FCC RF Test Report

APPLICANT	:	**Getac Technology Corporation.**
EQUIPMENT	:	**WWAN module**
BRAND NAME	:	**Getac**
MODEL NAME	:	**EM7455**
FCC ID	:	**QYLEM7455R**
STANDARD	:	**47 CFR Part 2, 22(H), 24(E), 27(L), 27(H), 27(F), 27(M)**
CLASSIFICATION	:	**PCS Licensed Transmitter (PCB)**

This is a partial report. The product was completely tested on Jul. 12, 2018. We, Sporton International (Shenzhen) Inc., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26-2015 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (Shenzhen) Inc., the test report shall not be reproduced except in full.

NVLAP®
TESTING
NVLAP LAB CODE 600156-0

Approved by: Eric Shih / Manager

Sporton International (Shenzhen) Inc.
1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan Shenzhen City
Guangdong Province 518055 China

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG862709-01B	Rev. 01	Initial issue of report	Jul. 31, 2018

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS
4.4	§2.1053 §22.917(a) §24.238(a) §27.53(c)(2) §27.53(f) §27.53(g) §27.53(h)	Radiated Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 25) (Band 26)	< $43+10\log_{10}(P[Watts])$	
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (Band 7) (Band 41)	< $55+10\log_{10}(P[Watts])$	
Remark: Except conducted output power and radiated spurious emission is carrying out, For other test data please refer to Sierra Report No.: B15W50341-FCC-RF_Rev1 for WWAN module (Model: EM7455).				

1 General Description

1.1 Applicant

Getac Technology Corporation.
5F., Building A, No. 209, Sec.1, Nangang Rd.,Nangang Dist., Taipei City 11568, Taiwan, R.O.C.

1.2 Product Feature of Equipment Under Test

WCDMA/LTE

Product Specification subjective to this standard	
Antenna Type	WWAN: PIFA Antenna

The product was installed into Tablet (Brand Name: Getac, Model Name: RX10) during test, and all tests were performed with SKU A.

SKU Table		
RX10 SKU		
	SKU A	SKU B
CPU	i5	M3
DDR	8G	4G
SSD	256GB	128GB
Panel	FHD	FHD
Digitizer	Support	Not Support
WLAN/BT	Support	Not Support
WWAN	Support	Not Support
GPS	Support	Not Support
RFID	Support	Not Support
Battery	5800mAh & 2160mAh	2160mAh

1.3 Modification of EUT

No modifications are made to the EUT during all test items.

1.4 Testing Location

Sporton Lab is accredited to ISO 17025 by National Voluntary Laboratory Accreditation Program (NVLAP code: 600156-0) and the FCC designation No is CN5019.

Test Site	Sporton International (Shenzhen) Inc.	
Test Site Location	No. 3 Bldg the third floor of south, Shahe River west, Fengzeyuan Warehouse, Nanshan District Shenzhen City Guangdong Province 518055 China TEL: +86-755-3320-2398	
Test Site No.	**Sporton Site No.**	**FCC Test Firm Registration No.**
	03CH01-SZ	577730

Note: The test site complies with ANSI C63.4 2014 requirement.

1.5 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 2, 22(H), 24(E), 27(L), 27(H), 27(F), 27(M)
- ANSI C63.26-2015
- FCC KDB 971168 D01 Power Meas License Digital Systems v03r01

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

2 Test Configuration of Equipment Under Test

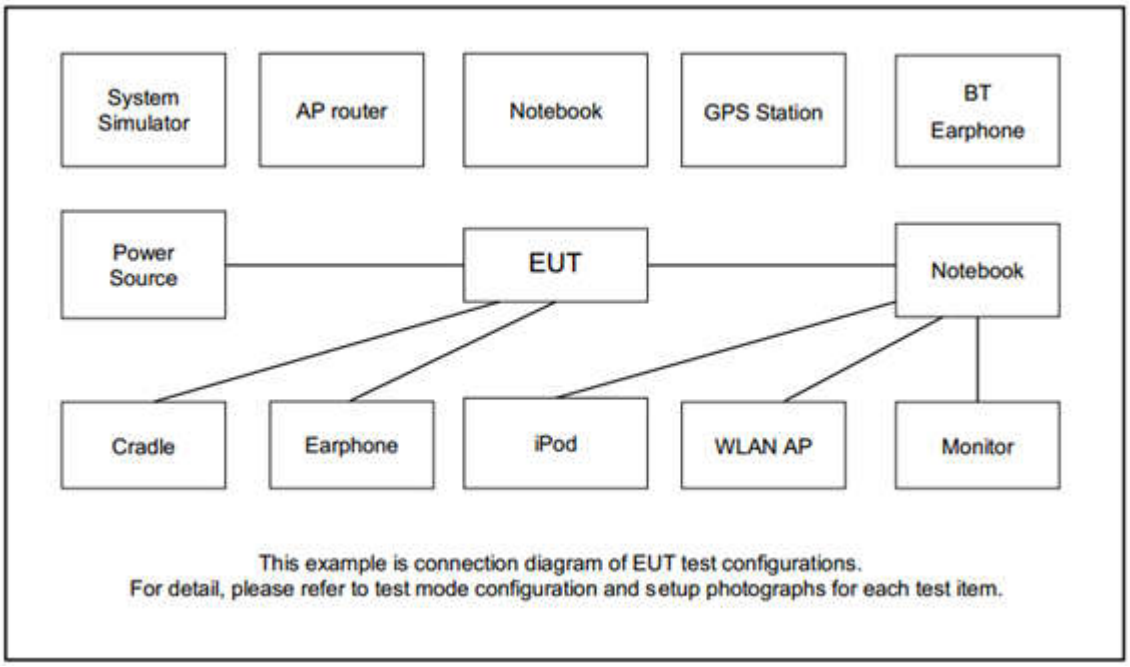
2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas License Digital Systems v03r01 with maximum output power.

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Max. Output Power	2	v	v	v	v	v	v	v	v		v	v	v	v	v	v
	4	v	v	v	v	v	v	v	v		v	v	v	v	v	v
	5	v	v	v	v	-	-	v	v		v	v	v	v	v	v
	7	-	-	v	v	v	v	v	v		v	v	v	v	v	v
	12	v	v	v	v	-	-	v	v		v	v	v	v	v	v
	13	-	-	v	v	-	-	v	v		v	v	v	v	v	v
	25	v	v	v	v	v	v	v	v		v	v	v	v	v	v
	26	v	v	v	v	v	-	v	v		v	v	v	v	v	v
	41	-	-	v	v	v	v	v	v		v	v	v	v	v	v
Radiated Spurious Emission	12	Worst Case												v		
Note	1. The mark "**v** " means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.															

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	LTE Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	DC Power Supply	GW INSTEK	GPS-3030D	N/A	N/A	Unshielded, 1.8 m
3.	Earphone	Apple	MC690ZP/A	N/A	Shielded, 1.0m	N/A

2.4 Frequency List of Low/Middle/High Channels

LTE Band 2 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	18700	18900	19100
	Frequency	1860	1880	1900
15	Channel	18675	18900	19125
	Frequency	1857.5	1880	1902.5
10	Channel	18650	18900	19150
	Frequency	1855	1880	1905
5	Channel	18625	18900	19175
	Frequency	1852.5	1880	1907.5
3	Channel	18615	18900	19185
	Frequency	1851.5	1880	1908.5
1.4	Channel	18607	18900	19193
	Frequency	1850.7	1880	1909.3

LTE Band 4 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	20050	20175	20300
	Frequency	1720	1732.5	1745
15	Channel	20025	20175	20325
	Frequency	1717.5	1732.5	1747.5
10	Channel	20000	20175	20350
	Frequency	1715	1732.5	1750
5	Channel	19975	20175	20375
	Frequency	1712.5	1732.5	1752.5
3	Channel	19965	20175	20385
	Frequency	1711.5	1732.5	1753.5
1.4	Channel	19957	20175	20393
	Frequency	1710.7	1732.5	1754.3

LTE Band 5 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	20450	20525	20600
	Frequency	829	836.5	844
5	Channel	20425	20525	20625
	Frequency	826.5	836.5	846.5
3	Channel	20415	20525	20635
	Frequency	825.5	836.5	847.5
1.4	Channel	20407	20525	20643
	Frequency	824.7	836.5	848.3

LTE Band 7 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	20850	21100	21350
	Frequency	2510	2535	2560
15	Channel	20825	21100	21375
	Frequency	2507.5	2535	2562.5
10	Channel	20800	21100	21400
	Frequency	2505	2535	2565
5	Channel	20775	21100	21425
	Frequency	2502.5	2535	2567.5

LTE Band 12 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	23060	23095	23130
	Frequency	704	707.5	711
5	Channel	23035	23095	23155
	Frequency	701.5	707.5	713.5
3	Channel	23025	23095	23165
	Frequency	700.5	707.5	714.5
1.4	Channel	23017	23095	23173
	Frequency	699.7	707.5	715.3

LTE Band 13 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	-	23230	-
	Frequency	-	782	-
5	Channel	23205	23230	23255
	Frequency	779.5	782	784.5

LTE Band 25 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	26140	26340	26590
	Frequency	1860	1880	1905
15	Channel	26115	26340	26615
	Frequency	1857.5	1880	1907.5
10	Channel	26090	26340	26640
	Frequency	1855	1880	1910
5	Channel	26065	26340	26665
	Frequency	1852.5	1880	1912.5
3	Channel	26055	26340	26675
	Frequency	1851.5	1880	1913.5
1.4	Channel	26047	26340	26683
	Frequency	1850.7	1880	1914.3

LTE Band 26 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
15	Channel	26865	26915	26965
	Frequency	831.5	836.5	841.5
10	Channel	26840	26915	26990
	Frequency	829	836.5	844
5	Channel	26815	26915	27015
	Frequency	826.5	836.5	846.5
3	Channel	26805	26915	27025
	Frequency	825.5	836.5	847.5
1.4	Channel	26797	26915	27033
	Frequency	824.7	836.5	848.3

LTE Band 41 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	39750	40620	41490
	Frequency	2506	2593	2680
15	Channel	39725	40620	41515
	Frequency	2503.5	2593	2682.5
10	Channel	39700	40620	41540
	Frequency	2501	2593	2685
5	Channel	39675	40620	41565
	Frequency	2498.5	2593	2687.5

3 Conducted Test Items

3.1 Measuring Instruments

See list of measuring instruments of this test report.

3.2 Test Setup

3.2.1 Conducted Output Power

3.3 Test Result of Conducted Test

Please refer to Appendix A.

3.4 Conducted Output Power

3.4.1 Description of the Conducted Output Power Measurement

A system simulator was used to establish communication with the EUT. Its parameters were set to force the EUT transmitting at maximum output power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

3.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.2
2. The transmitter output port was connected to the system simulator.
3. Set EUT at maximum power through the system simulator.
4. Select lowest, middle, and highest channels for each band and different modulation.
5. Measure and record the power level from the system simulator.

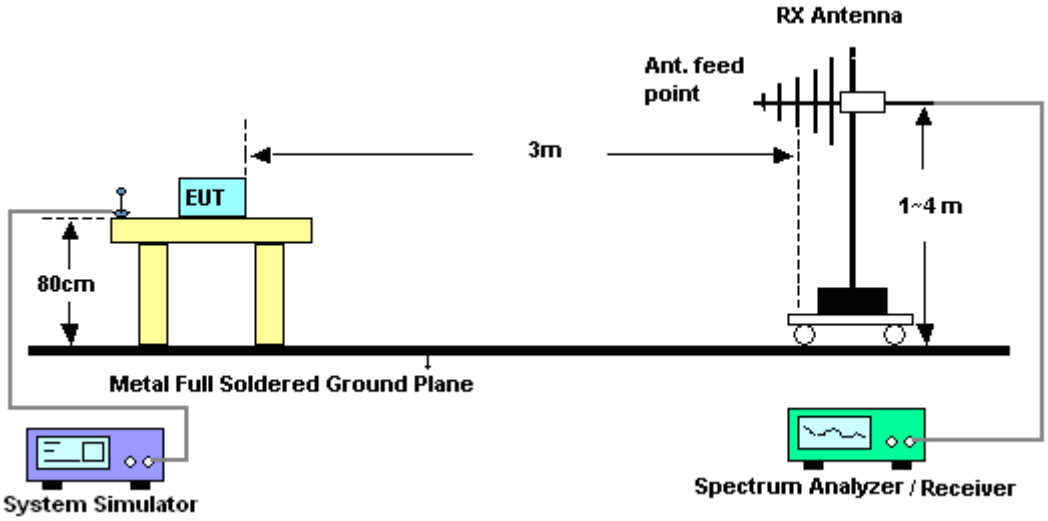
4 Radiated Test Items

4.1 Measuring Instruments

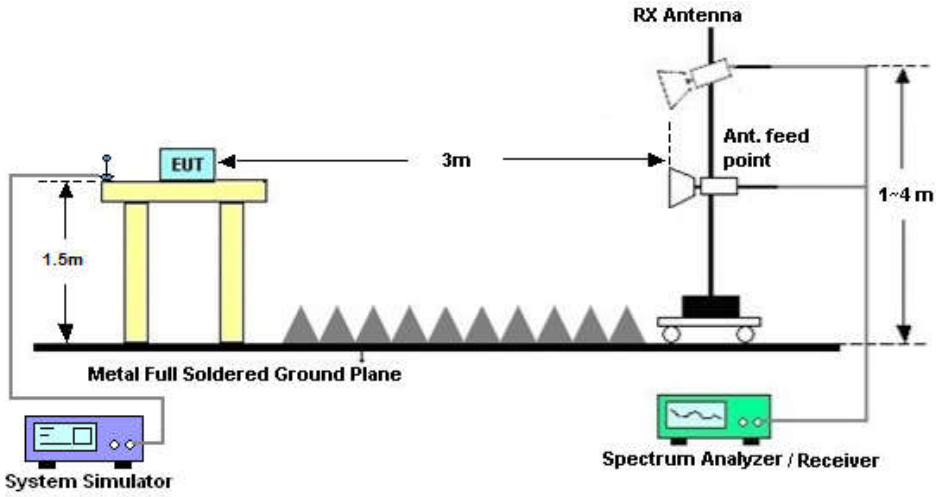
See list of measuring instruments of this test report.

4.2 Test Setup

4.2.1 For radiated test from 30MHz to 1GHz



4.2.2 For radiated test above 1GHz



4.3 Test Result of Radiated Test

Please refer to Appendix B.

4.4 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI C63.26. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

For LTE Band 12

For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

4.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.5
2. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
6. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
7. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
8. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
9. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
10. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
11. ERP (dBm) = EIRP - 2.15
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
    The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [43 + 10log(P)] (dB)
    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
    = -13dBm.

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101078	9kHz~40GHz	Apr. 19, 2018	Jul. 12, 2018	Apr. 18, 2019	Conducted (TH01-SZ)
DC Power Supply	GWINSTEK	AnritsuGPS-3030D	EM882636	Max 30V	Apr. 19, 2018	Jul. 12, 2018	Apr. 18, 2019	Conducted (TH01-SZ)
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Apr. 19, 2018	Jul. 05, 2018	Apr.18, 2019	Radiation (03CH01-SZ)
Bilog Antenna	TeseQ	CBL6112D	35408	30MHz-2GHz	Apr. 19, 2018	Jul. 05, 2018	Apr. 18, 2019	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS Lindgren	3117	119436	1GHz~18GHz	Jul. 28, 2017	Jul. 05, 2018	Jul. 27, 2018	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Mar. 30, 2018	Jul. 05, 2018	Mar. 29, 2019	Radiation (03CH01-SZ)
LF Amplifier	Burgeon	BPA-530	102209	0.01~3000Mhz	Apr. 19, 2018	Jul. 05, 2018	Apr.18, 2019	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	AMF-7D-00101800-30-10P-R	1707137	1GHz~18GHz	Oct. 19, 2017	Jul. 05, 2018	Oct. 18, 2018	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 18.2017	Jul. 05, 2018	Jul. 17, 2018	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	NCR	Jul. 05, 2018	NCR	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Jul. 05, 2018	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Jul. 05, 2018	NCR	Radiation (03CH01-SZ)

NCR: No Calibration Required

6 Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.5dB**

Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.5dB**

Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.0dB**

Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	22.67	22.76	22.74
20	1	49		22.35	22.36	22.62
20	1	99		22.12	22.27	22.33
20	50	0		21.40	21.53	21.50
20	50	24		21.51	21.40	21.73
20	50	50		21.41	21.42	21.71
20	100	0		21.32	21.52	21.61
20	1	0	16-QAM	21.79	21.82	21.72
20	1	49		21.73	21.85	21.92
20	1	99		21.40	21.68	21.58
20	50	0		20.62	20.50	20.58
20	50	24		20.60	20.56	20.64
20	50	50		20.47	20.50	20.64
20	100	0		20.52	20.58	20.71
15	1	0	QPSK	22.48	22.55	22.59
15	1	37		22.20	22.21	22.38
15	1	74		22.16	22.03	22.06
15	36	0		21.14	21.36	21.26
15	36	20		21.25	21.16	21.58
15	36	39		21.30	21.16	21.52
15	75	0		21.08	21.23	21.51
15	1	0	16-QAM	21.59	21.55	21.53
15	1	37		21.62	21.63	21.80
15	1	74		21.26	21.58	21.30
15	36	0		20.39	20.25	20.48
15	36	20		20.47	20.27	20.41
15	36	39		20.21	20.32	20.47
15	75	0		20.39	20.46	20.57

LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.55	22.48	22.54
10	1	25		22.08	22.21	22.38
10	1	49		22.00	22.00	22.15
10	25	0		21.13	21.34	21.39
10	25	12		21.38	21.29	21.49
10	25	25		21.13	21.15	21.54
10	50	0		21.10	21.26	21.32
10	1	0	16-QAM	21.49	21.71	21.42
10	1	25		21.46	21.71	21.70
10	1	49		21.19	21.49	21.41
10	25	0		20.45	20.40	20.31
10	25	12		20.47	20.35	20.49
10	25	25		20.28	20.28	20.49
10	50	0		20.36	20.38	20.50
5	1	0	QPSK	22.39	22.53	22.57
5	1	12		22.16	22.15	22.42
5	1	24		22.07	22.01	22.17
5	12	0		21.18	21.34	21.39
5	12	7		21.25	21.16	21.43
5	12	13		21.29	21.15	21.61
5	25	0		21.17	21.29	21.46
5	1	0	16-QAM	21.53	21.62	21.51
5	1	12		21.59	21.72	21.74
5	1	24		21.24	21.58	21.28
5	12	0		20.38	20.30	20.29
5	12	7		20.36	20.39	20.40
5	12	13		20.33	20.30	20.46
5	25	0		20.34	20.35	20.43

LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.42	22.50	22.59
3	1	8		22.23	22.26	22.44
3	1	14		22.17	22.17	22.20
3	8	0		21.10	21.37	21.26
3	8	4		21.29	21.13	21.50
3	8	7		21.23	21.28	21.61
3	15	0		21.15	21.33	21.48
3	1	0	16-QAM	21.57	21.56	21.53
3	1	8		21.53	21.73	21.65
3	1	14		21.15	21.53	21.32
3	8	0		20.40	20.36	20.38
3	8	4		20.45	20.38	20.54
3	8	7		20.26	20.38	20.43
3	15	0		20.30	20.39	20.47
1.4	1	0	QPSK	22.58	22.39	22.53
1.4	1	3		22.60	22.58	22.60
1.4	1	5		22.67	22.60	22.65
1.4	3	0		22.54	22.53	22.53
1.4	3	1		22.63	22.57	22.48
1.4	3	3		22.70	22.47	22.59
1.4	6	0		21.52	21.36	21.54
1.4	1	0	16-QAM	21.92	21.71	21.83
1.4	1	3		21.87	21.88	21.75
1.4	1	5		21.88	21.87	21.87
1.4	3	0		21.62	21.58	21.54
1.4	3	1		21.73	21.53	21.49
1.4	3	3		21.58	21.43	21.46
1.4	6	0		20.62	20.58	20.58

LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.10	22.75	22.77
20	1	49		22.59	22.65	22.61
20	1	99		22.35	22.16	22.36
20	50	0		21.78	21.60	21.61
20	50	24		21.78	21.73	21.72
20	50	50		21.65	21.46	21.60
20	100	0		21.70	21.57	21.57
20	1	0	16-QAM	22.09	21.88	22.03
20	1	49		22.02	21.89	21.85
20	1	99		21.71	21.61	21.60
20	50	0		20.82	20.61	20.69
20	50	24		20.83	20.55	20.51
20	50	50		20.60	20.43	20.60
20	100	0		20.80	20.62	20.54
15	1	0	QPSK	23.06	22.83	22.66
15	1	37		23.01	22.72	22.85
15	1	74		22.84	22.56	22.79
15	36	0		22.15	21.88	21.74
15	36	20		21.95	21.88	21.93
15	36	39		21.83	21.82	21.76
15	75	0		22.01	21.74	21.75
15	1	0	16-QAM	22.22	22.08	21.95
15	1	37		22.24	22.04	22.03
15	1	74		22.01	21.96	21.92
15	36	0		21.14	20.75	20.80
15	36	20		20.93	20.74	20.72
15	36	39		20.79	20.73	20.80
15	75	0		21.07	20.77	20.87

LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.02	22.75	22.81
10	1	25		22.90	22.80	22.80
10	1	49		22.80	22.66	22.78
10	25	0		22.12	21.88	21.89
10	25	12		22.04	21.90	21.82
10	25	25		21.88	21.78	21.70
10	50	0		21.94	21.73	21.85
10	1	0	16-QAM	22.22	22.00	22.03
10	1	25		22.32	21.95	22.08
10	1	49		21.97	21.95	21.96
10	25	0		21.03	20.88	20.82
10	25	12		21.05	20.90	20.87
10	25	25		20.83	20.67	20.72
10	50	0		21.00	20.81	20.75
5	1	0	QPSK	22.99	22.82	22.85
5	1	12		23.05	22.67	22.74
5	1	24		22.89	22.92	22.85
5	12	0		21.87	21.71	21.82
5	12	7		21.90	21.83	21.87
5	12	13		21.78	21.58	21.75
5	25	0		21.90	21.72	21.75
5	1	0	16-QAM	22.23	22.02	22.01
5	1	12		22.29	22.16	22.22
5	1	24		22.15	22.17	22.05
5	12	0		20.93	20.81	20.69
5	12	7		20.99	20.71	20.68
5	12	13		20.72	20.62	20.68
5	25	0		21.04	20.69	20.71

LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.87	22.70	22.58
3	1	8		22.87	22.77	22.61
3	1	14		22.81	22.68	22.62
3	8	0		21.80	21.69	21.61
3	8	4		21.70	21.55	21.73
3	8	7		21.71	21.59	21.67
3	15	0		21.70	21.72	21.71
3	1	0	16-QAM	21.83	21.85	21.84
3	1	8		22.01	22.06	22.08
3	1	14		21.82	21.77	21.87
3	8	0		20.86	20.66	20.75
3	8	4		20.72	20.60	20.69
3	8	7		20.83	20.62	20.76
3	15	0		20.78	20.68	20.64
1.4	1	0	QPSK	22.91	22.84	22.93
1.4	1	3		23.09	22.82	22.93
1.4	1	5		22.88	22.64	22.84
1.4	3	0		22.86	22.62	22.71
1.4	3	1		22.95	22.80	22.85
1.4	3	3		22.99	22.65	22.63
1.4	6	0		21.84	21.71	21.75
1.4	1	0	16-QAM	22.38	22.07	22.22
1.4	1	3		22.42	22.10	22.13
1.4	1	5		22.31	21.93	22.12
1.4	3	0		21.93	21.71	21.75
1.4	3	1		21.91	21.67	21.87
1.4	3	3		21.91	21.69	21.81
1.4	6	0		20.85	20.77	20.84

LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.73	22.65	22.70
10	1	25		22.56	22.53	22.64
10	1	49		22.34	22.43	22.51
10	25	0		21.57	21.54	21.56
10	25	12		21.54	21.38	21.57
10	25	25		21.53	21.34	21.38
10	50	0		21.45	21.37	21.38
10	1	0	16-QAM	21.98	21.70	21.77
10	1	25		22.02	21.86	21.72
10	1	49		21.65	21.65	21.78
10	25	0		20.56	20.45	20.64
10	25	12		20.42	20.49	20.43
10	25	25		20.55	20.37	20.50
10	50	0		20.51	20.45	20.50
5	1	0	QPSK	22.59	22.34	22.47
5	1	12		22.44	22.50	22.56
5	1	24		22.45	22.50	22.39
5	12	0		21.45	21.43	21.48
5	12	7		21.51	21.50	21.44
5	12	13		21.54	21.51	21.39
5	25	0		21.50	21.46	21.50
5	1	0	16-QAM	21.91	21.55	21.75
5	1	12		21.86	21.71	21.87
5	1	24		21.81	21.63	21.80
5	12	0		20.47	20.36	20.45
5	12	7		20.59	20.55	20.63
5	12	13		20.53	20.50	20.41
5	25	0		20.59	20.48	20.36

LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.59	22.48	22.31
3	1	8		22.45	22.51	22.54
3	1	14		22.47	22.52	22.51
3	8	0		21.47	21.51	21.32
3	8	4		21.60	21.35	21.52
3	8	7		21.44	21.42	21.55
3	15	0		21.44	21.47	21.43
3	1	0	16-QAM	21.81	21.57	21.69
3	1	8		21.75	21.56	21.65
3	1	14		21.71	21.53	21.64
3	8	0		20.65	20.36	20.41
3	8	4		20.49	20.58	20.50
3	8	7		20.38	20.47	20.56
3	15	0		20.45	20.55	20.46
1.4	1	0	QPSK	22.71	22.56	22.65
1.4	1	3		22.55	22.65	22.59
1.4	1	5		22.49	22.44	22.57
1.4	3	0		22.61	22.60	22.55
1.4	3	1		22.59	22.54	22.51
1.4	3	3		22.40	22.52	22.58
1.4	6	0		21.41	21.61	21.34
1.4	1	0	16-QAM	21.98	21.75	21.89
1.4	1	3		22.00	21.68	21.96
1.4	1	5		21.86	21.67	21.81
1.4	3	0		21.62	21.45	21.56
1.4	3	1		21.71	21.57	21.53
1.4	3	3		21.57	21.38	21.45
1.4	6	0		20.56	20.51	20.54

LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	22.14	22.49	22.11
20	1	49		22.36	22.36	22.20
20	1	99		22.28	22.14	22.10
20	50	0		21.32	21.47	21.22
20	50	24		21.40	21.54	21.24
20	50	50		21.48	21.38	21.31
20	100	0		21.31	21.46	21.22
20	1	0	16-QAM	21.35	21.69	21.40
20	1	49		21.65	21.61	21.57
20	1	99		21.46	21.44	21.34
20	50	0		20.30	20.52	20.28
20	50	24		20.39	20.55	20.28
20	50	50		20.43	20.43	20.33
20	100	0		20.33	20.51	20.28
15	1	0	QPSK	22.05	22.42	22.13
15	1	37		22.45	22.33	22.17
15	1	74		22.37	22.10	22.03
15	36	0		21.40	21.55	21.30
15	36	20		21.42	21.60	21.25
15	36	39		21.38	21.39	21.39
15	75	0		21.39	21.48	21.13
15	1	0	16-QAM	21.45	21.67	21.34
15	1	37		21.65	21.52	21.63
15	1	74		21.47	21.39	21.28
15	36	0		20.34	20.57	20.37
15	36	20		20.41	20.52	20.36
15	36	39		20.51	20.33	20.28
15	75	0		20.42	20.43	20.30

LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.22	22.40	22.05
10	1	25		22.28	22.29	22.18
10	1	49		22.36	22.09	22.19
10	25	0		21.41	21.53	21.31
10	25	12		21.30	21.54	21.14
10	25	25		21.42	21.37	21.32
10	50	0		21.32	21.37	21.23
10	1	0	16-QAM	21.39	21.75	21.36
10	1	25		21.74	21.54	21.57
10	1	49		21.38	21.38	21.32
10	25	0		20.34	20.62	20.34
10	25	12		20.49	20.52	20.18
10	25	25		20.33	20.42	20.24
10	50	0		20.29	20.43	20.25
5	1	0	QPSK	22.09	22.48	22.10
5	1	12		22.45	22.30	22.14
5	1	24		22.29	22.16	22.06
5	12	0		21.30	21.53	21.28
5	12	7		21.36	21.52	21.33
5	12	13		21.55	21.44	21.41
5	25	0		21.37	21.43	21.22
5	1	0	16-QAM	21.36	21.70	21.50
5	1	12		21.58	21.52	21.62
5	1	24		21.50	21.52	21.28
5	12	0		20.23	20.59	20.21
5	12	7		20.47	20.64	20.26
5	12	13		20.47	20.38	20.40
5	25	0		20.39	20.59	20.28

LTE Band 12 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.33	23.24	23.24
10	1	25		23.21	23.15	23.19
10	1	49		23.08	23.24	22.95
10	25	0		22.20	22.13	21.91
10	25	12		22.08	22.10	21.89
10	25	25		22.15	21.96	22.03
10	50	0		22.25	21.95	21.96
10	1	0	16-QAM	22.55	22.36	22.52
10	1	25		22.53	22.32	22.39
10	1	49		22.20	22.26	22.35
10	25	0		21.19	21.05	21.00
10	25	12		21.12	21.06	21.06
10	25	25		21.17	21.05	21.03
10	50	0		21.07	21.05	21.02
5	1	0	QPSK	23.31	23.05	23.07
5	1	12		23.19	22.89	22.80
5	1	24		23.13	22.91	22.99
5	12	0		22.17	21.99	21.94
5	12	7		22.18	22.05	21.96
5	12	13		22.11	22.02	21.83
5	25	0		22.18	21.93	22.04
5	1	0	16-QAM	22.51	22.39	22.19
5	1	12		22.59	22.33	22.50
5	1	24		22.37	22.16	22.27
5	12	0		21.07	21.08	20.93
5	12	7		21.12	20.99	20.90
5	12	13		21.13	21.01	20.85
5	25	0		21.22	21.11	20.80

LTE Band 12 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	23.19	22.97	22.87
3	1	8		23.14	22.94	22.84
3	1	14		22.96	22.86	22.87
3	8	0		22.16	22.00	21.92
3	8	4		22.05	21.93	21.99
3	8	7		22.05	21.77	21.98
3	15	0		22.25	21.85	21.93
3	1	0	16-QAM	22.41	22.19	22.05
3	1	8		22.39	22.18	22.22
3	1	14		22.39	22.05	22.20
3	8	0		21.32	21.00	20.94
3	8	4		21.22	21.01	20.94
3	8	7		21.07	20.86	20.95
3	15	0		21.25	20.86	21.01
1.4	1	0	QPSK	23.14	23.21	23.13
1.4	1	3		23.14	23.01	23.11
1.4	1	5		23.07	23.13	22.99
1.4	3	0		23.13	23.02	22.86
1.4	3	1		23.03	23.13	23.04
1.4	3	3		23.23	23.03	22.87
1.4	6	0		22.09	22.03	21.87
1.4	1	0	16-QAM	22.61	22.35	22.37
1.4	1	3		22.58	22.42	22.46
1.4	1	5		22.58	22.32	22.31
1.4	3	0		22.21	22.04	22.13
1.4	3	1		22.27	22.09	21.89
1.4	3	3		22.17	22.11	22.08
1.4	6	0		21.29	20.89	21.06

LTE Band 13 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK		22.46	
10	1	25			22.28	
10	1	49			22.40	
10	25	0			21.34	
10	25	12			21.20	
10	25	25			21.18	
10	50	0			21.28	
10	1	0	16-QAM		21.76	
10	1	25			21.49	
10	1	49			21.57	
10	25	0			20.33	
10	25	12			20.25	
10	25	25			20.21	
10	50	0			20.26	
5	1	0	QPSK	22.38	22.22	22.08
5	1	12		22.36	22.03	22.21
5	1	24		22.23	22.33	22.41
5	12	0		21.42	21.03	21.08
5	12	7		21.28	21.19	21.32
5	12	13		21.14	21.07	21.30
5	25	0		21.27	21.16	21.15
5	1	0	16-QAM	21.73	21.53	21.39
5	1	12		21.79	21.42	21.58
5	1	24		21.39	21.56	21.68
5	12	0		20.33	20.15	20.19
5	12	7		20.42	20.08	20.24
5	12	13		20.05	20.09	20.34
5	25	0		20.25	20.07	20.16

LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.05	22.91	23.02
20	1	49		22.89	22.90	22.90
20	1	99		22.67	22.53	22.76
20	50	0		21.85	21.77	21.90
20	50	24		21.83	21.78	21.92
20	50	50		21.77	21.75	21.84
20	100	0		21.74	21.74	21.98
20	1	0	16-QAM	22.20	21.98	22.24
20	1	49		22.07	22.02	22.31
20	1	99		21.96	21.75	21.96
20	50	0		20.90	20.85	20.85
20	50	24		20.83	20.77	20.98
20	50	50		20.73	20.69	20.76
20	100	0		20.73	20.75	20.94
15	1	0	QPSK	22.78	22.78	22.94
15	1	37		22.92	22.80	22.89
15	1	74		22.73	22.61	22.65
15	36	0		21.82	21.66	22.01
15	36	20		21.79	21.84	21.98
15	36	39		21.81	21.79	21.94
15	75	0		21.74	21.86	22.02
15	1	0	16-QAM	21.99	22.17	22.19
15	1	37		22.13	22.12	22.25
15	1	74		21.98	21.89	21.90
15	36	0		20.80	20.73	20.85
15	36	20		20.93	20.94	20.96
15	36	39		20.78	20.75	20.74
15	75	0		20.78	20.78	21.00

LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.92	22.88	23.02
10	1	25		22.99	23.04	22.80
10	1	49		22.76	22.74	22.78
10	25	0		21.74	21.82	21.88
10	25	12		21.73	21.71	21.77
10	25	25		21.78	21.76	21.74
10	50	0		21.67	21.74	21.96
10	1	0	16-QAM	22.12	22.23	22.27
10	1	25		22.09	22.09	22.23
10	1	49		21.82	22.02	22.12
10	25	0		20.74	20.82	20.76
10	25	12		20.64	20.82	20.84
10	25	25		20.76	20.60	20.83
10	50	0		20.79	20.73	20.89
5	1	0	QPSK	22.89	22.97	22.76
5	1	12		22.91	22.63	22.73
5	1	24		22.79	22.71	22.79
5	12	0		21.83	21.69	21.87
5	12	7		21.75	21.71	21.94
5	12	13		21.78	21.67	21.79
5	25	0		21.74	21.75	21.89
5	1	0	16-QAM	22.35	22.00	22.20
5	1	12		22.12	21.91	22.20
5	1	24		21.93	21.99	22.12
5	12	0		20.85	20.74	20.74
5	12	7		20.84	20.82	20.79
5	12	13		20.82	20.78	20.90
5	25	0		20.75	20.69	20.87

LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.98	22.90	22.70
3	1	8		22.84	22.77	22.83
3	1	14		22.79	22.76	22.87
3	8	0		21.91	21.80	21.73
3	8	4		21.85	21.68	21.75
3	8	7		21.77	21.76	21.76
3	15	0		21.77	21.64	21.83
3	1	0	16-QAM	22.22	22.01	22.06
3	1	8		22.14	21.94	22.14
3	1	14		21.94	21.88	22.03
3	8	0		20.97	20.70	20.70
3	8	4		20.97	20.86	20.65
3	8	7		20.90	20.74	20.71
3	15	0		20.80	20.71	20.68
1.4	1	0	QPSK	22.92	22.76	22.79
1.4	1	3		22.79	22.66	22.89
1.4	1	5		22.76	22.77	22.67
1.4	3	0		22.72	22.70	22.65
1.4	3	1		22.81	22.69	22.66
1.4	3	3		22.68	22.68	22.64
1.4	6	0		21.74	21.54	21.69
1.4	1	0	16-QAM	22.01	21.98	22.06
1.4	1	3		21.99	21.91	21.99
1.4	1	5		21.99	21.85	21.97
1.4	3	0		21.72	21.78	21.73
1.4	3	1		21.74	21.80	21.86
1.4	3	3		21.82	21.63	21.79
1.4	6	0		20.74	20.74	20.74

LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	22.65	22.93	22.72
15	1	37		22.84	22.57	22.67
15	1	74		22.51	22.53	22.48
15	36	0		21.97	21.72	21.56
15	36	20		22.00	21.69	21.74
15	36	39		21.71	21.46	21.73
15	75	0		21.95	21.63	21.66
15	1	0	16-QAM	22.34	21.88	21.72
15	1	37		22.13	21.74	21.90
15	1	74		21.81	21.65	21.83
15	36	0		20.91	20.70	20.67
15	36	20		21.08	20.63	20.57
15	36	39		20.64	20.53	20.60
15	75	0		20.83	20.63	20.74
10	1	0	QPSK	22.87	22.67	22.60
10	1	25		22.87	22.69	22.53
10	1	49		22.83	22.65	22.48
10	25	0		21.99	21.79	21.61
10	25	12		22.01	21.47	21.48
10	25	25		21.92	21.76	21.54
10	50	0		21.94	21.58	21.59
10	1	0	16-QAM	22.29	21.71	21.89
10	1	25		22.34	21.86	21.78
10	1	49		22.18	21.70	21.86
10	25	0		20.86	20.63	20.70
10	25	12		20.93	20.60	20.43
10	25	25		20.81	20.62	20.56
10	50	0		20.95	20.82	20.77

LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.81	22.71	22.52
5	1	12		22.79	22.67	22.53
5	1	24		22.82	22.64	22.65
5	12	0		21.97	21.67	21.45
5	12	7		21.95	21.47	21.54
5	12	13		21.88	21.67	21.58
5	25	0		21.87	21.55	21.58
5	1	0	16-QAM	22.32	21.71	21.76
5	1	12		22.24	21.87	21.86
5	1	24		22.18	21.59	21.74
5	12	0		20.98	20.70	20.63
5	12	7		20.90	20.67	20.47
5	12	13		20.92	20.64	20.50
5	25	0		21.00	20.63	20.66
3	1	0	QPSK	22.84	22.91	22.69
3	1	8		22.92	22.88	22.57
3	1	14		22.90	22.70	22.69
3	8	0		22.02	21.82	21.68
3	8	4		22.02	21.71	21.76
3	8	7		22.03	21.60	21.58
3	15	0		22.05	21.78	21.51
3	1	0	16-QAM	22.20	21.91	21.91
3	1	8		22.27	22.09	21.86
3	1	14		22.17	21.97	21.91
3	8	0		20.99	20.80	20.77
3	8	4		20.96	20.77	20.62
3	8	7		20.93	20.69	20.69
3	15	0		20.86	20.65	20.63

LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	22.92	22.56	22.54
1.4	1	3		22.90	22.57	22.49
1.4	1	5		22.90	22.71	22.55
1.4	3	0		22.85	22.73	22.56
1.4	3	1		22.84	22.65	22.47
1.4	3	3		22.81	22.63	22.46
1.4	6	0		21.84	21.91	21.59
1.4	1	0	16-QAM	22.21	21.72	21.84
1.4	1	3		22.40	21.66	21.86
1.4	1	5		22.34	21.78	21.87
1.4	3	0		21.97	21.61	21.61
1.4	3	1		22.02	21.93	21.45
1.4	3	3		22.08	21.82	21.59
1.4	6	0		21.04	20.91	20.80

LTE Band 41 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	22.31	22.30	22.50
20	1	49		22.24	22.28	21.92
20	1	99		21.92	22.00	21.52
20	50	0		21.45	21.39	21.69
20	50	24		21.42	21.39	21.38
20	50	50		21.22	21.12	21.02
20	100	0		21.30	21.31	21.39
20	1	0	16-QAM	21.30	21.40	21.55
20	1	49		21.31	21.44	21.04
20	1	99		21.06	21.11	20.67
20	50	0		20.38	20.48	20.76
20	50	24		20.41	20.44	20.45
20	50	50		20.23	20.23	20.09
20	100	0		20.33	20.41	20.37
15	1	0	QPSK	22.03	22.26	22.38
15	1	37		22.25	22.19	21.85
15	1	74		21.90	22.05	21.43
15	36	0		21.28	21.49	21.68
15	36	20		21.35	21.41	21.29
15	36	39		21.29	21.13	21.10
15	75	0		21.26	21.22	21.24
15	1	0	16-QAM	21.25	21.39	21.64
15	1	37		21.35	21.44	20.99
15	1	74		21.05	21.17	20.57
15	36	0		20.47	20.55	20.81
15	36	20		20.36	20.41	20.40
15	36	39		20.30	20.26	20.13
15	75	0		20.39	20.35	20.28

LTE Band 41 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.02	22.32	22.33
10	1	25		22.17	22.31	21.99
10	1	49		21.92	21.98	21.49
10	25	0		21.30	21.35	21.70
10	25	12		21.44	21.33	21.39
10	25	25		21.25	21.16	21.04
10	50	0		21.20	21.37	21.35
10	1	0	16-QAM	21.38	21.48	21.53
10	1	25		21.38	21.38	21.04
10	1	49		20.99	21.09	20.70
10	25	0		20.32	20.57	20.78
10	25	12		20.44	20.45	20.43
10	25	25		20.28	20.24	20.15
10	50	0		20.28	20.39	20.28
5	1	0	QPSK	22.16	22.33	22.49
5	1	12		22.24	22.20	21.82
5	1	24		21.84	21.90	21.56
5	12	0		21.44	21.38	21.65
5	12	7		21.43	21.32	21.45
5	12	13		21.30	21.20	21.09
5	25	0		21.40	21.25	21.20
5	1	0	16-QAM	21.40	21.50	21.53
5	1	12		21.32	21.37	21.13
5	1	24		20.97	21.19	20.76
5	12	0		20.47	20.41	20.67
5	12	7		20.44	20.37	20.47
5	12	13		20.21	20.19	20.14
5	25	0		20.26	20.51	20.42

Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

LTE Band 12 / 10MHz / QPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	1399	-67.65	-13	-54.65	-73.21	-72.03	2.86	9.39	H
	2098.5	-69.51	-13	-56.51	-79.93	-74.23	3.72	10.59	H
	2798	-65.23	-13	-52.23	-79.99	-71.28	4.39	12.59	H
	1399	-68.51	-13	-55.51	-73.22	-72.89	2.86	9.39	V
	2098.5	-69.34	-13	-56.34	-79.17	-74.06	3.72	10.59	V
	2798	-66.42	-13	-53.42	-79.99	-72.47	4.39	12.59	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.