FCC CFR47 PART 22H, 24E, 27, 90S CERTIFICATION TEST REPORT

FCC ID: 2AHZ5KK5P

Product:	Smartphone
Trade Mark:	CUBOT
Model Number:	KINGKONG 5 Pro
Family Model:	N/A
Report No.:	S21012002812006

Prepared for

Shenzhen Huafurui Technology Co., Ltd

Unit 1401 14/F, Jin qi zhi gu mansion Liu xian street, Xili, Nan shan district, Shenzhen, China

Prepared by

Shenzhen NTEK Testing Technology Co., Ltd.

1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street Bao'an District, Shenzhen 518126 P.R. China
Tel. 400-800-6106, 0755-2320 0050, 0755-2320 0090
Website: http://www.ntek.org.cn

TEST RESULT CERTIFICATION

Applicant's name ..... :	Shenzhen Huafurui Technology Co., Ltd
Address..... :	Unit 1401 14/F, Jin qi zhi gu mansion Liu xian street, Xili, Nan shan district, Shenzhen, China
Manufacturer's Name..... :	Shenzhen Huafurui Technology Co., Ltd
Address..... :	Unit 1401 14/F, Jin qi zhi gu mansion Liu xian street, Xili, Nan shan district, Shenzhen, China
Product name..... :	Smartphone
Model and/or type reference .. :	KINGKONG 5 Pro
Family Model：	N/A
Standards..... :	FCC CFR 47 Part 22H, Part 24E, Part 27, Part 90S
Test procedure ..... :	ANSI C63.26:2015 ANSI/TIA-603-E-2016

This device described above has been tested by NTEK, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

This report shall not be reproduced except in full, without the written approval of NTEK, this document may be altered or revised by NTEK, personal only, and shall be noted in the revision of the document.

Date of Test .....

Date (s) of performance of tests..... Jan 20. 2021 ~Mar 15, 2021

Date of Issue..... Mar 15, 2021

Test Result..... **Pass**

Testing Engineer : Cheng Jiawen

(Cheng Jiawen)

Technical Manager : Jasonchen

(Jason Chen)

Authorized Signatory : Alex

(Alex Li)

TABLE OF CONTENTS

1. GENERAL INFORMATION

1.1 PRODUCT DESCRIPTION

A major technical description of EUT is described as following:

Product Designation:	Smartphone
Trade Mark	CUBOT
Model Name	KINGKONG 5 Pro
Family Model	N/A
Model Difference	N/A
FCC ID:	2AHZ5KK5P
Frequency Bands:	U.S. Bands: ☒LTE FDD Band 2,4,5,7,12,13,17,25,26,41,66
Frequency Range:	LTE FDD Band 2 Uplink: 1850MHz-1910MHz, Downlink: 1930MHz-1990MHz; LTE FDD Band 4 Uplink: 1710MHz-1755MHz, Downlink: 2110MHz-2155MHz; LTE FDD Band 5 Uplink: 824MHz-849MHz, Downlink: 869MHz-894MHz; LTE-FDD Band 7 Uplink: 2500MHz-2570MHz, Downlink: 2620MHz-2690MHz; LTE FDD Band 12 Uplink: 699MHz-716MHz, Downlink: 729MHz-746MHz; LTE FDD Band 13 Uplink: 777MHz-787MHz, Downlink: 746MHz-756MHz; LTE FDD Band 17 Uplink: 704MHz-716MHz, Downlink: 734MHz-746MHz; LTE FDD Band 25 Uplink: 1850MHz-1915MHz, Downlink: 1930MHz-1995MHz; LTE FDD Band 26 Uplink: 814MHz-849MHz, Downlink: 859MHz-894MHz; LTE FDD Band 41 Uplink: 2496MHz-2690MHz, LTE FDD Band 66 Uplink: 1710MHz-1780MHz, Downlink: 2110MHz-2200MHz;
Type of Modulation:	QPSK/16QAM
SIM Card	SIM 1 and SIM 2 is a chipset unit and tested as a single chipset. The SIM 1 is chosen for test.
Antenna:	PIFA Antenna
Antenna gain:	Band 2: 1dBi; Band 4: 1.1dBi ; Band 5: -0.8dBi ; Band 7: 1.3dBi ; Band 12: -2.5dBi ;Band 13: -2.1dBi; Band 17: -2.2dBi; Band 25: 1.1dBi; Band 26: -1.6dBi; Band 41: 1.3dBi; Band 66: 1.1dBi;
Power Supply:	DC 3.85V from battery or DC 5V from Adapter.

Adapter:	Model: HJ-0503000K7-US Input: AC 100-240V~50/60Hz 0.6A Output: DC 5V⎓3.0A 15.0W
Extreme Vol. Limits:	DC 3.4V to DC 4.2V (Nominal DC 3.85V)（Note 1）
HW Version	TE826_MAIN_PCB_V1.1
SW Version	CUBOT_KINGKONG 5 Pro_B021C_V02_20210302
** Note1: The High Voltage DC 4.2V and Low Voltage 3.4V was declared by manufacturer, The EUT couldn't be operate normally with higher or lower voltage.	

1.2 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2AHZ5KK5P** filing to comply with the FCC Part 22H&24E&27&90S.

1.3 TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI/TIA-603-E-2016, FCC CFR 47 Part 2, Part 22, Part 24, Part 27, Part 90S,ANSI C63.26:2015.

1.4 TEST FACILITY

The test site used to collect the radiated data is located at:

ShenZhen NTEK Testing Technology Co., Ltd.

1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R.China.

The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.26:2015& ANSI C63.4: 2014.

FCC Registration No.:463705

IC Registration No.:9270A-1,

CNAS Registration No.:L5516

MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.5dB

1.5 SPECIAL ACCESSORIES

The battery and the charger, earphone supplied by the applicant were used as accessories and being tested with EUT intended for FCC grant together.

1.6 WORST-CASE CONFIGURATION AND MODE

The worst-case scenario for all measurements is based on the investigation results.

The device has LTE Bands of: Band 2, Band 4, Band 5, Band 7, Band 12, Band 13, Band 17, Band 25, Band 26, Band 41, Band 66.

The RB Size was selected to measure for peak or average ERP and EIRP, which was based on the conducted power verification baseline data.

For the fundamental investigation of radiated emissions, the EUT is investigated for vertical and horizontal antenna orientations and X Y and Z orientations of the EUT alone. After the investigations

the worst case was determined to be at X orientation for all LTE bands.

2. SYSTEM TEST CONFIGURATION

2.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT EXERCISE

The Transmitter was operated in the maximum output power mode through Communication Tester. The TX frequency was fixed which was for the purpose of the measurements.

2.3 CONFIGURATION OF EUT SYSTEM

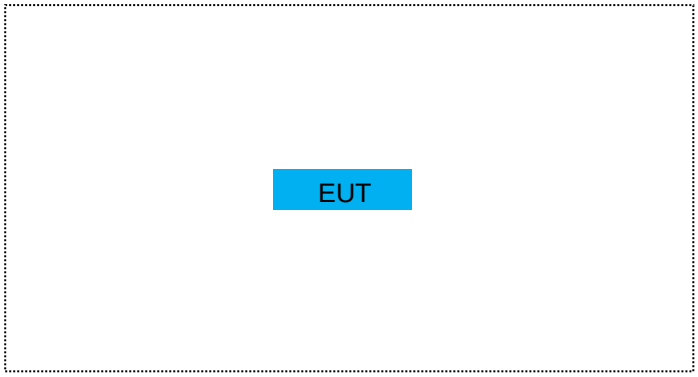
Table 2-1 Equipment Used in EUT System

Item	Equipment	Model No.	ID or Specification	Note
1	Smartphone	KINGKONG 5 Pro	FCC ID: 2AHZ5KK5P	EUT

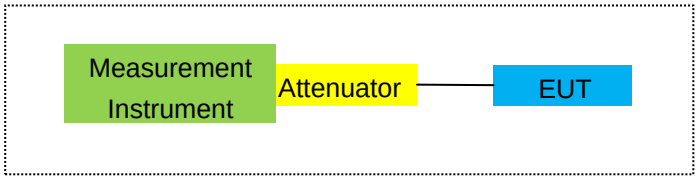
Note: All the accessories have been used during the test.
the following "EUT" in setup diagram means EUT system.

2.4 TEST SETUP

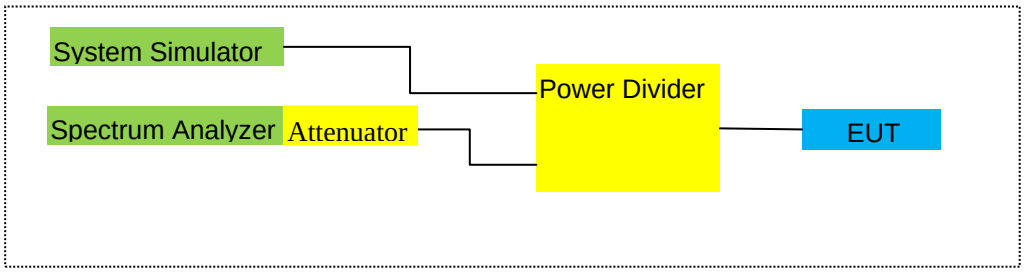
For Radiated Test Cases



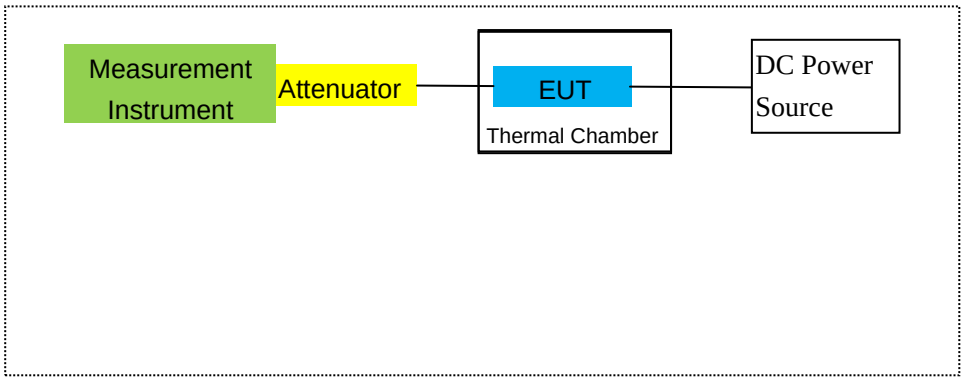
For Conducted Output Power



For Peak-to Average Ratio, Occupied Bandwidth, Conducted Band edge and Conducted Spurious Emission



For Frequency Stability



Note: EUT built-in battery-powered, the battery is fully-charged.

3.TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	MXA Signal Analyzer	Agilent	N9020A	MY49100060	2020.07.13	2021.07.12	1 year
2	Test Receiver	R&S	ESPI	101318	2020.05.11	2021.05.10	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2020.04.11	2021.04.10	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2020.05.11	2023.05.10	3 year
5	Horn Antenna	EM	EM-AH-10180	2011071402	2020.04.11	2021.04.10	1 year
6	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2020.11.20	2021.11.19	1 year
7	Amplifier	EM	EM-30180	060538	2020.07.13	2021.07.12	1 year
8	Loop Antenna	ARA	PLA-1030/B	1029	2020.05.11	2021.05.10	1 year
9	Power Meter	R&S	NRVS	100696	2020.07.13	2021.07.12	1 year
10	Power Sensor	R&S	URV5-Z4	0395.1619.05	2020.05.11	2021.05.10	1 year
11	Test Cable	N/A	R-01	N/A	2019.08.06	2022.08.05	3 year
12	Test Cable	N/A	R-02	N/A	2019.08.06	2022.08.05	3 year
13	Test Cable	N/A	R-03	N/A	2019.06.28	2022.06.27	3 year
14	Test Receiver	R&S	ESCI	101160	2020.05.11	2021.05.10	1 year
15	LISN	R&S	ENV216	101313	2020.05.11	2021.05.10	1 year
16	LISN	EMCO	3816/2	00042990	2020.05.11	2021.05.10	1 year
17	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2020.05.11	2021.05.10	1 year
18	Passive Voltage Probe	R&S	ESH2-Z3	100196	2020.04.11	2021.04.10	1 year
19	Test Cable	N/A	C01	N/A	2020.05.11	2023.05.10	3 year
20	Test Cable	N/A	C02	N/A	2020.05.11	2023.05.10	3 year
21	Test Cable	N/A	C03	N/A	2020.05.11	2021.05.10	1 year
22	Attenuator	MCE	24-10-34	BN9258	2020.05.11	2021.05.10	1 year
23	Spectrum Analyzer	agilent	e4440a	us44300399	2020.05.11	2021.05.10	1 year
24	test receiver	R&S	ESCI	a0304218	2020.05.11	2021.05.10	1 year
25	Communication Tester	R&S	CMU200	A0304247	2020.07.13	2021.07.12	1 year
26	Thermal Chamber	Ten Billion	TTC-B3C	TBN-960502	2020.05.11	2021.05.10	1 year

27	DC Power Source	N/A	PS-6005D	20170402923	2020.05.11	2023.05.10	3 year
28	PSG Analog Signal Generator	Agilent	E8257D	MY51110112	2020.7.13	2021.7.12	1 year
29	Communication Tester	R&S	CMW500	148500	2020.05.11	2021.05.10	1 year

Note: Each piece of equipment is scheduled for calibration once a year except the Test Cable& DC Power Source which is scheduled for calibration every 3 years.

4. OUTPUT POWER

4.1 OUTPUT POWER MEASUREMENT

LTE Measurement Procedure:

All LTE bands conducted power peak and average are obtained from the CMW500 telecommunication test set. The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of “NS_01”.3

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4,10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23[1]	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
--					
NS_32	-	-	-	-	-

Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.

Test data reference attachment.

5. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

LIMITS

For reporting purposes only

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. The occupied bandwidth was measured with the spectrum analyzer at the low, middle and high channel in each band. The -26dB bandwidth was also measured and recorded.

MODES TESTED

- □ LTE Band 2
- LTE Band 4
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 17
- LTE Band 25,
- LTE Band 26,
- LTE Band 41
- LTE Band 66

RESULTS

PASS

Test data reference attachment.

6. BANDEDGE AND EMISSION MASK

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238, §27.53, and §90.691
FCC: §22.359

LIMITS

FCC: §22.917, §24.238, §27.53
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

(m)(4) For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.Show citation box.
(c)(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations;

FCC: §90.691 Emission mask requirements for EA-based systems.
(a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:
(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log10(f/6.1) decibels or 50 + 10 Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.
(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

TEST PROCEDURE

The transmitter output was connected to a CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

For each band edge measurement:

Set the spectrum analyzer span to include the block edge frequency

Set a marker to point the corresponding band edge frequency in each test case.

Set resolution bandwidth to at least 1% of emission bandwidth.

MODES TESTED

- LTE Band 2
- LTE Band 4
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 17
- LTE Band 25,
- LTE Band 26,
- LTE Band 41
- LTE Band 66

RESULTS

Test data reference attachment.

7. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238, §27.53 and §90.691

LIMITS

1. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.
2. The Band 7/41 emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 55 + 10 log (P) dB.

TEST PROCEDURE

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

For each out of band emissions measurement:

□

□ Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.

MODES TESTED

□ LTE Band 2/4/5/7/12/13/17/25/26/41/66

□

7.1 MEASUREMENT METHOD

The test set up and general procedure is similar to conducted peak output power test. Only different for setting the measurement configuration of the measuring instrument of Spectrum Analyzer.

Test data reference attachment.

8. RADIATED MEASUREMENT

8.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §22.913, §24.232, §27.50 and §90.635

LIMITS:

22.913(a) - The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.
27.50 (c) (10) the following power and antenna height requirements apply to stations transmitting in the 698–746 MHz band, the portable stations (hand-held devices) are limited to 3 watts ERP.
27.50 (b)(10) Portable stations (hand-held devices) transmitting in the 746–757 MHz, 758–763 MHz, 776–793 MHz, and 805–806 MHz bands are limited to 3 watts ERP.
27.50 (d)(4) The following power and antenna height requirements apply to stations transmitting in the 1710–1755 MHz and 2110–2155 MHz bands: Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP.
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.
90.635(b) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

TEST PROCEDURE

ANSI/TIA-603-E Clause 2.2.17
KDB 971168 v02r01 RF power output using broadband peak and average power meter method.
KDB 971168 D01 Power Meas License Digital Systems v02r01, “Measurement Guidance for Certification of Licensed Digital Transmitters”

MODES TESTED

- LTE Band 2/4/5/7/12/13/17/25/26/41/66

RESULTS

Pass

8.2 LTE BAND 2

Radiated Power (EIRP) for Band 2									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	1850.7	-1.21	3.76	28.24	23.27	212.324	Horizontal	Pass
		1880	0.08	3.91	28.22	24.39	274.789	Horizontal	Pass
		1909.3	-1.41	3.93	28.20	22.86	193.197	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-0.04	3.77	28.23	24.42	276.694	Horizontal	Pass
		1880	-0.45	3.91	28.24	23.88	244.343	Horizontal	Pass
		1908.5	-0.80	3.94	28.25	23.51	224.388	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-1.20	3.77	28.31	23.34	215.774	Horizontal	Pass
		1880	-0.81	3.91	28.22	23.50	223.872	Horizontal	Pass
		1907.5	0.14	3.94	28.20	24.40	275.423	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1855	-0.60	3.79	28.33	23.94	247.742	Horizontal	Pass
		1880	-0.49	3.95	28.22	23.78	238.781	Horizontal	Pass
		1905	0.07	3.97	28.19	24.29	268.534	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1857.5	-1.30	3.79	28.34	23.25	211.349	Horizontal	Pass
		1880	0.24	3.95	28.22	24.51	282.488	Horizontal	Pass
		1902.5	0.32	3.97	28.18	24.53	283.792	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1860	-0.13	3.81	28.35	24.41	276.058	Horizontal	Pass
		1880	-1.14	3.96	28.22	23.12	205.116	Horizontal	Pass
		1900	-0.16	4.00	28.16	24.00	251.189	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1850.7	-0.56	3.76	28.24	23.92	246.604	Vertical	Pass
		1880	0.26	3.91	28.22	24.57	286.418	Vertical	Pass
		1909.3	-0.53	3.93	28.20	23.74	236.592	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-0.96	3.77	28.23	23.50	223.872	Vertical	Pass
		1880	-0.39	3.91	28.24	23.94	247.742	Vertical	Pass
		1908.5	0.31	3.94	28.25	24.62	289.734	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-0.29	3.77	28.31	24.25	266.073	Vertical	Pass
		1880	0.35	3.91	28.22	24.66	292.415	Vertical	Pass
		1907.5	0.30	3.94	28.20	24.56	285.759	Vertical	Pass
10.0MHz Band	1/#Mid	1855	-0.76	3.79	28.33	23.78	238.781	Vertical	Pass
		1880	-1.26	3.95	28.22	23.01	199.986	Vertical	Pass

QPSK		1905	-1.65	3.97	28.19	22.57	180.717	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	1857.5	-1.50	3.79	28.34	23.05	201.837	Vertical	Pass
		1880	-0.62	3.95	28.22	23.65	231.739	Vertical	Pass
		1902.5	-0.84	3.97	28.18	23.37	217.270	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	1860	-1.43	3.81	28.35	23.11	204.644	Vertical	Pass
		1880	-1.34	3.96	28.22	22.92	195.884	Vertical	Pass
		1900	0.58	4.00	28.16	24.74	297.852	Vertical	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)
Factor Gain(dB)=Antenna Gain(dB) + Amplifier Factor (dB)

Radiated Power (EIRP) for Band 2									
Mode	RB/RB SIZE	Frequency	Result					Polarization Of Max. ERP	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)		
1.4MHz Band 16 QAM	1/#Mid	1850.7	-1.75	3.76	28.24	22.73	187.499	Horizontal	Pass
		1880	-1.34	3.91	28.22	22.97	198.153	Horizontal	Pass
		1909.3	-0.98	3.93	28.20	23.29	213.304	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-1.94	3.77	28.23	22.52	178.649	Horizontal	Pass
		1880	-1.19	3.91	28.24	23.14	206.063	Horizontal	Pass
		1908.5	-1.40	3.94	28.25	22.91	195.434	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-1.80	3.77	28.31	22.74	187.932	Horizontal	Pass
		1880	-1.49	3.91	28.22	22.82	191.426	Horizontal	Pass
		1907.5	-0.92	3.94	28.20	23.34	215.774	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-1.68	3.79	28.33	22.86	193.197	Horizontal	Pass
		1880	-1.49	3.95	28.22	22.78	189.671	Horizontal	Pass
		1905	-0.84	3.97	28.19	23.38	217.771	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-1.74	3.79	28.34	22.81	190.985	Horizontal	Pass
		1880	-1.39	3.95	28.22	22.88	194.089	Horizontal	Pass
		1902.5	-1.36	3.97	28.18	22.85	192.752	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1860	-1.53	3.81	28.35	23.01	199.986	Horizontal	Pass
		1880	-0.90	3.96	28.22	23.36	216.770	Horizontal	Pass
		1900	-1.01	4.00	28.16	23.15	206.538	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1850.7	-1.92	3.76	28.24	22.56	180.302	Vertical	Pass
		1880	-0.95	3.91	28.22	23.36	216.770	Vertical	Pass
		1909.3	-0.95	3.93	28.20	23.32	214.783	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-1.67	3.77	28.23	22.79	190.108	Vertical	Pass
		1880	-1.51	3.91	28.24	22.82	191.426	Vertical	Pass
		1908.5	-1.23	3.94	28.25	23.08	203.236	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-1.18	3.77	28.31	23.36	216.770	Vertical	Pass
		1880	-1.77	3.91	28.22	22.54	179.473	Vertical	Pass
		1907.5	-1.06	3.94	28.20	23.20	208.930	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-1.38	3.79	28.33	23.16	207.014	Vertical	Pass
		1880	-1.55	3.95	28.22	22.72	187.068	Vertical	Pass
		1905	-1.48	3.97	28.19	22.74	187.932	Vertical	Pass
15.0MHz Band	1/#Mid	1857.5	-1.19	3.79	28.34	23.36	216.770	Vertical	Pass
		1880	-1.99	3.95	28.22	22.28	169.044	Vertical	Pass

16 QAM		1902.5	-0.95	3.97	28.18	23.26	211.836	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	1860	-0.81	3.81	28.35	23.73	236.048	Vertical	Pass
		1880	-0.96	3.96	28.22	23.30	213.796	Vertical	Pass
		1900	-1.10	4.00	28.16	23.06	202.302	Vertical	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)
Factor Gain(dB)=Antenna Gain(dB) + Amplifier Factor (dB)

8.3 LTE BAND 4

Radiated Power (EIRP) for Band 4									
Mode	RB/RB SIZE	Frequency	Result					Polarization Of Max. ERP	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)		
1.4MHz Band QPSK	1/#Mid	1710.7	0.09	3.12	27.58	24.55	285.102	Horizontal	Pass
		1732.5	0.50	3.27	27.61	24.84	304.789	Horizontal	Pass
		1754.3	0.11	3.29	27.63	24.45	278.612	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-1.02	3.13	27.61	23.46	221.820	Horizontal	Pass
		1732.5	-1.52	3.27	27.61	22.82	191.426	Horizontal	Pass
		1753.5	-1.76	3.30	27.62	22.56	180.302	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-0.48	3.13	27.63	24.02	252.348	Horizontal	Pass
		1732.5	-1.73	3.27	27.61	22.61	182.390	Horizontal	Pass
		1752.5	0.42	3.30	27.60	24.72	296.483	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1715	-0.46	3.15	27.64	24.03	252.930	Horizontal	Pass
		1732.5	0.23	3.31	27.61	24.53	283.792	Horizontal	Pass
		1750	0.56	3.33	27.59	24.82	303.389	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-0.98	3.15	27.65	23.52	224.905	Horizontal	Pass
		1732.5	0.40	3.31	27.61	24.70	295.121	Horizontal	Pass
		1747.5	0.14	3.33	27.57	24.38	274.157	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1720	-1.15	3.17	27.66	23.34	215.774	Horizontal	Pass
		1732.5	0.40	3.32	27.61	24.69	294.442	Horizontal	Pass
		1745	-0.01	3.36	27.56	24.19	262.422	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1710.7	0.31	3.12	27.58	24.77	299.916	Vertical	Pass
		1732.5	-0.91	3.27	27.61	23.43	220.293	Vertical	Pass
		1754.3	-1.11	3.29	27.63	23.23	210.378	Vertical	Pass

3.0MHz Band QPSK	1/#Mid	1711.5	0.28	3.13	27.61	24.76	299.226	Vertical	Pass
		1732.5	0.21	3.27	27.61	24.55	285.102	Vertical	Pass
		1753.5	0.10	3.30	27.62	24.42	276.694	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-1.23	3.13	27.63	23.27	212.324	Vertical	Pass
		1732.5	-0.14	3.27	27.61	24.20	263.027	Vertical	Pass
		1752.5	-1.02	3.30	27.60	23.28	212.814	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1715	-0.92	3.15	27.64	23.57	227.510	Vertical	Pass
		1732.5	-1.18	3.31	27.61	23.12	205.116	Vertical	Pass
		1750	0.37	3.33	27.59	24.63	290.402	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-0.89	3.15	27.65	23.61	229.615	Vertical	Pass
		1732.5	-0.51	3.31	27.61	23.79	239.332	Vertical	Pass
		1747.5	-0.75	3.33	27.57	23.49	223.357	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	1720	-0.12	3.17	27.66	24.37	273.527	Vertical	Pass
		1732.5	0.36	3.32	27.61	24.65	291.743	Vertical	Pass
		1745	0.69	3.36	27.56	24.89	308.319	Vertical	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)
Factor Gain(dB)=Antenna Gain(dB) + Amplifier Factor (dB)

Radiated Power (EIRP) for Band 4									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mid	1710.7	-1.60	3.12	27.58	22.86	193.197	Horizontal	Pass
		1732.5	-1.84	3.27	27.61	22.50	177.828	Horizontal	Pass
		1754.3	-1.73	3.29	27.63	22.61	182.390	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-1.76	3.13	27.61	22.72	187.068	Horizontal	Pass
		1732.5	-2.92	3.27	27.61	21.42	138.676	Horizontal	Pass
		1753.5	-1.66	3.30	27.62	22.66	184.502	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-1.83	3.13	27.63	22.67	184.927	Horizontal	Pass
		1732.5	-2.05	3.27	27.61	22.29	169.434	Horizontal	Pass
		1752.5	-1.14	3.30	27.60	23.16	207.014	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-1.60	3.15	27.64	22.89	194.536	Horizontal	Pass
		1732.5	-1.96	3.31	27.61	22.34	171.396	Horizontal	Pass
		1750	-2.18	3.33	27.59	22.08	161.436	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-1.95	3.15	27.65	22.55	179.887	Horizontal	Pass
		1732.5	-1.62	3.31	27.61	22.68	185.353	Horizontal	Pass
		1747.5	-1.46	3.33	27.57	22.78	189.671	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-1.82	3.17	27.66	22.67	184.927	Horizontal	Pass
		1732.5	-0.84	3.32	27.61	23.45	221.309	Horizontal	Pass
		1745	-1.60	3.36	27.56	22.60	181.970	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	-1.43	3.12	27.58	23.03	200.909	Vertical	Pass
		1732.5	-1.17	3.27	27.61	23.17	207.491	Vertical	Pass
		1754.3	-1.73	3.29	27.63	22.61	182.390	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-2.01	3.13	27.61	22.47	176.604	Vertical	Pass
		1732.5	-2.78	3.27	27.61	21.56	143.219	Vertical	Pass
		1753.5	-1.82	3.30	27.62	22.50	177.828	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-1.80	3.13	27.63	22.70	186.209	Vertical	Pass
		1732.5	-1.86	3.27	27.61	22.48	177.011	Vertical	Pass
		1752.5	-2.01	3.30	27.60	22.29	169.434	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-1.42	3.15	27.64	23.07	202.768	Vertical	Pass
		1732.5	-1.75	3.31	27.61	22.55	179.887	Vertical	Pass
		1750	-1.08	3.33	27.59	23.18	207.970	Vertical	Pass
15.0MH	1/#Mid	1717.5	-1.30	3.15	27.65	23.20	208.930	Vertical	Pass

z Band		1732.5	-1.86	3.31	27.61	22.44	175.388	Vertical	Pass
16 QAM		1747.5	-0.97	3.33	27.57	23.27	212.324	Vertical	Pass
20.0MH		1720	-0.89	3.17	27.66	23.60	229.087	Vertical	Pass
z Band	1/#Mid	1732.5	-1.41	3.32	27.61	22.88	194.089	Vertical	Pass
16 QAM		1745	-1.10	3.36	27.56	23.10	204.174	Vertical	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)
Factor Gain(dB)=Antenna Gain(dB) + Amplifier Factor (dB)

8.4 LTE BAND 5

Radiated Power (ERP) for Band 5										
Mode	RB/RB SIZE	Frequency	Result						Polarization Of Max. ERP	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)		
1.4MHz Band QPSK	1/#Mid	824.7	6.38	2.01	19.68	2.15	21.90	154.882	Horizontal	Pass
		836.5	5.95	2.01	19.77	2.15	21.56	143.219	Horizontal	Pass
		848.3	6.27	2.02	19.82	2.15	21.92	155.597	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	825.5	5.90	2.01	19.70	2.15	21.44	139.316	Horizontal	Pass
		836.5	5.91	2.01	19.77	2.15	21.52	141.906	Horizontal	Pass
		847.5	6.26	2.02	19.81	2.15	21.90	154.882	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	826.5	5.79	2.01	19.71	2.15	21.34	136.144	Horizontal	Pass
		836.5	6.29	2.01	19.77	2.15	21.90	154.882	Horizontal	Pass
		846.5	5.78	2.02	19.79	2.15	21.40	138.038	Horizontal	Pass
10.0Hz Band QPSK	1/#Mid	829	6.15	2.01	19.73	2.15	21.72	148.594	Horizontal	Pass
		836.5	6.39	2.01	19.77	2.15	22.00	158.489	Horizontal	Pass
		844	6.25	2.02	19.78	2.15	21.86	153.462	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	824.7	6.64	2.01	19.68	2.15	22.16	164.437	Vertical	Pass
		836.5	5.82	2.01	19.77	2.15	21.43	138.995	Vertical	Pass
		848.3	6.09	2.02	19.82	2.15	21.74	149.279	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	825.5	5.96	2.01	19.70	2.15	21.50	141.254	Vertical	Pass
		836.5	5.85	2.01	19.77	2.15	21.46	139.959	Vertical	Pass
		847.5	5.68	2.02	19.81	2.15	21.32	135.519	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	826.5	6.62	2.01	19.71	2.15	22.17	164.816	Vertical	Pass
		836.5	5.51	2.01	19.77	2.15	21.12	129.420	Vertical	Pass
		846.5	6.61	2.02	19.79	2.15	22.23	167.109	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	829	6.38	2.01	19.73	2.15	21.95	156.675	Vertical	Pass
		836.5	6.73	2.01	19.77	2.15	22.34	171.396	Vertical	Pass
		844	6.14	2.02	19.78	2.15	21.75	149.624	Vertical	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)

Factor Gain(dB)=Antenna Gain(dB) + Amplifier Factor (dB)

Radiated Power (ERP) for Band 5										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16QAM	1/#Mid	824.7	5.27	2.01	19.68	2.15	20.79	119.950	Horizontal	Pass
		836.5	4.50	2.01	19.77	2.15	20.11	102.565	Horizontal	Pass
		848.3	4.55	2.02	19.82	2.15	20.20	104.713	Horizontal	Pass
3.0MHz Band 16QAM	1/#Mid	825.5	4.49	2.01	19.70	2.15	20.03	100.693	Horizontal	Pass
		836.5	4.80	2.01	19.77	2.15	20.41	109.901	Horizontal	Pass
		847.5	4.83	2.02	19.81	2.15	20.47	111.429	Horizontal	Pass
5.0MHz Band 16QAM	1/#Mid	826.5	4.35	2.01	19.71	2.15	19.90	97.724	Horizontal	Pass
		836.5	4.45	2.01	19.77	2.15	20.06	101.391	Horizontal	Pass
		846.5	4.79	2.02	19.79	2.15	20.41	109.901	Horizontal	Pass
10.0Hz Band 16QAM	1/#Mid	829	4.71	2.01	19.73	2.15	20.28	106.660	Horizontal	Pass
		836.5	4.33	2.01	19.77	2.15	19.94	98.628	Horizontal	Pass
		844	4.06	2.02	19.78	2.15	19.67	92.683	Horizontal	Pass
1.4MHz Band 16QAM	1/#Mid	824.7	4.66	2.01	19.68	2.15	20.18	104.232	Vertical	Pass
		836.5	3.78	2.01	19.77	2.15	19.39	86.896	Vertical	Pass
		848.3	4.05	2.02	19.82	2.15	19.70	93.325	Vertical	Pass
3.0MHz Band 16QAM	1/#Mid	825.5	3.75	2.01	19.70	2.15	19.29	84.918	Vertical	Pass
		836.5	4.39	2.01	19.77	2.15	20.00	100.000	Vertical	Pass
		847.5	4.31	2.02	19.81	2.15	19.95	98.855	Vertical	Pass
5.0MHz Band 16QAM	1/#Mid	826.5	3.79	2.01	19.71	2.15	19.34	85.901	Vertical	Pass
		836.5	4.55	2.01	19.77	2.15	20.16	103.753	Vertical	Pass
		846.5	4.61	2.02	19.79	2.15	20.23	105.439	Vertical	Pass
10.0Hz Band 16QAM	1/#Mid	829	4.23	2.01	19.73	2.15	19.80	95.499	Vertical	Pass
		836.5	5.23	2.01	19.77	2.15	20.84	121.339	Vertical	Pass
		844	4.09	2.02	19.78	2.15	19.70	93.325	Vertical	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)

Factor Gain(dB)=Antenna Gain(dB) + Amplifier Factor (dB)

8.5 LTE BAND 7

Radiated Power (EIRP) for Band 7									
Mode	RB/RB SIZE	Frequency	Result					Polarization Of Max. ERP	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)		
5.0MHz Band QPSK	1/#Mid	2502.5	0.64	4.54	27.75	23.85	242.661	Horizontal	Pass
		2535	1.25	4.69	27.72	24.28	267.917	Horizontal	Pass
		2567.5	1.20	4.71	27.71	24.20	263.027	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	2505	0.77	4.55	27.76	23.98	250.035	Horizontal	Pass
		2535	-0.02	4.69	27.72	23.01	199.986	Horizontal	Pass
		2565	0.33	4.72	27.70	23.31	214.289	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	1.16	4.55	27.77	24.38	274.157	Horizontal	Pass
		2535	0.99	4.69	27.72	24.02	252.348	Horizontal	Pass
		2562.5	0.58	4.72	27.69	23.55	226.464	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	2510	-0.03	4.57	27.78	23.18	207.970	Horizontal	Pass
		2535	0.10	4.73	27.72	23.09	203.704	Horizontal	Pass
		2560	1.35	4.75	27.68	24.28	267.917	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	2502.5	0.38	4.54	27.75	23.59	228.560	Vertical	Pass
		2535	0.13	4.69	27.72	23.16	207.014	Vertical	Pass
		2567.5	-0.21	4.71	27.71	22.79	190.108	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	2505	0.85	4.55	27.76	24.06	254.683	Vertical	Pass
		2535	0.73	4.69	27.72	23.76	237.684	Vertical	Pass
		2565	-0.21	4.72	27.70	22.77	189.234	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	0.60	4.55	27.77	23.82	240.991	Vertical	Pass
		2535	0.17	4.69	27.72	23.20	208.930	Vertical	Pass
		2562.5	0.59	4.72	27.69	23.56	226.986	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	2510	0.74	4.57	27.78	23.95	248.313	Vertical	Pass
		2535	1.19	4.73	27.72	24.18	261.818	Vertical	Pass
		2560	1.47	4.75	27.68	24.40	275.423	Vertical	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)

Factor Gain(dB)=Antenna Gain(dB) + Amplifier Factor (dB)

Radiated Power (EIRP) for Band 7									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	1/#Mid	2502.5	-0.98	4.54	27.75	22.23	167.109	Horizontal	Pass
		2535	-0.26	4.69	27.72	22.77	189.234	Horizontal	Pass
		2567.5	0.06	4.71	27.71	23.06	202.302	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	-0.13	4.55	27.76	23.08	203.236	Horizontal	Pass
		2535	-0.02	4.69	27.72	23.01	199.986	Horizontal	Pass
		2565	-0.24	4.72	27.70	22.74	187.932	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	-0.16	4.55	27.77	23.06	202.302	Horizontal	Pass
		2535	-0.08	4.69	27.72	22.95	197.242	Horizontal	Pass
		2562.5	0.17	4.72	27.69	23.14	206.063	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	0.03	4.57	27.78	23.24	210.863	Horizontal	Pass
		2535	0.12	4.73	27.72	23.11	204.644	Horizontal	Pass
		2560	-0.85	4.75	27.68	22.08	161.436	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	2502.5	-0.83	4.54	27.75	22.38	172.982	Vertical	Pass
		2535	-0.34	4.69	27.72	22.69	185.780	Vertical	Pass
		2567.5	-0.52	4.71	27.71	22.48	177.011	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	-0.92	4.55	27.76	22.29	169.434	Vertical	Pass
		2535	-1.45	4.69	27.72	21.58	143.880	Vertical	Pass
		2565	0.17	4.72	27.70	23.15	206.538	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	-0.17	4.55	27.77	23.05	201.837	Vertical	Pass
		2535	0.22	4.69	27.72	23.25	211.349	Vertical	Pass
		2562.5	-0.19	4.72	27.69	22.78	189.671	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	0.35	4.57	27.78	23.56	226.986	Vertical	Pass
		2535	0.30	4.73	27.72	23.29	213.304	Vertical	Pass
		2560	-0.03	4.75	27.68	22.90	194.984	Vertical	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)
Factor Gain(dB)=Antenna Gain(dB) + Amplifier Factor (dB)

8.6 LTE BAND 12

Radiated Power (ERP) for Band 12										
Mode	RB/RB SIZE	Frequency	Result						Polarization Of Max. ERP	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)		
1.4MHz Band QPSK	1/#Mid	699.7	5.31	1.91	19.21	2.15	20.46	111.173	Vertical	Pass
		707.5	4.21	1.91	19.26	2.15	19.41	87.297	Vertical	Pass
		715.3	3.44	1.93	19.34	2.15	18.70	74.131	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	700.5	4.84	1.91	19.21	2.15	19.99	99.770	Vertical	Pass
		707.5	4.48	1.91	19.26	2.15	19.68	92.897	Vertical	Pass
		714.5	3.65	1.93	19.34	2.15	18.91	77.804	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	701.5	4.03	1.91	19.23	2.15	19.20	83.176	Vertical	Pass
		707.5	5.05	1.91	19.26	2.15	20.25	105.925	Vertical	Pass
		713.5	3.83	1.92	19.33	2.15	19.09	81.096	Vertical	Pass
10.0Hz Band QPSK	1/#Mid	704	4.83	1.91	19.25	2.15	20.02	100.462	Vertical	Pass
		707.5	5.07	1.91	19.26	2.15	20.27	106.414	Vertical	Pass
		711	4.74	1.92	19.32	2.15	19.99	99.770	Vertical	Pass
1.4MHz Band QPSK	1/#Mid	699.7	4.84	1.91	19.21	2.15	19.99	99.770	Horizontal	Pass
		707.5	4.38	1.91	19.26	2.15	19.58	90.782	Horizontal	Pass
		715.3	4.47	1.93	19.34	2.15	19.73	93.972	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	700.5	4.73	1.91	19.21	2.15	19.88	97.275	Horizontal	Pass
		707.5	4.72	1.91	19.26	2.15	19.92	98.175	Horizontal	Pass
		714.5	4.56	1.93	19.34	2.15	19.82	95.940	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	701.5	4.92	1.91	19.23	2.15	20.09	102.094	Horizontal	Pass
		707.5	5.03	1.91	19.26	2.15	20.23	105.439	Horizontal	Pass
		713.5	5.00	1.92	19.33	2.15	20.26	106.170	Horizontal	Pass
10.0Hz Band QPSK	1/#Mid	704	5.35	1.91	19.25	2.15	20.54	113.240	Horizontal	Pass
		707.5	3.82	1.91	19.26	2.15	19.02	79.799	Horizontal	Pass
		711	4.07	1.92	19.32	2.15	19.32	85.507	Horizontal	Pass

Radiated Power (ERP) for Band 12										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16QAM	1/#Mid	699.7	3.65	1.91	19.21	2.15	18.80	75.858	Vertical	Pass
		707.5	3.35	1.91	19.26	2.15	18.55	71.614	Vertical	Pass
		715.3	2.64	1.93	19.34	2.15	17.90	61.660	Vertical	Pass
3.0MHz Band 16QAM	1/#Mid	700.5	3.81	1.91	19.21	2.15	18.96	78.705	Vertical	Pass
		707.5	3.74	1.91	19.26	2.15	18.94	78.343	Vertical	Pass
		714.5	3.22	1.93	19.34	2.15	18.48	70.469	Vertical	Pass
5.0MHz Band 16QAM	1/#Mid	701.5	3.59	1.91	19.23	2.15	18.76	75.162	Vertical	Pass
		707.5	3.76	1.91	19.26	2.15	18.96	78.705	Vertical	Pass
		713.5	3.84	1.92	19.33	2.15	19.10	81.283	Vertical	Pass
10.0MHz Band 16QAM	1/#Mid	704	3.96	1.91	19.25	2.15	19.15	82.224	Vertical	Pass
		707.5	3.66	1.91	19.26	2.15	18.86	76.913	Vertical	Pass
		711	4.35	1.92	19.32	2.15	19.60	91.201	Vertical	Pass
1.4MHz Band 16QAM	1/#Mid	699.7	3.69	1.91	19.21	2.15	18.84	76.560	Horizontal	Pass
		707.5	4.05	1.91	19.26	2.15	19.25	84.140	Horizontal	Pass
		715.3	3.84	1.93	19.34	2.15	19.10	81.283	Horizontal	Pass
3.0MHz Band 16QAM	1/#Mid	700.5	4.10	1.91	19.21	2.15	19.25	84.140	Horizontal	Pass
		707.5	3.99	1.91	19.26	2.15	19.19	82.985	Horizontal	Pass
		714.5	4.06	1.93	19.34	2.15	19.32	85.507	Horizontal	Pass
5.0MHz Band 16QAM	1/#Mid	701.5	3.91	1.91	19.23	2.15	19.08	80.910	Horizontal	Pass
		707.5	3.77	1.91	19.26	2.15	18.97	78.886	Horizontal	Pass
		713.5	2.77	1.92	19.33	2.15	18.03	63.533	Horizontal	Pass
10.0Hz Band 16QAM	1/#Mid	704	3.44	1.91	19.25	2.15	18.63	72.946	Horizontal	Pass
		707.5	4.43	1.91	19.26	2.15	19.63	91.833	Horizontal	Pass
		711	3.96	1.92	19.32	2.15	19.21	83.368	Horizontal	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)
Factor Gain(dB)=Antenna Gain(dB) + Amplifier Factor (dB)

8.7 LTE BAND 13

Radiated Power (ERP) for Band 13										
Mode	RB/RB SIZE	Frequency	Result						Polarization Of Max. ERP	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)		
5.0MHz Band QPSK	1/#Mid	779.5	3.80	1.91	19.23	2.15	18.97	78.886	Vertical	Pass
		782	4.33	1.91	19.26	2.15	19.53	89.743	Vertical	Pass
		784.5	4.74	1.92	19.33	2.15	20.00	100.000	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	782	2.75	1.91	19.25	2.15	17.94	62.230	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	779.5	4.62	1.91	19.23	2.15	19.79	95.280	Horizontal	Pass
		782	5.19	1.91	19.26	2.15	20.39	109.396	Horizontal	Pass
		784.5	4.13	1.92	19.33	2.15	19.39	86.896	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	782	5.21	1.91	19.25	2.15	20.40	109.648	Horizontal	Pass

Radiated Power (ERP) for Band 13										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	1/#Mid	779.5	3.07	1.91	19.23	2.15	18.24	66.681	Vertical	Pass
		782	3.30	1.91	19.26	2.15	18.50	70.795	Vertical	Pass
		784.5	3.10	1.92	19.33	2.15	18.36	68.549	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	782	3.42	1.91	19.25	2.15	18.61	72.611	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	779.5	2.16	1.91	19.23	2.15	17.33	54.075	Horizontal	Pass
		782	3.14	1.91	19.26	2.15	18.34	68.234	Horizontal	Pass
		784.5	2.97	1.92	19.33	2.15	18.23	66.527	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	782	2.68	1.91	19.25	2.15	17.87	61.235	Horizontal	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)
Factor Gain(dB)=Antenna Gain(dB) + Amplifier Factor (dB)

8.8 LTE BAND 17

Radiated Power (ERP) for Band 17										
Mode	RB/ RB SIZE	Frequency	Result						Polarization Of Max. ERP	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor Gain (dB)	Correction (dB)	Max. ERP Average (dBm)	Max. ERP Average (mW)		
5.0MHz Band QPSK	25/0	706.5	3.83	1.91	19.23	2.15	19.00	79.433	Vertical	Pass
		710	4.32	1.91	19.26	2.15	19.52	89.536	Vertical	Pass
		713.5	4.76	1.92	19.33	2.15	20.02	100.462	Vertical	Pass
10.0MHz Band QPSK	50/0	709	2.71	1.91	19.25	2.15	17.90	61.660	Vertical	Pass
		710	4.17	1.91	19.26	2.15	19.37	86.497	Vertical	Pass
		711	5.29	1.92	19.32	2.15	20.54	113.240	Vertical	Pass
5.0MHz Band QPSK	25/0	706.5	4.63	1.91	19.23	2.15	19.80	95.499	Horizontal	Pass
		710	5.18	1.91	19.26	2.15	20.38	109.144	Horizontal	Pass
		713.5	4.12	1.92	19.33	2.15	19.38	86.696	Horizontal	Pass
10.0MHz Band QPSK	50/0	709	4.81	1.91	19.25	2.15	20.00	100.000	Horizontal	Pass
		710	4.73	1.91	19.26	2.15	19.93	98.401	Horizontal	Pass
		711	4.93	1.92	19.32	2.15	20.18	104.232	Horizontal	Pass

Radiated Power (ERP) for Band 17										
Mode	RB/ RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor Gain (dB)	Correction (dB)	Max. ERP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	25/0	706.5	3.62	1.91	19.23	2.15	18.79	75.683	Vertical	Pass
		710	3.84	1.91	19.26	2.15	19.04	80.168	Vertical	Pass
		713.5	3.58	1.92	19.33	2.15	18.84	76.560	Vertical	Pass
10.0MHz Band 16 QAM	50/0	709	3.40	1.91	19.25	2.15	18.59	72.277	Vertical	Pass
		710	2.53	1.91	19.26	2.15	17.73	59.293	Vertical	Pass
		711	3.55	1.92	19.32	2.15	18.80	75.858	Vertical	Pass
5.0MHz Band 16 QAM	25/0	706.5	2.57	1.91	19.23	2.15	17.74	59.429	Horizontal	Pass
		710	3.65	1.91	19.26	2.15	18.85	76.736	Horizontal	Pass
		713.5	3.45	1.92	19.33	2.15	18.71	74.302	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	709	3.20	1.91	19.25	2.15	18.39	69.024	Horizontal	Pass
		710	4.19	1.91	19.26	2.15	19.39	86.896	Horizontal	Pass
		711	4.01	1.92	19.32	2.15	19.26	84.333	Horizontal	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)
Factor Gain(dB)=Antenna Gain(dB) + Amplifier Factor (dB)

8.9 LTE BAND 25

Radiated Power (EIRP) for Band 25									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	1850.7	-0.59	3.12	27.58	23.87	243.781	Horizontal	Pass
		1882,5	-0.15	3.27	27.61	24.19	262.422	Horizontal	Pass
		1914.3	-0.48	3.29	27.63	23.86	243.220	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-1.67	3.13	27.61	22.81	190.985	Horizontal	Pass
		1882,5	-2.06	3.27	27.61	22.28	169.044	Horizontal	Pass
		1913.5	-2.28	3.30	27.62	22.04	159.956	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-0.99	3.13	27.63	23.51	224.388	Horizontal	Pass
		1882,5	-2.27	3.27	27.61	22.07	161.065	Horizontal	Pass
		1912.5	-0.19	3.30	27.60	24.11	257.632	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1855	-1.05	3.15	27.64	23.44	220.800	Horizontal	Pass
		1882,5	-0.33	3.31	27.61	23.97	249.459	Horizontal	Pass
		1910	-0.09	3.33	27.59	24.17	261.216	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1857.5	-1.52	3.15	27.65	22.98	198.609	Horizontal	Pass
		1882,5	-0.26	3.31	27.61	24.04	253.513	Horizontal	Pass
		1907.5	-0.42	3.33	27.57	23.82	240.991	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1860	-1.63	3.17	27.66	22.86	193.197	Horizontal	Pass
		1882,5	-0.27	3.32	27.61	24.02	252.348	Horizontal	Pass
		1905	-0.56	3.36	27.56	23.64	231.206	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1850.7	-0.14	3.12	27.58	24.32	270.396	Vertical	Pass
		1882,5	-1.49	3.27	27.61	22.85	192.752	Vertical	Pass
		1914.3	-1.62	3.29	27.63	22.72	187.068	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-0.40	3.13	27.61	24.08	255.859	Vertical	Pass
		1882,5	-0.41	3.27	27.61	23.93	247.172	Vertical	Pass
		1913.5	-0.43	3.30	27.62	23.89	244.906	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-1.74	3.13	27.63	22.76	188.799	Vertical	Pass
		1882,5	-0.76	3.27	27.61	23.58	228.034	Vertical	Pass
		1912.5	-1.60	3.30	27.60	22.70	186.209	Vertical	Pass
10.0MHz Band	1/#Mid	1855	-1.52	3.15	27.64	22.97	198.153	Vertical	Pass
		1882,5	-1.89	3.31	27.61	22.41	174.181	Vertical	Pass

QPSK		1910	-0.27	3.33	27.59	23.99	250.611	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	1857.5	-1.45	3.15	27.65	23.05	201.837	Vertical	Pass
		1882,5	-1.01	3.31	27.61	23.29	213.304	Vertical	Pass
		1907.5	-1.27	3.33	27.57	22.97	198.153	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	1860	-0.78	3.17	27.66	23.71	234.963	Vertical	Pass
		1882,5	0.13	3.32	27.61	24.42	276.694	Vertical	Pass
		1905	0.03	3.36	27.56	24.23	264.850	Vertical	Pass

Radiated Power (EIRP) for Band 25									
Mode	RB/RB SIZE	Frequency	Result						
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	Conclusion
1.4MHz Band 16 QAM	1/#Mid	1850.7	-1.51	3.12	27.58	22.95	197.242	Horizontal	Pass
		1882,5	-1.82	3.27	27.61	22.52	178.649	Horizontal	Pass
		1914.3	-1.73	3.29	27.63	22.61	182.390	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-1.73	3.13	27.61	22.75	188.365	Horizontal	Pass
		1882,5	-2.97	3.27	27.61	21.37	137.088	Horizontal	Pass
		1913.5	-1.76	3.30	27.62	22.56	180.302	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-1.84	3.13	27.63	22.66	184.502	Horizontal	Pass
		1882,5	-2.13	3.27	27.61	22.21	166.341	Horizontal	Pass
		1912.5	-1.12	3.30	27.60	23.18	207.970	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-1.61	3.15	27.64	22.88	194.089	Horizontal	Pass
		1882,5	-1.84	3.31	27.61	22.46	176.198	Horizontal	Pass
		1910	-2.15	3.33	27.59	22.11	162.555	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-1.91	3.15	27.65	22.59	181.552	Horizontal	Pass
		1882,5	-1.60	3.31	27.61	22.70	186.209	Horizontal	Pass
		1907.5	-1.42	3.33	27.57	22.82	191.426	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1860	-1.93	3.17	27.66	22.56	180.302	Horizontal	Pass
		1882,5	-0.92	3.32	27.61	23.37	217.270	Horizontal	Pass
		1905	-1.54	3.36	27.56	22.66	184.502	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1850.7	-1.48	3.12	27.58	22.98	198.609	Vertical	Pass
		1882,5	-1.08	3.27	27.61	23.26	211.836	Vertical	Pass
		1914.3	-1.71	3.29	27.63	22.63	183.231	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-2.01	3.13	27.61	22.47	176.604	Vertical	Pass
		1882,5	-2.76	3.27	27.61	21.58	143.880	Vertical	Pass
		1913.5	-1.94	3.30	27.62	22.38	172.982	Vertical	Pass

5.0MHz Band 16 QAM	1/#Mid	1852.5	-1.90	3.13	27.63	22.60	181.970	Vertical	Pass
		1882,5	-1.85	3.27	27.61	22.49	177.419	Vertical	Pass
		1912.5	-2.02	3.30	27.60	22.28	169.044	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-1.38	3.15	27.64	23.11	204.644	Vertical	Pass
		1882,5	-1.75	3.31	27.61	22.55	179.887	Vertical	Pass
		1910	-1.08	3.33	27.59	23.18	207.970	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-1.37	3.15	27.65	23.13	205.589	Vertical	Pass
		1882,5	-1.79	3.31	27.61	22.51	178.238	Vertical	Pass
		1907.5	-0.96	3.33	27.57	23.28	212.814	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	1860	-0.91	3.17	27.66	23.58	228.034	Vertical	Pass
		1882,5	-1.39	3.32	27.61	22.90	194.984	Vertical	Pass
		1905	-1.03	3.36	27.56	23.17	207.491	Vertical	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)
Factor Gain(dB)=Antenna Gain(dB) + Amplifier Factor (dB)

8.10 LTE BAND 26 A

Radiated Power (ERP) for Band 26(814MHz~824MHz)										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	814.7	5.61	2.01	19.68	2.15	21.13	129.718	Vertical	Pass
		819	4.47	2.01	19.77	2.15	20.08	101.859	Vertical	Pass
		823.3	3.69	2.02	19.82	2.15	19.34	85.901	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	815.5	5.12	2.01	19.70	2.15	20.66	116.413	Vertical	Pass
		819	4.69	2.01	19.77	2.15	20.30	107.152	Vertical	Pass
		822.5	4.00	2.02	19.81	2.15	19.64	92.045	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	816.5	4.33	2.01	19.71	2.15	19.88	97.275	Vertical	Pass
		819	5.31	2.01	19.77	2.15	20.92	123.595	Vertical	Pass
		821.5	4.08	2.02	19.79	2.15	19.70	93.325	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	819	5.17	2.01	19.73	2.15	20.74	118.577	Vertical	Pass
1.4MHz Band QPSK	1/#Mid	814.7	5.05	2.01	19.68	2.15	20.57	114.025	Horizontal	Pass
		819	4.57	2.01	19.77	2.15	20.18	104.232	Horizontal	Pass
		823.3	4.65	2.02	19.82	2.15	20.30	107.152	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	815.5	4.94	2.01	19.70	2.15	20.48	111.686	Horizontal	Pass
		819	4.97	2.01	19.77	2.15	20.58	114.288	Horizontal	Pass
		822.5	4.81	2.02	19.81	2.15	20.45	110.917	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	816.5	5.20	2.01	19.71	2.15	20.75	118.850	Horizontal	Pass
		819	5.33	2.01	19.77	2.15	20.94	124.165	Horizontal	Pass
		821.5	5.23	2.02	19.79	2.15	20.85	121.619	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	819	5.72	2.01	19.73	2.15	21.29	134.586	Horizontal	Pass

Radiated Power (ERP) for Band 26(814MHz~824MHz)										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mid	814.7	4.50	2.01	19.68	2.15	20.02	100.462	Vertical	Pass
		819	4.10	2.01	19.77	2.15	19.71	93.541	Vertical	Pass
		823.3	3.29	2.02	19.82	2.15	18.94	78.343	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	815.5	4.62	2.01	19.70	2.15	20.16	103.753	Vertical	Pass
		819	4.54	2.01	19.77	2.15	20.15	103.514	Vertical	Pass
		822.5	4.01	2.02	19.81	2.15	19.65	92.257	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	816.5	4.40	2.01	19.71	2.15	19.95	98.855	Vertical	Pass
		819	4.55	2.01	19.77	2.15	20.16	103.753	Vertical	Pass
		821.5	4.57	2.02	19.79	2.15	20.19	104.472	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	819	4.80	2.01	19.73	2.15	20.37	108.893	Vertical	Pass
1.4MHz Band 16 QAM	1/#Mid	814.7	4.40	2.01	19.68	2.15	19.92	98.175	Horizontal	Pass
		819	4.80	2.01	19.77	2.15	20.41	109.901	Horizontal	Pass
		823.3	4.70	2.02	19.82	2.15	20.35	108.393	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	815.5	4.83	2.01	19.70	2.15	20.37	108.893	Horizontal	Pass
		819	4.68	2.01	19.77	2.15	20.29	106.905	Horizontal	Pass
		822.5	4.75	2.02	19.81	2.15	20.39	109.396	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	816.5	4.64	2.01	19.71	2.15	20.19	104.472	Horizontal	Pass
		819	4.43	2.01	19.77	2.15	20.04	100.925	Horizontal	Pass
		821.5	3.57	2.02	19.79	2.15	19.19	82.985	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	819	5.21	2.01	19.73	2.15	20.78	119.674	Horizontal	Pass

8.11 LTE BAND 26B

Radiated Power (ERP) for Band 26(824MHz~849MHz)										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	824.7	5.58	2.01	19.68	2.15	21.10	128.825	Vertical	Pass
		836.5	4.51	2.01	19.77	2.15	20.12	102.802	Vertical	Pass
		848.3	3.69	2.02	19.82	2.15	19.34	85.901	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	825.5	5.20	2.01	19.70	2.15	20.74	118.577	Vertical	Pass
		836.5	4.70	2.01	19.77	2.15	20.31	107.399	Vertical	Pass
		847.5	4.00	2.02	19.81	2.15	19.64	92.045	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	826.5	4.36	2.01	19.71	2.15	19.91	97.949	Vertical	Pass
		836.5	5.37	2.01	19.77	2.15	20.98	125.314	Vertical	Pass
		846.5	4.08	2.02	19.79	2.15	19.70	93.325	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	829	5.10	2.01	19.73	2.15	20.67	116.681	Vertical	Pass
		836.5	5.31	2.01	19.77	2.15	20.92	123.595	Vertical	Pass
		844	4.91	2.02	19.78	2.15	20.52	112.720	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	831.5	5.16	2.01	19.73	2.15	20.73	118.304	Vertical	Pass
		836.5	5.33	2.01	19.77	2.15	20.94	124.165	Vertical	Pass
		841.5	4.98	2.02	19.78	2.15	20.59	114.551	Vertical	Pass
1.4MHz Band QPSK	1/#Mid	824.7	5.04	2.01	19.68	2.15	20.56	113.763	Horizontal	Pass
		836.5	4.50	2.01	19.77	2.15	20.11	102.565	Horizontal	Pass
		848.3	4.61	2.02	19.82	2.15	20.26	106.170	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	825.5	4.93	2.01	19.70	2.15	20.47	111.429	Horizontal	Pass
		836.5	4.94	2.01	19.77	2.15	20.55	113.501	Horizontal	Pass
		847.5	4.80	2.02	19.81	2.15	20.44	110.662	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	826.5	5.18	2.01	19.71	2.15	20.73	118.304	Horizontal	Pass
		836.5	5.37	2.01	19.77	2.15	20.98	125.314	Horizontal	Pass
		846.5	5.33	2.02	19.79	2.15	20.95	124.451	Horizontal	Pass
10.0MHz Band	1/#Mid	829	5.74	2.01	19.73	2.15	21.31	135.207	Horizontal	Pass
		836.5	4.07	2.01	19.77	2.15	19.68	92.897	Horizontal	Pass
		844	4.43	2.02	19.78	2.15	20.04	100.925	Horizontal	Pass

QPSK										
15.0MHz Band QPSK	1/#Mid	831.5	5.63	2.01	19.73	2.15	21.20	131.826	Horizontal	Pass
		836.5	6.15	2.01	19.77	2.15	21.76	149.968	Horizontal	Pass
		841.5	5.44	2.02	19.78	2.15	21.05	127.350	Horizontal	Pass

Radiated Power (ERP) for Band 26(824MHz~849MHz)										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16QAM	1/#Mid	824.7	4.50	2.01	19.68	2.15	20.02	100.462	Vertical	Pass
		836.5	4.07	2.01	19.77	2.15	19.68	92.897	Vertical	Pass
		848.3	3.39	2.02	19.82	2.15	19.04	80.168	Vertical	Pass
3.0MHz Band 16QAM	1/#Mid	825.5	4.64	2.01	19.70	2.15	20.18	104.232	Vertical	Pass
		836.5	4.53	2.01	19.77	2.15	20.14	103.276	Vertical	Pass
		847.5	4.07	2.02	19.81	2.15	19.71	93.541	Vertical	Pass
5.0MHz Band 16QAM	1/#Mid	826.5	4.41	2.01	19.71	2.15	19.96	99.083	Vertical	Pass
		836.5	4.57	2.01	19.77	2.15	20.18	104.232	Vertical	Pass
		846.5	4.69	2.02	19.79	2.15	20.31	107.399	Vertical	Pass
10.0MHz Band 16QAM	1/#Mid	829	4.87	2.01	19.73	2.15	20.44	110.662	Vertical	Pass
		836.5	4.36	2.01	19.77	2.15	19.97	99.312	Vertical	Pass
		844	5.08	2.02	19.78	2.15	20.69	117.220	Vertical	Pass
15.0MHz Band 16QAM	1/#Mid	831.5	4.78	2.01	19.73	2.15	20.35	108.393	Vertical	Pass
		836.5	4.42	2.01	19.77	2.15	20.03	100.693	Vertical	Pass
		841.5	5.05	2.02	19.78	2.15	20.66	116.413	Vertical	Pass

1.4MHz Band 16QAM	1/#Mid	824.7	4.48	2.01	19.68	2.15	20.00	100.000	Horizontal	Pass
		836.5	4.78	2.01	19.77	2.15	20.39	109.396	Horizontal	Pass
		848.3	4.69	2.02	19.82	2.15	20.34	108.143	Horizontal	Pass
3.0MHz Band 16QAM	1/#Mid	825.5	4.80	2.01	19.70	2.15	20.34	108.143	Horizontal	Pass
		836.5	4.79	2.01	19.77	2.15	20.40	109.648	Horizontal	Pass
		847.5	4.74	2.02	19.81	2.15	20.38	109.144	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	4.64	2.01	19.71	2.15	20.19	104.472	Horizontal	Pass
		836.5	4.44	2.01	19.77	2.15	20.05	101.158	Horizontal	Pass
		846.5	3.64	2.02	19.79	2.15	19.26	84.333	Horizontal	Pass
10.0MHz Band 16QAM	1/#Mid	829	4.22	2.01	19.73	2.15	19.79	95.280	Horizontal	Pass
		836.5	4.97	2.01	19.77	2.15	20.58	114.288	Horizontal	Pass
		844	4.75	2.02	19.78	2.15	20.36	108.643	Horizontal	Pass
15.0MHz Band 16QAM	1/#Mid	831.5	5.26	2.01	19.73	2.15	20.83	121.060	Horizontal	Pass
		836.5	5.08	2.01	19.77	2.15	20.69	117.220	Horizontal	Pass
		841.5	4.78	2.02	19.78	2.15	20.39	109.396	Horizontal	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)
Factor Gain(dB)=Antenna Gain(dB) + Amplifier Factor (dB)

8.12 LTE BAND 41

Radiated Power (EIRP) for Band 41									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band QPSK	1/#Mid	2572.5	0.70	4.54	27.75	23.91	246.037	Horizontal	Pass
		2595	1.17	4.69	27.72	24.20	263.027	Horizontal	Pass
		2617.5	0.96	4.71	27.71	23.96	248.886	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	2575	0.67	4.55	27.76	23.88	244.343	Horizontal	Pass
		2595	-0.05	4.69	27.72	22.98	198.609	Horizontal	Pass
		2615	0.19	4.72	27.70	23.17	207.491	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	2577.5	1.05	4.55	27.77	24.27	267.301	Horizontal	Pass
		2595	0.95	4.69	27.72	23.98	250.035	Horizontal	Pass
		2612.5	0.53	4.72	27.69	23.50	223.872	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	2580	0.12	4.57	27.78	23.33	215.278	Horizontal	Pass
		2595	0.22	4.73	27.72	23.21	209.411	Horizontal	Pass
		2610	1.44	4.75	27.68	24.37	273.527	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	2572.5	0.46	4.54	27.75	23.67	232.809	Vertical	Pass
		2595	0.26	4.69	27.72	23.29	213.304	Vertical	Pass
		2617.5	-0.22	4.71	27.71	22.78	189.671	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	2575	0.75	4.55	27.76	23.96	248.886	Vertical	Pass
		2595	0.73	4.69	27.72	23.76	237.684	Vertical	Pass
		2615	-0.36	4.72	27.70	22.62	182.810	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	2577.5	0.48	4.55	27.77	23.70	234.423	Vertical	Pass
		2595	0.29	4.69	27.72	23.32	214.783	Vertical	Pass
		2612.5	0.59	4.72	27.69	23.56	226.986	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	2580	0.65	4.57	27.78	23.86	243.220	Vertical	Pass
		2595	1.15	4.73	27.72	24.14	259.418	Vertical	Pass
		2610	1.30	4.75	27.68	24.23	264.850	Vertical	Pass

Radiated Power (EIRP) for Band 41									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	1/#Mid	2572.5	-1.03	4.54	27.75	22.18	165.196	Horizontal	Pass
		2595	-0.30	4.69	27.72	22.73	187.499	Horizontal	Pass
		2617.5	0.05	4.71	27.71	23.05	201.837	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	2575	-0.01	4.55	27.76	23.20	208.930	Horizontal	Pass
		2595	-0.05	4.69	27.72	22.98	198.609	Horizontal	Pass
		2615	-0.13	4.72	27.70	22.85	192.752	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	2577.5	-0.15	4.55	27.77	23.07	202.768	Horizontal	Pass
		2595	-0.24	4.69	27.72	22.79	190.108	Horizontal	Pass
		2612.5	0.25	4.72	27.69	23.22	209.894	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	2580	0.22	4.57	27.78	23.43	220.293	Horizontal	Pass
		2595	-0.04	4.73	27.72	22.95	197.242	Horizontal	Pass
		2610	-0.93	4.75	27.68	22.00	158.489	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	2572.5	-0.56	4.54	27.75	22.65	184.077	Vertical	Pass
		2595	-0.30	4.69	27.72	22.73	187.499	Vertical	Pass
		2617.5	-0.64	4.71	27.71	22.36	172.187	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	2575	-0.86	4.55	27.76	22.35	171.791	Vertical	Pass
		2595	-1.29	4.69	27.72	21.74	149.279	Vertical	Pass
		2615	0.21	4.72	27.70	23.19	208.449	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	2577.5	-0.14	4.55	27.77	23.08	203.236	Vertical	Pass
		2595	0.18	4.69	27.72	23.21	209.411	Vertical	Pass
		2612.5	-0.15	4.72	27.69	22.82	191.426	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	2580	0.40	4.57	27.78	23.61	229.615	Vertical	Pass
		2595	0.35	4.73	27.72	23.34	215.774	Vertical	Pass
		2610	-0.09	4.75	27.68	22.84	192.309	Vertical	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)
Factor Gain(dB)=Antenna Gain(dB) + Amplifier Factor (dB)

8.13 LTE BAND 66

Radiated Power (EIRP) for Band 66									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	1710.7	-0.90	3.12	27.58	23.56	226.986	Horizontal	Pass
		1745	-0.37	3.27	27.61	23.97	249.459	Horizontal	Pass
		1779.3	-0.86	3.29	27.63	23.48	222.844	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-1.84	3.13	27.61	22.64	183.654	Horizontal	Pass
		1745	-2.16	3.27	27.61	22.18	165.196	Horizontal	Pass
		1778.5	-2.53	3.30	27.62	21.79	151.008	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-1.12	3.13	27.63	23.38	217.771	Horizontal	Pass
		1745	-2.59	3.27	27.61	21.75	149.624	Horizontal	Pass
		1777.5	-0.41	3.30	27.60	23.89	244.906	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1715	-1.26	3.15	27.64	23.23	210.378	Horizontal	Pass
		1745	-0.56	3.31	27.61	23.74	236.592	Horizontal	Pass
		1775	-0.29	3.33	27.59	23.97	249.459	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-1.73	3.15	27.65	22.77	189.234	Horizontal	Pass
		1745	-0.56	3.31	27.61	23.74	236.592	Horizontal	Pass
		1772.5	-0.86	3.33	27.57	23.38	217.771	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1720	-1.94	3.17	27.66	22.55	179.887	Horizontal	Pass
		1745	-0.53	3.32	27.61	23.76	237.684	Horizontal	Pass
		1770	-1.00	3.36	27.56	23.20	208.930	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1710.7	-0.41	3.12	27.58	24.05	254.097	Vertical	Pass
		1745	-1.68	3.27	27.61	22.66	184.502	Vertical	Pass
		1779.3	-1.95	3.29	27.63	22.39	173.380	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-0.62	3.13	27.61	23.86	243.220	Vertical	Pass
		1745	-0.55	3.27	27.61	23.79	239.332	Vertical	Pass
		1778.5	-0.54	3.30	27.62	23.78	238.781	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-1.79	3.13	27.63	22.71	186.638	Vertical	Pass
		1745	-1.15	3.27	27.61	23.19	208.449	Vertical	Pass
		1777.5	-1.87	3.30	27.60	22.43	174.985	Vertical	Pass
10.0MH	1/#Mid	1715	-1.72	3.15	27.64	22.77	189.234	Vertical	Pass

z Band QPSK		1745	-2.12	3.31	27.61	22.18	165.196	Vertical	Pass
		1775	-0.59	3.33	27.59	23.67	232.809	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-1.65	3.15	27.65	22.85	192.752	Vertical	Pass
		1745	-1.37	3.31	27.61	22.93	196.336	Vertical	Pass
		1772.5	-1.60	3.33	27.57	22.64	183.654	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	1720	-1.04	3.17	27.66	23.45	221.309	Vertical	Pass
		1745	-0.21	3.32	27.61	24.08	255.859	Vertical	Pass
		1770	-0.42	3.36	27.56	23.78	238.781	Vertical	Pass

Radiated Power (EIRP) for Band 66									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mid	1710.7	-1.65	3.12	27.58	22.81	190.985	Horizontal	Pass
		1745	-1.85	3.27	27.61	22.49	177.419	Horizontal	Pass
		1779.3	-1.85	3.29	27.63	22.49	177.419	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-1.87	3.13	27.61	22.61	182.390	Horizontal	Pass
		1745	-2.98	3.27	27.61	21.36	136.773	Horizontal	Pass
		1778.5	-1.70	3.30	27.62	22.62	182.810	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-1.80	3.13	27.63	22.70	186.209	Horizontal	Pass
		1745	-1.98	3.27	27.61	22.36	172.187	Horizontal	Pass
		1777.5	-1.13	3.30	27.60	23.17	207.491	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-1.81	3.15	27.64	22.68	185.353	Horizontal	Pass
		1745	-1.69	3.31	27.61	22.61	182.390	Horizontal	Pass
		1775	-2.03	3.33	27.59	22.23	167.109	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-1.92	3.15	27.65	22.58	181.134	Horizontal	Pass
		1745	-1.77	3.31	27.61	22.53	179.061	Horizontal	Pass
		1772.5	-1.39	3.33	27.57	22.85	192.752	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-1.76	3.17	27.66	22.73	187.499	Horizontal	Pass
		1745	-1.20	3.32	27.61	23.09	203.704	Horizontal	Pass
		1770	-1.78	3.36	27.56	22.42	174.582	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	-1.36	3.12	27.58	23.10	204.174	Vertical	Pass
		1745	-1.31	3.27	27.61	23.03	200.909	Vertical	Pass
		1779.3	-1.84	3.29	27.63	22.50	177.828	Vertical	Pass
3.0MHz	1/#Mid	1711.5	-1.87	3.13	27.61	22.61	182.390	Vertical	Pass

Band 16 QAM		1745	-2.92	3.27	27.61	21.42	138.676	Vertical	Pass
		1778.5	-1.91	3.30	27.62	22.41	174.181	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-1.96	3.13	27.63	22.54	179.473	Vertical	Pass
		1745	-1.86	3.27	27.61	22.48	177.011	Vertical	Pass
		1777.5	-1.98	3.30	27.60	22.32	170.608	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-1.31	3.15	27.64	23.18	207.970	Vertical	Pass
		1745	-1.90	3.31	27.61	22.40	173.780	Vertical	Pass
		1775	-1.20	3.33	27.59	23.06	202.302	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-1.29	3.15	27.65	23.21	209.411	Vertical	Pass
		1745	-1.77	3.31	27.61	22.53	179.061	Vertical	Pass
		1772.5	-1.16	3.33	27.57	23.08	203.236	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-1.27	3.17	27.66	23.22	209.894	Vertical	Pass
		1745	-1.52	3.32	27.61	22.77	189.234	Vertical	Pass
		1770	-1.07	3.36	27.56	23.13	205.589	Vertical	Pass

Note:

SG Level= Signal generator output

Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)

Factor Gain(dB)=Antenna Gain(dB) + Amplifier Factor (dB)

9. SPURIOUS RADIATION EMISSION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, §27.53 and §90.691

LIMIT

§22.917 (e) and §24.238 and §90.691 (a): Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

§27.53 (g) For operations in the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB.

§27.53 (h) For operations in the 1710–1755 MHz and 2110–2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10(P) dB.

TEST PROCEDURE

For Cellular equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

For PCS equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

The unwanted emission power shall be measured with a resolution bandwidth of at least 1% of the occupied bandwidth in the 1 MHz band immediately outside and adjacent to the channel edge of the equipment. Beyond the 1 MHz band immediately outside the channel edge of the equipment, a resolution bandwidth of 1 MHz shall be employed. A narrower resolution bandwidth is allowed to be used provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz or 1% of the occupied bandwidth as applicable.

The power of any unwanted emissions measured from the channel edge of the equipment shall be attenuated below the transmitter power, P (dBW), as follows:
a. for base station and subscriber equipment, other than mobile subscriber equipment, the attenuation shall not be less than 43 + 10 Log10 (p), dB; and
b. for mobile subscriber equipment, the attenuation shall not be less than 43 + 10 Log10 (p), dB at the channel edges and 55 + 10 Log10 (p) at 5.5 MHz away and beyond the channel edges where p in (a) and (b) is the transmitter power measured in watts.

MODES TESTED

- ☐ LTE Band 2
- LTE Band 4
- ☐ LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 17
- LTE Band 25,
- LTE Band 26,
- LTE Band 41,
- LTE Band 66

RESULTS

PASS

9.1 LTE BAND 2

QPSK EIRP POWER FOR LTE BAND 2 (1.4MHZ BANDWIDTH)

Test Results for Low Channel 1850.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3701.4	-48.19	4.04	33.51	-18.72	-13	-5.72	Horizontal
3701.4	-53.38	4.04	33.51	-23.91	-13	-10.91	Vertical
5552.1	-55.01	5.24	35.84	-24.41	-13	-11.41	Vertical
5552.1	-51.69	5.24	35.84	-21.09	-13	-8.09	Horizontal
123.0	-47.90	1.66	17.86	-31.70	-13	-18.70	Vertical
153.1	-41.61	1.61	16.60	-26.62	-13	-13.62	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-48.24	4.04	33.56	-18.72	-13	-5.72	Horizontal
3760.0	-53.07	4.04	33.56	-23.55	-13	-10.55	Vertical
5640.0	-46.64	5.24	35.91	-15.97	-13	-2.97	Vertical
5640.0	-55.86	5.24	35.91	-25.19	-13	-12.19	Horizontal
210.9	-48.54	1.32	16.99	-32.87	-13	-19.87	Vertical
171.4	-45.54	1.67	15.36	-31.85	-13	-18.85	Horizontal
Test Results for High Channel 1909.3MHz							
3818.6	-56.40	4.04	34.00	-26.44	-13	-13.44	Horizontal
3818.6	-56.18	4.04	34.00	-26.22	-13	-13.22	Vertical
5727.9	-58.66	5.24	36.04	-27.86	-13	-14.86	Vertical
5727.9	-49.27	5.24	36.04	-18.47	-13	-5.47	Horizontal
185.2	-43.92	1.73	15.69	-29.96	-13	-16.96	Vertical
138.0	-45.88	1.39	17.58	-29.69	-13	-16.69	Horizontal

QPSK EIRP POWER FOR LTE BAND 2 (20.0MHZ BANDWIDTH)

Test Results for Low Channel 1860MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3720.0	-50.06	4.07	33.54	-20.59	-13	-7.59	Horizontal
3720.0	-55.70	4.07	33.54	-26.23	-13	-13.23	Vertical
5580.0	-54.14	5.28	35.86	-23.56	-13	-10.56	Vertical
5580.0	-48.77	5.28	35.86	-18.19	-13	-5.19	Horizontal
169.5	-46.51	1.40	15.41	-32.50	-13	-19.50	Vertical
146.4	-39.87	1.53	15.31	-26.09	-13	-13.09	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-48.58	4.04	33.56	-19.06	-13	-6.06	Horizontal
3760.0	-50.59	4.04	33.56	-21.07	-13	-8.07	Vertical
5640.0	-54.26	5.24	35.91	-23.59	-13	-10.59	Vertical
5640.0	-58.36	5.24	35.91	-27.69	-13	-14.69	Horizontal
125.6	-46.70	1.67	17.00	-31.37	-13	-18.37	Vertical
110.8	-42.01	1.73	15.14	-28.60	-13	-15.60	Horizontal
Test Results for High Channel 1900MHz							
3800.0	-55.34	4.04	34.00	-25.38	-13	-12.38	Horizontal
3800.0	-56.20	4.04	34.00	-26.24	-13	-13.24	Vertical
5700.0	-52.95	5.24	36.04	-22.15	-13	-9.15	Vertical
5700.0	-57.69	5.24	36.04	-26.89	-13	-13.89	Horizontal
85.6	-39.57	1.70	16.06	-25.21	-13	-12.21	Vertical
236.4	-44.35	1.48	16.11	-29.72	-13	-16.72	Horizontal

Note: PMea(dBm)= Power(dBm)+ ARpl (dBm)

. Over Limit= : PMea(dBm)-Limit(dBm)

. Both QPSK and 16QAM has been tested, the worst case is QPSK mode, the report just reported the worst case.

9.2 LTE BAND 4

QPSK EIRP POWER FOR LTE BAND 4 (1.4MHZ BANDWIDTH)

Test Results for Low Channel 1710.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3421.4	-50.18	4.02	29.80	-24.40	-13	-11.40	Horizontal
3421.4	-48.58	4.02	29.80	-22.80	-13	-9.80	Vertical
5132.1	-47.37	5.24	35.84	-16.77	-13	-3.77	Vertical
5132.1	-48.34	5.24	35.84	-17.74	-13	-4.74	Horizontal
140.4	-45.41	1.78	16.37	-30.82	-13	-17.82	Vertical
142.8	-44.63	1.60	16.15	-30.08	-13	-17.08	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-56.07	4.03	30.00	-30.10	-13	-17.10	Horizontal
3465.0	-48.47	4.03	30.00	-22.50	-13	-9.50	Vertical
5197.5	-53.22	5.25	35.86	-22.61	-13	-9.61	Vertical
5197.5	-49.94	5.25	35.86	-19.33	-13	-6.33	Horizontal
210.7	-46.80	1.66	16.79	-31.67	-13	-18.67	Vertical
130.0	-43.03	1.46	17.06	-27.43	-13	-14.43	Horizontal
Test Results for High Channel 1754.3MHz							
3508.6	-53.45	4.05	30.01	-27.49	-13	-14.49	Horizontal
3508.6	-48.39	4.05	30.01	-22.43	-13	-9.43	Vertical
5262.9	-55.05	5.26	35.86	-24.45	-13	-11.45	Vertical
5262.9	-54.27	5.26	35.86	-23.67	-13	-10.67	Horizontal
271.9	-44.02	1.44	17.92	-27.54	-13	-14.54	Vertical
130.9	-46.43	1.74	16.51	-31.66	-13	-18.66	Horizontal

QPSK EIRP POWER FOR LTE BAND 4 (20.0MHZ BANDWIDTH)

Test Results for Low Channel 1720MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3440.0	-52.97	4.02	29.80	-27.19	-13	-14.19	Horizontal
3440.0	-49.82	4.02	29.80	-24.04	-13	-11.04	Vertical
5160.0	-48.59	5.24	35.84	-17.99	-13	-4.99	Vertical
5160.0	-52.84	5.24	35.84	-22.24	-13	-9.24	Horizontal
208.5	-44.85	1.62	16.00	-30.47	-13	-17.47	Vertical
165.6	-37.75	1.56	15.09	-24.22	-13	-11.22	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-57.45	4.03	30.00	-31.48	-13	-18.48	Horizontal
3465.0	-50.33	4.03	30.00	-24.36	-13	-11.36	Vertical
5197.5	-52.19	5.25	35.86	-21.58	-13	-8.58	Vertical
5197.5	-51.00	5.25	35.86	-20.39	-13	-7.39	Horizontal
177.8	-46.58	1.34	16.12	-31.80	-13	-18.80	Vertical
191.0	-37.70	1.45	15.15	-24.00	-13	-11.00	Horizontal
Test Results for High Channel 1745MHz							
3490.0	-56.54	2.91	27.68	-31.77	-13	-18.77	Horizontal
3490.0	-54.46	2.91	27.68	-29.69	-13	-16.69	Vertical
5235.0	-53.31	5.26	35.86	-22.71	-13	-9.71	Vertical
5235.0	-54.05	5.26	35.86	-23.45	-13	-10.45	Horizontal
128.0	-40.19	1.34	17.94	-23.59	-13	-10.59	Vertical
114.5	-43.94	1.52	15.17	-30.29	-13	-17.29	Horizontal

Note: PMea(dBm)= Power(dBm)+ ARpl (dBm)

. Over Limit= : PMea(dBm)-Limit(dBm)

. Both QPSK and 16QAM has been tested, the worst case is QPSK mode, the report just reported the worst case.

9.3 LTE BAND 5

QPSK EIRP POWER FOR LTE BAND 5 (1.4MHZ BANDWIDTH)

Test Results for Low Channel 824.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1649.4	-47.22	2.78	27.50	-22.50	-13	-9.50	Horizontal
1649.4	-48.70	2.78	27.50	-23.98	-13	-10.98	Vertical
2474.1	-49.13	2.90	27.80	-24.23	-13	-11.23	Vertical
2474.1	-51.93	2.90	27.80	-27.03	-13	-14.03	Horizontal
152.9	-40.83	1.46	17.31	-24.98	-13	-11.98	Vertical
143.7	-47.25	1.56	17.99	-30.82	-13	-17.82	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-41.86	2.80	27.48	-17.18	-13	-4.18	Horizontal
1673.0	-49.02	2.80	27.48	-24.34	-13	-11.34	Vertical
2509.5	-52.42	2.91	27.70	-27.63	-13	-14.63	Vertical
2509.5	-43.35	2.91	27.70	-18.56	-13	-5.56	Horizontal
255.0	-47.06	1.57	17.22	-31.41	-13	-18.41	Vertical
103.5	-45.83	1.38	16.76	-30.45	-13	-17.45	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-46.27	2.82	27.43	-21.66	-13	-8.66	Horizontal
1696.6	-43.76	2.82	27.43	-19.15	-13	-6.15	Vertical
2544.9	-46.88	2.92	27.74	-22.06	-13	-9.06	Vertical
2544.9	-42.44	2.92	27.74	-17.62	-13	-4.62	Horizontal
83.6	-45.37	1.41	15.46	-31.32	-13	-18.32	Vertical
279.0	-41.89	1.45	15.62	-27.72	-13	-14.72	Horizontal

QPSK EIRP POWER FOR LTE BAND 5 (10MHZ BANDWIDTH)

Test Results for Low Channel 829MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1658.0	-41.66	2.78	27.50	-16.94	-13	-3.94	Horizontal
1658.0	-47.82	2.78	27.50	-23.10	-13	-10.10	Vertical
2487.0	-47.46	2.90	27.80	-22.56	-13	-9.56	Vertical
2487.0	-46.29	2.90	27.80	-21.39	-13	-8.39	Horizontal
98.0	-44.45	1.35	16.68	-29.12	-13	-16.12	Vertical
175.6	-37.53	1.70	15.09	-24.14	-13	-11.14	Horizontal
Test Results for Mid Channel 836.5MHz							
1673.0	-53.79	2.80	27.48	-29.11	-13	-16.11	Horizontal
1673.0	-46.64	2.80	27.48	-21.96	-13	-8.96	Vertical
2509.5	-52.43	2.91	27.70	-27.64	-13	-14.64	Vertical
2509.5	-43.70	2.91	27.70	-18.91	-13	-5.91	Horizontal
109.0	-43.91	1.72	17.38	-28.25	-13	-15.25	Vertical
182.3	-43.60	1.31	15.30	-29.61	-13	-16.61	Horizontal
Test Results for High Channel 844MHz							
1688.0	-44.25	2.82	27.43	-19.64	-13	-6.64	Horizontal
1688.0	-40.87	2.82	27.43	-16.26	-13	-3.26	Vertical
2532.0	-44.14	2.92	27.74	-19.32	-13	-6.32	Vertical
2532.0	-40.53	2.92	27.74	-15.71	-13	-2.71	Horizontal
127.8	-45.20	1.32	17.85	-28.67	-13	-15.67	Vertical
272.5	-45.14	1.69	16.53	-30.30	-13	-17.30	Horizontal

Note: PMea(dBm)= Power(dBm)+ ARpl (dBm)

. Over Limit= : PMea(dBm)-Limit(dBm)

. Both QPSK and 16QAM has been tested, the worst case is QPSK mode, the report just reported the worst case.

9.4 LTE BAND 7

QPSK EIRP POWER FOR LTE BAND 7 (5.0MHZ BANDWIDTH)

Test Results for Low Channel 2502.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
5005.0	-67.01	5.23	35.81	-36.43	-25	-11.43	Horizontal
5005.0	-66.01	5.23	35.81	-35.43	-25	-10.43	Vertical
7507.5	-69.40	5.67	36.85	-38.22	-25	-13.22	Vertical
7507.5	-64.68	5.67	36.85	-33.50	-25	-8.50	Horizontal
427.4	-56.60	1.79	17.07	-41.32	-25	-16.32	Vertical
497.6	-52.36	1.38	15.44	-38.30	-25	-13.30	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-67.59	5.23	35.82	-37.00	-25	-12.00	Horizontal
5070.0	-60.59	5.23	35.82	-30.00	-25	-5.00	Vertical
7605.0	-61.98	5.67	36.85	-30.80	-25	-5.80	Vertical
7605.0	-66.70	5.67	36.85	-35.52	-25	-10.52	Horizontal
544.4	-59.01	1.30	17.04	-43.27	-25	-18.27	Vertical
564.7	-53.13	1.45	15.52	-39.06	-25	-14.06	Horizontal
Test Results for High Channel 2567.5MHz							
5135.0	-66.23	5.24	35.83	-35.64	-25	-10.64	Horizontal
5135.0	-66.21	5.24	35.83	-35.62	-25	-10.62	Vertical
7702.5	-67.57	5.68	36.87	-36.38	-25	-11.38	Vertical
7702.5	-64.80	5.68	36.87	-33.61	-25	-8.61	Horizontal
164.1	-57.66	1.74	17.13	-42.27	-25	-17.27	Vertical
89.5	-57.24	1.74	16.93	-42.05	-25	-17.05	Horizontal

QPSK EIRP POWER FOR LTE BAND 7 (20.0MHZ BANDWIDTH)

Test Results for Low Channel 2510MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
5020.0	-69.55	5.23	35.82	-38.96	-25	-13.96	Horizontal
5020.0	-67.47	5.23	35.82	-36.88	-25	-11.88	Vertical
7530.0	-71.44	5.67	36.86	-40.25	-25	-15.25	Vertical
7530.0	-69.37	5.67	36.86	-38.18	-25	-13.18	Horizontal
324.1	-55.78	1.34	16.66	-40.46	-25	-15.46	Vertical
271.3	-54.81	1.34	16.10	-40.05	-25	-15.05	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-62.16	5.23	35.82	-31.57	-25	-6.57	Horizontal
5070.0	-68.97	5.23	35.82	-38.38	-25	-13.38	Vertical
7605.0	-64.38	5.67	36.85	-33.20	-25	-8.20	Vertical
7605.0	-64.79	5.67	36.85	-33.61	-25	-8.61	Horizontal
292.6	-56.54	1.57	15.71	-42.40	-25	-17.40	Vertical
255.9	-53.36	1.71	15.11	-39.96	-25	-14.96	Horizontal
Test Results for High Channel 2560MHz							
5120.0	-63.02	5.24	35.83	-32.43	-25	-7.43	Horizontal
5120.0	-67.35	5.24	35.83	-36.76	-25	-11.76	Vertical
7680.0	-67.83	5.70	36.88	-36.65	-25	-11.65	Vertical
7680.0	-70.26	5.70	36.88	-39.08	-25	-14.08	Horizontal
345.9	-58.34	1.67	15.79	-44.22	-25	-19.22	Vertical
408.9	-55.14	1.43	16.04	-40.53	-25	-15.53	Horizontal

Note: PMea(dBm)= Power(dBm)+ ARpl (dBm)

. Over Limit= : PMea(dBm)-Limit(dBm)

. Both QPSK and 16QAM has been tested, the worst case is QPSK mode, the report just reported the worst case.

9.5 LTE BAND 12

QPSK EIRP POWER FOR LTE BAND 12 (1.4MHZ BANDWIDTH)

Test Results for Low Channel 699.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1399.4	-45.79	2.60	27.20	-21.19	-13	-8.19	Horizontal
1399.4	-48.25	2.60	27.20	-23.65	-13	-10.65	Vertical
2099.1	-52.83	2.85	27.54	-28.14	-13	-15.14	Vertical
2099.1	-52.60	2.85	27.54	-27.91	-13	-14.91	Horizontal
267.6	-43.22	1.57	15.52	-29.27	-13	-16.27	Vertical
238.7	-43.87	1.50	15.43	-29.94	-13	-16.94	Horizontal
Test Results For Mid Channel 707.5MHz							
1415.0	-52.36	2.61	27.28	-27.69	-13	-14.69	Horizontal
1415.0	-48.72	2.61	27.28	-24.05	-13	-11.05	Vertical
2122.5	-50.95	2.87	27.59	-26.23	-13	-13.23	Vertical
2122.5	-49.40	2.87	27.59	-24.68	-13	-11.68	Horizontal
191.9	-43.50	1.64	15.34	-29.80	-13	-16.80	Vertical
94.2	-42.39	1.34	16.19	-27.54	-13	-14.54	Horizontal
Test Results for High Channel 715.3MHz							
1430.6	-46.27	2.63	27.28	-21.62	-13	-8.62	Horizontal
1430.6	-48.50	2.63	27.28	-23.85	-13	-10.85	Vertical
2145.9	-51.02	2.88	27.60	-26.30	-13	-13.30	Vertical
2145.9	-47.35	2.88	27.60	-22.63	-13	-9.63	Horizontal
232.9	-47.44	1.35	17.26	-31.53	-13	-18.53	Vertical
234.3	-46.15	1.40	17.29	-30.26	-13	-17.26	Horizontal

QPSK EIRP POWER FOR LTE BAND 12 (10MHZ BANDWIDTH)

Test Results for Low Channel 704MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1408.0	-45.53	2.61	27.26	-20.88	-13	-7.88	Horizontal
1408.0	-52.15	2.61	27.26	-27.50	-13	-14.50	Vertical
2112.0	-52.58	2.87	27.58	-27.87	-13	-14.87	Vertical
2112.0	-47.68	2.87	27.58	-22.97	-13	-9.97	Horizontal
103.2	-47.52	1.79	16.83	-32.48	-13	-19.48	Vertical
163.7	-45.31	1.45	15.91	-30.85	-13	-17.85	Horizontal
Test Results for Mid Channel 707.5MHz							
1415.0	-51.01	2.61	27.28	-26.34	-13	-13.34	Horizontal
1415.0	-46.51	2.61	27.28	-21.84	-13	-8.84	Vertical
2122.5	-43.62	2.87	27.59	-18.90	-13	-5.90	Vertical
2122.5	-40.99	2.87	27.59	-16.27	-13	-3.27	Horizontal
98.3	-41.77	1.57	16.71	-26.63	-13	-13.63	Vertical
151.8	-47.43	1.55	16.70	-32.28	-13	-19.28	Horizontal
Test Results for High Channel 711MHz							
1422.0	-44.60	2.62	27.28	-19.94	-13	-6.94	Horizontal
1422.0	-48.54	2.62	27.28	-23.88	-13	-10.88	Vertical
2133.0	-48.43	2.87	27.60	-23.70	-13	-10.70	Vertical
2133.0	-50.87	2.87	27.60	-26.14	-13	-13.14	Horizontal
193.7	-40.49	1.44	17.26	-24.67	-13	-11.67	Vertical
166.4	-42.98	1.52	16.07	-28.43	-13	-15.43	Horizontal

Note: PMea(dBm)= Power(dBm)+ ARpl (dBm)

. Over Limit= : PMea(dBm)-Limit(dBm)

. Both QPSK and 16QAM has been tested, the worst case is QPSK mode, the report just reported the worst case.

9.6 LTE BAND 13

QPSK EIRP POWER FOR LTE BAND 13 (5MHZ BANDWIDTH)

Test Results for Low Channel 779.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1559.0	-70.25	2.61	27.28	-45.58	-40	-5.58	Horizontal
1559.0	-72.99	2.61	27.28	-48.32	-40	-8.32	Vertical
2338.5	-52.85	2.87	27.59	-28.13	-13	-15.13	Vertical
2338.5	-49.06	2.87	27.59	-24.34	-13	-11.34	Horizontal
272.6	-46.00	1.70	17.99	-29.71	-13	-16.71	Vertical
95.9	-38.69	1.48	16.14	-24.03	-13	-11.03	Horizontal
Test Results For Mid Channel 782MHz							
1564.0	-75.69	2.62	27.30	-51.01	-40	-11.01	Horizontal
1564.0	-67.52	2.62	27.30	-42.84	-40	-2.84	Vertical
2346.0	-42.97	2.87	27.62	-18.22	-13	-5.22	Vertical
2346.0	-42.35	2.87	27.62	-17.60	-13	-4.60	Horizontal
153.2	-44.59	1.34	16.11	-29.82	-13	-16.82	Vertical
156.0	-44.91	1.68	16.44	-30.15	-13	-17.15	Horizontal
Test Results for High Channel 784.5MHz							
1569.0	-74.37	2.66	27.28	-49.75	-40	-9.75	Horizontal
1569.0	-71.54	2.66	27.28	-46.92	-40	-6.92	Vertical
2353.5	-49.79	2.88	27.60	-25.07	-13	-12.07	Vertical
2353.5	-48.34	2.88	27.60	-23.62	-13	-10.62	Horizontal
165.7	-46.91	1.33	17.16	-31.08	-13	-18.08	Vertical
205.3	-43.38	1.51	15.13	-29.76	-13	-16.76	Horizontal

QPSK EIRP POWER FOR LTE BAND 13 (10MHZ BANDWIDTH)

Test Results for Channel 782MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1564.0	-72.16	2.62	27.30	-47.48	-40	-7.48	Horizontal
1564.0	-74.51	2.62	27.30	-49.83	-40	-9.83	Vertical
2346.0	-52.15	2.87	27.62	-27.40	-13	-14.40	Vertical
2346.0	-46.88	2.87	27.62	-22.13	-13	-9.13	Horizontal
198.7	-39.95	1.35	16.73	-24.57	-13	-11.57	Vertical
237.9	-44.85	1.35	17.53	-28.67	-13	-15.67	Horizontal

Note: PMea(dBm)= Power(dBm)+ ARpl (dBm)

. Over Limit= : PMea(dBm)-Limit(dBm)

. Both QPSK and 16QAM has been tested, the worst case is QPSK mode, the report just reported the worst case.

9.7 LTE BAND 17

QPSK EIRP POWER FOR LTE BAND 17 (5MHZ BANDWIDTH)

Test Results for Low Channel 706.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1413.0	-42.94	2.61	27.28	-18.27	-13	-5.27	Horizontal
1413.0	-45.86	2.61	27.28	-21.19	-13	-8.19	Vertical
2119.5	-50.94	2.87	27.59	-26.22	-13	-13.22	Vertical
2119.5	-43.03	2.87	27.59	-18.31	-13	-5.31	Horizontal
121.4	-39.89	1.77	16.50	-25.16	-13	-12.16	Vertical
110.9	-41.87	1.80	17.38	-26.29	-13	-13.29	Horizontal
Test Results For Mid Channel 710MHz							
1420.0	-51.11	2.62	27.30	-26.43	-13	-13.43	Horizontal
1420.0	-48.74	2.62	27.30	-24.06	-13	-11.06	Vertical
2130.0	-45.41	2.87	27.62	-20.66	-13	-7.66	Vertical
2130.0	-45.30	2.87	27.62	-20.55	-13	-7.55	Horizontal
254.9	-46.92	1.76	17.94	-30.74	-13	-17.74	Vertical
186.5	-46.73	1.52	16.72	-31.53	-13	-18.53	Horizontal
Test Results for High Channel 713.5MHz							
1427.0	-49.94	2.66	27.28	-25.32	-13	-12.32	Horizontal
1427.0	-47.10	2.66	27.28	-22.48	-13	-9.48	Vertical
2140.5	-45.48	2.88	27.60	-20.76	-13	-7.76	Vertical
2140.5	-48.28	2.88	27.60	-23.56	-13	-10.56	Horizontal
99.0	-42.56	1.62	17.25	-26.93	-13	-13.93	Vertical
267.9	-43.89	1.67	17.05	-28.51	-13	-15.51	Horizontal

QPSK EIRP POWER FOR LTE BAND 17 (10MHZ BANDWIDTH)

Test Results for Low Channel 709MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1418.0	-48.02	2.62	27.30	-23.34	-13	-10.34	Horizontal
1418.0	-49.09	2.62	27.30	-24.41	-13	-11.41	Vertical
2127.0	-49.54	2.87	27.62	-24.79	-13	-11.79	Vertical
2127.0	-47.88	2.87	27.62	-23.13	-13	-10.13	Horizontal
201.9	-44.96	1.78	15.95	-30.79	-13	-17.79	Vertical
116.5	-39.24	1.78	16.43	-24.59	-13	-11.59	Horizontal
Test Results for Mid Channel 710MHz							
1420.0	-46.91	2.62	27.30	-22.23	-13	-9.23	Horizontal
1420.0	-52.33	2.62	27.30	-27.65	-13	-14.65	Vertical
2130.0	-54.06	2.87	27.62	-29.31	-13	-16.31	Vertical
2130.0	-53.11	2.87	27.62	-28.36	-13	-15.36	Horizontal
276.8	-38.52	1.66	16.88	-23.30	-13	-10.30	Vertical
248.1	-47.48	1.33	17.88	-30.93	-13	-17.93	Horizontal
Test Results for High Channel 711MHz							
1422.0	-47.53	2.62	27.30	-22.85	-13	-9.85	Horizontal
1422.0	-43.36	2.62	27.30	-18.68	-13	-5.68	Vertical
2133.0	-54.20	2.87	27.62	-29.45	-13	-16.45	Vertical
2133.0	-47.88	2.87	27.62	-23.13	-13	-10.13	Horizontal
256.1	-44.35	1.80	17.55	-28.60	-13	-15.60	Vertical
262.6	-43.16	1.34	16.68	-27.82	-13	-14.82	Horizontal

Note: PMea(dBm)= Power(dBm)+ ARpl (dBm)

. Over Limit= : PMea(dBm)-Limit(dBm)

. Both QPSK and 16QAM has been tested, the worst case is QPSK mode, the report just reported the worst case.

9.8 LTE BAND 25

QPSK EIRP POWER FOR LTE BAND 25 (1.4MHZ BANDWIDTH)

Test Results for Low Channel 1710.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3701.4	-49.85	4.02	29.80	-24.07	-13	-11.07	Horizontal
3701.4	-51.10	4.02	29.80	-25.32	-13	-12.32	Vertical
5552.1	-52.53	5.24	35.84	-21.93	-13	-8.93	Vertical
5552.1	-49.85	5.24	35.84	-19.25	-13	-6.25	Horizontal
168.9	-43.54	1.45	16.48	-28.51	-13	-15.51	Vertical
117.1	-39.44	1.60	15.88	-25.16	-13	-12.16	Horizontal
Test Results for Mid Channel 1732.5MHz							
3765.0	-52.59	4.03	30.00	-26.62	-13	-13.62	Horizontal
3765.0	-55.40	4.03	30.00	-29.43	-13	-16.43	Vertical
5647.5	-53.48	5.25	35.86	-22.87	-13	-9.87	Vertical
5647.5	-48.95	5.25	35.86	-18.34	-13	-5.34	Horizontal
276.3	-43.64	1.73	17.23	-28.14	-13	-15.14	Vertical
81.7	-48.29	1.66	17.64	-32.31	-13	-19.31	Horizontal
Test Results for High Channel 1754.3MHz							
3828.6	-51.98	4.05	30.01	-26.02	-13	-13.02	Horizontal
3828.6	-50.71	4.05	30.01	-24.75	-13	-11.75	Vertical
5742.9	-52.44	5.26	35.86	-21.84	-13	-8.84	Vertical
5742.9	-50.24	5.26	35.86	-19.64	-13	-6.64	Horizontal
154.6	-47.61	1.40	17.84	-31.17	-13	-18.17	Vertical
90.7	-42.75	1.47	16.13	-28.09	-13	-15.09	Horizontal

QPSK EIRP POWER FOR LTE BAND 25 (20MHZ BANDWIDTH)

Test Results for Low Channel 1720MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3720.0	-47.07	4.02	29.80	-21.29	-13	-8.29	Horizontal
3720.0	-48.91	4.02	29.80	-23.13	-13	-10.13	Vertical
5580.0	-50.04	5.24	35.84	-19.44	-13	-6.44	Vertical
5580.0	-48.83	5.24	35.84	-18.23	-13	-5.23	Horizontal
164.9	-46.79	1.79	17.98	-30.60	-13	-17.60	Vertical
230.5	-43.47	1.63	17.60	-27.50	-13	-14.50	Horizontal
Test Results for Mid Channel 1732.5MHz							
3765.0	-57.67	4.03	30.00	-31.70	-13	-18.70	Horizontal
3765.0	-47.67	4.03	30.00	-21.70	-13	-8.70	Vertical
5647.5	-51.04	5.25	35.86	-20.43	-13	-7.43	Vertical
5647.5	-50.32	5.25	35.86	-19.71	-13	-6.71	Horizontal
181.3	-37.89	1.43	15.87	-23.45	-13	-10.45	Vertical
226.7	-47.23	1.48	16.08	-32.63	-13	-19.63	Horizontal
Test Results for High Channel 1745MHz							
3810.0	-56.51	2.91	27.68	-31.74	-13	-18.74	Horizontal
3810.0	-50.70	2.91	27.68	-25.93	-13	-12.93	Vertical
5715.0	-52.60	5.26	35.86	-22.00	-13	-9.00	Vertical
5715.0	-54.12	5.26	35.86	-23.52	-13	-10.52	Horizontal
265.1	-37.38	1.72	15.99	-23.11	-13	-10.11	Vertical
131.8	-46.63	1.78	15.64	-32.77	-13	-19.77	Horizontal

9.9 LTE BAND 26

QPSK EIRP POWER FOR LTE BAND 26(814MHz~824MHz) (1.4MHZ BANDWIDTH)

Test Results for Low Channel 814.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1629.4	-52.58	2.78	27.50	-27.86	-13	-14.86	Horizontal
1629.4	-51.86	2.78	27.50	-27.14	-13	-14.14	Vertical
2444.1	-47.67	2.90	27.80	-22.77	-13	-9.77	Vertical
2444.1	-48.37	2.90	27.80	-23.47	-13	-10.47	Horizontal
191.2	-41.07	1.55	16.80	-25.82	-13	-12.82	Vertical
121.9	-45.13	1.65	15.09	-31.69	-13	-18.69	Horizontal
Test Results For Mid Channel 819MHz							
1638.0	-47.02	2.80	27.48	-22.34	-13	-9.34	Horizontal
1638.0	-49.30	2.80	27.48	-24.62	-13	-11.62	Vertical
2457.0	-49.67	2.91	27.70	-24.88	-13	-11.88	Vertical
2457.0	-43.26	2.91	27.70	-18.47	-13	-5.47	Horizontal
238.8	-38.46	1.77	15.03	-25.20	-13	-12.20	Vertical
277.6	-47.31	1.78	17.67	-31.42	-13	-18.42	Horizontal
Test Results for High Channel 823.3MHz							
1646.6	-46.69	2.82	27.43	-22.08	-13	-9.08	Horizontal
1646.6	-41.75	2.82	27.43	-17.14	-13	-4.14	Vertical
2469.9	-44.78	2.92	27.74	-19.96	-13	-6.96	Vertical
2469.9	-45.74	2.92	27.74	-20.92	-13	-7.92	Horizontal
191.6	-39.46	1.40	16.69	-24.17	-13	-11.17	Vertical
112.3	-45.50	1.32	17.20	-29.62	-13	-16.62	Horizontal

QPSK EIRP POWER FOR LTE BAND 26(814MHz~824MHz) (1.4MHZ BANDWIDTH)

Test Results for Channel 819MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1638.0	-44.90	2.78	27.50	-20.18	-13	-7.18	Horizontal
1638.0	-45.47	2.78	27.50	-20.75	-13	-7.75	Vertical
2457.0	-49.96	2.90	27.80	-25.06	-13	-12.06	Vertical
2457.0	-43.33	2.90	27.80	-18.43	-13	-5.43	Horizontal
103.2	-42.08	1.55	15.53	-28.10	-13	-15.10	Vertical
252.3	-40.79	1.34	17.70	-24.43	-13	-11.43	Horizontal

QPSK EIRP POWER FOR LTE BAND 26(824MHz~849MHz) (1.4MHZ BANDWIDTH)

Test Results for Low Channel 824.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1649.4	-54.62	2.78	27.50	-29.90	-13	-16.90	Horizontal
1649.4	-51.63	2.78	27.50	-26.91	-13	-13.91	Vertical
2474.1	-52.19	2.90	27.80	-27.29	-13	-14.29	Vertical
2474.1	-45.51	2.90	27.80	-20.61	-13	-7.61	Horizontal
247.7	-48.49	1.62	17.36	-32.75	-13	-19.75	Vertical
170.8	-39.12	1.48	16.69	-23.91	-13	-10.91	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-43.68	2.80	27.48	-19.00	-13	-6.00	Horizontal
1673.0	-46.74	2.80	27.48	-22.06	-13	-9.06	Vertical
2509.5	-44.49	2.91	27.70	-19.70	-13	-6.70	Vertical
2509.5	-46.38	2.91	27.70	-21.59	-13	-8.59	Horizontal
120.3	-45.94	1.36	17.15	-30.15	-13	-17.15	Vertical
139.2	-48.37	1.49	17.90	-31.96	-13	-18.96	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-44.17	2.82	27.43	-19.56	-13	-6.56	Horizontal
1696.6	-42.90	2.82	27.43	-18.29	-13	-5.29	Vertical
2544.9	-47.66	2.92	27.74	-22.84	-13	-9.84	Vertical
2544.9	-43.09	2.92	27.74	-18.27	-13	-5.27	Horizontal
98.1	-39.42	1.72	17.78	-23.36	-13	-10.36	Vertical
219.9	-42.59	1.41	17.05	-26.95	-13	-13.95	Horizontal

QPSK EIRP POWER FOR LTE BAND 26(824MHz~849MHz) (15MHZ BANDWIDTH)

Test Results for Low Channel 831.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1663.0	-46.61	2.78	27.50	-21.89	-13	-8.89	Horizontal
1663.0	-47.19	2.78	27.50	-22.47	-13	-9.47	Vertical
2494.5	-44.95	2.90	27.80	-20.05	-13	-7.05	Vertical
2494.5	-45.00	2.90	27.80	-20.10	-13	-7.10	Horizontal
164.4	-48.37	1.63	17.58	-32.42	-13	-19.42	Vertical
177.9	-48.06	1.64	16.89	-32.81	-13	-19.81	Horizontal
Test Results for Mid Channel 836.5MHz							
1673.0	-49.89	2.80	27.48	-25.21	-13	-12.21	Horizontal
1673.0	-52.26	2.80	27.48	-27.58	-13	-14.58	Vertical
2509.5	-48.31	2.91	27.70	-23.52	-13	-10.52	Vertical
2509.5	-52.07	2.91	27.70	-27.28	-13	-14.28	Horizontal
193.5	-40.10	1.71	15.30	-26.51	-13	-13.51	Vertical
258.7	-45.81	1.31	15.50	-31.62	-13	-18.62	Horizontal
Test Results for High Channel841.5MHz							
1683.0	-46.26	2.82	27.43	-21.65	-13	-8.65	Horizontal
1683.0	-40.53	2.82	27.43	-15.92	-13	-2.92	Vertical
2524.5	-46.01	2.92	27.74	-21.19	-13	-8.19	Vertical
2524.5	-45.54	2.92	27.74	-20.72	-13	-7.72	Horizontal
147.9	-40.85	1.54	17.32	-25.07	-13	-12.07	Vertical
200.1	-43.81	1.60	17.17	-28.24	-13	-15.24	Horizontal

9.10 LTE BAND 41

QPSK EIRP POWER FOR LTE BAND 41 (5MHZ BANDWIDTH)

Test Results for Low Channel 2572.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
5145.0	-65.67	5.23	35.81	-35.09	-25	-10.09	Horizontal
5145.0	-63.45	5.23	35.81	-32.87	-25	-7.87	Vertical
7717.5	-63.85	5.67	36.85	-32.67	-25	-7.67	Vertical
7717.5	-64.90	5.67	36.85	-33.72	-25	-8.72	Horizontal
165.2	-53.82	1.46	17.14	-38.14	-25	-13.14	Vertical
504.6	-55.57	1.49	15.54	-41.52	-25	-16.52	Horizontal
Test Results for Mid Channel 2595MHz							
5190.0	-70.14	5.23	35.82	-39.55	-25	-14.55	Horizontal
5190.0	-66.01	5.23	35.82	-35.42	-25	-10.42	Vertical
7785.0	-66.53	5.67	36.85	-35.35	-25	-10.35	Vertical
7785.0	-65.68	5.67	36.85	-34.50	-25	-9.50	Horizontal
283.9	-57.69	1.76	17.33	-42.12	-25	-17.12	Vertical
125.9	-50.47	1.54	15.60	-36.41	-25	-11.41	Horizontal
Test Results for High Channel 2617.5MHz							
5235.0	-68.27	5.24	35.83	-37.68	-25	-12.68	Horizontal
5235.0	-69.06	5.24	35.83	-38.47	-25	-13.47	Vertical
7852.5	-61.32	5.68	36.87	-30.13	-25	-5.13	Vertical
7852.5	-63.66	5.68	36.87	-32.47	-25	-7.47	Horizontal
492.4	-58.82	1.79	17.96	-42.65	-25	-17.65	Vertical
214.5	-52.80	1.57	15.81	-38.56	-25	-13.56	Horizontal

QPSK EIRP POWER FOR LTE BAND 41 (5MHZ BANDWIDTH)

Test Results for Low Channel 2580MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
5160.0	-63.91	5.23	35.82	-33.32	-25	-8.32	Horizontal
5160.0	-71.31	5.23	35.82	-40.72	-25	-15.72	Vertical
7740.0	-64.78	5.67	36.86	-33.59	-25	-8.59	Vertical
7740.0	-72.06	5.67	36.86	-40.87	-25	-15.87	Horizontal
330.7	-60.17	1.74	17.55	-44.36	-25	-19.36	Vertical
240.3	-58.39	1.71	16.22	-43.88	-25	-18.88	Horizontal
Test Results for Mid Channel 2595MHz							
5190.0	-65.63	5.23	35.82	-35.04	-25	-10.04	Horizontal
5190.0	-63.61	5.23	35.82	-33.02	-25	-8.02	Vertical
7785.0	-68.65	5.67	36.85	-37.47	-25	-12.47	Vertical
7785.0	-68.61	5.67	36.85	-37.43	-25	-12.43	Horizontal
515.5	-49.92	1.77	16.40	-35.29	-25	-10.29	Vertical
115.3	-58.16	1.52	16.53	-43.15	-25	-18.15	Horizontal
Test Results for High Channel 2610MHz							
5220.0	-64.46	5.24	35.83	-33.87	-25	-8.87	Horizontal
5220.0	-64.77	5.24	35.83	-34.18	-25	-9.18	Vertical
7830.0	-69.78	5.70	36.88	-38.60	-25	-13.60	Vertical
7830.0	-63.40	5.70	36.88	-32.22	-25	-7.22	Horizontal
486.2	-56.91	1.67	16.27	-42.31	-25	-17.31	Vertical
309.4	-54.79	1.47	16.63	-39.63	-25	-14.63	Horizontal

9.11 LTE BAND 66

QPSK EIRP POWER FOR LTE BAND 66 (1.4MHZ BANDWIDTH)

Test Results for Low Channel 1710.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3421.4	-48.02	4.02	29.80	-22.24	-13	-9.24	Horizontal
3421.4	-52.75	4.02	29.80	-26.97	-13	-13.97	Vertical
5132.1	-50.14	5.24	35.84	-19.54	-13	-6.54	Vertical
5132.1	-54.13	5.24	35.84	-23.53	-13	-10.53	Horizontal
193.4	-38.02	1.76	15.04	-24.74	-13	-11.74	Vertical
272.4	-42.98	1.47	16.53	-27.92	-13	-14.92	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-50.59	4.03	30.00	-24.62	-13	-11.62	Horizontal
3490.0	-48.46	4.03	30.00	-22.49	-13	-9.49	Vertical
5235.0	-51.81	5.25	35.86	-21.20	-13	-8.20	Vertical
5235.0	-47.23	5.25	35.86	-16.62	-13	-3.62	Horizontal
175.1	-46.61	1.68	15.64	-32.65	-13	-19.65	Vertical
178.3	-38.47	1.76	16.16	-24.07	-13	-11.07	Horizontal
Test Results for High Channel 1779.3MHz							
3558.6	-49.74	4.05	30.01	-23.78	-13	-10.78	Horizontal
3558.6	-55.24	4.05	30.01	-29.28	-13	-16.28	Vertical
5337.9	-53.13	5.26	35.86	-22.53	-13	-9.53	Vertical
5337.9	-53.63	5.26	35.86	-23.03	-13	-10.03	Horizontal
91.3	-41.68	1.49	17.30	-25.87	-13	-12.87	Vertical
185.2	-44.75	1.65	16.37	-30.03	-13	-17.03	Horizontal

QPSK EIRP POWER FOR LTE BAND 66 (20MHZ BANDWIDTH)

Test Results for Low Channel 1720MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3440.0	-49.69	4.02	29.80	-23.91	-13	-10.91	Horizontal
3440.0	-50.82	4.02	29.80	-25.04	-13	-12.04	Vertical
5160.0	-54.59	5.24	35.84	-23.99	-13	-10.99	Vertical
5160.0	-56.46	5.24	35.84	-25.86	-13	-12.86	Horizontal
279.1	-46.44	1.48	16.53	-31.39	-13	-18.39	Vertical
267.0	-43.56	1.37	15.85	-29.08	-13	-16.08	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-56.19	4.03	30.00	-30.22	-13	-17.22	Horizontal
3490.0	-54.81	4.03	30.00	-28.84	-13	-15.84	Vertical
5235.0	-55.65	5.25	35.86	-25.04	-13	-12.04	Vertical
5235.0	-54.91	5.25	35.86	-24.30	-13	-11.30	Horizontal
137.1	-39.17	1.50	15.41	-25.26	-13	-12.26	Vertical
144.1	-45.91	1.79	15.84	-31.86	-13	-18.86	Horizontal
Test Results for High Channel 1770MHz							
3540.0	-56.75	2.91	27.68	-31.98	-13	-18.98	Horizontal
3540.0	-49.57	2.91	27.68	-24.80	-13	-11.80	Vertical
5310.0	-55.58	5.26	35.86	-24.98	-13	-11.98	Vertical
5310.0	-50.41	5.26	35.86	-19.81	-13	-6.81	Horizontal
267.8	-42.93	1.40	17.02	-27.31	-13	-14.31	Vertical
263.0	-44.82	1.37	16.60	-29.59	-13	-16.59	Horizontal

Note: PMea(dBm)= Power(dBm)+ ARpl (dBm)

. Over Limit= : PMea(dBm)-Limit(dBm)

. We test both H direction and V direction, recorded worst case direction.

Both QPSK and 16QAM has been tested, the worst case is QPSK mode, the report just reported the worst case.

10. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §22.355, §24.235, §27.54, §90.213

LIMITS

§22.355 - The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

§24.235 - The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

- Temp. = −30° to +50°C
- Voltage =low voltage,DC 3.4V, Normal, DC 3.85V and High voltage, DC 4.2V.

Frequency Stability vs Temperature:

The EUT is place inside a temperature chamber. The temperature is set to -30ºC and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until +50ºC is reached.

Frequency Stability vs Voltage:

The peak frequency error is recorded (worst-case).

MODES TESTED

- LTE Band 2

LTE Band 4

- LTE Band5

LTE Band 7
LTE Band 12
LTE Band 13
LTE Band 17
LTE Band 25,
LTE Band 26,
LTE Band 41,
LTE Band 66

RESULTS

See the following pages.

10.1 LTE BAND 2

QPSK, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 2 QPSK, (CH 18900 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	1880	-10.0	-0.005340	2.5
3.85	1880	15.0	0.007995	2.5
4.2	1880	17.7	0.009404	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 2 QPSK, (CH 18900 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1880	18.8	0.009979	2.5
Extreme (50C)	1880	-17.2	-0.009138	2.5
Extreme (40C)	1880	-6.5	-0.003468	2.5
Extreme (30C)	1880	-19.3	-0.010271	2.5
Extreme (10C)	1880	-21.1	-0.011229	2.5
Extreme (0C)	1880	-0.1	-0.000059	2.5
Extreme (-10C)	1880	11.1	0.005926	2.5
Extreme (-20C)	1880	-9.1	-0.004840	2.5
Extreme (-30C)	1880	13.4	0.007112	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 2 16QAM, (CH 18900 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	1880	32.8	0.017447	2.5
3.85	1880	5.7	0.003043	2.5
4.2	1880	14.7	0.007809	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 2 16QAM, (CH 18900 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1880	-22.8	-0.012149	2.5
Extreme (50C)	1880	13.0	0.006931	2.5
Extreme (40C)	1880	-6.1	-0.003239362	2.5
Extreme (30C)	1880	15.5	0.008239362	2.5
Extreme (10C)	1880	17.8	0.009484043	2.5
Extreme (0C)	1880	19.6	0.010441489	2.5
Extreme (-10C)	1880	-17.4	-0.00925	2.5
Extreme (-20C)	1880	17.1	0.009117021	2.5
Extreme (-30C)	1880	17.9	0.009494681	2.5

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication Test Set.

10.2 LTE BAND 4

QPSK, (10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 4 QPSK, (CH 20175 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	1732.5	0.3	0.000196	2.5
3.85	1732.5	19.2	0.011100	2.5
4.2	1732.5	26.6	0.015336	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 4 QPSK, (CH 20175 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1732.5	5.1	0.002955	2.5
Extreme (50C)	1732.5	27.9	0.016087	2.5
Extreme (40C)	1732.5	-27.4	-0.015821	2.5
Extreme (30C)	1732.5	17.2	0.009905	2.5
Extreme (10C)	1732.5	20.6	0.011867	2.5
Extreme (0C)	1732.5	-14.0	-0.008069	2.5
Extreme (-10C)	1732.5	-1.3	-0.000756	2.5
Extreme (-20C)	1732.5	-24.8	-0.014332	2.5
Extreme (-30C)	1732.5	3.1	0.001807	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 4 16QAM, (CH 20175 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	1732.5	-24.8	-0.014332	2.5
3.85	1732.5	-24.4	-0.014084	2.5
4.2	1732.5	-23.7	-0.013651	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 4 16QAM, (CH 20175 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1732.5	16.0	0.009247	2.5
Extreme (50C)	1732.5	-16.1	-0.009299	2.5
Extreme (40C)	1732.5	-7.3	-0.004237	2.5
Extreme (30C)	1732.5	-25.9	-0.014938	2.5
Extreme (10C)	1732.5	-3.0	-0.001709	2.5
Extreme (0C)	1732.5	-15.4	-0.008889	2.5
Extreme (-10C)	1732.5	-23.3	-0.013460	2.5
Extreme (-20C)	1732.5	8.7	0.005004	2.5
Extreme (-30C)	1732.5	14.9	0.008589	2.5

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication Test Set.

10.3 LTE BAND 5

QPSK, (10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 5 QPSK, (CH 20525 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
3.4	836.5	-19.6	-0.023479	2.5
3.85	836.5	1.2	0.001435	2.5
4.2	836.5	-15.0	-0.017920	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 5 QPSK, (CH 20525 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
Normal (25C)	836.5	-17.1	-0.020442	2.5
Extreme (50C)	836.5	17.1	0.020454	2.5
Extreme (40C)	836.5	5.5	0.006623	2.5
Extreme (30C)	836.5	14.3	0.017083	2.5
Extreme (10C)	836.5	10.6	0.012720	2.5
Extreme (0C)	836.5	-3.2	-0.003802	2.5
Extreme (-10C)	836.5	-17.9	-0.021339	2.5
Extreme (-20C)	836.5	-13.1	-0.015649	2.5
Extreme (-30C)	836.5	9.7	0.011632	2.5

16QAM, (10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 5 16QAM, (CH 20525 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
3.4	836.5	-30.4	-0.036354	2.5
3.85	836.5	12.1	0.014417	2.5
4.2	836.5	-20.6	-0.024626	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 5 16QAM, (CH 20525 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
Normal (25C)	836.5	-14.3	-0.017119	2.5
Extreme (50C)	836.5	6.5	0.007747	2.5
Extreme (40C)	836.5	-17.1	-0.020478	2.5
Extreme (30C)	836.5	22.5	0.026838	2.5
Extreme (10C)	836.5	-25.7	-0.030687	2.5
Extreme (0C)	836.5	7.1	0.008440	2.5
Extreme (-10C)	836.5	-22.6	-0.026981	2.5
Extreme (-20C)	836.5	-21.9	-0.026216	2.5
Extreme (-30C)	836.5	-11.5	-0.013688	2.5

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication Test Set.

10.4 LTE BAND 7

QPSK, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 7 QPSK, (CH 21100 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	2535	4.8	0.001893	2.5
3.85	2535	3.0	0.001183	2.5
4.2	2535	-17.1	-0.006726	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 7 QPSK, (CH 21100 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	2535	5.3	0.002099	2.5
Extreme (50C)	2535	-29.5	-0.011617	2.5
Extreme (40C)	2535	-27.4	-0.010824	2.5
Extreme (30C)	2535	-18.5	-0.007302	2.5
Extreme (10C)	2535	1.2	0.000481	2.5
Extreme (0C)	2535	-19.4	-0.007665	2.5
Extreme (-10C)	2535	26.7	0.010536	2.5
Extreme (-20C)	2535	-20.8	-0.008217	2.5
Extreme (-30C)	2535	12.7	0.005006	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 7 16QAM, (CH 21100 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	2535	0.5	0.000205	2.5
3.85	2535	-16.6	-0.006548	2.5
4.2	2535	-22.6	-0.008915	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 7 16QAM, (CH 21100 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	2535	-10.4	-0.004110	2.5
Extreme (50C)	2535	-21.5	-0.008477	2.5
Extreme (40C)	2535	-11.9	-0.004710	2.5
Extreme (30C)	2535	-5.3	-0.002095	2.5
Extreme (10C)	2535	-12.2	-0.004828	2.5
Extreme (0C)	2535	-26.3	-0.010367	2.5
Extreme (-10C)	2535	-29.7	-0.011708	2.5
Extreme (-20C)	2535	9.0	0.003535	2.5
Extreme (-30C)	2535	8.0	0.003136	2.5

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication Test Set.

10.5 LTE BAND 12

QPSK, (10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 12 QPSK, (CH 23095 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
3.4	707.5	27.5	0.038827	2.5
3.85	707.5	-30.6	-0.043307	2.5
4.2	707.5	-14.4	-0.020396	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 12 QPSK, (CH 23095 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
Normal (25C)	707.5	6.8	0.009541	2.5
Extreme (50C)	707.5	6.2	0.008693	2.5
Extreme (40C)	707.5	5.4	0.007604	2.5
Extreme (30C)	707.5	-3.3	-0.004664	2.5
Extreme (10C)	707.5	26.4	0.037244	2.5
Extreme (0C)	707.5	18.8	0.026502	2.5
Extreme (-10C)	707.5	-32.4	-0.045753	2.5
Extreme (-20C)	707.5	-23.9	-0.033753	2.5
Extreme (-30C)	707.5	13.4	0.018912	2.5

16QAM, (10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 12 16QAM, (CH 23095 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
3.4	707.5	17.0	0.024057	2.5
3.85	707.5	6.5	0.009159	2.5
4.2	707.5	-31.9	-0.045018	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 12 QPSK, (CH 23095 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
Normal (25C)	707.5	-20.4	-0.028763	2.5
Extreme (50C)	707.5	-17.8	-0.025102	2.5
Extreme (40C)	707.5	20.0	0.028297	2.5
Extreme (30C)	707.5	-9.9	-0.013993	2.5
Extreme (10C)	707.5	17.7	0.025060	2.5
Extreme (0C)	707.5	-3.1	-0.004396	2.5
Extreme (-10C)	707.5	-26.5	-0.037442	2.5
Extreme (-20C)	707.5	5.8	0.008184	2.5
Extreme (-30C)	707.5	10.1	0.014219	2.5

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication Test Set.

10.6 LTE BAND 13

QPSK, (10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 13 QPSK, (CH 23230 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
3.4	782	23.0	0.029463	2.5
3.85	782	-27.6	-0.035256	2.5
4.2	782	-11.3	-0.014386	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 13 QPSK, (CH 23230 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
Normal (25C)	782	-21.4	-0.027327	2.5
Extreme (50C)	782	7.7	0.009808	2.5
Extreme (40C)	782	17.4	0.022199	2.5
Extreme (30C)	782	21.7	0.027749	2.5
Extreme (10C)	782	24.5	0.031317	2.5
Extreme (0C)	782	11.2	0.014271	2.5
Extreme (-10C)	782	-17.5	-0.022327	2.5
Extreme (-20C)	782	6.7	0.008504	2.5
Extreme (-30C)	782	-24.7	-0.031535	2.5

16QAM, (10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 13 16QAM, (CH 23230 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
3.4	782	21.5	0.027506	2.5
3.85	782	14.8	0.018939	2.5
4.2	782	12.9	0.016535	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 13 QPSK, (CH 23230 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
Normal (25C)	782	-12.3	-0.015742	2.5
Extreme (50C)	782	-31.0	-0.039616	2.5
Extreme (40C)	782	30.2	0.038555	2.5
Extreme (30C)	782	23.3	0.029757	2.5
Extreme (10C)	782	26.0	0.033235	2.5
Extreme (0C)	782	-4.4	-0.005563	2.5
Extreme (-10C)	782	-7.5	-0.009642	2.5
Extreme (-20C)	782	-16.0	-0.020499	2.5
Extreme (-30C)	782	-14.5	-0.018581	2.5

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication Test Set.

10.7 LTE BAND 17

QPSK, (10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 17 QPSK, (CH 23790 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
3.4	710.0	11.8	0.016634	2.5
3.85	710.0	3.6	0.005099	2.5
4.2	710.0	-17.4	-0.024507	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 17 QPSK, (CH 23790 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
Normal (25C)	710.0	19.8	0.027944	2.5
Extreme (50C)	710.0	15.3	0.021493	2.5
Extreme (40C)	710.0	3.1	0.004394	2.5
Extreme (30C)	710.0	-12.7	-0.017817	2.5
Extreme (10C)	710.0	7.1	0.010056	2.5
Extreme (0C)	710.0	25.2	0.035437	2.5
Extreme (-10C)	710.0	-14.2	-0.019958	2.5
Extreme (-20C)	710.0	-10.3	-0.014521	2.5
Extreme (-30C)	710.0	30.8	0.043380	2.5

16QAM, (10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 17 16QAM, (CH 23790 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
3.4	710.0	-20.3	-0.028563	2.5
3.85	710.0	15.5	0.021887	2.5
4.2	710.0	12.6	0.017761	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 17 QPSK, (CH 23790 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
Normal (25C)	710.0	-25.1	-0.035324	2.5
Extreme (50C)	710.0	21.8	0.030704	2.5
Extreme (40C)	710.0	24.5	0.034493	2.5
Extreme (30C)	710.0	20.4	0.028718	2.5
Extreme (10C)	710.0	-13.1	-0.018465	2.5
Extreme (0C)	710.0	-1.0	-0.001366	2.5
Extreme (-10C)	710.0	-12.5	-0.017634	2.5
Extreme (-20C)	710.0	12.5	0.017648	2.5
Extreme (-30C)	710.0	-17.1	-0.024014	2.5

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication Test Set.

10.7 LTE BAND 25

QPSK, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 25 QPSK, (CH 26365 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	1882.5	25.2	0.013408	2.5
3.85	1882.5	-14.3	-0.007591	2.5
4.2	1882.5	12.1	0.006433	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 25 QPSK, (CH 26365 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1882.5	-21.0	-0.011139	2.5
Extreme (50C)	1882.5	20.6	0.010927	2.5
Extreme (40C)	1882.5	3.2	0.001705	2.5
Extreme (30C)	1882.5	13.8	0.007336	2.5
Extreme (10C)	1882.5	-14.3	-0.007591	2.5
Extreme (0C)	1882.5	0.3	0.000149	2.5
Extreme (-10C)	1882.5	-26.9	-0.014263	2.5
Extreme (-20C)	1882.5	-16.2	-0.008600	2.5
Extreme (-30C)	1882.5	27.3	0.014507	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 25 16QAM, (CH 26365 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	1882.5	-14.4	-0.007639	2.5
3.85	1882.5	31.4	0.016701	2.5
4.2	1882.5	9.7	0.005142	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 25 16QAM, (CH 26365 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1882.5	19.5	0.010348	2.5
Extreme (50C)	1882.5	-16.2	-0.008611	2.5
Extreme (40C)	1882.5	6.5	0.003463	2.5
Extreme (30C)	1882.5	-30.3	-0.016085	2.5
Extreme (10C)	1882.5	28.9	0.015373	2.5
Extreme (0C)	1882.5	17.7	0.009386	2.5
Extreme (-10C)	1882.5	23.3	0.012351	2.5
Extreme (-20C)	1882.5	-5.0	-0.002640	2.5
Extreme (-30C)	1882.5	5.7	0.003044	2.5

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication Test Set.

10.8 LTE BAND 26

Band 26 A (814MHz~824MHz) QPSK,10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26A QPSK, (CH 26740 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
3.4	819	15.0	0.018278	2.5
3.85	819	15.0	0.018303	2.5
4.2	819	29.2	0.035604	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26A QPSK, (CH 26740RB size 50 RB Offset 0 10MHz BANDWIDTH)				
Normal (25C)	819	-4.6	-0.005665	2.5
Extreme (50C)	819	3.8	0.004628	2.5
Extreme (40C)	819	-10.4	-0.012723	2.5
Extreme (30C)	819	-19.1	-0.023260	2.5
Extreme (10C)	819	22.4	0.027338	2.5
Extreme (0C)	819	31.7	0.038718	2.5
Extreme (-10C)	819	-15.7	-0.019219	2.5
Extreme (-20C)	819	-10.7	-0.013040	2.5
Extreme (-30C)	819	-8.3	-0.010085	2.5

Band 26 (814MHz~824MHz) 16QAM, (10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26A 16QAM, (CH 26740 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
3.4	819	15.4	0.018803	2.5
3.85	819	3.1	0.003822	2.5
4.2	819	25.8	0.031502	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26A 16QAM, (CH 26740 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
Normal (25C)	819	9.1	0.011111	2.5
Extreme (50C)	819	-16.9	-0.020586	2.5
Extreme (40C)	819	12.1	0.014799	2.5
Extreme (30C)	819	0.9	0.001074	2.5
Extreme (10C)	819	12.0	0.014603	2.5
Extreme (0C)	819	15.1	0.018376	2.5
Extreme (-10C)	819	-12.3	-0.014994	2.5
Extreme (-20C)	819	-21.9	-0.026679	2.5
Extreme (-30C)	819	25.8	0.031490	2.5

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication Test Set.

Band 26B ((824MHz~849MHz) QPSK,15MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26B QPSK, (CH 26915 RB size 75 RB Offset 0 15MHz BANDWIDTH)				
3.4	836.5	12.2	0.014549	2.5
3.85	836.5	14.6	0.017430	2.5
4.2	836.5	25.0	0.029851	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26B QPSK, (CH 26915 RB size 75 RB Offset 0 15MHz BANDWIDTH)				
Normal (25C)	836.5	-12.8	-0.015314	2.5
Extreme (50C)	836.5	-12.5	-0.014955	2.5
Extreme (40C)	836.5	-8.7	-0.010341	2.5
Extreme (30C)	836.5	9.4	0.011237	2.5
Extreme (10C)	836.5	29.4	0.035087	2.5
Extreme (0C)	836.5	27.2	0.032504	2.5
Extreme (-10C)	836.5	9.4	0.011201	2.5
Extreme (-20C)	836.5	-9.9	-0.011859	2.5
Extreme (-30C)	836.5	-9.3	-0.011166	2.5

Band 26B (824MHz~849MHz) 16QAM, (15MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26B 16QAM, (CH 26915 RB size 75 RB Offset 0 15MHz BANDWIDTH)				
3.4	836.5	14.8	0.017633	2.5
3.85	836.5	11.5	0.013700	2.5
4.2	836.5	-33.6	-0.040203	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26B 16QAM, (CH 26915 RB size 75 RB Offset 0 15MHz BANDWIDTH)				
Normal (25C)	836.5	18.0	0.021530	2.5
Extreme (50C)	836.5	-20.6	-0.024603	2.5
Extreme (40C)	836.5	11.0	0.013126	2.5
Extreme (30C)	836.5	18.9	0.022642	2.5
Extreme (10C)	836.5	1.3	0.001578	2.5
Extreme (0C)	836.5	14.9	0.017776	2.5
Extreme (-10C)	836.5	21.1	0.025272	2.5
Extreme (-20C)	836.5	23.4	0.027914	2.5
Extreme (-30C)	836.5	-17.8	-0.021303	2.5

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication

10.9 LTE BAND 41

QPSK, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 41 QPSK, (CH 40640 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	2595	13.2	0.005098	2.5
3.85	2595	13.8	0.005329	2.5
4.2	2595	-9.8	-0.003773	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 41 QPSK, (CH 40640 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	2595	-9.5	-0.003645	2.5
Extreme (50C)	2595	-28.0	-0.010794	2.5
Extreme (40C)	2595	-16.9	-0.006509	2.5
Extreme (30C)	2595	-4.7	-0.001819	2.5
Extreme (10C)	2595	0.8	0.000289	2.5
Extreme (0C)	2595	22.6	0.008721	2.5
Extreme (-10C)	2595	10.0	0.003842	2.5
Extreme (-20C)	2595	20.1	0.007730	2.5
Extreme (-30C)	2595	-23.6	-0.009079	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 41 16QAM, (CH 40640 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	2595	29.5	0.011372	2.5
3.85	2595	-23.6	-0.009079	2.5
4.2	2595	5.8	0.002243	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
AND 41 16QAM, (CH 40640 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	2595	15.6	0.006019	2.5
Extreme (50C)	2595	-8.7	-0.003360	2.5
Extreme (40C)	2595	-12.8	-0.004925	2.5
Extreme (30C)	2595	-32.2	-0.012420	2.5
Extreme (10C)	2595	-16.2	-0.006235	2.5
Extreme (0C)	2595	-11.3	-0.004347	2.5
Extreme (-10C)	2595	29.9	0.011507	2.5
Extreme (-20C)	2595	9.9	0.003800	2.5
Extreme (-30C)	2595	19.5	0.007530	2.5

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication Test Set.

10.10 LTE BAND 66

QPSK, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 66 QPSK, (CH 132322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	1745	21.8	0.012464	2.5
3.85	1745	-3.9	-0.002235	2.5
4.2	1745	-14.1	-0.008086	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 66 QPSK, (CH 132322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1745	-18.0	-0.010315	2.5
Extreme (50C)	1745	22.7	0.012991	2.5
Extreme (40C)	1745	-27.8	-0.015937	2.5
Extreme (30C)	1745	-15.7	-0.009014	2.5
Extreme (10C)	1745	11.3	0.006481	2.5
Extreme (0C)	1745	16.0	0.009186	2.5
Extreme (-10C)	1745	31.3	0.017948	2.5
Extreme (-20C)	1745	-0.4	-0.000235	2.5
Extreme (-30C)	1745	24.1	0.013805	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 66 16QAM, (CH 132322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	1745	4.9	0.002831	2.5
3.85	1745	-23.5	-0.013461	2.5
4.2	1745	7.6	0.004332	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 66 16QAM, (CH 132322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1745	22.1	0.012688	2.5
Extreme (50C)	1745	12.7	0.007289	2.5
Extreme (40C)	1745	17.4	0.009966	2.5
Extreme (30C)	1745	11.4	0.006533	2.5
Extreme (10C)	1745	-25.5	-0.014585	2.5
Extreme (0C)	1745	-13.7	-0.007862	2.5
Extreme (-10C)	1745	-7.6	-0.004372	2.5
Extreme (-20C)	1745	-17.1	-0.009811	2.5
Extreme (-30C)	1745	7.9	0.004510	2.5

***Note:** Frequency error measurements were made by using the build-in capability of the Wireless Communication Test Set.

11. Peak-to-Average Ratio

11.1 Description of the PAR Measurement

The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

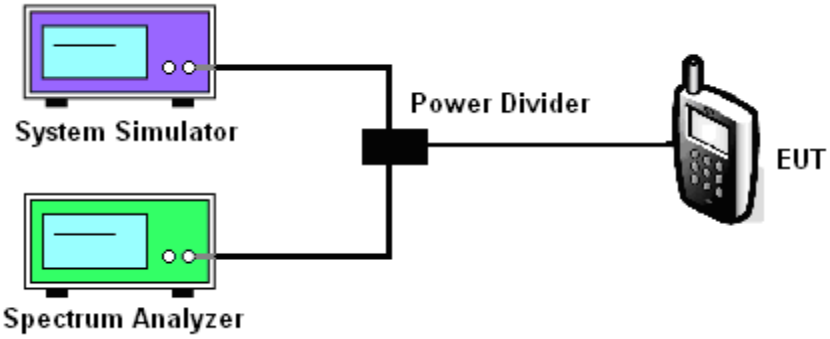
11.2 Measuring Instruments

See list of measuring instruments of this test report.

11.3 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. For LTE operating modes:
   a. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
   b. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.

11.4 Test Setup



MODES TESTED

- ☐ LTE Band 2
- LTE Band 4
- ☐ LTE Band5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 17
- LTE Band 25,
- LTE Band 26,
- LTE Band 41,
- LTE Band 66

Test data reference attachment.

----END OF REPORT----