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

FCC ID: 2A9FT-Z400-H3

Product: Smart LTE Module

Trade Mark: ZelusTek

Model No.: Z400-H3

Family Model: N/A

Report No.: S22101304802006

Issue Date: Nov 17, 2022

Prepared for

Zelus (HangZhou) Technology Ltd.

Room 601-602, Building 1, LiuheJinzuo, Xihu District, Hangzhou City, Zhejiang Province,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 ..... :	Zelus (HangZhou) Technology Ltd.
Address..... :	Room 601-602, Building 1, LiuheJinzuo, Xihu District, Hangzhou City, Zhejiang Province,China
Manufacturer's Name..... :	Zelus (HangZhou) Technology Ltd.
Address..... :	Room 601-602, Building 1, LiuheJinzuo, Xihu District, Hangzhou City, Zhejiang Province,China
Product name..... :	Smart LTE Module
Model and/or type reference .. :	Z400-H3
Family Model..... :	N/A
Test Sample Number.....	S221013048002
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.

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Date of Test .....

Date (s) of performance of tests..... Oct 13, 2022 ~ Nov 17, 2022

Date of Issue..... Nov 17, 2022

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

Testing Engineer : Mukzi Lee

(Mukzi Lee)

Authorized Signatory : Alex

(Alex Li)

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1. GENERAL INFORMATION

1.1 PRODUCT DESCRIPTION

A major technical description of EUT is described as following:

Product Designation:	Smart LTE Module
Trade Mark	ZelusTek
Model Name	Z400-H3
Family Model	N/A
Model Difference	N/A
FCC ID:	2A9FT-Z400-H3
Frequency Bands:	U.S. Bands: ☒LTE FDD Band 2,4,5,7,12,13,17,25,26,41,66,71
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 26A Uplink: 814MHz-824MHz, Downlink: 859MHz-869MHz; LTE FDD Band 26B Uplink: 824MHz-849MHz, Downlink: 869MHz-894MHz; LTE FDD Band 41 Uplink: 2496MHz-2690MHz, LTE FDD Band 66 Uplink: 1710MHz-1780MHz, Downlink: 2110MHz-2200MHz; LTE FDD Band 71 Uplink: 663MHz-698MHz, Downlink: 617MHz-652MHz;
Type of Modulation:	QPSK/16QAM/64QAM(Only Downlink)
Antenna:	External Antenna
Antenna gain:	2 dBi;
Adapter	N/A

Battery	N/A
Power Rating	DC 4V
Extreme Vol. Limits:	DC 3.4V to DC 4.6V (Nominal DC 4.0V)（Note 1）
HW Version	Z400-H3 V2.0
SW Version	N/A
** Note1: The High Voltage DC 4.6V 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: 2A9FT-Z400-H3** 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 2/4/5/7/12/13/17/25/26/41/66/71

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

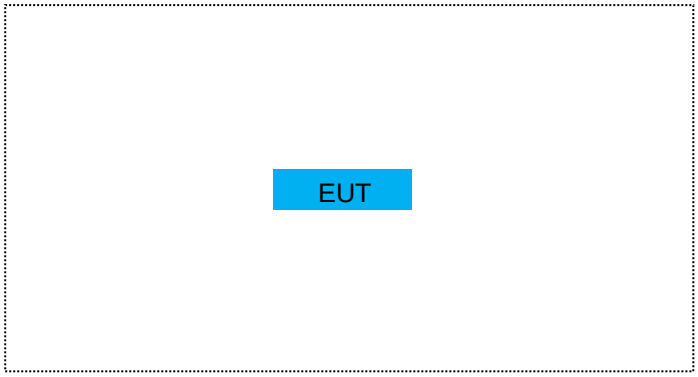
Table 2-1 Equipment Used in EUT System

Item	Equipment	Model No.	ID or Specification	Note
1	Smart LTE Module	Z400-H3	FCC ID: 2A9FT-Z400-H3	EUT

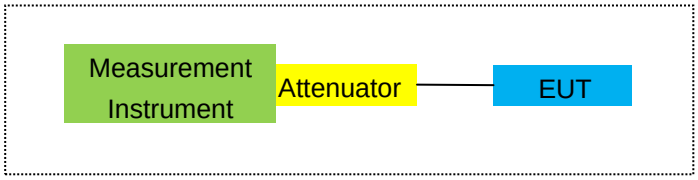
Note: All the accessories have been used during the test.
the following "EUT" in setup diagram means EUT system.

2.4 TEST SETUP

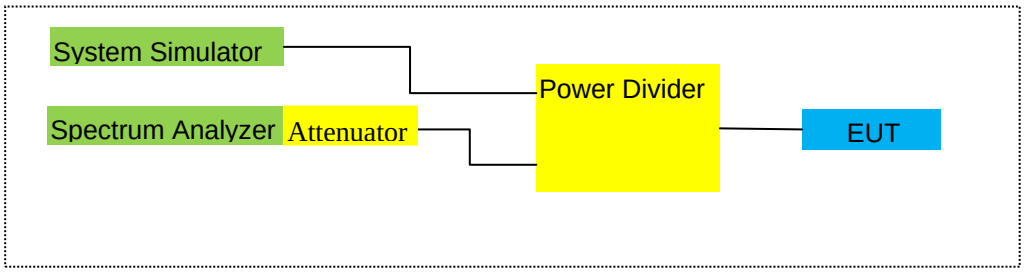
For Radiated Test Cases



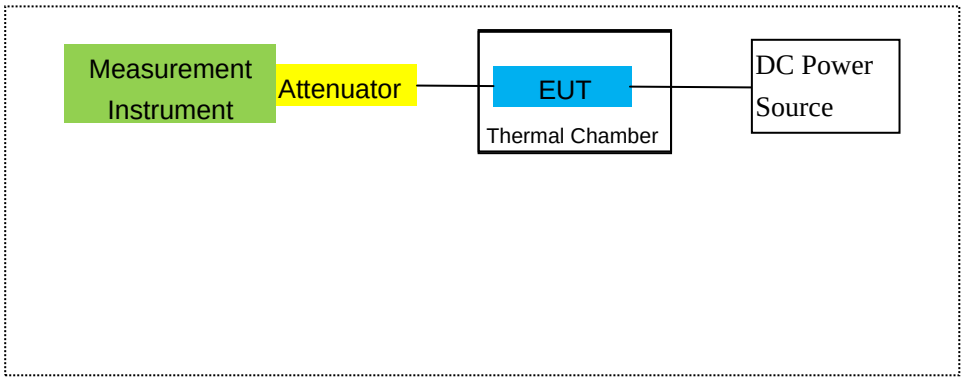
For Conducted Output Power



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	2022.06.16	2023.06.17	1 year
2	Test Receiver	R&S	ESPI	101318	2022.04.06	2023.04.05	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2022.03.30	2023.03.29	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	2022.03.31	2023.03.30	1 year
6	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2021.11.07 2022.11.01	2022.11.06 2023.10.31	1 year
7	Amplifier	EM	EM-30180	060538	2022.06.17	2023.06.16	1 year
8	Loop Antenna	ARA	PLA-1030/B	1029	2022.04.06	2023.04.05	1 year
9	Power Meter	R&S	NRVS	100696	2022.06.17	2023.06.16	1 year
10	Power Sensor	R&S	URV5-Z4	0395.1619.05	2022.04.06	2023.04.05	1 year
11	Test Cable	N/A	R-01	N/A	2022.06.17	2025.06.16	3 year
12	Test Cable	N/A	R-02	N/A	2022.06.17	2025.06.16	3 year
13	Test Cable	N/A	R-03	N/A	2022.06.17	2025.06.16	3 year
14	Test Receiver	R&S	ESCI	101160	2022.04.06	2023.04.05	1 year
15	LISN	R&S	ENV216	101313	2022.04.06	2023.04.05	1 year
16	LISN	EMCO	3816/2	00042990	2022.04.06	2023.04.05	1 year
17	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2022.04.06	2023.04.05	1 year
18	Passive Voltage Probe	R&S	ESH2-Z3	100196	2022.04.06	2023.04.05	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	2023.05.10	3 year
22	Attenuator	MCE	24-10-34	BN9258	2022.04.01	2023.03.31	1 year
23	Spectrum Analyzer	agilent	e4440a	us44300399	2022.04.01	2023.03.31	1 year
24	test receiver	R&S	ESCI	a0304218	2022.04.06	2023.04.05	1 year
25	Communication Tester	R&S	CMU200	A0304247	2022.06.16	2023.06.15	1 year

26	Thermal Chamber	Ten Billion	TTC-B3C	TBN-960502	2022.04.06	2023.04.05	1 year
27	DC Power Source	N/A	PS-6005D	2017040292 3	2020.05.11	2023.05.10	3 year
28	MXG Vector Signal Generator	Agilent	N5182A	MY47070317	2022.06.16	2023.06.15	1 year
29	Communication Tester	R&S	CMW500	148500	2022.06.16	2023.06.15	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 2/4/5/7/12/13/17/25/26/41/66/71

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 2/4/5/7/12/13/17/25/26/41/66/71

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 2/4/5/7/12/13/17/25/26/41/66/71

□

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 2/4/5/7/12/13/17/25/26/41/66/71

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 (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	1850.7	-1.58	3.76	28.24	22.90	194.984	Horizontal	Pass
		1880	-1.35	3.91	28.22	22.96	197.697	Horizontal	Pass
		1909.3	-1.39	3.93	28.20	22.88	194.089	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-1.56	3.77	28.23	22.90	194.984	Horizontal	Pass
		1880	-1.42	3.91	28.24	22.91	195.434	Horizontal	Pass
		1908.5	-1.34	3.94	28.25	22.97	198.153	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-1.64	3.77	28.31	22.90	194.984	Horizontal	Pass
		1880	-1.42	3.91	28.22	22.89	194.536	Horizontal	Pass
		1907.5	-1.32	3.94	28.20	22.94	196.789	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1855	-1.57	3.79	28.33	22.97	198.153	Horizontal	Pass
		1880	-1.43	3.95	28.22	22.84	192.309	Horizontal	Pass
		1905	-1.36	3.97	28.19	22.86	193.197	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1857.5	-1.65	3.79	28.34	22.90	194.984	Horizontal	Pass
		1880	-1.34	3.95	28.22	22.93	196.336	Horizontal	Pass
		1902.5	-1.31	3.97	28.18	22.90	194.984	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1860	-1.62	3.81	28.35	22.92	195.884	Horizontal	Pass
		1880	-1.46	3.96	28.22	22.80	190.546	Horizontal	Pass
		1900	-1.34	4.00	28.16	22.82	191.426	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1850.7	-1.59	3.76	28.24	22.89	194.536	Vertical	Pass
		1880	-1.34	3.91	28.22	22.97	198.153	Vertical	Pass
		1909.3	-1.42	3.93	28.20	22.85	192.752	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-1.56	3.77	28.23	22.90	194.984	Vertical	Pass
		1880	-1.46	3.91	28.24	22.87	193.642	Vertical	Pass
		1908.5	-1.36	3.94	28.25	22.95	197.242	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-1.72	3.77	28.31	22.82	191.426	Vertical	Pass
		1880	-1.35	3.91	28.22	22.96	197.697	Vertical	Pass
		1907.5	-1.41	3.94	28.20	22.85	192.752	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1855	-1.65	3.79	28.33	22.89	194.536	Vertical	Pass
		1880	-1.34	3.95	28.22	22.93	196.336	Vertical	Pass
		1905	-1.38	3.97	28.19	22.84	192.309	Vertical	Pass

15.0MHz Band QPSK	1/#Mid	1857.5	-1.60	3.79	28.34	22.95	197.242	Vertical	Pass
		1880	-1.39	3.95	28.22	22.88	194.089	Vertical	Pass
		1902.5	-1.26	3.97	28.18	22.95	197.242	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	1860	-1.52	3.81	28.35	23.02	200.447	Vertical	Pass
		1880	-1.24	3.96	28.22	23.02	200.447	Vertical	Pass
		1900	-1.13	4.00	28.16	23.03	200.909	Vertical	Pass

Radiated Power (EIRP) for Band 2									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mid	1850.7	-2.60	3.76	28.24	21.88	154.170	Horizontal	Pass
		1880	-2.45	3.91	28.22	21.86	153.462	Horizontal	Pass
		1909.3	-2.48	3.93	28.20	21.79	151.008	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-2.59	3.77	28.23	21.87	153.815	Horizontal	Pass
		1880	-2.47	3.91	28.24	21.86	153.462	Horizontal	Pass
		1908.5	-2.47	3.94	28.25	21.84	152.757	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-2.77	3.77	28.31	21.77	150.314	Horizontal	Pass
		1880	-2.43	3.91	28.22	21.88	154.170	Horizontal	Pass
		1907.5	-2.53	3.94	28.20	21.73	148.936	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-2.79	3.79	28.33	21.75	149.624	Horizontal	Pass
		1880	-2.41	3.95	28.22	21.86	153.462	Horizontal	Pass
		1905	-2.44	3.97	28.19	21.78	150.661	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-2.73	3.79	28.34	21.82	152.055	Horizontal	Pass
		1880	-2.53	3.95	28.22	21.74	149.279	Horizontal	Pass
		1902.5	-2.39	3.97	28.18	21.82	152.055	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1860	-2.72	3.81	28.35	21.82	152.055	Horizontal	Pass
		1880	-2.50	3.96	28.22	21.76	149.968	Horizontal	Pass
		1900	-2.34	4.00	28.16	21.82	152.055	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1850.7	-2.71	3.76	28.24	21.77	150.314	Vertical	Pass
		1880	-2.57	3.91	28.22	21.74	149.279	Vertical	Pass
		1909.3	-2.40	3.93	28.20	21.87	153.815	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-2.63	3.77	28.23	21.83	152.405	Vertical	Pass
		1880	-2.57	3.91	28.24	21.76	149.968	Vertical	Pass
		1908.5	-2.43	3.94	28.25	21.88	154.170	Vertical	Pass
5.0MHz	1/#Mid	1852.5	-2.72	3.77	28.31	21.82	152.055	Vertical	Pass

Band 16 QAM		1880	-2.47	3.91	28.22	21.84	152.757	Vertical	Pass
		1907.5	-2.51	3.94	28.20	21.75	149.624	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-2.75	3.79	28.33	21.79	151.008	Vertical	Pass
		1880	-2.41	3.95	28.22	21.86	153.462	Vertical	Pass
		1905	-2.45	3.97	28.19	21.77	150.314	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-2.77	3.79	28.34	21.78	150.661	Vertical	Pass
		1880	-2.53	3.95	28.22	21.74	149.279	Vertical	Pass
		1902.5	-2.41	3.97	28.18	21.80	151.356	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	1860	-2.61	3.81	28.35	21.93	155.955	Vertical	Pass
		1880	-2.36	3.96	28.22	21.90	154.882	Vertical	Pass
		1900	-2.27	4.00	28.16	21.89	154.525	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)	Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)		
1.4MHz Band QPSK	1/#Mid	1710.7	-1.95	3.12	27.58	22.51	178.238	Horizontal	Pass
		1732.5	-1.72	3.27	27.61	22.62	182.810	Horizontal	Pass
		1754.3	-1.71	3.29	27.63	22.63	183.231	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-2.00	3.13	27.61	22.48	177.011	Horizontal	Pass
		1732.5	-1.82	3.27	27.61	22.52	178.649	Horizontal	Pass
		1753.5	-1.71	3.30	27.62	22.61	182.390	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-1.89	3.13	27.63	22.61	182.390	Horizontal	Pass
		1732.5	-1.87	3.27	27.61	22.47	176.604	Horizontal	Pass
		1752.5	-1.70	3.30	27.60	22.60	181.970	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1715	-1.87	3.15	27.64	22.62	182.810	Horizontal	Pass
		1732.5	-1.77	3.31	27.61	22.53	179.061	Horizontal	Pass
		1750	-1.72	3.33	27.59	22.54	179.473	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-1.98	3.15	27.65	22.52	178.649	Horizontal	Pass
		1732.5	-1.76	3.31	27.61	22.54	179.473	Horizontal	Pass
		1747.5	-1.68	3.33	27.57	22.56	180.302	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1720	-1.87	3.17	27.66	22.62	182.810	Horizontal	Pass
		1732.5	-1.83	3.32	27.61	22.46	176.198	Horizontal	Pass
		1745	-1.65	3.36	27.56	22.55	179.887	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1710.7	-1.93	3.12	27.58	22.53	179.061	Vertical	Pass
		1732.5	-1.78	3.27	27.61	22.56	180.302	Vertical	Pass
		1754.3	-1.83	3.29	27.63	22.51	178.238	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-1.86	3.13	27.61	22.62	182.810	Vertical	Pass
		1732.5	-1.77	3.27	27.61	22.57	180.717	Vertical	Pass
		1753.5	-1.72	3.30	27.62	22.60	181.970	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-1.96	3.13	27.63	22.54	179.473	Vertical	Pass
		1732.5	-1.75	3.27	27.61	22.59	181.552	Vertical	Pass
		1752.5	-1.84	3.30	27.60	22.46	176.198	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1715	-1.95	3.15	27.64	22.54	179.473	Vertical	Pass
		1732.5	-1.81	3.31	27.61	22.49	177.419	Vertical	Pass
		1750	-1.69	3.33	27.59	22.57	180.717	Vertical	Pass

15.0MHz Band QPSK	1/#Mid	1717.5	-1.94	3.15	27.65	22.56	180.302	Vertical	Pass
		1732.5	-1.82	3.31	27.61	22.48	177.011	Vertical	Pass
		1747.5	-1.66	3.33	27.57	22.58	181.134	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	1720	-1.82	3.17	27.66	22.67	184.927	Vertical	Pass
		1732.5	-1.65	3.32	27.61	22.64	183.654	Vertical	Pass
		1745	-1.52	3.36	27.56	22.68	185.353	Vertical	Pass

Radiated Power (EIRP) for Band 4									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mid	1710.7	-2.87	3.12	27.58	21.59	144.212	Horizontal	Pass
		1732.5	-2.66	3.27	27.61	21.68	147.231	Horizontal	Pass
		1754.3	-2.64	3.29	27.63	21.70	147.911	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-2.82	3.13	27.61	21.66	146.555	Horizontal	Pass
		1732.5	-2.69	3.27	27.61	21.65	146.218	Horizontal	Pass
		1753.5	-2.75	3.30	27.62	21.57	143.549	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-2.96	3.13	27.63	21.54	142.561	Horizontal	Pass
		1732.5	-2.79	3.27	27.61	21.55	142.889	Horizontal	Pass
		1752.5	-2.62	3.30	27.60	21.68	147.231	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-2.92	3.15	27.64	21.57	143.549	Horizontal	Pass
		1732.5	-2.68	3.31	27.61	21.62	145.211	Horizontal	Pass
		1750	-2.69	3.33	27.59	21.57	143.549	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-2.80	3.15	27.65	21.70	147.911	Horizontal	Pass
		1732.5	-2.67	3.31	27.61	21.63	145.546	Horizontal	Pass
		1747.5	-2.56	3.33	27.57	21.68	147.231	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-2.91	3.17	27.66	21.58	143.880	Horizontal	Pass
		1732.5	-2.72	3.32	27.61	21.57	143.549	Horizontal	Pass
		1745	-2.65	3.36	27.56	21.55	142.889	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	-2.77	3.12	27.58	21.69	147.571	Vertical	Pass
		1732.5	-2.76	3.27	27.61	21.58	143.880	Vertical	Pass
		1754.3	-2.68	3.29	27.63	21.66	146.555	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-2.92	3.13	27.61	21.56	143.219	Vertical	Pass
		1732.5	-2.71	3.27	27.61	21.63	145.546	Vertical	Pass
		1753.5	-2.76	3.30	27.62	21.56	143.219	Vertical	Pass
5.0MHz	1/#Mid	1712.5	-2.91	3.13	27.63	21.59	144.212	Vertical	Pass

Band 16 QAM		1732.5	-2.77	3.27	27.61	21.57	143.549	Vertical	Pass
		1752.5	-2.66	3.30	27.60	21.64	145.881	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-2.87	3.15	27.64	21.62	145.211	Vertical	Pass
		1732.5	-2.73	3.31	27.61	21.57	143.549	Vertical	Pass
		1750	-2.68	3.33	27.59	21.58	143.880	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-2.93	3.15	27.65	21.57	143.549	Vertical	Pass
		1732.5	-2.69	3.31	27.61	21.61	144.877	Vertical	Pass
		1747.5	-2.61	3.33	27.57	21.63	145.546	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-2.77	3.17	27.66	21.72	148.594	Vertical	Pass
		1732.5	-2.57	3.32	27.61	21.72	148.594	Vertical	Pass
		1745	-2.46	3.36	27.56	21.74	149.279	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								Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Correction (dB)	Max. ERP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. ERP		
1.4MHz Band QPSK	1/#Mid	824.7	6.68	2.01	19.68	2.15	22.20	165.959	Horizontal		Pass
		836.5	6.48	2.01	19.77	2.15	22.09	161.808	Horizontal		Pass
		848.3	6.49	2.02	19.82	2.15	22.14	163.682	Horizontal		Pass
3.0MHz Band QPSK	1/#Mid	825.5	6.52	2.01	19.70	2.15	22.06	160.694	Horizontal		Pass
		836.5	6.47	2.01	19.77	2.15	22.08	161.436	Horizontal		Pass
		847.5	6.54	2.02	19.81	2.15	22.18	165.196	Horizontal		Pass
5.0MHz Band QPSK	1/#Mid	826.5	6.47	2.01	19.71	2.15	22.02	159.221	Horizontal		Pass
		836.5	6.56	2.01	19.77	2.15	22.17	164.816	Horizontal		Pass
		846.5	6.48	2.02	19.79	2.15	22.10	162.181	Horizontal		Pass
10.0MHz Band QPSK	1/#Mid	829	6.44	2.01	19.73	2.15	22.01	158.855	Horizontal		Pass
		836.5	6.48	2.01	19.77	2.15	22.09	161.808	Horizontal		Pass
		844	6.42	2.02	19.78	2.15	22.03	159.588	Horizontal		Pass
1.4MHz Band QPSK	1/#Mid	824.7	6.56	2.01	19.68	2.15	22.08	161.436	Vertical		Pass
		836.5	6.46	2.01	19.77	2.15	22.07	161.065	Vertical		Pass
		848.3	6.43	2.02	19.82	2.15	22.08	161.436	Vertical		Pass
3.0MHz Band QPSK	1/#Mid	825.5	6.63	2.01	19.70	2.15	22.17	164.816	Vertical		Pass
		836.5	6.44	2.01	19.77	2.15	22.05	160.325	Vertical		Pass
		847.5	6.48	2.02	19.81	2.15	22.12	162.930	Vertical		Pass
5.0MHz Band QPSK	1/#Mid	826.5	6.51	2.01	19.71	2.15	22.06	160.694	Vertical		Pass
		836.5	6.56	2.01	19.77	2.15	22.17	164.816	Vertical		Pass
		846.5	6.45	2.02	19.79	2.15	22.07	161.065	Vertical		Pass
10.0MHz Band QPSK	1/#Mid	829	6.66	2.01	19.73	2.15	22.23	167.109	Vertical		Pass
		836.5	6.60	2.01	19.77	2.15	22.21	166.341	Vertical		Pass
		844	6.64	2.02	19.78	2.15	22.25	167.880	Vertical		Pass

Radiated Power (ERP) for Band 5										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Correction (dB)	Max. ERP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mid	824.7	5.76	2.01	19.68	2.15	21.28	134.276	Horizontal	Pass
		836.5	5.55	2.01	19.77	2.15	21.16	130.617	Horizontal	Pass
		848.3	5.51	2.02	19.82	2.15	21.16	130.617	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	5.76	2.01	19.70	2.15	21.30	134.896	Horizontal	Pass
		836.5	5.67	2.01	19.77	2.15	21.28	134.276	Horizontal	Pass
		847.5	5.60	2.02	19.81	2.15	21.24	133.045	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	5.61	2.01	19.71	2.15	21.16	130.617	Horizontal	Pass
		836.5	5.57	2.01	19.77	2.15	21.18	131.220	Horizontal	Pass
		846.5	5.57	2.02	19.79	2.15	21.19	131.522	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	829	5.69	2.01	19.73	2.15	21.26	133.660	Horizontal	Pass
		836.5	5.66	2.01	19.77	2.15	21.27	133.968	Horizontal	Pass
		844	5.50	2.02	19.78	2.15	21.11	129.122	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	824.7	5.74	2.01	19.68	2.15	21.26	133.660	Vertical	Pass
		836.5	5.68	2.01	19.77	2.15	21.29	134.586	Vertical	Pass
		848.3	5.58	2.02	19.82	2.15	21.23	132.739	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	5.65	2.01	19.70	2.15	21.19	131.522	Vertical	Pass
		836.5	5.63	2.01	19.77	2.15	21.24	133.045	Vertical	Pass
		847.5	5.51	2.02	19.81	2.15	21.15	130.317	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	5.74	2.01	19.71	2.15	21.29	134.586	Vertical	Pass
		836.5	5.57	2.01	19.77	2.15	21.18	131.220	Vertical	Pass
		846.5	5.59	2.02	19.79	2.15	21.21	132.130	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	829	5.76	2.01	19.73	2.15	21.33	135.831	Vertical	Pass
		836.5	5.74	2.01	19.77	2.15	21.35	136.458	Vertical	Pass
		844	5.73	2.02	19.78	2.15	21.34	136.144	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						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band QPSK	1/#Mid	2502.5	-0.34	4.54	27.75	22.87	193.642	Horizontal	Pass
		2535	-0.17	4.69	27.72	22.86	193.197	Horizontal	Pass
		2567.5	-0.02	4.71	27.71	22.98	198.609	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	2505	-0.25	4.55	27.76	22.96	197.697	Horizontal	Pass
		2535	-0.12	4.69	27.72	22.91	195.434	Horizontal	Pass
		2565	-0.11	4.72	27.70	22.87	193.642	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	-0.29	4.55	27.77	22.93	196.336	Horizontal	Pass
		2535	-0.06	4.69	27.72	22.97	198.153	Horizontal	Pass
		2562.5	-0.12	4.72	27.69	22.85	192.752	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	2510	-0.30	4.57	27.78	22.91	195.434	Horizontal	Pass
		2535	-0.01	4.73	27.72	22.98	198.609	Horizontal	Pass
		2560	0.02	4.75	27.68	22.95	197.242	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	2502.5	-0.22	4.54	27.75	22.99	199.067	Vertical	Pass
		2535	-0.11	4.69	27.72	22.92	195.884	Vertical	Pass
		2567.5	-0.01	4.71	27.71	22.99	199.067	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	2505	-0.28	4.55	27.76	22.93	196.336	Vertical	Pass
		2535	-0.17	4.69	27.72	22.86	193.197	Vertical	Pass
		2565	-0.08	4.72	27.70	22.90	194.984	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	-0.32	4.55	27.77	22.90	194.984	Vertical	Pass
		2535	-0.04	4.69	27.72	22.99	199.067	Vertical	Pass
		2562.5	-0.01	4.72	27.69	22.96	197.697	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	2510	-0.20	4.57	27.78	23.01	199.986	Vertical	Pass
		2535	0.05	4.73	27.72	23.04	201.372	Vertical	Pass
		2560	0.12	4.75	27.68	23.05	201.837	Vertical	Pass

Radiated Power (EIRP) for Band 7									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	1/#Mid	2502.5	-1.40	4.54	27.75	21.81	151.705	Horizontal	Pass
		2535	-1.23	4.69	27.72	21.80	151.356	Horizontal	Pass
		2567.5	-1.18	4.71	27.71	21.82	152.055	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	-1.43	4.55	27.76	21.78	150.661	Horizontal	Pass
		2535	-1.24	4.69	27.72	21.79	151.008	Horizontal	Pass
		2565	-1.11	4.72	27.70	21.87	153.815	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	-1.46	4.55	27.77	21.76	149.968	Horizontal	Pass
		2535	-1.22	4.69	27.72	21.81	151.705	Horizontal	Pass
		2562.5	-1.17	4.72	27.69	21.80	151.356	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	-1.44	4.57	27.78	21.77	150.314	Horizontal	Pass
		2535	-1.15	4.73	27.72	21.84	152.757	Horizontal	Pass
		2560	-1.03	4.75	27.68	21.90	154.882	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	2502.5	-1.39	4.54	27.75	21.82	152.055	Vertical	Pass
		2535	-1.20	4.69	27.72	21.83	152.405	Vertical	Pass
		2567.5	-1.15	4.71	27.71	21.85	153.109	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	-1.32	4.55	27.76	21.89	154.525	Vertical	Pass
		2535	-1.19	4.69	27.72	21.84	152.757	Vertical	Pass
		2565	-1.09	4.72	27.70	21.89	154.525	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	-1.35	4.55	27.77	21.87	153.815	Vertical	Pass
		2535	-1.14	4.69	27.72	21.89	154.525	Vertical	Pass
		2562.5	-1.16	4.72	27.69	21.81	151.705	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	-1.30	4.57	27.78	21.91	155.239	Vertical	Pass
		2535	-1.05	4.73	27.72	21.94	156.315	Vertical	Pass
		2560	-0.99	4.75	27.68	21.94	156.315	Vertical	Pass

Note:

SG Level= Signal generator output

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

8.6 LTE BAND 12

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 QPSK	1/#Mid	699.7	6.80	1.91	19.21	2.15	21.95	156.675	Vertical	Pass
		707.5	6.70	1.91	19.26	2.15	21.90	154.882	Vertical	Pass
		715.3	6.73	1.93	19.34	2.15	21.99	158.125	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	700.5	6.83	1.91	19.21	2.15	21.98	157.761	Vertical	Pass
		707.5	6.72	1.91	19.26	2.15	21.92	155.597	Vertical	Pass
		714.5	6.66	1.93	19.34	2.15	21.92	155.597	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	701.5	6.76	1.91	19.23	2.15	21.93	155.955	Vertical	Pass
		707.5	6.66	1.91	19.26	2.15	21.86	153.462	Vertical	Pass
		713.5	6.59	1.92	19.33	2.15	21.85	153.109	Vertical	Pass
10.0Hz Band QPSK	1/#Mid	704	6.76	1.91	19.25	2.15	21.95	156.675	Vertical	Pass
		707.5	6.72	1.91	19.26	2.15	21.92	155.597	Vertical	Pass
		711	6.72	1.92	19.32	2.15	21.97	157.398	Vertical	Pass
1.4MHz Band QPSK	1/#Mid	699.7	6.73	1.91	19.21	2.15	21.88	154.170	Horizontal	Pass
		707.5	6.73	1.91	19.26	2.15	21.93	155.955	Horizontal	Pass
		715.3	6.61	1.93	19.34	2.15	21.87	153.815	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	700.5	6.75	1.91	19.21	2.15	21.90	154.882	Horizontal	Pass
		707.5	6.75	1.91	19.26	2.15	21.95	156.675	Horizontal	Pass
		714.5	6.66	1.93	19.34	2.15	21.92	155.597	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	701.5	6.82	1.91	19.23	2.15	21.99	158.125	Horizontal	Pass
		707.5	6.69	1.91	19.26	2.15	21.89	154.525	Horizontal	Pass
		713.5	6.62	1.92	19.33	2.15	21.88	154.170	Horizontal	Pass
10.0Hz Band QPSK	1/#Mid	704	6.85	1.91	19.25	2.15	22.04	159.956	Horizontal	Pass
		707.5	6.81	1.91	19.26	2.15	22.01	158.855	Horizontal	Pass
		711	6.76	1.92	19.32	2.15	22.01	158.855	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 16 QAM	1/#Mid	699.7	5.79	1.91	19.21	2.15	20.94	124.165	Vertical	Pass
		707.5	5.68	1.91	19.26	2.15	20.88	122.462	Vertical	Pass
		715.3	5.67	1.93	19.34	2.15	20.93	123.880	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	700.5	5.82	1.91	19.21	2.15	20.97	125.026	Vertical	Pass
		707.5	5.66	1.91	19.26	2.15	20.86	121.899	Vertical	Pass
		714.5	5.67	1.93	19.34	2.15	20.93	123.880	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	701.5	5.78	1.91	19.23	2.15	20.95	124.451	Vertical	Pass
		707.5	5.69	1.91	19.26	2.15	20.89	122.744	Vertical	Pass
		713.5	5.68	1.92	19.33	2.15	20.94	124.165	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	704	5.63	1.91	19.25	2.15	20.82	120.781	Vertical	Pass
		707.5	5.64	1.91	19.26	2.15	20.84	121.339	Vertical	Pass
		711	5.59	1.92	19.32	2.15	20.84	121.339	Vertical	Pass
1.4MHz Band 16 QAM	1/#Mid	699.7	5.72	1.91	19.21	2.15	20.87	122.180	Horizontal	Pass
		707.5	5.76	1.91	19.26	2.15	20.96	124.738	Horizontal	Pass
		715.3	5.72	1.93	19.34	2.15	20.98	125.314	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	700.5	5.77	1.91	19.21	2.15	20.92	123.595	Horizontal	Pass
		707.5	5.77	1.91	19.26	2.15	20.97	125.026	Horizontal	Pass
		714.5	5.73	1.93	19.34	2.15	20.99	125.603	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	701.5	5.80	1.91	19.23	2.15	20.97	125.026	Horizontal	Pass
		707.5	5.74	1.91	19.26	2.15	20.94	124.165	Horizontal	Pass
		713.5	5.62	1.92	19.33	2.15	20.88	122.462	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	704	5.82	1.91	19.25	2.15	21.01	126.183	Horizontal	Pass
		707.5	5.85	1.91	19.26	2.15	21.05	127.350	Horizontal	Pass
		711	5.76	1.92	19.32	2.15	21.01	126.183	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							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Correction (dB)	Max. EPR Average (dBm)	Max. EPR Average (mW)	Polarization Of Max. ERP	
5.0MHz Band QPSK	1/#Mid	779.5	6.80	1.95	19.23	2.15	21.93	155.955	Vertical	Pass
		782	6.78	1.95	19.26	2.15	21.94	156.315	Vertical	Pass
		784.5	6.70	1.96	19.33	2.15	21.92	155.597	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	782	6.83	1.95	19.25	2.15	21.98	157.761	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	779.5	6.80	1.95	19.23	2.15	21.93	155.955	Horizontal	Pass
		782	6.80	1.95	19.26	2.15	21.96	157.036	Horizontal	Pass
		784.5	6.78	1.96	19.33	2.15	22.00	158.489	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	782	6.88	1.95	19.25	2.15	22.03	159.588	Horizontal	Pass

Radiated Power (ERP) for Band 13										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Correction (dB)	Max. EPR Average (dBm)	Max. EPR Average (mW)	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	1/#Mid	779.5	6.36	1.95	19.23	2.15	21.49	140.929	Vertical	Pass
		782	6.37	1.95	19.26	2.15	21.53	142.233	Vertical	Pass
		784.5	6.32	1.96	19.33	2.15	21.54	142.561	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	782	6.44	1.95	19.25	2.15	21.59	144.212	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	779.5	6.41	1.95	19.23	2.15	21.54	142.561	Horizontal	Pass
		782	6.34	1.95	19.26	2.15	21.50	141.254	Horizontal	Pass
		784.5	6.27	1.96	19.33	2.15	21.49	140.929	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	782	6.48	1.95	19.25	2.15	21.63	145.546	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							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band QPSK	1/#Mid	706.5	7.03	1.91	19.23	2.15	22.20	165.959	Vertical	Pass
		710	6.89	1.91	19.26	2.15	22.09	161.808	Vertical	Pass
		713.5	6.81	1.92	19.33	2.15	22.07	161.065	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	709	6.94	1.91	19.25	2.15	22.13	163.305	Vertical	Pass
		710	6.85	1.91	19.26	2.15	22.05	160.325	Vertical	Pass
		711	6.87	1.92	19.32	2.15	22.12	162.930	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	706.5	7.00	1.91	19.23	2.15	22.17	164.816	Horizontal	Pass
		710	6.85	1.91	19.26	2.15	22.05	160.325	Horizontal	Pass
		713.5	6.83	1.92	19.33	2.15	22.09	161.808	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	709	7.03	1.91	19.25	2.15	22.22	166.725	Horizontal	Pass
		710	7.01	1.91	19.26	2.15	22.21	166.341	Horizontal	Pass
		711	6.96	1.92	19.32	2.15	22.21	166.341	Horizontal	Pass

Radiated Power (ERP) for Band 17										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	1/#Mid	706.5	6.63	1.91	19.23	2.15	21.80	151.356	Vertical	Pass
		710	6.59	1.91	19.26	2.15	21.79	151.008	Vertical	Pass
		713.5	6.48	1.92	19.33	2.15	21.74	149.279	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	709	6.49	1.91	19.25	2.15	21.68	147.231	Vertical	Pass
		710	6.52	1.91	19.26	2.15	21.72	148.594	Vertical	Pass
		711	6.54	1.92	19.32	2.15	21.79	151.008	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	706.5	6.60	1.91	19.23	2.15	21.77	150.314	Horizontal	Pass
		710	6.59	1.91	19.26	2.15	21.79	151.008	Horizontal	Pass
		713.5	6.53	1.92	19.33	2.15	21.79	151.008	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	709	6.61	1.91	19.25	2.15	21.80	151.356	Horizontal	Pass
		710	6.60	1.91	19.26	2.15	21.80	151.356	Horizontal	Pass
		711	6.57	1.92	19.32	2.15	**21.82**	152.055	Horizontal	Pass

Note:

ERP=EIRP-2.15

SG Level= Signal generator output

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

8.9 LTE BAND 25

Radiated Power (EIRP) for Band 25									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	1850.7	-3.82	3.12	27.58	20.64	115.878	Horizontal	Pass
		1882.5	-3.72	3.27	27.61	20.62	115.345	Horizontal	Pass
		1914.3	-3.59	3.29	27.63	20.75	118.850	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-3.86	3.13	27.61	20.62	115.345	Horizontal	Pass
		1882.5	-3.69	3.27	27.61	20.65	116.145	Horizontal	Pass
		1753.5	-3.72	3.30	27.62	20.60	114.815	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-3.83	3.13	27.63	20.67	116.681	Horizontal	Pass
		1882.5	-3.65	3.27	27.61	20.69	117.220	Horizontal	Pass
		1912.5	-3.65	3.30	27.60	20.65	116.145	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1855	-3.79	3.15	27.64	20.70	117.490	Horizontal	Pass
		1882.5	-3.64	3.31	27.61	20.66	116.413	Horizontal	Pass
		1910	-3.64	3.33	27.59	20.62	115.345	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1857.5	-3.80	3.15	27.65	20.70	117.490	Horizontal	Pass
		1882.5	-3.57	3.31	27.61	20.73	118.304	Horizontal	Pass
		1907.5	-3.58	3.33	27.57	20.66	116.413	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1860	-3.78	3.17	27.66	20.71	117.761	Horizontal	Pass
		1882.5	-3.61	3.32	27.61	20.68	116.950	Horizontal	Pass
		1905	-3.47	3.36	27.56	20.73	118.304	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1850.7	-3.83	3.12	27.58	20.63	115.611	Vertical	Pass
		1882.5	-3.62	3.27	27.61	20.72	118.032	Vertical	Pass
		1914.3	-3.62	3.29	27.63	20.72	118.032	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-3.88	3.13	27.61	20.60	114.815	Vertical	Pass
		1882.5	-3.69	3.27	27.61	20.65	116.145	Vertical	Pass
		1753.5	-3.62	3.30	27.62	20.70	117.490	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-3.84	3.13	27.63	20.66	116.413	Vertical	Pass
		1882.5	-3.70	3.27	27.61	20.64	115.878	Vertical	Pass
		1912.5	-3.57	3.30	27.60	20.73	118.304	Vertical	Pass
10.0MHz Band	1/#Mid	1855	-3.81	3.15	27.64	20.68	116.950	Vertical	Pass
		1882.5	-3.65	3.31	27.61	20.65	116.145	Vertical	Pass

QPSK		1910	-3.60	3.33	27.59	20.66	116.413	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	1857.5	-3.83	3.15	27.65	20.67	116.681	Vertical	Pass
		1882.5	-3.55	3.31	27.61	20.75	118.850	Vertical	Pass
		1907.5	-3.60	3.33	27.57	20.64	115.878	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	1860	-3.71	3.17	27.66	20.78	119.674	Vertical	Pass
		1882.5	-3.49	3.32	27.61	20.80	120.226	Vertical	Pass
		1905	-3.39	3.36	27.56	20.81	120.504	Vertical	Pass

Radiated Power (EIRP) for Band 25									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mid	1850.7	-4.05	3.12	27.58	20.41	109.901	Horizontal	Pass
		1882.5	-3.85	3.27	27.61	20.49	111.944	Horizontal	Pass
		1914.3	-3.89	3.29	27.63	20.45	110.917	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-4.03	3.13	27.61	20.45	110.917	Horizontal	Pass
		1882.5	-3.82	3.27	27.61	20.52	112.720	Horizontal	Pass
		1753.5	-3.83	3.30	27.62	20.49	111.944	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-3.98	3.13	27.63	20.52	112.720	Horizontal	Pass
		1882.5	-3.93	3.27	27.61	20.41	109.901	Horizontal	Pass
		1912.5	-3.90	3.30	27.60	20.40	109.648	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-4.07	3.15	27.64	20.42	110.154	Horizontal	Pass
		1882.5	-3.85	3.31	27.61	20.45	110.917	Horizontal	Pass
		1910	-3.86	3.33	27.59	20.40	109.648	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-4.10	3.15	27.65	20.40	109.648	Horizontal	Pass
		1882.5	-3.80	3.31	27.61	20.50	112.202	Horizontal	Pass
		1907.5	-3.79	3.33	27.57	20.45	110.917	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1860	-4.00	3.17	27.66	20.49	111.944	Horizontal	Pass
		1882.5	-3.78	3.32	27.61	20.51	112.460	Horizontal	Pass
		1905	-3.71	3.36	27.56	20.49	111.944	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1850.7	-3.98	3.12	27.58	20.48	111.686	Vertical	Pass
		1882.5	-3.82	3.27	27.61	20.52	112.720	Vertical	Pass
		1914.3	-3.85	3.29	27.63	20.49	111.944	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-4.09	3.13	27.61	20.39	109.396	Vertical	Pass
		1882.5	-3.93	3.27	27.61	20.41	109.901	Vertical	Pass
		1753.5	-3.93	3.30	27.62	20.39	109.396	Vertical	Pass

5.0MHz Band 16 QAM	1/#Mid	1852.5	-4.08	3.13	27.63	20.42	110.154	Vertical	Pass
		1882.5	-3.82	3.27	27.61	20.52	112.720	Vertical	Pass
		1912.5	-3.79	3.30	27.60	20.51	112.460	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-4.01	3.15	27.64	20.48	111.686	Vertical	Pass
		1882.5	-3.87	3.31	27.61	20.43	110.408	Vertical	Pass
		1910	-3.83	3.33	27.59	20.43	110.408	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-4.10	3.15	27.65	20.40	109.648	Vertical	Pass
		1882.5	-3.79	3.31	27.61	20.51	112.460	Vertical	Pass
		1907.5	-3.77	3.33	27.57	20.47	111.429	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	1860	-3.91	3.17	27.66	20.58	114.288	Vertical	Pass
		1882.5	-3.71	3.32	27.61	20.58	114.288	Vertical	Pass
		1905	-3.63	3.36	27.56	20.57	114.025	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 26a										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Correction (dB)	Max. EPR Average (dBm)	Max. EPR Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	814.7	6.85	1.91	19.21	2.15	22.00	158.489	Vertical	Pass
		819	6.69	1.91	19.26	2.15	21.89	154.525	Vertical	Pass
		823.3	6.62	1.93	19.34	2.15	21.88	154.170	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	815.5	6.85	1.91	19.21	2.15	22.00	158.489	Vertical	Pass
		819	6.81	1.91	19.26	2.15	22.01	158.855	Vertical	Pass
		822.5	6.64	1.93	19.34	2.15	21.90	154.882	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	816.5	6.81	1.91	19.23	2.15	21.98	157.761	Vertical	Pass
		819	6.79	1.91	19.26	2.15	21.99	158.125	Vertical	Pass
		821.5	6.72	1.92	19.33	2.15	21.98	157.761	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	819	6.8	1.93	19.25	2.15	21.97	157.398	Vertical	Pass
1.4MHz Band QPSK	1/#Mid	814.7	6.79	1.91	19.21	2.15	21.94	156.315	Horizontal	Pass
		819	6.75	1.91	19.26	2.15	21.95	156.675	Horizontal	Pass
		823.3	6.76	1.93	19.34	2.15	22.02	159.221	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	815.5	6.82	1.91	19.21	2.15	21.97	157.398	Horizontal	Pass
		819	6.72	1.91	19.26	2.15	21.92	155.597	Horizontal	Pass
		822.5	6.75	1.93	19.34	2.15	22.01	158.855	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	816.5	6.83	1.91	19.23	2.15	22.00	158.489	Horizontal	Pass
		819	6.75	1.91	19.26	2.15	21.95	156.675	Horizontal	Pass
		821.5	6.72	1.92	19.33	2.15	21.98	157.761	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	819	6.86	1.93	19.25	2.15	22.03	159.588	Horizontal	Pass

Radiated Power (ERP) for Band 26a										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Correction (dB)	Max. EPR Average (dBm)	Max. EPR Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mid	814.7	6.09	1.91	19.21	2.15	21.24	133.045	Vertical	Pass
		819	6.01	1.91	19.26	2.15	21.21	132.130	Vertical	Pass
		823.3	6.01	1.93	19.34	2.15	21.27	133.968	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	815.5	6.04	1.91	19.21	2.15	21.19	131.522	Vertical	Pass
		819	6.05	1.91	19.26	2.15	21.25	133.352	Vertical	Pass
		822.5	6.03	1.93	19.34	2.15	21.29	134.586	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	816.5	6.00	1.91	19.23	2.15	21.17	130.918	Vertical	Pass
		819	5.92	1.91	19.26	2.15	21.12	129.420	Vertical	Pass
		821.5	5.96	1.92	19.33	2.15	21.22	132.434	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	819	6.05	1.93	19.25	2.15	21.22	132.434	Vertical	Pass
1.4MHz Band 16 QAM	1/#Mid	814.7	6.03	1.91	19.21	2.15	21.18	131.220	Horizontal	Pass
		819	5.94	1.91	19.26	2.15	21.14	130.017	Horizontal	Pass
		823.3	5.91	1.93	19.34	2.15	21.17	130.918	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	815.5	6.06	1.91	19.21	2.15	21.21	132.130	Horizontal	Pass
		819	6.05	1.91	19.26	2.15	21.25	133.352	Horizontal	Pass
		822.5	6.01	1.93	19.34	2.15	21.27	133.968	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	816.5	5.95	1.91	19.23	2.15	21.12	129.420	Horizontal	Pass
		819	6.01	1.91	19.26	2.15	21.21	132.130	Horizontal	Pass
		821.5	5.97	1.92	19.33	2.15	21.23	132.739	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	819	6.16	1.93	19.25	2.15	21.33	135.831	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)

8.11 LTE BAND 26B

Radiated Power (ERP) for Band 26B										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Correction (dB)	Max. ERP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	824.7	6.56	2.02	19.72	2.15	22.11	162.555	Horizontal	Pass
		836.5	6.52	2.02	19.83	2.15	22.18	165.196	Horizontal	Pass
		848.3	6.41	2.03	19.95	2.15	22.18	165.196	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	825.5	6.52	2.02	19.84	2.15	22.19	165.577	Horizontal	Pass
		836.5	6.36	2.02	19.94	2.15	22.13	163.305	Horizontal	Pass
		847.5	6.40	2.03	19.98	2.15	22.20	165.959	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	826.5	6.60	2.02	19.75	2.15	22.18	165.196	Horizontal	Pass
		836.5	6.47	2.02	19.83	2.15	22.13	163.305	Horizontal	Pass
		846.5	6.36	2.03	19.92	2.15	22.10	162.181	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	829	6.40	2.02	19.84	2.15	22.07	161.065	Horizontal	Pass
		836.5	6.41	2.02	19.90	2.15	22.14	163.682	Horizontal	Pass
		844	6.35	2.03	19.96	2.15	22.13	163.305	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	831.5	6.96	2.02	19.33	2.15	22.12	162.930	Vertical	Pass
		836.5	6.89	2.02	19.37	2.15	22.09	161.808	Vertical	Pass
		841.5	6.71	2.03	19.52	2.15	22.05	160.325	Vertical	Pass
1.4MHz Band QPSK	1/#Mid	824.7	6.58	2.02	19.76	2.15	22.17	164.816	Vertical	Pass
		836.5	6.55	2.02	19.78	2.15	22.16	164.437	Vertical	Pass
		848.3	6.35	2.03	19.94	2.15	22.11	162.555	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	825.5	6.49	2.02	19.83	2.15	22.15	164.059	Vertical	Pass
		836.5	6.35	2.02	19.96	2.15	22.14	163.682	Vertical	Pass
		847.5	6.39	2.03	19.87	2.15	22.08	161.436	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	826.5	6.33	2.02	19.86	2.15	22.02	159.221	Vertical	Pass
		836.5	6.50	2.02	19.81	2.15	22.14	163.682	Vertical	Pass
		846.5	6.39	2.03	19.83	2.15	22.04	159.956	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	829	6.63	2.02	19.75	2.15	22.21	166.341	Vertical	Pass
		836.5	6.55	2.02	19.85	2.15	22.23	167.109	Vertical	Pass
		844	6.60	2.03	19.80	2.15	22.22	166.725	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	831.5	7.13	2.02	19.31	2.15	22.27	168.655	Horizontal	Pass
		836.5	7.12	2.02	19.33	2.15	22.28	169.044	Horizontal	Pass
		841.5	7.05	2.03	19.38	2.15	22.25	167.880	Horizontal	Pass

Radiated Power (ERP) for Band 26B										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Correction (dB)	Max. EPR Average (dBm)	Max. EPR Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mid	824.7	5.80	2.02	19.72	2.15	21.35	136.458	Horizontal	Pass
		836.5	5.62	2.02	19.83	2.15	21.28	134.276	Horizontal	Pass
		848.3	5.51	2.03	19.95	2.15	21.28	134.276	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	5.70	2.02	19.84	2.15	21.37	137.088	Horizontal	Pass
		836.5	5.57	2.02	19.94	2.15	21.34	136.144	Horizontal	Pass
		847.5	5.49	2.03	19.98	2.15	21.29	134.586	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	5.81	2.02	19.75	2.15	21.39	137.721	Horizontal	Pass
		836.5	5.71	2.02	19.83	2.15	21.37	137.088	Horizontal	Pass
		846.5	5.55	2.03	19.92	2.15	21.29	134.586	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	829	5.56	2.02	19.84	2.15	21.23	132.739	Horizontal	Pass
		836.5	5.64	2.02	19.90	2.15	21.37	137.088	Horizontal	Pass
		844	5.55	2.03	19.96	2.15	21.33	135.831	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	831.5	6.23	2.02	19.33	2.15	21.39	137.721	Vertical	Pass
		836.5	6.08	2.02	19.37	2.15	21.28	134.276	Vertical	Pass
		841.5	6.00	2.03	19.52	2.15	21.34	136.144	Vertical	Pass
1.4MHz Band 16 QAM	1/#Mid	824.7	5.72	2.02	19.76	2.15	21.31	135.207	Vertical	Pass
		836.5	5.77	2.02	19.78	2.15	21.38	137.404	Vertical	Pass
		848.3	5.58	2.03	19.94	2.15	21.34	136.144	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	5.68	2.02	19.83	2.15	21.34	136.144	Vertical	Pass
		836.5	5.50	2.02	19.96	2.15	21.29	134.586	Vertical	Pass
		847.5	5.60	2.03	19.87	2.15	21.29	134.586	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	5.58	2.02	19.86	2.15	21.27	133.968	Vertical	Pass
		836.5	5.63	2.02	19.81	2.15	21.27	133.968	Vertical	Pass
		846.5	5.66	2.03	19.83	2.15	21.31	135.207	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	829	5.84	2.02	19.75	2.15	21.42	138.676	Vertical	Pass
		836.5	5.72	2.02	19.85	2.15	21.40	138.038	Vertical	Pass
		844	5.77	2.03	19.80	2.15	21.39	137.721	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	831.5	6.31	2.02	19.31	2.15	21.45	139.637	Horizontal	Pass
		836.5	6.24	2.02	19.33	2.15	21.40	138.038	Horizontal	Pass
		841.5	6.23	2.03	19.38	2.15	21.43	138.995	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)	Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band QPSK	1/#Mid	2557.5	0.28	4.54	27.75	23.49	223.357	Horizontal	Pass
		2605	0.39	4.69	27.72	23.42	219.786	Horizontal	Pass
		2652.5	0.37	4.71	27.71	23.37	217.270	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	2560	0.23	4.55	27.76	23.44	220.800	Horizontal	Pass
		2605	0.45	4.69	27.72	23.48	222.844	Horizontal	Pass
		2650	0.45	4.72	27.70	23.43	220.293	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	2562.5	0.10	4.55	27.77	23.32	214.783	Horizontal	Pass
		2605	0.43	4.69	27.72	23.46	221.820	Horizontal	Pass
		2647.5	0.37	4.72	27.69	23.34	215.774	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	2565	0.20	4.57	27.78	23.41	219.280	Horizontal	Pass
		2605	0.43	4.73	27.72	23.42	219.786	Horizontal	Pass
		2645	0.45	4.75	27.68	23.38	217.771	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	2557.5	0.16	4.54	27.75	23.37	217.270	Vertical	Pass
		2605	0.35	4.69	27.72	23.38	217.771	Vertical	Pass
		2652.5	0.48	4.71	27.71	23.48	222.844	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	2560	0.15	4.55	27.76	23.36	216.770	Vertical	Pass
		2605	0.47	4.69	27.72	23.50	223.872	Vertical	Pass
		2650	0.47	4.72	27.70	23.45	221.309	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	2562.5	0.11	4.55	27.77	23.33	215.278	Vertical	Pass
		2605	0.35	4.69	27.72	23.38	217.771	Vertical	Pass
		2647.5	0.43	4.72	27.69	23.40	218.776	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	2565	0.32	4.57	27.78	23.53	225.424	Vertical	Pass
		2605	0.51	4.73	27.72	23.50	223.872	Vertical	Pass
		2645	0.62	4.75	27.68	23.55	226.464	Vertical	Pass

Radiated Power (EIRP) for Band 41									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	1/#Mid	2557.5	-0.38	4.54	27.75	22.83	191.867	Horizontal	Pass
		2605	-0.27	4.69	27.72	22.76	188.799	Horizontal	Pass
		2652.5	-0.24	4.71	27.71	22.76	188.799	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	2560	-0.42	4.55	27.76	22.79	190.108	Horizontal	Pass
		2605	-0.20	4.69	27.72	22.83	191.867	Horizontal	Pass
		2650	-0.18	4.72	27.70	22.80	190.546	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	2562.5	-0.47	4.55	27.77	22.75	188.365	Horizontal	Pass
		2605	-0.17	4.69	27.72	22.86	193.197	Horizontal	Pass
		2647.5	-0.09	4.72	27.69	22.88	194.089	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	2565	-0.46	4.57	27.78	22.75	188.365	Horizontal	Pass
		2605	-0.15	4.73	27.72	22.84	192.309	Horizontal	Pass
		2645	-0.14	4.75	27.68	22.79	190.108	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	2557.5	-0.33	4.54	27.75	22.88	194.089	Vertical	Pass
		2605	-0.14	4.69	27.72	22.89	194.536	Vertical	Pass
		2652.5	-0.18	4.71	27.71	22.82	191.426	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	2560	-0.37	4.55	27.76	22.84	192.309	Vertical	Pass
		2605	-0.26	4.69	27.72	22.77	189.234	Vertical	Pass
		2650	-0.14	4.72	27.70	22.84	192.309	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	2562.5	-0.48	4.55	27.77	22.74	187.932	Vertical	Pass
		2605	-0.27	4.69	27.72	22.76	188.799	Vertical	Pass
		2647.5	-0.12	4.72	27.69	22.85	192.752	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	2565	-0.31	4.57	27.78	22.90	194.984	Vertical	Pass
		2605	-0.06	4.73	27.72	22.93	196.336	Vertical	Pass
		2645	-0.01	4.75	27.68	22.92	195.884	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)	Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	1710.7	-4.15	3.76	28.24	20.33	107.895	Horizontal	Pass
		1745	-3.99	3.91	28.22	20.32	107.647	Horizontal	Pass
		1779.3	-3.92	3.93	28.2	20.35	108.393	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-4.20	3.77	28.23	20.26	106.170	Horizontal	Pass
		1745	-4.12	3.91	28.24	20.21	104.954	Horizontal	Pass
		1778.5	-3.99	3.94	28.25	20.32	107.647	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-4.30	3.77	28.31	20.24	105.682	Horizontal	Pass
		1745	-4.06	3.91	28.22	20.25	105.925	Horizontal	Pass
		1777.5	-4.03	3.94	28.2	20.23	105.439	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1715	-4.26	3.79	28.33	20.28	106.660	Horizontal	Pass
		1745	-3.97	3.95	28.22	20.30	107.152	Horizontal	Pass
		1775	-3.95	3.97	28.19	20.27	106.414	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-4.24	3.79	28.34	20.31	107.399	Horizontal	Pass
		1745	-3.95	3.95	28.22	20.32	107.647	Horizontal	Pass
		1772.5	-3.94	3.97	28.18	20.27	106.414	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1720	-4.19	3.81	28.35	20.35	108.393	Horizontal	Pass
		1745	-4.06	3.96	28.22	20.20	104.713	Horizontal	Pass
		1770	-3.98	4	28.16	20.18	104.232	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1710.7	-4.21	3.76	28.24	20.27	106.414	Vertical	Pass
		1745	-3.95	3.91	28.22	20.36	108.643	Vertical	Pass
		1779.3	-4.05	3.93	28.2	20.22	105.196	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-4.12	3.77	28.23	20.34	108.143	Vertical	Pass
		1745	-4.04	3.91	28.24	20.29	106.905	Vertical	Pass
		1778.5	-4.02	3.94	28.25	20.29	106.905	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-4.25	3.77	28.31	20.29	106.905	Vertical	Pass
		1745	-3.99	3.91	28.22	20.32	107.647	Vertical	Pass
		1777.5	-3.95	3.94	28.2	20.31	107.399	Vertical	Pass
10.0MHz	1/#Mid	1715	-4.25	3.79	28.34	20.30	107.152	Vertical	Pass

Band QPSK		1745	-3.95	3.95	28.22	20.32	107.647	Vertical	Pass
		1775	-3.94	3.97	28.18	20.27	106.414	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-4.20	3.81	28.35	20.34	108.143	Vertical	Pass
		1745	-3.93	3.96	28.22	20.33	107.895	Vertical	Pass
		1772.5	-3.81	4	28.16	20.35	108.393	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	1720	-4.16	3.79	28.34	20.39	109.396	Vertical	Pass
		1745	-3.89	3.95	28.22	20.38	109.144	Vertical	Pass
		1770	-3.80	3.97	28.18	20.41	109.901	Vertical	Pass

Radiated Power (EIRP) for Band 66									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mid	1710.7	-4.52	3.76	28.24	19.96	99.083	Horizontal	Pass
		1745	-4.42	3.91	28.22	19.89	97.499	Horizontal	Pass
		1779.3	-4.29	3.93	28.2	19.98	99.541	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-4.61	3.77	28.23	19.85	96.605	Horizontal	Pass
		1745	-4.47	3.91	28.24	19.86	96.828	Horizontal	Pass
		1778.5	-4.42	3.94	28.25	19.89	97.499	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-4.56	3.77	28.31	19.98	99.541	Horizontal	Pass
		1745	-4.33	3.91	28.22	19.98	99.541	Horizontal	Pass
		1777.5	-4.34	3.94	28.2	19.92	98.175	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-4.63	3.79	28.33	19.91	97.949	Horizontal	Pass
		1745	-4.28	3.95	28.22	19.99	99.770	Horizontal	Pass
		1775	-4.37	3.97	28.19	19.85	96.605	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-4.57	3.79	28.34	19.98	99.541	Horizontal	Pass
		1745	-4.38	3.95	28.22	19.89	97.499	Horizontal	Pass
		1772.5	-4.31	3.97	28.18	19.90	97.724	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-4.62	3.81	28.35	19.92	98.175	Horizontal	Pass
		1745	-4.38	3.96	28.22	19.88	97.275	Horizontal	Pass
		1770	-4.18	4	28.16	19.98	99.541	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	-4.55	3.76	28.24	19.93	98.401	Vertical	Pass
		1745	-4.37	3.91	28.22	19.94	98.628	Vertical	Pass
		1779.3	-4.30	3.93	28.2	19.97	99.312	Vertical	Pass
3.0MHz Band 16	1/#Mid	1711.5	-4.59	3.77	28.23	19.87	97.051	Vertical	Pass
		1745	-4.47	3.91	28.24	19.86	96.828	Vertical	Pass

QAM		1778.5	-4.41	3.94	28.25	19.90	97.724	Vertical	Pass
5.0MHz		1712.5	-4.65	3.77	28.31	19.89	97.499	Vertical	Pass
Band 16	1/#Mid	1745	-4.37	3.91	28.22	19.94	98.628	Vertical	Pass
QAM		1777.5	-4.42	3.94	28.2	19.84	96.383	Vertical	Pass
10.0MHz		1715	-4.68	3.79	28.34	19.87	97.051	Vertical	Pass
Band 16	1/#Mid	1745	-4.34	3.95	28.22	19.93	98.401	Vertical	Pass
QAM		1775	-4.28	3.97	28.18	19.93	98.401	Vertical	Pass
15.0MHz		1717.5	-4.59	3.81	28.35	19.95	98.855	Vertical	Pass
Band 16	1/#Mid	1745	-4.29	3.96	28.22	19.97	99.312	Vertical	Pass
QAM		1772.5	-4.18	4	28.16	19.98	99.541	Vertical	Pass
20.0MHz		1720	-4.51	3.79	28.34	20.04	100.925	Vertical	Pass
Band 16	1/#Mid	1745	-4.24	3.95	28.22	20.03	100.693	Vertical	Pass
QAM		1770	-4.21	3.97	28.18	20.00	100.000	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)

8.14 LTE BAND 71

Radiated Power (ERP) for Band 71										
Mode	RB/RB SIZE	Frequency	Result						Polarization Of Max. ERP	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Correction (dB)	Max. EPR Average (dBm)	Max. EPR Average (mW)		
5.0MHz Band QPSK	1/#Mid	665.5	6.84	1.91	19.21	2.15	21.99	158.125	Vertical	Pass
		680.5	6.71	1.91	19.26	2.15	21.91	155.239	Vertical	Pass
		695.5	6.67	1.93	19.34	2.15	21.93	155.955	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	668	6.80	1.91	19.21	2.15	21.95	156.675	Vertical	Pass
		680.5	6.68	1.91	19.26	2.15	21.88	154.170	Vertical	Pass
		693	6.60	1.93	19.34	2.15	21.86	153.462	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	670.5	6.66	1.91	19.23	2.15	21.83	152.405	Vertical	Pass
		680.5	6.68	1.91	19.26	2.15	21.88	154.170	Vertical	Pass
		690.5	6.57	1.92	19.33	2.15	21.83	152.405	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	673	6.72	1.91	19.25	2.15	21.91	155.239	Vertical	Pass
		683	6.67	1.91	19.26	2.15	21.87	153.815	Vertical	Pass
		688	6.58	1.92	19.32	2.15	21.83	152.405	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	665.5	6.72	1.91	19.21	2.15	21.87	153.815	Horizontal	Pass
		680.5	6.74	1.91	19.26	2.15	21.94	156.315	Horizontal	Pass
		695.5	6.73	1.93	19.34	2.15	21.99	158.125	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	668	6.80	1.91	19.21	2.15	21.95	156.675	Horizontal	Pass
		680.5	6.79	1.91	19.26	2.15	21.99	158.125	Horizontal	Pass
		693	6.66	1.93	19.34	2.15	21.92	155.597	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	670.5	6.67	1.91	19.23	2.15	21.84	152.757	Horizontal	Pass
		680.5	6.66	1.91	19.26	2.15	21.86	153.462	Horizontal	Pass
		690.5	6.69	1.92	19.33	2.15	21.95	156.675	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	673	6.86	1.91	19.25	2.15	22.05	160.325	Horizontal	Pass
		683	6.85	1.91	19.26	2.15	22.05	160.325	Horizontal	Pass
		688	6.78	1.92	19.32	2.15	22.03	159.588	Horizontal	Pass

Radiated Power (ERP) for Band 71										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Correction (dB)	Max. EPR Average (dBm)	Max. EPR Average (mW)	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	1/#Mid	665.5	6.11	1.91	19.21	2.15	21.26	133.660	Vertical	Pass
		680.5	6.14	1.91	19.26	2.15	21.34	136.144	Vertical	Pass
		695.5	6.05	1.93	19.34	2.15	21.31	135.207	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	668	6.23	1.91	19.21	2.15	21.38	137.404	Vertical	Pass
		680.5	6.19	1.91	19.26	2.15	21.39	137.721	Vertical	Pass
		693	6.07	1.93	19.34	2.15	21.33	135.831	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	670.5	6.16	1.91	19.23	2.15	21.33	135.831	Vertical	Pass
		680.5	6.16	1.91	19.26	2.15	21.36	136.773	Vertical	Pass
		690.5	6.11	1.92	19.33	2.15	21.37	137.088	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	673	6.12	1.91	19.25	2.15	21.31	135.207	Vertical	Pass
		683	6.14	1.91	19.26	2.15	21.34	136.144	Vertical	Pass
		688	6.05	1.92	19.32	2.15	21.30	134.896	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	665.5	6.14	1.91	19.21	2.15	21.29	134.586	Horizontal	Pass
		680.5	6.19	1.91	19.26	2.15	21.39	137.721	Horizontal	Pass
		695.5	6.07	1.93	19.34	2.15	21.33	135.831	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	668	6.17	1.91	19.21	2.15	21.32	135.519	Horizontal	Pass
		680.5	6.11	1.91	19.26	2.15	21.31	135.207	Horizontal	Pass
		693	6.05	1.93	19.34	2.15	21.31	135.207	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	670.5	6.16	1.91	19.23	2.15	21.33	135.831	Horizontal	Pass
		680.5	6.10	1.91	19.26	2.15	21.30	134.896	Horizontal	Pass
		690.5	6.13	1.92	19.33	2.15	21.39	137.721	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	673	6.25	1.91	19.25	2.15	21.44	139.316	Horizontal	Pass
		683	6.22	1.91	19.26	2.15	21.42	138.676	Horizontal	Pass
		688	6.18	1.92	19.32	2.15	21.43	138.995	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)

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 2/4/5/7/12/13/17/25/26/41/66/71

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	-46.69	4.04	33.51	-17.22	-13	-4.22	Horizontal
3701.4	-53.85	4.04	33.51	-24.38	-13	-11.38	Vertical
5552.1	-50.86	5.24	35.84	-20.26	-13	-7.26	Vertical
5552.1	-52.05	5.24	35.84	-21.45	-13	-8.45	Horizontal
182.0	-44.85	1.43	16.02	-30.26	-13	-17.26	Vertical
283.3	-43.66	1.30	17.99	-26.97	-13	-13.97	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-52.82	4.04	33.56	-23.30	-13	-10.30	Horizontal
3760.0	-53.47	4.04	33.56	-23.95	-13	-10.95	Vertical
5640.0	-53.58	5.24	35.91	-22.91	-13	-9.91	Vertical
5640.0	-50.08	5.24	35.91	-19.41	-13	-6.41	Horizontal
196.7	-37.27	1.62	16.97	-21.92	-13	-8.92	Vertical
362.2	-36.27	1.74	15.98	-22.04	-13	-9.04	Horizontal
Test Results for High Channel 1909.3MHz							
3818.6	-47.63	4.04	34.00	-17.67	-13	-4.67	Horizontal
3818.6	-50.68	4.04	34.00	-20.72	-13	-7.72	Vertical
5727.9	-48.55	5.24	36.04	-17.75	-13	-4.75	Vertical
5727.9	-50.61	5.24	36.04	-19.81	-13	-6.81	Horizontal
196.4	-41.64	1.42	17.29	-25.77	-13	-12.77	Vertical
241.5	-34.76	1.50	17.90	-18.35	-13	-5.35	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	-51.74	4.07	33.54	-22.27	-13	-9.27	Horizontal
3720.0	-45.99	4.07	33.54	-16.52	-13	-3.52	Vertical
5580.0	-52.09	5.28	35.86	-21.51	-13	-8.51	Vertical
5580.0	-51.86	5.28	35.86	-21.28	-13	-8.28	Horizontal
211.4	-38.39	1.58	16.89	-23.07	-13	-10.07	Vertical
326.1	-40.33	1.76	17.26	-24.83	-13	-11.83	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-51.21	4.04	33.56	-21.69	-13	-8.69	Horizontal
3760.0	-50.06	4.04	33.56	-20.54	-13	-7.54	Vertical
5640.0	-50.76	5.24	35.91	-20.09	-13	-7.09	Vertical
5640.0	-53.30	5.24	35.91	-22.63	-13	-9.63	Horizontal
211.8	-34.48	1.46	16.27	-19.67	-13	-6.67	Vertical
413.7	-36.52	1.59	15.15	-22.96	-13	-9.96	Horizontal
Test Results for High Channel 1900MHz							
3800.0	-48.10	4.04	34.00	-18.14	-13	-5.14	Horizontal
3800.0	-46.85	4.04	34.00	-16.89	-13	-3.89	Vertical
5700.0	-52.44	5.24	36.04	-21.64	-13	-8.64	Vertical
5700.0	-52.86	5.24	36.04	-22.06	-13	-9.06	Horizontal
210.2	-34.31	1.36	17.39	-18.27	-13	-5.27	Vertical
343.0	-41.59	1.66	15.39	-27.86	-13	-14.86	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	-48.73	4.02	29.80	-22.95	-13	-9.95	Horizontal
3421.4	-46.92	4.02	29.80	-21.14	-13	-8.14	Vertical
5132.1	-47.67	5.24	35.84	-17.07	-13	-4.07	Vertical
5132.1	-51.68	5.24	35.84	-21.08	-13	-8.08	Horizontal
195.0	-34.34	1.68	16.04	-19.98	-13	-6.98	Vertical
409.6	-40.03	1.78	17.74	-24.07	-13	-11.07	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-45.23	4.03	30.00	-19.26	-13	-6.26	Horizontal
3465.0	-50.37	4.03	30.00	-24.40	-13	-11.40	Vertical
5197.5	-47.94	5.25	35.86	-17.33	-13	-4.33	Vertical
5197.5	-50.54	5.25	35.86	-19.93	-13	-6.93	Horizontal
176.4	-35.15	1.72	17.69	-19.18	-13	-6.18	Vertical
263.1	-38.41	1.62	16.02	-24.00	-13	-11.00	Horizontal
Test Results for High Channel 1754.3MHz							
3508.6	-46.17	4.05	30.01	-20.21	-13	-7.21	Horizontal
3508.6	-53.66	4.05	30.01	-27.70	-13	-14.70	Vertical
5262.9	-45.62	5.26	35.86	-15.02	-13	-2.02	Vertical
5262.9	-49.49	5.26	35.86	-18.89	-13	-5.89	Horizontal
199.2	-38.48	1.80	16.69	-23.59	-13	-10.59	Vertical
318.1	-41.76	1.75	16.66	-26.86	-13	-13.86	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	-45.13	4.02	29.80	-19.35	-13	-6.35	Horizontal
3440.0	-47.74	4.02	29.80	-21.96	-13	-8.96	Vertical
5160.0	-46.09	5.24	35.84	-15.49	-13	-2.49	Vertical
5160.0	-51.86	5.24	35.84	-21.26	-13	-8.26	Horizontal
200.1	-40.94	1.57	17.26	-25.25	-13	-12.25	Vertical
392.2	-43.62	1.78	16.35	-29.05	-13	-16.05	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-46.95	4.03	30.00	-20.98	-13	-7.98	Horizontal
3465.0	-44.90	4.03	30.00	-18.93	-13	-5.93	Vertical
5197.5	-52.17	5.25	35.86	-21.56	-13	-8.56	Vertical
5197.5	-53.46	5.25	35.86	-22.85	-13	-9.85	Horizontal
183.9	-39.83	1.44	17.95	-23.32	-13	-10.32	Vertical
281.0	-41.93	1.65	16.09	-27.49	-13	-14.49	Horizontal
Test Results for High Channel 1745MHz							
3490.0	-46.38	4.05	27.68	-22.75	-13	-9.75	Horizontal
3490.0	-45.16	4.05	27.68	-21.53	-13	-8.53	Vertical
5235.0	-45.90	5.26	35.86	-15.30	-13	-2.30	Vertical
5235.0	-51.87	5.26	35.86	-21.27	-13	-8.27	Horizontal
198.2	-35.25	1.61	16.85	-20.01	-13	-7.01	Vertical
407.7	-39.41	1.61	15.19	-25.83	-13	-12.83	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	-52.61	2.78	27.50	-27.89	-13	-14.89	Horizontal
1649.4	-49.10	2.78	27.50	-24.38	-13	-11.38	Vertical
2474.1	-52.00	2.90	27.80	-27.10	-13	-14.10	Vertical
2474.1	-51.98	2.90	27.80	-27.08	-13	-14.08	Horizontal
199.0	-42.36	1.76	17.59	-26.53	-13	-13.53	Vertical
373.3	-38.72	1.63	15.87	-24.48	-13	-11.48	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-45.64	2.80	27.48	-20.96	-13	-7.96	Horizontal
1673.0	-49.95	2.80	27.48	-25.27	-13	-12.27	Vertical
2509.5	-52.72	2.91	27.70	-27.93	-13	-14.93	Vertical
2509.5	-50.55	2.91	27.70	-25.76	-13	-12.76	Horizontal
186.3	-43.50	1.61	15.68	-29.43	-13	-16.43	Vertical
309.0	-35.32	1.59	17.52	-19.40	-13	-6.40	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-51.14	2.82	27.43	-26.53	-13	-13.53	Horizontal
1696.6	-53.08	2.82	27.43	-28.47	-13	-15.47	Vertical
2544.9	-51.03	2.92	27.74	-26.21	-13	-13.21	Vertical
2544.9	-49.78	2.92	27.74	-24.96	-13	-11.96	Horizontal
195.2	-41.22	1.69	16.67	-26.23	-13	-13.23	Vertical
458.9	-34.18	1.70	17.18	-18.70	-13	-5.70	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	-45.61	2.78	27.50	-20.89	-13	-7.89	Horizontal
1658.0	-50.65	2.78	27.50	-25.93	-13	-12.93	Vertical
2487.0	-48.32	2.90	27.80	-23.42	-13	-10.42	Vertical
2487.0	-49.29	2.90	27.80	-24.39	-13	-11.39	Horizontal
193.2	-40.88	1.71	15.57	-27.02	-13	-14.02	Vertical
460.3	-41.85	1.34	16.40	-26.79	-13	-13.79	Horizontal
Test Results for Mid Channel 836.5MHz							
1673.0	-48.99	2.80	27.48	-24.31	-13	-11.31	Horizontal
1673.0	-50.84	2.80	27.48	-26.16	-13	-13.16	Vertical
2509.5	-50.30	2.91	27.70	-25.51	-13	-12.51	Vertical
2509.5	-51.26	2.91	27.70	-26.47	-13	-13.47	Horizontal
175.8	-35.45	1.44	17.04	-19.85	-13	-6.85	Vertical
399.4	-35.52	1.76	17.62	-19.66	-13	-6.66	Horizontal
Test Results for High Channel 844MHz							
1688.0	-50.25	2.82	27.43	-25.64	-13	-12.64	Horizontal
1688.0	-53.45	2.82	27.43	-28.84	-13	-15.84	Vertical
2532.0	-51.74	2.92	27.74	-26.92	-13	-13.92	Vertical
2532.0	-52.35	2.92	27.74	-27.53	-13	-14.53	Horizontal
176.7	-36.82	1.74	17.70	-20.86	-13	-7.86	Vertical
392.6	-38.39	1.41	17.46	-22.33	-13	-9.33	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 Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
5005.0	-61.85	5.23	35.81	-31.27	-25	-6.27	Horizontal
5005.0	-62.32	5.23	35.81	-31.74	-25	-6.74	Vertical
7507.5	-59.35	5.67	36.85	-28.17	-25	-3.17	Vertical
7507.5	-64.47	5.67	36.85	-33.29	-25	-8.29	Horizontal
197.1	-46.63	1.73	17.97	-30.39	-25	-5.39	Vertical
240.2	-48.55	1.38	15.11	-34.82	-25	-9.82	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-59.85	5.23	35.82	-29.26	-25	-4.26	Horizontal
5070.0	-64.13	5.23	35.82	-33.54	-25	-8.54	Vertical
7605.0	-64.31	5.67	36.85	-33.13	-25	-8.13	Vertical
7605.0	-59.62	5.67	36.85	-28.44	-25	-3.44	Horizontal
177.6	-52.16	1.77	16.17	-37.75	-25	-12.75	Vertical
288.5	-46.43	1.63	15.21	-32.85	-25	-7.85	Horizontal
Test Results for High Channel 2567.5MHz							
5135.0	-59.96	5.24	35.83	-29.37	-25	-4.37	Horizontal
5135.0	-64.62	5.24	35.83	-34.03	-25	-9.03	Vertical
7702.5	-61.36	5.68	36.87	-30.17	-25	-5.17	Vertical
7702.5	-62.14	5.68	36.87	-30.95	-25	-5.95	Horizontal
186.8	-47.65	1.58	17.56	-31.67	-25	-6.67	Vertical
273.7	-45.13	1.45	16.58	-30.00	-25	-5.00	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 Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
5020.0	-63.12	5.23	35.82	-32.53	-25	-7.53	Horizontal
5020.0	-63.90	5.23	35.82	-33.31	-25	-8.31	Vertical
7530.0	-63.24	5.67	36.86	-32.05	-25	-7.05	Vertical
7530.0	-62.04	5.67	36.86	-30.85	-25	-5.85	Horizontal
198.1	-51.17	1.63	15.76	-37.04	-25	-12.04	Vertical
253.5	-47.50	1.71	15.44	-33.77	-25	-8.77	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-64.45	5.23	35.82	-33.86	-25	-8.86	Horizontal
5070.0	-60.41	5.23	35.82	-29.82	-25	-4.82	Vertical
7605.0	-63.19	5.67	36.85	-32.01	-25	-7.01	Vertical
7605.0	-61.80	5.67	36.85	-30.62	-25	-5.62	Horizontal
194.1	-45.17	1.79	16.84	-30.11	-25	-5.11	Vertical
372.1	-51.84	1.71	17.64	-35.91	-25	-10.91	Horizontal
Test Results for High Channel 2560MHz							
5120.0	-60.26	5.24	35.83	-29.67	-25	-4.67	Horizontal
5120.0	-62.30	5.24	35.83	-31.71	-25	-6.71	Vertical
7680.0	-59.73	5.70	36.88	-28.55	-25	-3.55	Vertical
7680.0	-60.96	5.70	36.88	-29.78	-25	-4.78	Horizontal
200.2	-44.52	1.79	16.84	-29.46	-25	-4.46	Vertical
384.8	-45.36	1.71	17.64	-29.43	-25	-4.43	Horizontal

Note: Spurious Emission Level = Spectrum Analyzer Read Value + Cable Loss+ Antenna Factor + 11.74

. Margin = Spurious Emission Level - Limit

. 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	-47.76	2.60	27.20	-23.16	-13	-10.16	Horizontal
1399.4	-45.03	2.60	27.20	-20.43	-13	-7.43	Vertical
2099.1	-51.81	2.85	27.54	-27.12	-13	-14.12	Vertical
2099.1	-51.86	2.85	27.54	-27.17	-13	-14.17	Horizontal
188.9	-44.06	1.49	17.78	-27.77	-13	-14.77	Vertical
342.6	-40.46	1.36	17.33	-24.49	-13	-11.49	Horizontal
Test Results For Mid Channel 707.5MHz							
1415.0	-46.50	2.61	27.28	-21.83	-13	-8.83	Horizontal
1415.0	-53.15	2.61	27.28	-28.48	-13	-15.48	Vertical
2122.5	-44.11	2.87	27.59	-19.39	-13	-6.39	Vertical
2122.5	-51.66	2.87	27.59	-26.94	-13	-13.94	Horizontal
178.6	-39.18	1.73	15.74	-25.17	-13	-12.17	Vertical
373.3	-44.29	1.62	15.79	-30.12	-13	-17.12	Horizontal
Test Results for High Channel 715.3MHz							
1430.6	-47.28	2.63	27.28	-22.63	-13	-9.63	Horizontal
1430.6	-44.81	2.63	27.28	-20.16	-13	-7.16	Vertical
2145.9	-45.86	2.88	27.60	-21.14	-13	-8.14	Vertical
2145.9	-51.10	2.88	27.60	-26.38	-13	-13.38	Horizontal
185.9	-43.22	1.61	18.00	-26.83	-13	-13.83	Vertical
402.6	-43.09	1.45	15.49	-29.06	-13	-16.06	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	-46.18	2.61	27.26	-21.53	-13	-8.53	Horizontal
1408.0	-49.30	2.61	27.26	-24.65	-13	-11.65	Vertical
2112.0	-51.51	2.87	27.58	-26.80	-13	-13.80	Vertical
2112.0	-53.43	2.87	27.58	-28.72	-13	-15.72	Horizontal
178.0	-37.64	1.31	16.97	-21.98	-13	-8.98	Vertical
410.9	-34.70	1.65	16.70	-19.65	-13	-6.65	Horizontal
Test Results for Mid Channel 707.5MHz							
1415.0	-46.52	2.61	27.28	-21.85	-13	-8.85	Horizontal
1415.0	-51.08	2.61	27.28	-26.41	-13	-13.41	Vertical
2122.5	-44.44	2.87	27.59	-19.72	-13	-6.72	Vertical
2122.5	-52.40	2.87	27.59	-27.68	-13	-14.68	Horizontal
195.5	-42.28	1.72	17.99	-26.01	-13	-13.01	Vertical
327.1	-39.90	1.73	17.94	-23.69	-13	-10.69	Horizontal
Test Results for High Channel 711MHz							
1422.0	-45.71	2.62	27.28	-21.05	-13	-8.05	Horizontal
1422.0	-52.29	2.62	27.28	-27.63	-13	-14.63	Vertical
2133.0	-53.01	2.87	27.60	-28.28	-13	-15.28	Vertical
2133.0	-51.75	2.87	27.60	-27.02	-13	-14.02	Horizontal
202.8	-38.96	1.58	15.93	-24.61	-13	-11.61	Vertical
398.7	-41.99	1.36	15.59	-27.76	-13	-14.76	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	-72.81	2.61	27.28	-48.14	-40	-8.14	Horizontal
1559.0	-74.89	2.61	27.28	-50.22	-40	-10.22	Vertical
2338.5	-68.49	2.87	27.59	-43.77	-13	-30.77	Vertical
2338.5	-71.70	2.87	27.59	-46.98	-13	-33.98	Horizontal
211.0	-69.60	1.71	16.15	-55.16	-13	-42.16	Vertical
246.9	-67.82	1.41	17.32	-51.91	-13	-38.91	Horizontal
Test Results For Mid Channel 782MHz							
1564.0	-73.35	2.62	27.30	-48.67	-40	-8.67	Horizontal
1564.0	-67.44	2.62	27.30	-42.76	-40	-2.76	Vertical
2346.0	-70.34	2.87	27.62	-45.59	-13	-32.59	Vertical
2346.0	-72.82	2.87	27.62	-48.07	-13	-35.07	Horizontal
181.2	-71.91	1.42	15.25	-58.09	-13	-45.09	Vertical
293.4	-71.50	1.36	17.19	-55.67	-13	-42.67	Horizontal
Test Results for High Channel 784.5MHz							
1569.0	-74.05	2.66	27.28	-49.43	-40	-9.43	Horizontal
1569.0	-75.23	2.66	27.28	-50.61	-40	-10.61	Vertical
2353.5	-71.81	2.88	27.60	-47.09	-13	-34.09	Vertical
2353.5	-71.96	2.88	27.60	-47.24	-13	-34.24	Horizontal
191.9	-70.05	1.32	17.29	-54.08	-13	-41.08	Vertical
387.2	-72.84	1.72	16.89	-57.67	-13	-44.67	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	-67.28	2.62	27.30	-42.60	-40	-2.60	Horizontal
1564.0	-72.74	2.62	27.30	-48.06	-40	-8.06	Vertical
2346.0	-69.48	2.87	27.62	-44.73	-13	-31.73	Vertical
2346.0	-71.40	2.87	27.62	-46.65	-13	-33.65	Horizontal
182.0	-72.51	1.35	16.91	-56.95	-13	-43.95	Vertical
454.2	-71.05	1.62	16.31	-56.36	-13	-43.36	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 Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1413.0	-53.67	2.61	27.28	-29.00	-13	-16.00	Horizontal
1413.0	-50.87	2.61	27.28	-26.20	-13	-13.20	Vertical
2119.5	-52.13	2.87	27.59	-27.41	-13	-14.41	Vertical
2119.5	-50.30	2.87	27.59	-25.58	-13	-12.58	Horizontal
176.8	-42.65	1.71	16.15	-28.21	-13	-15.21	Vertical
231.1	-37.78	1.41	17.32	-21.87	-13	-8.87	Horizontal
Test Results For Mid Channel 710MHz							
1420.0	-49.77	2.62	27.30	-25.09	-13	-12.09	Horizontal
1420.0	-46.18	2.62	27.30	-21.50	-13	-8.50	Vertical
2130.0	-52.96	2.87	27.62	-28.21	-13	-15.21	Vertical
2130.0	-51.86	2.87	27.62	-27.11	-13	-14.11	Horizontal
179.4	-35.75	1.42	15.25	-21.93	-13	-8.93	Vertical
298.0	-42.03	1.36	17.19	-26.20	-13	-13.20	Horizontal
Test Results for High Channel 713.5MHz							
1427.0	-47.13	2.66	27.28	-22.51	-13	-9.51	Horizontal
1427.0	-44.56	2.66	27.28	-19.94	-13	-6.94	Vertical
2140.5	-51.23	2.88	27.60	-26.51	-13	-13.51	Vertical
2140.5	-50.39	2.88	27.60	-25.67	-13	-12.67	Horizontal
195.6	-34.09	1.32	17.29	-18.12	-13	-5.12	Vertical
240.3	-34.80	1.72	16.89	-19.63	-13	-6.63	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 Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1418.0	-50.25	2.62	27.30	-25.57	-13	-12.57	Horizontal
1418.0	-49.36	2.62	27.30	-24.68	-13	-11.68	Vertical
2127.0	-47.28	2.87	27.62	-22.53	-13	-9.53	Vertical
2127.0	-52.16	2.87	27.62	-27.41	-13	-14.41	Horizontal
202.5	-41.76	1.35	16.91	-26.20	-13	-13.20	Vertical
450.2	-34.86	1.62	16.31	-20.17	-13	-7.17	Horizontal
Test Results for Mid Channel 710MHz							
1420.0	-50.04	2.62	27.30	-25.36	-13	-12.36	Horizontal
1420.0	-52.78	2.62	27.30	-28.10	-13	-15.10	Vertical
2130.0	-52.36	2.87	27.62	-27.61	-13	-14.61	Vertical
2130.0	-49.96	2.87	27.62	-25.21	-13	-12.21	Horizontal
186.3	-39.94	1.51	17.14	-24.31	-13	-11.31	Vertical
357.5	-39.98	1.77	16.88	-24.87	-13	-11.87	Horizontal
Test Results for High Channel 711MHz							
1422.0	-48.84	2.62	27.30	-24.16	-13	-11.16	Horizontal
1422.0	-50.16	2.62	27.30	-25.48	-13	-12.48	Vertical
2133.0	-48.16	2.87	27.62	-23.41	-13	-10.41	Vertical
2133.0	-49.25	2.87	27.62	-24.50	-13	-11.50	Horizontal
209.4	-39.48	1.78	15.95	-25.31	-13	-12.31	Vertical
311.7	-44.69	1.34	17.95	-28.09	-13	-15.09	Horizontal

Note: Spurious Emission Level = Spectrum Analyzer Read Value + Cable Loss+ Antenna Factor + 11.74

. Margin = Spurious Emission Level - Limit

. 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 1850.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3701.4	-52.83	4.26	29.80	-27.29	-13	-14.29	Horizontal
3701.4	-48.32	4.26	29.80	-22.78	-13	-9.78	Vertical
5552.1	-45.63	5.36	35.84	-15.15	-13	-2.15	Vertical
5552.1	-49.39	5.36	35.84	-18.91	-13	-5.91	Horizontal
194.6	-43.63	1.68	16.04	-29.27	-13	-16.27	Vertical
448.6	-39.72	1.78	17.74	-23.76	-13	-10.76	Horizontal
Test Results for Mid Channel 1882.5MHz							
3765.0	-53.01	4.28	30.00	-27.29	-13	-14.29	Horizontal
3765.0	-44.97	4.28	30.00	-19.25	-13	-6.25	Vertical
5647.5	-46.24	5.41	35.86	-15.79	-13	-2.79	Vertical
5647.5	-49.43	5.41	35.86	-18.98	-13	-5.98	Horizontal
189.6	-43.55	1.72	17.69	-27.58	-13	-14.58	Vertical
425.2	-39.99	1.62	16.02	-25.58	-13	-12.58	Horizontal
Test Results for High Channel 1914.3MHz							
3828.6	-49.97	4.31	30.01	-24.27	-13	-11.27	Horizontal
3828.6	-46.41	4.31	30.01	-20.71	-13	-7.71	Vertical
5742.9	-51.94	5.43	35.86	-21.51	-13	-8.51	Vertical
5742.9	-51.72	5.43	35.86	-21.29	-13	-8.29	Horizontal
190.0	-44.05	1.80	16.69	-29.16	-13	-16.16	Vertical
279.7	-41.42	1.75	16.66	-26.52	-13	-13.52	Horizontal

QPSK EIRP POWER FOR LTE BAND 25 (20MHZ 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	-50.42	4.29	29.80	-24.91	-13	-11.91	Horizontal
3720.0	-52.12	4.29	29.80	-26.61	-13	-13.61	Vertical
5580.0	-46.17	5.38	35.84	-15.71	-13	-2.71	Vertical
5580.0	-52.61	5.38	35.84	-22.15	-13	-9.15	Horizontal
190.2	-35.81	1.57	17.26	-20.12	-13	-7.12	Vertical
357.8	-44.72	1.78	16.35	-30.15	-13	-17.15	Horizontal
Test Results for Mid Channel 1882.5MHz							
3765.0	-44.31	4.28	30.00	-18.59	-13	-5.59	Horizontal
3765.0	-52.57	4.28	30.00	-26.85	-13	-13.85	Vertical
5647.5	-50.50	5.41	35.86	-20.05	-13	-7.05	Vertical
5647.5	-49.74	5.41	35.86	-19.29	-13	-6.29	Horizontal
212.5	-38.05	1.44	17.95	-21.54	-13	-8.54	Vertical
381.1	-39.11	1.65	16.09	-24.67	-13	-11.67	Horizontal
Test Results for High Channel 1905MHz							
3810.0	-53.27	4.35	27.68	-29.94	-13	-16.94	Horizontal
3810.0	-45.33	4.35	27.68	-22.00	-13	-9.00	Vertical
5715.0	-48.05	5.42	35.86	-17.61	-13	-4.61	Vertical
5715.0	-53.55	5.42	35.86	-23.11	-13	-10.11	Horizontal
198.2	-36.02	1.61	16.85	-20.78	-13	-7.78	Vertical
250.1	-35.03	1.61	15.19	-21.45	-13	-8.45	Horizontal

9.9 LTE BAND 26A

QPSK EIRP POWER FOR LTE BAND 26A(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	-45.54	4.26	29.80	-20.00	-13	-7.00	Horizontal
1629.4	-53.13	4.26	29.80	-27.59	-13	-14.59	Vertical
2444.1	-46.28	5.36	35.84	-15.80	-13	-2.80	Vertical
2444.1	-49.27	5.36	35.84	-18.79	-13	-5.79	Horizontal
178.7	-37.96	1.68	16.04	-23.60	-13	-10.60	Vertical
328.3	-36.11	1.78	17.74	-20.15	-13	-7.15	Horizontal
Test Results For Mid Channel 819MHz							
1638.0	-53.91	4.28	30.00	-28.19	-13	-15.19	Horizontal
1638.0	-49.11	4.28	30.00	-23.39	-13	-10.39	Vertical
2457.0	-47.87	5.41	35.86	-17.42	-13	-4.42	Vertical
2457.0	-49.57	5.41	35.86	-19.12	-13	-6.12	Horizontal
209.8	-42.78	1.72	17.69	-26.81	-13	-13.81	Vertical
241.7	-38.56	1.62	16.02	-24.15	-13	-11.15	Horizontal
Test Results for High Channel 823.3MHz							
1646.6	-49.20	4.31	30.01	-23.50	-13	-10.50	Horizontal
1646.6	-46.55	4.31	30.01	-20.85	-13	-7.85	Vertical
2469.9	-47.62	5.43	35.86	-17.19	-13	-4.19	Vertical
2469.9	-51.68	5.43	35.86	-21.25	-13	-8.25	Horizontal
194.8	-44.99	1.80	16.69	-30.10	-13	-17.10	Vertical
438.9	-36.51	1.75	16.66	-21.61	-13	-8.61	Horizontal

QPSK EIRP POWER FOR LTE BAND 26A(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	-47.81	4.28	30.00	-22.09	-13	-9.09	Horizontal
1638.0	-48.58	4.28	30.00	-22.86	-13	-9.86	Vertical
2457.0	-49.57	5.41	35.86	-19.12	-13	-6.12	Vertical
2457.0	-53.30	5.41	35.86	-22.85	-13	-9.85	Horizontal
186.9	-35.55	1.44	17.95	-19.04	-13	-6.04	Vertical
271.1	-40.98	1.65	16.09	-26.54	-13	-13.54	Horizontal

9.10 LTE BAND 26B

QPSK EIRP POWER FOR LTE BAND 26B(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	-53.27	4.26	29.80	-27.73	-13	-14.73	Horizontal
1649.4	-50.52	4.26	29.80	-24.98	-13	-11.98	Vertical
2474.1	-47.83	5.36	35.84	-17.35	-13	-4.35	Vertical
2474.1	-50.63	5.36	35.84	-20.15	-13	-7.15	Horizontal
188.1	-44.29	1.68	16.04	-29.93	-13	-16.93	Vertical
391.1	-41.73	1.78	17.74	-25.77	-13	-12.77	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-52.58	4.28	30.00	-26.86	-13	-13.86	Horizontal
1673.0	-50.91	4.28	30.00	-25.19	-13	-12.19	Vertical
2509.5	-48.99	5.41	35.86	-18.54	-13	-5.54	Vertical
2509.5	-50.02	5.41	35.86	-19.57	-13	-6.57	Horizontal
211.0	-35.80	1.72	17.69	-19.83	-13	-6.83	Vertical
267.1	-39.51	1.62	16.02	-25.10	-13	-12.10	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-51.98	4.31	30.01	-26.28	-13	-13.28	Horizontal
1696.6	-48.02	4.31	30.01	-22.32	-13	-9.32	Vertical
2544.9	-46.52	5.43	35.86	-16.09	-13	-3.09	Vertical
2544.9	-50.45	5.43	35.86	-20.02	-13	-7.02	Horizontal
176.6	-35.24	1.80	16.69	-20.35	-13	-7.35	Vertical
243.8	-44.64	1.75	16.66	-29.74	-13	-16.74	Horizontal

QPSK EIRP POWER FOR LTE BAND 26B(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	-46.23	4.29	29.80	-20.72	-13	-7.72	Horizontal
1663.0	-53.51	4.29	29.80	-28.00	-13	-15.00	Vertical
2494.5	-53.12	5.38	35.84	-22.66	-13	-9.66	Vertical
2494.5	-49.98	5.38	35.84	-19.52	-13	-6.52	Horizontal
177.9	-35.64	1.57	17.26	-19.95	-13	-6.95	Vertical
265.0	-40.18	1.78	16.35	-25.61	-13	-12.61	Horizontal
Test Results for Mid Channel 836.5MHz							
1673.0	-52.08	4.28	30.00	-26.36	-13	-13.36	Horizontal
1673.0	-47.81	4.28	30.00	-22.09	-13	-9.09	Vertical
2509.5	-45.87	5.41	35.86	-15.42	-13	-2.42	Vertical
2509.5	-51.20	5.41	35.86	-20.75	-13	-7.75	Horizontal
190.6	-35.86	1.44	17.95	-19.35	-13	-6.35	Vertical
238.7	-39.32	1.65	16.09	-24.88	-13	-11.88	Horizontal
Test Results for High Channel841.5MHz							
1683.0	-50.00	4.35	27.68	-26.67	-13	-13.67	Horizontal
1683.0	-51.46	4.35	27.68	-28.13	-13	-15.13	Vertical
2524.5	-45.87	5.42	35.86	-15.43	-13	-2.43	Vertical
2524.5	-52.05	5.42	35.86	-21.61	-13	-8.61	Horizontal
209.1	-41.66	1.61	16.85	-26.42	-13	-13.42	Vertical
446.6	-37.93	1.61	15.19	-24.35	-13	-11.35	Horizontal

9.11 LTE BAND 41

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

Test Results for Low Channel 2498.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
4997.0	-60.47	5.13	35.81	-29.79	-25	-4.79	Horizontal
4997.0	-60.24	5.13	35.81	-29.56	-25	-4.56	Vertical
7495.5	-62.82	5.42	36.85	-31.39	-25	-6.39	Vertical
7495.5	-63.93	5.42	36.85	-32.50	-25	-7.50	Horizontal
203.5	-51.45	1.56	17.97	-35.04	-25	-10.04	Vertical
392.5	-45.23	1.33	15.11	-31.45	-25	-6.45	Horizontal
Test Results for Mid Channel 2593MHz							
5186.0	-60.46	5.16	35.82	-29.80	-25	-4.80	Horizontal
5186.0	-62.42	5.16	35.82	-31.76	-25	-6.76	Vertical
7779.0	-62.53	5.53	36.85	-31.21	-25	-6.21	Vertical
7779.0	-59.81	5.53	36.85	-28.49	-25	-3.49	Horizontal
180.3	-48.87	1.77	16.17	-34.46	-25	-9.46	Vertical
462.6	-54.63	1.63	15.21	-41.05	-25	-16.05	Horizontal
Test Results for High Channel 2687.5MHz							
5375.0	-61.08	5.23	35.83	-30.48	-25	-5.48	Horizontal
5375.0	-61.71	5.23	35.83	-31.11	-25	-6.11	Vertical
8062.5	-63.37	5.62	36.87	-32.12	-25	-7.12	Vertical
8062.5	-59.41	5.62	36.87	-28.16	-25	-3.16	Horizontal
190.0	-46.45	1.58	17.56	-30.47	-25	-5.47	Vertical
384.5	-48.01	1.45	16.58	-32.88	-25	-7.88	Horizontal

QPSK EIRP POWER FOR LTE BAND 41 (20MHZ BANDWIDTH)

Test Results for Low Channel 2506MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
5012.0	-64.59	5.23	35.82	-34.00	-25	-9.00	Horizontal
5012.0	-60.38	5.23	35.82	-29.79	-25	-4.79	Vertical
7518.0	-60.08	5.67	36.86	-28.89	-25	-3.89	Vertical
7518.0	-60.01	5.67	36.86	-28.82	-25	-3.82	Horizontal
186.9	-51.24	1.55	15.76	-37.03	-25	-12.03	Vertical
436.5	-54.21	1.62	15.44	-40.39	-25	-15.39	Horizontal
Test Results for Mid Channel 2593MHz							
5186.0	-63.55	5.16	35.82	-32.89	-25	-7.89	Horizontal
5186.0	-62.53	5.16	35.82	-31.87	-25	-6.87	Vertical
7779.0	-63.17	5.53	36.85	-31.85	-25	-6.85	Vertical
7779.0	-60.86	5.53	36.85	-29.54	-25	-4.54	Horizontal
192.3	-49.18	1.58	16.84	-33.92	-25	-8.92	Vertical
275.4	-53.63	1.61	17.64	-37.60	-25	-12.60	Horizontal
Test Results for High Channel 2680MHz							
5360.0	-64.49	5.24	35.83	-33.90	-25	-8.90	Horizontal
5360.0	-59.22	5.24	35.83	-28.63	-25	-3.63	Vertical
8040.0	-62.57	5.70	36.88	-31.39	-25	-6.39	Vertical
8040.0	-62.07	5.70	36.88	-30.89	-25	-5.89	Horizontal
206.0	-46.88	1.48	16.84	-31.52	-25	-6.52	Vertical
284.9	-48.89	1.59	17.64	-32.84	-25	-7.84	Horizontal

9.12 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	-63.89	3.84	35.81	-31.92	-13	-18.92	Horizontal
3421.4	-60.42	3.84	35.81	-28.45	-13	-15.45	Vertical
5132.1	-64.28	5.18	36.85	-32.61	-13	-19.61	Vertical
5132.1	-60.46	5.18	36.85	-28.79	-13	-15.79	Horizontal
180.4	-44.66	1.56	17.97	-28.25	-13	-15.25	Vertical
405.9	-54.07	1.33	15.11	-40.29	-13	-27.29	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-64.77	3.85	35.82	-32.80	-13	-19.80	Horizontal
3490.0	-59.65	3.85	35.82	-27.68	-13	-14.68	Vertical
5235.0	-62.14	5.21	36.85	-30.50	-13	-17.50	Vertical
5235.0	-59.27	5.21	36.85	-27.63	-13	-14.63	Horizontal
195.3	-44.06	1.77	16.17	-29.65	-13	-16.65	Vertical
411.0	-49.34	1.63	15.21	-35.76	-13	-22.76	Horizontal
Test Results for High Channel 1779.3MHz							
3558.6	-60.03	3.86	35.83	-28.06	-13	-15.06	Horizontal
3558.6	-63.86	3.86	35.83	-31.89	-13	-18.89	Vertical
5337.9	-63.71	5.24	36.87	-32.08	-13	-19.08	Vertical
5337.9	-62.59	5.24	36.87	-30.96	-13	-17.96	Horizontal
212.4	-48.35	1.58	17.56	-32.37	-13	-19.37	Vertical
306.0	-46.84	1.45	16.58	-31.71	-13	-18.71	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	-59.01	3.84	35.82	-27.03	-13	-14.03	Horizontal
3440.0	-59.29	3.84	35.82	-27.31	-13	-14.31	Vertical
5160.0	-62.83	5.18	36.86	-31.15	-13	-18.15	Vertical
5160.0	-63.06	5.18	36.86	-31.38	-13	-18.38	Horizontal
195.8	-46.36	1.56	15.76	-32.16	-13	-19.16	Vertical
253.4	-45.52	1.33	15.44	-31.41	-13	-18.41	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-63.38	3.85	35.82	-31.41	-13	-18.41	Horizontal
3490.0	-60.06	3.85	35.82	-28.09	-13	-15.09	Vertical
5235.0	-61.36	5.21	36.85	-29.72	-13	-16.72	Vertical
5235.0	-60.62	5.21	36.85	-28.98	-13	-15.98	Horizontal
179.4	-48.26	1.77	16.84	-33.18	-13	-20.18	Vertical
419.3	-46.28	1.63	17.64	-30.27	-13	-17.27	Horizontal
Test Results for High Channel 1770MHz							
3540.0	-64.97	3.86	35.83	-33.00	-13	-20.00	Horizontal
3540.0	-59.33	3.86	35.83	-27.36	-13	-14.36	Vertical
5310.0	-61.56	5.24	36.88	-29.92	-13	-16.92	Vertical
5310.0	-64.07	5.24	36.88	-32.43	-13	-19.43	Horizontal
183.9	-48.41	1.58	16.84	-33.14	-13	-20.14	Vertical
292.4	-48.64	1.45	17.64	-32.45	-13	-19.45	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.

9.13 LTE BAND 71

QPSK EIRP POWER FOR LTE BAND 71 (5MHZ BANDWIDTH)

Test Results for Low Channel 665.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1331.0	-61.04	2.16	35.81	-27.39	-13	-14.39	Horizontal
1331.0	-63.06	2.16	35.81	-29.41	-13	-16.41	Vertical
1996.5	-60.53	2.89	36.85	-26.57	-13	-13.57	Vertical
1996.5	-61.07	2.89	36.85	-27.11	-13	-14.11	Horizontal
207.9	-47.80	1.56	17.97	-31.39	-13	-18.39	Vertical
248.4	-53.95	1.33	15.11	-40.17	-13	-27.17	Horizontal
Test Results for Mid Channel 680.5MHz							
1361.0	-59.31	2.17	35.82	-25.66	-13	-12.66	Horizontal
1361.0	-60.61	2.17	35.82	-26.96	-13	-13.96	Vertical
2041.5	-59.24	2.90	36.85	-25.29	-13	-12.29	Vertical
2041.5	-63.75	2.90	36.85	-29.80	-13	-16.80	Horizontal
202.5	-51.39	1.77	16.17	-36.98	-13	-23.98	Vertical
467.9	-53.38	1.63	15.21	-39.80	-13	-26.80	Horizontal
Test Results for High Channel 695.5MHz							
1391.0	-59.39	2.19	35.83	-25.75	-13	-12.75	Horizontal
1391.0	-64.33	2.19	35.83	-30.69	-13	-17.69	Vertical
2086.5	-61.73	2.95	36.87	-27.81	-13	-14.81	Vertical
2086.5	-59.50	2.95	36.87	-25.58	-13	-12.58	Horizontal
175.2	-47.50	1.58	17.56	-31.52	-13	-18.52	Vertical
250.5	-48.89	1.45	16.58	-33.76	-13	-20.76	Horizontal

QPSK EIRP POWER FOR LTE BAND 71 (20MHZ BANDWIDTH)

Test Results for Low Channel 673MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1346.0	-61.61	2.16	35.82	-27.95	-13	-14.95	Horizontal
1346.0	-64.60	2.16	35.82	-30.94	-13	-17.94	Vertical
2019.0	-62.95	2.89	36.86	-28.98	-13	-15.98	Vertical
2019.0	-59.19	2.89	36.86	-25.22	-13	-12.22	Horizontal
175.2	-49.59	1.56	15.76	-35.39	-13	-22.39	Vertical
453.5	-47.17	1.33	15.44	-33.06	-13	-20.06	Horizontal
Test Results for Mid Channel 683MHz							
1366.0	-64.13	2.17	35.82	-30.48	-13	-17.48	Horizontal
1366.0	-62.07	2.17	35.82	-28.42	-13	-15.42	Vertical
2049.0	-60.97	2.90	36.85	-27.02	-13	-14.02	Vertical
2049.0	-59.22	2.90	36.85	-25.27	-13	-12.27	Horizontal
201.9	-52.31	1.77	16.84	-37.23	-13	-24.23	Vertical
237.2	-51.97	1.63	17.64	-35.96	-13	-22.96	Horizontal
Test Results for High Channel 688MHz							
1376.0	-63.05	2.19	35.83	-29.41	-13	-16.41	Horizontal
1376.0	-64.61	2.19	35.83	-30.97	-13	-17.97	Vertical
2064.0	-63.75	2.95	36.88	-29.82	-13	-16.82	Vertical
2064.0	-60.90	2.95	36.88	-26.97	-13	-13.97	Horizontal
206.1	-44.75	1.58	16.84	-29.48	-13	-16.48	Vertical
410.1	-48.68	1.45	17.64	-32.49	-13	-19.49	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 4V and High voltage, DC 4.6V.

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 2/4/5/12/13/25/26/41/66/71

RESULTS

See the following pages.

10.1 LTE BAND 2

Band 2 QPSK, (20MHz BANDWIDTH RB size 100 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	1880	12.8	0.006818	2.5
4	1880	13.3	0.007079	2.5
4.60	1880	13.1	0.006994	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	12.7	0.006764	2.5
Extreme (50C)	1880	11.3	0.006033	2.5
Extreme (40C)	1880	14.0	0.007448	2.5
Extreme (30C)	1880	13.3	0.007070	2.5
Extreme (10C)	1880	14.2	0.007542	2.5
Extreme (0C)	1880	11.9	0.006348	2.5
Extreme (-10C)	1880	12.9	0.006861	2.5
Extreme (-20C)	1880	14.1	0.007518	2.5
Extreme (-30C)	1880	14.5	0.007733	2.5

Band 2 16QAM, (20MHz BANDWIDTH RB size 100 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	1880	9.6	0.005128	2.5
4	1880	8.6	0.004600	2.5
4.60	1880	8.5	0.004512	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	9.2	0.004870	2.5
Extreme (50C)	1880	8.8	0.004661	2.5
Extreme (40C)	1880	8.0	0.004278099	2.5
Extreme (30C)	1880	9.0	0.004794714	2.5
Extreme (10C)	1880	9.0	0.004812444	2.5
Extreme (0C)	1880	8.3	0.004394617	2.5
Extreme (-10C)	1880	8.8	0.004674293	2.5
Extreme (-20C)	1880	8.6	0.004563212	2.5
Extreme (-30C)	1880	7.7	0.00410282	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

Band 4 QPSK, (20MHz BANDWIDTH RB size 100 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	1732.5	8.9	0.005110	2.5
4	1732.5	9.3	0.005363	2.5
4.60	1732.5	8.1	0.004679	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	8.7	0.005044	2.5
Extreme (50C)	1732.5	9.1	0.005256	2.5
Extreme (40C)	1732.5	7.9	0.004532	2.5
Extreme (30C)	1732.5	5.9	0.003377	2.5
Extreme (10C)	1732.5	7.5	0.004333	2.5
Extreme (0C)	1732.5	8.9	0.005155	2.5
Extreme (-10C)	1732.5	8.1	0.004690	2.5
Extreme (-20C)	1732.5	6.7	0.003894	2.5
Extreme (-30C)	1732.5	8.4	0.004866	2.5

Band 4 16QAM, (20MHz BANDWIDTH RB size 100 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	1732.5	9.4	0.005423	2.5
4	1732.5	8.9	0.005147	2.5
4.60	1732.5	8.0	0.004627	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	9.8	0.005653	2.5
Extreme (50C)	1732.5	8.4	0.004863	2.5
Extreme (40C)	1732.5	7.8	0.004486	2.5
Extreme (30C)	1732.5	8.9	0.005159	2.5
Extreme (10C)	1732.5	8.6	0.004961	2.5
Extreme (0C)	1732.5	7.9	0.004551	2.5
Extreme (-10C)	1732.5	8.6	0.004970	2.5
Extreme (-20C)	1732.5	9.2	0.005286	2.5
Extreme (-30C)	1732.5	8.6	0.004945	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

Band 5 QPSK, (10MHz BANDWIDTH RB size 50 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	836.5	5.5	0.006582	2.5
4	836.5	6.5	0.007805	2.5
4.60	836.5	5.3	0.006280	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	6.2	0.007353	2.5
Extreme (50C)	836.5	6.0	0.007123	2.5
Extreme (40C)	836.5	6.1	0.007334	2.5
Extreme (30C)	836.5	6.7	0.007968	2.5
Extreme (10C)	836.5	5.4	0.006494	2.5
Extreme (0C)	836.5	5.8	0.006920	2.5
Extreme (-10C)	836.5	5.3	0.006390	2.5
Extreme (-20C)	836.5	6.1	0.007245	2.5
Extreme (-30C)	836.5	6.4	0.007688	2.5

Band 5 16QAM, (10MHz BANDWIDTH RB size 50 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	836.5	5.5	0.006581	2.5
4	836.5	6.8	0.008145	2.5
4.60	836.5	5.1	0.006040	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	6.2	0.007375	2.5
Extreme (50C)	836.5	5.9	0.007021	2.5
Extreme (40C)	836.5	6.5	0.007715	2.5
Extreme (30C)	836.5	5.9	0.007103	2.5
Extreme (10C)	836.5	5.2	0.006160	2.5
Extreme (0C)	836.5	5.2	0.006185	2.5
Extreme (-10C)	836.5	5.2	0.006247	2.5
Extreme (-20C)	836.5	6.3	0.007490	2.5
Extreme (-30C)	836.5	6.5	0.007776	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

Band 7 QPSK, (20MHz BANDWIDTH RB size 100 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	2535	10.0	0.003937	2.5
4	2535	9.1	0.003580	2.5
4.60	2535	8.9	0.003500	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2535	9.9	0.003894	2.5
Extreme (50C)	2535	9.2	0.003632	2.5
Extreme (40C)	2535	8.6	0.003399	2.5
Extreme (30C)	2535	8.9	0.003506	2.5
Extreme (10C)	2535	7.9	0.003101	2.5
Extreme (0C)	2535	8.4	0.003325	2.5
Extreme (-10C)	2535	9.0	0.003561	2.5
Extreme (-20C)	2535	8.5	0.003357	2.5
Extreme (-30C)	2535	8.8	0.003486	2.5

Band 7 16QAM, (20MHz BANDWIDTH RB size 100 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	2535	6.9	0.002722	2.5
4	2535	6.6	0.002589	2.5
4.60	2535	5.3	0.002108	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2535	6.9	0.002722	2.5
Extreme (50C)	2535	5.5	0.002172	2.5
Extreme (40C)	2535	5.6	0.002198	2.5
Extreme (30C)	2535	6.2	0.002458	2.5
Extreme (10C)	2535	5.4	0.002125	2.5
Extreme (0C)	2535	5.3	0.002107	2.5
Extreme (-10C)	2535	5.3	0.002099	2.5
Extreme (-20C)	2535	5.9	0.002329	2.5
Extreme (-30C)	2535	5.4	0.002111	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

Band 12 QPSK, (10MHz BANDWIDTH RB size 50 RB Offset 0

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	707.5	8.5	0.011956	2.5
4	707.5	10.4	0.014664	2.5
4.60	707.5	8.8	0.012413	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	707.5	8.9	0.012577	2.5
Extreme (50C)	707.5	7.4	0.010438	2.5
Extreme (40C)	707.5	7.6	0.010782	2.5
Extreme (30C)	707.5	8.7	0.012350	2.5
Extreme (10C)	707.5	7.4	0.010439	2.5
Extreme (0C)	707.5	8.9	0.012578	2.5
Extreme (-10C)	707.5	8.0	0.011270	2.5
Extreme (-20C)	707.5	8.9	0.012623	2.5
Extreme (-30C)	707.5	7.5	0.010633	2.5

Band 12 16QAM, (10MHz BANDWIDTH RB size 50 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	707.5	7.5	0.010629	2.5
4	707.5	8.8	0.012392	2.5
4.60	707.5	7.4	0.010453	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	707.5	9.1	0.012915	2.5
Extreme (50C)	707.5	8.1	0.011500	2.5
Extreme (40C)	707.5	8.9	0.012645	2.5
Extreme (30C)	707.5	7.3	0.010351	2.5
Extreme (10C)	707.5	8.4	0.011828	2.5
Extreme (0C)	707.5	7.6	0.010692	2.5
Extreme (-10C)	707.5	7.3	0.010350	2.5
Extreme (-20C)	707.5	8.9	0.012630	2.5
Extreme (-30C)	707.5	8.9	0.012571	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

Band 13 QPSK, (10MHz BANDWIDTH RB size 50 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	782.0	12.9	0.016495	2.5
4	782.0	13.8	0.017622	2.5
4.60	782.0	13.1	0.016733	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	782.0	14.4	0.018447	2.5
Extreme (50C)	782.0	14.1	0.018040	2.5
Extreme (40C)	782.0	14.6	0.018689	2.5
Extreme (30C)	782.0	14.4	0.018428	2.5
Extreme (10C)	782.0	14.1	0.017984	2.5
Extreme (0C)	782.0	14.3	0.018271	2.5
Extreme (-10C)	782.0	14.1	0.018004	2.5
Extreme (-20C)	782.0	13.9	0.017743	2.5
Extreme (-30C)	782.0	13.3	0.017020	2.5

Band 13 16QAM, (10MHz BANDWIDTH RB size 50 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	782.0	12.9	0.016507	2.5
4	782.0	13.9	0.017724	2.5
4.60	782.0	13.0	0.016587	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	782.0	13.1	0.016746	2.5
Extreme (50C)	782.0	11.4	0.014592	2.5
Extreme (40C)	782.0	13.7	0.017540	2.5
Extreme (30C)	782.0	13.1	0.016709	2.5
Extreme (10C)	782.0	13.9	0.017726	2.5
Extreme (0C)	782.0	12.4	0.015837	2.5
Extreme (-10C)	782.0	12.5	0.016039	2.5
Extreme (-20C)	782.0	13.8	0.017651	2.5
Extreme (-30C)	782.0	14.6	0.018625	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

Band 17 QPSK, (10MHz BANDWIDTH RB size 50 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	710.0	9.8	0.013742	2.5
4	710.0	8.4	0.011882	2.5
4.60	710.0	8.0	0.011301	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	9.9	0.014007	2.5
Extreme (50C)	710.0	8.7	0.012301	2.5
Extreme (40C)	710.0	7.7	0.010822	2.5
Extreme (30C)	710.0	8.6	0.012124	2.5
Extreme (10C)	710.0	8.7	0.012313	2.5
Extreme (0C)	710.0	7.6	0.010745	2.5
Extreme (-10C)	710.0	8.8	0.012414	2.5
Extreme (-20C)	710.0	8.9	0.012552	2.5
Extreme (-30C)	710.0	8.3	0.011718	2.5

Band 17 16QAM, (10MHz BANDWIDTH RB size 50 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	710.0	10.0	0.014110	2.5
4	710.0	8.4	0.011891	2.5
4.60	710.0	8.5	0.011935	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	9.3	0.013049	2.5
Extreme (50C)	710.0	9.2	0.012933	2.5
Extreme (40C)	710.0	8.7	0.012266	2.5
Extreme (30C)	710.0	8.8	0.012368	2.5
Extreme (10C)	710.0	8.4	0.011828	2.5
Extreme (0C)	710.0	8.4	0.011798	2.5
Extreme (-10C)	710.0	9.4	0.013264	2.5
Extreme (-20C)	710.0	9.3	0.013138	2.5
Extreme (-30C)	710.0	8.7	0.012287	2.5

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

10.8 LTE BAND 25

Band 25 QPSK, (20MHz BANDWIDTH RB size 100 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	1882.5	9.9	0.005242	2.5
4	1882.5	9.4	0.004977	2.5
4.60	1882.5	8.0	0.004232	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1882.5	9.4	0.005007	2.5
Extreme (50C)	1882.5	8.7	0.004603	2.5
Extreme (40C)	1882.5	8.1	0.004297	2.5
Extreme (30C)	1882.5	9.2	0.004886	2.5
Extreme (10C)	1882.5	8.5	0.004537	2.5
Extreme (0C)	1882.5	8.1	0.004291	2.5
Extreme (-10C)	1882.5	8.8	0.004679	2.5
Extreme (-20C)	1882.5	8.9	0.004704	2.5
Extreme (-30C)	1882.5	7.8	0.004118	2.5

Band 25 16QAM, (20MHz BANDWIDTH RB size 100 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	1882.5	10.2	0.005443	2.5
4	1882.5	9.2	0.004911	2.5
4.60	1882.5	8.4	0.004470	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1882.5	9.5	0.005039	2.5
Extreme (50C)	1882.5	9.1	0.004846	2.5
Extreme (40C)	1882.5	8.0	0.004243	2.5
Extreme (30C)	1882.5	9.3	0.004928	2.5
Extreme (10C)	1882.5	8.0	0.004261	2.5
Extreme (0C)	1882.5	8.0	0.004276	2.5
Extreme (-10C)	1882.5	9.1	0.004820	2.5
Extreme (-20C)	1882.5	9.1	0.004813	2.5
Extreme (-30C)	1882.5	8.3	0.004428	2.5

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

10.9 LTE BAND 26A

Band 26A QPSK, (10MHz BANDWIDTH RB size 50 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	819.0	9.7	0.011903	2.5
4	819.0	8.8	0.010786	2.5
4.60	819.0	8.2	0.009994	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	819.0	9.8	0.011957	2.5
Extreme (50C)	819.0	8.8	0.010782	2.5
Extreme (40C)	819.0	8.1	0.009880	2.5
Extreme (30C)	819.0	9.3	0.011302	2.5
Extreme (10C)	819.0	8.9	0.010839	2.5
Extreme (0C)	819.0	8.2	0.009979	2.5
Extreme (-10C)	819.0	9.3	0.011300	2.5
Extreme (-20C)	819.0	8.6	0.010511	2.5
Extreme (-30C)	819.0	8.1	0.009876	2.5

Band 26A 16QAM, (10MHz BANDWIDTH RB size 50 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	819.0	9.7	0.011840	2.5
4	819.0	9.3	0.011304	2.5
4.60	819.0	8.6	0.010507	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	819.0	9.5	0.011618	2.5
Extreme (50C)	819.0	8.8	0.010731	2.5
Extreme (40C)	819.0	7.9	0.009656	2.5
Extreme (30C)	819.0	8.6	0.010543	2.5
Extreme (10C)	819.0	7.6	0.009323	2.5
Extreme (0C)	819.0	8.8	0.010692	2.5
Extreme (-10C)	819.0	9.0	0.011012	2.5
Extreme (-20C)	819.0	8.5	0.010412	2.5
Extreme (-30C)	819.0	7.9	0.009703	2.5

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

10.10 LTE BAND 26B

Band 26B QPSK, (15MHz BANDWIDTH RB size 75 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	836.5	9.3	0.011176	2.5
4	836.5	9.1	0.010861	2.5
4.60	836.5	8.1	0.009672	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	10.1	0.012044	2.5
Extreme (50C)	836.5	9.3	0.011095	2.5
Extreme (40C)	836.5	7.8	0.009304	2.5
Extreme (30C)	836.5	9.2	0.011011	2.5
Extreme (10C)	836.5	9.3	0.011081	2.5
Extreme (0C)	836.5	8.6	0.010267	2.5
Extreme (-10C)	836.5	9.2	0.011050	2.5
Extreme (-20C)	836.5	8.5	0.010128	2.5
Extreme (-30C)	836.5	7.7	0.009197	2.5

Band 26B 16QAM, (15MHz BANDWIDTH RB size 75 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	836.5	10.4	0.012481	2.5
4	836.5	8.4	0.010053	2.5
4.60	836.5	8.2	0.009821	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	9.7	0.011654	2.5
Extreme (50C)	836.5	8.9	0.010667	2.5
Extreme (40C)	836.5	8.7	0.010376	2.5
Extreme (30C)	836.5	8.5	0.010148	2.5
Extreme (10C)	836.5	7.7	0.009243	2.5
Extreme (0C)	836.5	8.4	0.010010	2.5
Extreme (-10C)	836.5	9.2	0.011034	2.5
Extreme (-20C)	836.5	8.8	0.010512	2.5
Extreme (-30C)	836.5	8.1	0.009728	2.5

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

10.11 LTE BAND 41

Band 41 QPSK, (20MHz BANDWIDTH RB size 100 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	2593	10.3	0.003975	2.5
4	2593	9.2	0.003551	2.5
4.60	2593	8.8	0.003381	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2593	9.6	0.003712	2.5
Extreme (50C)	2593	9.2	0.003549	2.5
Extreme (40C)	2593	8.4	0.003254	2.5
Extreme (30C)	2593	8.5	0.003296	2.5
Extreme (10C)	2593	8.5	0.003287	2.5
Extreme (0C)	2593	8.2	0.003145	2.5
Extreme (-10C)	2593	9.0	0.003478	2.5
Extreme (-20C)	2593	9.3	0.003572	2.5
Extreme (-30C)	2593	7.9	0.003066	2.5

Band 41 16QAM, (20MHz BANDWIDTH RB size 100 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	2593	6.9	0.002661	2.5
4	2593	6.4	0.002480	2.5
4.60	2593	6.0	0.002330	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2593	6.9	0.002661	2.5
Extreme (50C)	2593	5.6	0.002160	2.5
Extreme (40C)	2593	5.6	0.002176	2.5
Extreme (30C)	2593	6.9	0.002646	2.5
Extreme (10C)	2593	6.0	0.002317	2.5
Extreme (0C)	2593	4.9	0.001878	2.5
Extreme (-10C)	2593	5.6	0.002148	2.5
Extreme (-20C)	2593	6.4	0.002462	2.5
Extreme (-30C)	2593	6.0	0.002328	2.5

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

10.12 LTE BAND 66

Band 66 QPSK, (20MHz BANDWIDTH RB size 100 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	1745	6.9	0.003947	2.5
4	1745	6.9	0.003939	2.5
4.60	1745	7.7	0.004398	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1745	6.0	0.003411	2.5
Extreme (50C)	1745	7.7	0.004420	2.5
Extreme (40C)	1745	6.8	0.003869	2.5
Extreme (30C)	1745	7.4	0.004246	2.5
Extreme (10C)	1745	7.4	0.004228	2.5
Extreme (0C)	1745	6.9	0.003936	2.5
Extreme (-10C)	1745	6.0	0.003438	2.5
Extreme (-20C)	1745	6.7	0.003848	2.5
Extreme (-30C)	1745	5.7	0.003256	2.5

Band 66 16QAM, (20MHz BANDWIDTH RB size 100 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	1745	8.0	0.004597	2.5
4	1745	7.0	0.004031	2.5
4.60	1745	9.8	0.005636	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1745	9.2	0.005250	2.5
Extreme (50C)	1745	7.8	0.004471	2.5
Extreme (40C)	1745	8.7	0.004989	2.5
Extreme (30C)	1745	8.2	0.004703	2.5
Extreme (10C)	1745	8.7	0.004961	2.5
Extreme (0C)	1745	6.9	0.003936	2.5
Extreme (-10C)	1745	8.4	0.004828	2.5
Extreme (-20C)	1745	8.9	0.005110	2.5
Extreme (-30C)	1745	5.1	0.002920	2.5

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

10.13 LTE BAND 71

Band 71 QPSK, (20MHz BANDWIDTH RB size 100 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	1745	6.8	0.003881	2.5
4	1745	6.9	0.003946	2.5
4.60	1745	7.8	0.004498	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1745	5.9	0.003355	2.5
Extreme (50C)	1745	7.7	0.004432	2.5
Extreme (40C)	1745	6.7	0.003841	2.5
Extreme (30C)	1745	7.0	0.004033	2.5
Extreme (10C)	1745	7.1	0.004090	2.5
Extreme (0C)	1745	6.8	0.003921	2.5
Extreme (-10C)	1745	5.8	0.003334	2.5
Extreme (-20C)	1745	6.6	0.003774	2.5
Extreme (-30C)	1745	5.9	0.003396	2.5

Band 71 16QAM, (20MHz BANDWIDTH RB size 100 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	1745	8.3	0.004768	2.5
4	1745	7.6	0.004336	2.5
4.60	1745	9.6	0.005519	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1745	8.5	0.004884	2.5
Extreme (50C)	1745	7.6	0.004379	2.5
Extreme (40C)	1745	8.5	0.004852	2.5
Extreme (30C)	1745	7.6	0.004369	2.5
Extreme (10C)	1745	8.4	0.004786	2.5
Extreme (0C)	1745	6.2	0.003530	2.5
Extreme (-10C)	1745	8.5	0.004869	2.5
Extreme (-20C)	1745	8.1	0.004624	2.5
Extreme (-30C)	1745	5.3	0.003042	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.

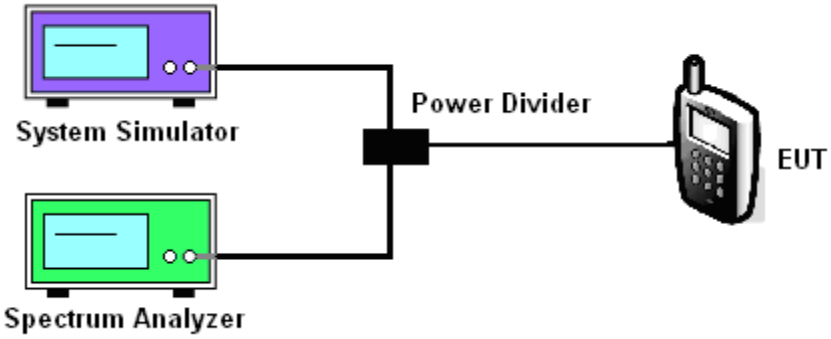
11.2 Measuring Instruments

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 2/4/5/7/12/13/17/25/26/41/66/71

Test data reference attachment.

----END OF REPORT----