)**	**Result**
Lowest	2.78	13	Pass
Middle	3.19	13	Pass
Highest	3.16	13	Pass

The test plot as follows:

Lowest Channel	Middle Channel
	
Highest Channel	
	N/A

5.4.2 LTE Band 4

Peak-to-average ratio (dB)						
Channel	RB Configuration	Channel Bandwidth: 20 MHz			Limit (dB)	Result
		QPSK	16QAM	64QAM		
Lowest	1 RB	4.43	5.30	5.22	13	Pass
	Full RB	4.75	5.80	5.83	13	Pass
Middle	1 RB	3.65	4.20	5.77	13	Pass
	Full RB	4.90	5.86	5.86	13	Pass
Highest	1 RB	4.55	5.36	5.51	13	Pass
	Full RB	4.93	5.77	5.91	13	Pass

LTE Band 4 / 20MHz / QPSK	
1 RB	Full RB
Lowest Channel	
	
Middle Channel	
	
Highest Channel	
	

LTE Band 4 / 20MHz / 16QAM	
1 RB	Full RB
Lowest Channel	
	
Date: 17.AUG.2017 23:34:30	Date: 17.AUG.2017 23:34:54
Middle Channel	
	
Date: 17.AUG.2017 23:30:22	Date: 17.AUG.2017 23:29:57
Highest Channel	
	
Date: 17.AUG.2017 23:36:25	Date: 17.AUG.2017 23:36:06

LTE Band 4 / 20MHz / 64QAM	
1 RB	Full RB
Lowest Channel	
	
Middle Channel	
	
Highest Channel	
	

5.4.3 LTE Band 7

Peak-to-average ratio (dB)						
Channel	RB Configuration	Channel Bandwidth: 20 MHz			Limit (dB)	Result
		QPSK	16QAM	64QAM		
Lowest	1 RB	3.62	4.23	5.33	13	Pass
	Full RB	4.81	5.86	6.00	13	Pass
Middle	1 RB	3.80	4.61	5.22	13	Pass
	Full RB	4.72	5.74	5.97	13	Pass
Highest	1 RB	4.26	5.04	5.25	13	Pass
	Full RB	4.58	5.65	5.80	13	Pass

LTE Band 7 / 20MHz / QPSK	
1 RB	Full RB
Lowest Channel	
	
Middle Channel	
	
Highest Channel	
	

LTE Band 7 / 20MHz / 16QAM	
1 RB	Full RB
Lowest Channel	
	
Middle Channel	
	
Highest Channel	
	

LTE Band 7 / 20MHz / 64QAM	
1 RB	Full RB
Lowest Channel	
	
Date: 2.SEP.2017 15:40:44	Date: 2.SEP.2017 15:41:13
Middle Channel	
	
Date: 2.SEP.2017 15:42:16	Date: 2.SEP.2017 15:41:46
Highest Channel	
	
Date: 2.SEP.2017 15:42:53	Date: 2.SEP.2017 15:43:17

5.4.4 LTE Band 12

Peak-to-average ratio (dB)						
Channel	RB Configuration	Channel Bandwidth: 10 MHz			Limit (dB)	Result
		QPSK	16QAM	64QAM		
Lowest	1 RB	3.36	4.17	4.87	13	Pass
	Full RB	4.93	5.91	5.74	13	Pass
Middle	1 RB	4.46	5.30	4.81	13	Pass
	Full RB	4.70	5.86	5.71	13	Pass
Highest	1 RB	3.54	4.75	5.45	13	Pass
	Full RB	5.01	5.80	5.71	13	Pass

LTE Band 12 / 10MHz / QPSK	
1 RB	Full RB
Lowest Channel	
	
Middle Channel	
	
Highest Channel	
	

LTE Band 12 / 10MHz / 16QAM	
1 RB	Full RB
Lowest Channel	
	
Middle Channel	
	
Highest Channel