FCC CFR47 PART 22H, 24E, 27
CERTIFICATION TEST REPORT
FCC ID: 2AZYA-AC81

Product: Mobile Phone

Trade Mark: ACER

Model No.: SOSPIRO-AC81

Family Model: SOSPIRO-AC81-B, SOSPIRO-AC81-N

Report No.: S23071306705005

Issue Date: Aug 22, 2023

Prepared for

Senwa Global International, S.A. de C.V.

Carretera Mexico-Toluca No. 5324 PBColonia El Yaqui Del.Cuajimalpa de Morelos, C.P. 05320 Ciudad de Mexico, Mexico

Prepared by

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Certificate #4298.01

TEST RESULT CERTIFICATION

Applicant's name	:	Senwa Global International, S.A. de C.V.
Address	:	Carretera Mexico-Toluca No. 5324 PBColonia El Yaqui Del.Cuajimalpa de Morelos, C.P. 05320 Ciudad de Mexico, Mexico
Manufacturer's Name	:	Senwa Mobile China Ltd
Address	:	A611, Languang technology building, No. 27, Gaoxin North 6th Road, songpingshan community, Xili street, Nanshan District, Shenzhen, Guangdong Province
Product name	:	Mobile Phone
Model and/or type reference	:	SOSPIRO-AC81
Trade Mark	:	ACER
Family Model	:	SOSPIRO-AC81-B, SOSPIRO-AC81-N
Test Sample Number		S230713067006
Standards	:	FCC CFR 47 Part 22H, Part 24E, Part 27
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 ..... Jul 13, 2023 ~ Aug 22, 2023

Date of Issue ..... Aug 22, 2023

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:	Mobile Phone
Trade Mark	ACER
Model Name	SOSPIRO-AC81
Family Model	SOSPIRO-AC81-B, SOSPIRO-AC81-N
Model Difference	All the model are the same circuit and RF module, except the model names and colors. B is white, N is black.
FCC ID:	2AZYA-AC81
Frequency Bands:	U.S. Bands: ☒LTE FDD Band 2,4,5,7,12,13,17 LTE TDD Band 38,41,66
Frequency Range:	LTE FDD Band 2 Uplink: 1850MHz-1910MHz, Downlink: 1930MHz-1990MHz; LTE FDD Band 4 Uplink: 1710MHz-1755MHz, Downlink: 2110MHz-2155MHz; LTE FDD Band 5 Uplink: 824MHz-849MHz, Downlink: 869MHz-894MHz; LTE-FDD Band 7 Uplink: 2500MHz-2570MHz, Downlink: 2620MHz-2690MHz; LTE FDD Band 12 Uplink: 699MHz-716MHz, Downlink: 729MHz-746MHz; LTE FDD Band 13 Uplink: 777MHz-787MHz, Downlink: 746MHz-756MHz; LTE FDD Band 17 Uplink: 704MHz-716MHz, Downlink: 734MHz-746MHz; LTE TDD Band 38 Uplink&Downlink: 2570MHz-2620MHz, LTE TDD Band 41 Uplink&Downlink: 2535MHz-2655MHz, LTE TDD Band 66 Uplink: 1710MHz-1780MHz, Downlink: 2110MHz-2200MHz;
Type of Modulation:	QPSK/16QAM/64QAM(Only Downlink)
Power Class	Class 3
SIM Card:	SIM 1 and SIM 2 is a chipset unit and tested as a single chipset. The SIM 1 is chosen for test.
Antenna:	PIFA Antenna
Antenna gain:	Band 2: -0.64 dBi, Band 4: -0.69dBi, Band 5: -0.98dBi, Band 7: -1.22dBi, Band 12: -1.35 dBi, Band 13: -1.11 dBi, Band 17: -1.4 dBi, Band 38: -0.95 dBi, Band 41: -1.24 dBi, Band 66: -0.72 dBi
Adapter	Model: SGCH0018 Input: AC 100-240V~50-60Hz ,0.5A Output: DC 5V⎓3A, DC 9V⎓2A, 18W
Battery	DC 3.87V, 5100mAh, 19.73Wh
Power supply	DC 3.87V from battery or DC 5V from Adapter.
Extreme Vol. Limits:	DC 3.29 to DC 4.45V (Nominal DC 3.87V)（Note 1）

HW Version	ums5121h10_V1.0
SW Version	Acer_AC81_Ver01
** Note1: The High Voltage DC 4.45V and Low Voltage 3.29V was declared by manufacturer, The EUT couldn't be operate normally with higher or lower voltage.	

Revision History

Report No.	Version	Description	Issued Date
S23071306705005	Rev.01	Initial issue of report	Aug 22, 2023

1.2 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2AZYA-AC81** 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, 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&5/F, Building C, 1&2/F, Building E, Fenda Science Park, Sanwei Community, Hangcheng Street, Baoan District, Shenzhen ,Guangdong, 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

1.5 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

1.6 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.

1.7 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 2/4/5/7/12/13/17/38/41/66

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

For the fundamental investigation of radiated emissions, the EUT is investigated for vertical and horizontal antenna orientations and X Y and Z orientations of the EUT alone. After the investigations the worst case was determined to be at X orientation for all LTE bands.

2. SYSTEM TEST CONFIGURATION

2.1 EUT CONFIGURATION

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

2.2 EUT EXERCISE

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

2.3 CONFIGURATION OF EUT SYSTEM

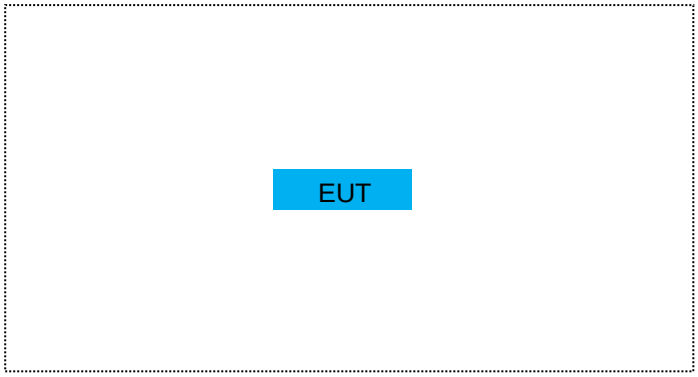
Table 2-1 Equipment Used in EUT System

Item	Equipment	Model No.	ID or Specification	Note
1	Mobile Phone	SOSPIRO-AC81	FCC ID: 2AZYA-AC81	EUT

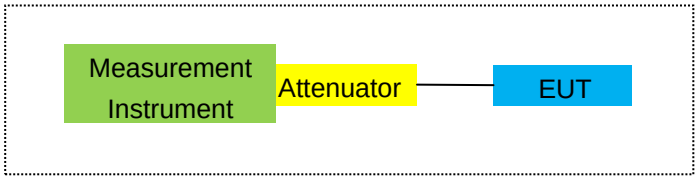
Note: All the accessories have been used during the test.
the following "EUT" in setup diagram means EUT system.

2.4 TEST SETUP

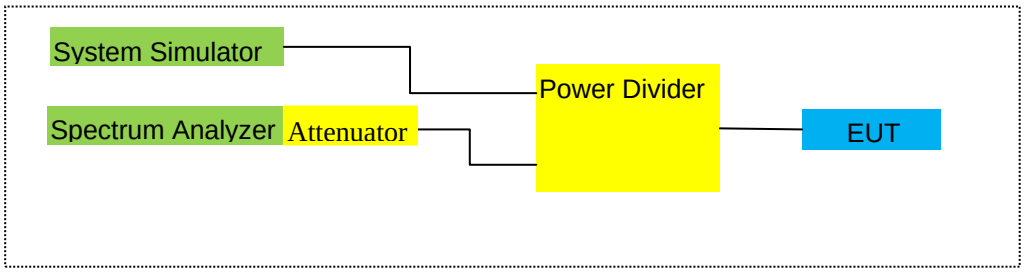
For Radiated Test Cases



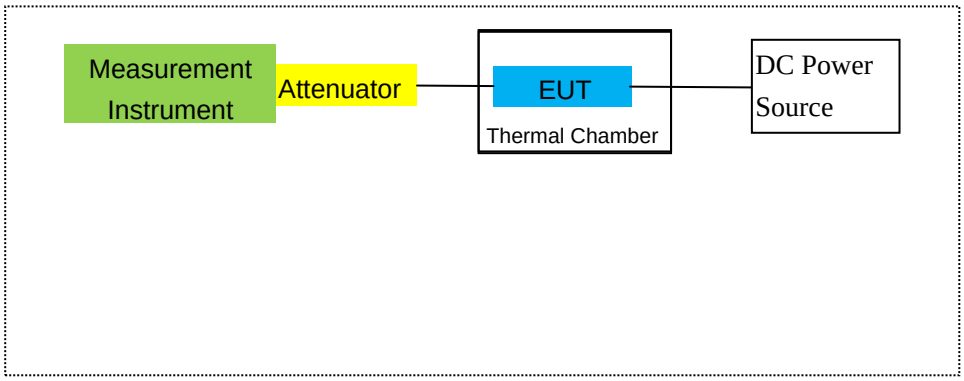
For Conducted Output Power



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	2023.05.29	2024.05.28	1 year
2	Test Receiver	R&S	ESPI	101318	2023.03.27	2024.03.26	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2023.03.16	2024.03.15	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2023.05.06	2026.05.05	3 year
5	Horn Antenna	EM	EM-AH-10180	2011071402	2022.03.31	2025.03.30	3 year
6	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2022.11.07	2023.11.06	1 year
7	Amplifier	EM	EM-30180	060538	2023.05.29	2024.05.28	1 year
8	Loop Antenna	ARA	PLA-1030/B	1029	2022.11.04	2023.11.05	1 year
9	Power Meter	R&S	NRVS	100696	2023.05.29	2024.05.28	1 year
10	Power Sensor	R&S	URV5-Z4	0395.1619.05	2023.05.29	2024.05.28	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 Receiver	R&S	ESCI	101160	2023.03.27	2024.03.26	1 year
14	LISN	R&S	ENV216	101313	2023.03.27	2024.03.26	1 year
15	LISN	EMCO	3816/2	00042990	2023.03.27	2024.03.26	1 year
16	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2023.03.27	2024.03.26	1 year
17	Passive Voltage Probe	R&S	ESH2-Z3	100196	2023.03.27	2024.03.26	1 year
18	Test Cable	N/A	C01	N/A	2023.05.06	2026.05.05	3 year
19	Spectrum Analyzer	agilent	e4440a	us44300399	2023.03.27	2024.03.26	1 year
20	test receiver	R&S	ESCI	a0304218	2023.03.27	2024.03.26	1 year
21	Thermal Chamber	Ten Billion	TTC-B3C	TBN-960502	2023.03.27	2024.03.26	1 year
22	DC Power Source	N/A	PS-6005D	20170402923	2023.05.06	2026.05.05	3 year
23	Wireless Communications Test Set	R&S	CMW500	1100.008.02	2023.05.29	2024.05.28	1 year
27	Log-Periodic Antenna	SCHWARZBECK	VULB 9162	584	2023/1/11	2024/1/10	1 year

28	Log-Periodic Antenna	SCHWARZ BECK	VULB 9162	586	2023/1/11	2024/1/10	1 year
29	ESG Vetctor Signal Generator	Agilent	E4438C	MY45093347	2023/3/21	2024/3/20	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

Band 2/4/5/7/12/13/17/38/41/66

RESULTS

PASS

Test data reference attachment.

6. BANDEDGE AND EMISSION MASK

RULE PART(S)

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

LIMITS

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

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

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

TEST PROCEDURE

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

For each band edge measurement:

Set the spectrum analyzer span to include the block edge frequency

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

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

MODES TESTED

Band 2/4/5/7/12/13/17/38/41/66

RESULTS

Test data reference attachment.

7. OUT OF BAND EMISSIONS

RULE PART(S)

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

LIMITS

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

TEST PROCEDURE

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

For each out of band emissions measurement:

□

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

MODES TESTED

□ Band 2/4/5/7/12/13/17/38/41/66

□

7.1 MEASUREMENT METHOD

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

Test data reference attachment.

8. RADIATED MEASUREMENT

8.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

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

LIMITS:

22.913(a) - The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.
27.50 (c) (10) the following power and antenna height requirements apply to stations transmitting in the 698–746 MHz band, the portable stations (hand-held devices) are limited to 3 watts ERP.
27.50 (b)(10) Portable stations (hand-held devices) transmitting in the 746–757 MHz, 758–763 MHz, 776–793 MHz, and 805–806 MHz bands are limited to 3 watts ERP.
27.50 (d)(4) The following power and antenna height requirements apply to stations transmitting in the 1710–1755 MHz and 2110–2155 MHz bands: Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP.
27.50 (h)(2) Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.
90.635(b) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

TEST PROCEDURE

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

MODES TESTED

- Band 2/4/5/7/12/13/17/38/41/66

RESULTS

Pass

8.2 LTE BAND 2

Radiated Power (EIRP) for Band 2									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	1850.7	-3.74	3.76	28.24	20.74	118.577	Horizontal	Pass
		1880	-3.64	3.91	28.22	20.67	116.681	Horizontal	Pass
		1909.3	-3.57	3.93	28.20	20.70	117.490	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-3.73	3.77	28.23	20.73	118.304	Horizontal	Pass
		1880	-3.59	3.91	28.24	20.74	118.577	Horizontal	Pass
		1908.5	-3.57	3.94	28.25	20.74	118.577	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-3.79	3.77	28.31	20.75	118.850	Horizontal	Pass
		1880	-3.69	3.91	28.22	20.62	115.345	Horizontal	Pass
		1907.5	-3.58	3.94	28.20	20.68	116.950	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1855	-3.83	3.79	28.33	20.71	117.761	Horizontal	Pass
		1880	-3.52	3.95	28.22	20.75	118.850	Horizontal	Pass
		1905	-3.52	3.97	28.19	20.70	117.490	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1857.5	-3.87	3.79	28.34	20.68	116.950	Horizontal	Pass
		1880	-3.57	3.95	28.22	20.70	117.490	Horizontal	Pass
		1902.5	-3.47	3.97	28.18	20.74	118.577	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1860	-3.96	3.81	28.35	20.58	114.288	Horizontal	Pass
		1880	-3.65	3.96	28.22	20.61	115.080	Horizontal	Pass
		1900	-3.46	4.00	28.16	20.70	117.490	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1850.7	-3.80	3.76	28.24	20.68	116.950	Vertical	Pass
		1880	-3.67	3.91	28.22	20.64	115.878	Vertical	Pass
		1909.3	-3.65	3.93	28.20	20.62	115.345	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-3.76	3.77	28.23	20.70	117.490	Vertical	Pass
		1880	-3.66	3.91	28.24	20.67	116.681	Vertical	Pass
		1908.5	-3.65	3.94	28.25	20.66	116.413	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-3.84	3.77	28.31	20.70	117.490	Vertical	Pass
		1880	-3.61	3.91	28.22	20.70	117.490	Vertical	Pass
		1907.5	-3.65	3.94	28.20	20.61	115.080	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1855	-3.89	3.79	28.33	20.65	116.145	Vertical	Pass
		1880	-3.58	3.95	28.22	20.69	117.220	Vertical	Pass
		1905	-3.52	3.97	28.19	20.70	117.490	Vertical	Pass

15.0MHz Band QPSK	1/#Mid	1857.5	-3.93	3.79	28.34	20.62	115.345	Vertical	Pass
		1880	-3.57	3.95	28.22	20.70	117.490	Vertical	Pass
		1902.5	-3.52	3.97	28.18	20.69	117.220	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	1860	-3.75	3.81	28.35	20.79	119.950	Vertical	Pass
		1880	-3.46	3.96	28.22	20.80	120.226	Vertical	Pass
		1900	-3.39	4.00	28.16	20.77	119.399	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	-4.15	3.76	28.24	20.33	107.895	Horizontal	Pass
		1880	-3.91	3.91	28.22	20.40	109.648	Horizontal	Pass
		1909.3	-3.94	3.93	28.20	20.33	107.895	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-4.04	3.77	28.23	20.42	110.154	Horizontal	Pass
		1880	-3.97	3.91	28.24	20.36	108.643	Horizontal	Pass
		1908.5	-3.93	3.94	28.25	20.38	109.144	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-4.22	3.77	28.31	20.32	107.647	Horizontal	Pass
		1880	-3.86	3.91	28.22	20.45	110.917	Horizontal	Pass
		1907.5	-3.84	3.94	28.20	20.42	110.154	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-4.22	3.79	28.33	20.32	107.647	Horizontal	Pass
		1880	-3.88	3.95	28.22	20.39	109.396	Horizontal	Pass
		1905	-3.80	3.97	28.19	20.42	110.154	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-4.10	3.79	28.34	20.45	110.917	Horizontal	Pass
		1880	-3.97	3.95	28.22	20.30	107.152	Horizontal	Pass
		1902.5	-3.90	3.97	28.18	20.31	107.399	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1860	-4.16	3.81	28.35	20.38	109.144	Horizontal	Pass
		1880	-3.97	3.96	28.22	20.29	106.905	Horizontal	Pass
		1900	-3.73	4.00	28.16	20.43	110.408	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1850.7	-4.09	3.76	28.24	20.39	109.396	Vertical	Pass
		1880	-3.88	3.91	28.22	20.43	110.408	Vertical	Pass
		1909.3	-3.93	3.93	28.20	20.34	108.143	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-4.12	3.77	28.23	20.34	108.143	Vertical	Pass
		1880	-4.00	3.91	28.24	20.33	107.895	Vertical	Pass
		1908.5	-3.90	3.94	28.25	20.41	109.901	Vertical	Pass
5.0MHz	1/#Mid	1852.5	-4.12	3.77	28.31	20.42	110.154	Vertical	Pass

Band 16 QAM		1880	-3.90	3.91	28.22	20.41	109.901	Vertical	Pass
		1907.5	-3.96	3.94	28.20	20.30	107.152	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-4.15	3.79	28.33	20.39	109.396	Vertical	Pass
		1880	-3.89	3.95	28.22	20.38	109.144	Vertical	Pass
		1905	-3.89	3.97	28.19	20.33	107.895	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-4.10	3.79	28.34	20.45	110.917	Vertical	Pass
		1880	-3.84	3.95	28.22	20.43	110.408	Vertical	Pass
		1902.5	-3.85	3.97	28.18	20.36	108.643	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	1860	-4.08	3.81	28.35	20.46	111.173	Vertical	Pass
		1880	-3.75	3.96	28.22	20.51	112.460	Vertical	Pass
		1900	-3.66	4.00	28.16	20.50	112.202	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	-3.05	3.12	27.58	21.41	138.357	Horizontal	Pass
		1732.5	-2.96	3.27	27.61	21.38	137.404	Horizontal	Pass
		1754.3	-3.06	3.29	27.63	21.28	134.276	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-3.13	3.13	27.61	21.35	136.458	Horizontal	Pass
		1732.5	-2.99	3.27	27.61	21.35	136.458	Horizontal	Pass
		1753.5	-2.94	3.30	27.62	21.38	137.404	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-3.20	3.13	27.63	21.30	134.896	Horizontal	Pass
		1732.5	-3.05	3.27	27.61	21.29	134.586	Horizontal	Pass
		1752.5	-2.97	3.30	27.60	21.33	135.831	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1715	-3.14	3.15	27.64	21.35	136.458	Horizontal	Pass
		1732.5	-3.04	3.31	27.61	21.26	133.660	Horizontal	Pass
		1750	-2.93	3.33	27.59	21.33	135.831	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-3.15	3.15	27.65	21.35	136.458	Horizontal	Pass
		1732.5	-2.95	3.31	27.61	21.35	136.458	Horizontal	Pass
		1747.5	-2.98	3.33	27.57	21.26	133.660	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1720	-3.12	3.17	27.66	21.37	137.088	Horizontal	Pass
		1732.5	-2.99	3.32	27.61	21.30	134.896	Horizontal	Pass
		1745	-2.86	3.36	27.56	21.34	136.144	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1710.7	-3.09	3.12	27.58	21.37	137.088	Vertical	Pass
		1732.5	-3.06	3.27	27.61	21.28	134.276	Vertical	Pass
		1754.3	-2.94	3.29	27.63	21.40	138.038	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-3.19	3.13	27.61	21.29	134.586	Vertical	Pass
		1732.5	-2.95	3.27	27.61	21.39	137.721	Vertical	Pass
		1753.5	-3.06	3.30	27.62	21.26	133.660	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-3.19	3.13	27.63	21.31	135.207	Vertical	Pass
		1732.5	-3.09	3.27	27.61	21.25	133.352	Vertical	Pass
		1752.5	-3.02	3.30	27.60	21.28	134.276	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1715	-3.19	3.15	27.64	21.30	134.896	Vertical	Pass
		1732.5	-3.04	3.31	27.61	21.26	133.660	Vertical	Pass
		1750	-2.94	3.33	27.59	21.32	135.519	Vertical	Pass

15.0MHz Band QPSK	1/#Mid	1717.5	-3.22	3.15	27.65	21.28	134.276	Vertical	Pass
		1732.5	-3.04	3.31	27.61	21.26	133.660	Vertical	Pass
		1747.5	-2.87	3.33	27.57	21.37	137.088	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	1720	-3.03	3.17	27.66	21.46	139.959	Vertical	Pass
		1732.5	-2.83	3.32	27.61	21.46	139.959	Vertical	Pass
		1745	-2.75	3.36	27.56	21.45	139.637	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	-4.39	3.12	27.58	20.07	101.625	Horizontal	Pass
		1732.5	-4.30	3.27	27.61	20.04	100.925	Horizontal	Pass
		1754.3	-4.23	3.29	27.63	20.11	102.565	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-4.39	3.13	27.61	20.09	102.094	Horizontal	Pass
		1732.5	-4.26	3.27	27.61	20.08	101.859	Horizontal	Pass
		1753.5	-4.35	3.30	27.62	19.97	99.312	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-4.39	3.13	27.63	20.11	102.565	Horizontal	Pass
		1732.5	-4.41	3.27	27.61	19.93	98.401	Horizontal	Pass
		1752.5	-4.37	3.30	27.60	19.93	98.401	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-4.53	3.15	27.64	19.96	99.083	Horizontal	Pass
		1732.5	-4.24	3.31	27.61	20.06	101.391	Horizontal	Pass
		1750	-4.26	3.33	27.59	20.00	100.000	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-4.43	3.15	27.65	20.07	101.625	Horizontal	Pass
		1732.5	-4.31	3.31	27.61	19.99	99.770	Horizontal	Pass
		1747.5	-4.25	3.33	27.57	19.99	99.770	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-4.44	3.17	27.66	20.05	101.158	Horizontal	Pass
		1732.5	-4.23	3.32	27.61	20.06	101.391	Horizontal	Pass
		1745	-4.10	3.36	27.56	20.10	102.329	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	-4.45	3.12	27.58	20.01	100.231	Vertical	Pass
		1732.5	-4.37	3.27	27.61	19.97	99.312	Vertical	Pass
		1754.3	-4.35	3.29	27.63	19.99	99.770	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-4.51	3.13	27.61	19.97	99.312	Vertical	Pass
		1732.5	-4.26	3.27	27.61	20.08	101.859	Vertical	Pass
		1753.5	-4.22	3.30	27.62	20.10	102.329	Vertical	Pass
5.0MHz	1/#Mid	1712.5	-4.55	3.13	27.63	19.95	98.855	Vertical	Pass

Band 16 QAM		1732.5	-4.37	3.27	27.61	19.97	99.312	Vertical	Pass
		1752.5	-4.33	3.30	27.60	19.97	99.312	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-4.44	3.15	27.64	20.05	101.158	Vertical	Pass
		1732.5	-4.31	3.31	27.61	19.99	99.770	Vertical	Pass
		1750	-4.26	3.33	27.59	20.00	100.000	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-4.51	3.15	27.65	19.99	99.770	Vertical	Pass
		1732.5	-4.24	3.31	27.61	20.06	101.391	Vertical	Pass
		1747.5	-4.16	3.33	27.57	20.08	101.859	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-4.36	3.17	27.66	20.13	103.039	Vertical	Pass
		1732.5	-4.17	3.32	27.61	20.12	102.802	Vertical	Pass
		1745	-4.06	3.36	27.56	20.14	103.276	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	3.85	2.01	19.68	2.15	19.37	86.497	Horizontal	Pass
		836.5	3.74	2.01	19.77	2.15	19.35	86.099	Horizontal	Pass
		848.3	3.68	2.02	19.82	2.15	19.33	85.704	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	825.5	3.87	2.01	19.70	2.15	19.41	87.297	Horizontal	Pass
		836.5	3.80	2.01	19.77	2.15	19.41	87.297	Horizontal	Pass
		847.5	3.74	2.02	19.81	2.15	19.38	86.696	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	826.5	3.76	2.01	19.71	2.15	19.31	85.310	Horizontal	Pass
		836.5	3.74	2.01	19.77	2.15	19.35	86.099	Horizontal	Pass
		846.5	3.64	2.02	19.79	2.15	19.26	84.333	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	829	3.83	2.01	19.73	2.15	19.40	87.096	Horizontal	Pass
		836.5	3.77	2.01	19.77	2.15	19.38	86.696	Horizontal	Pass
		844	3.80	2.02	19.78	2.15	19.41	87.297	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	824.7	3.75	2.01	19.68	2.15	19.27	84.528	Vertical	Pass
		836.5	3.76	2.01	19.77	2.15	19.37	86.497	Vertical	Pass
		848.3	3.67	2.02	19.82	2.15	19.32	85.507	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	825.5	3.86	2.01	19.70	2.15	19.40	87.096	Vertical	Pass
		836.5	3.78	2.01	19.77	2.15	19.39	86.896	Vertical	Pass
		847.5	3.66	2.02	19.81	2.15	19.30	85.114	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	826.5	3.82	2.01	19.71	2.15	19.37	86.497	Vertical	Pass
		836.5	3.72	2.01	19.77	2.15	19.33	85.704	Vertical	Pass
		846.5	3.66	2.02	19.79	2.15	19.28	84.723	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	829	3.87	2.01	19.73	2.15	19.44	87.902	Vertical	Pass
		836.5	3.82	2.01	19.77	2.15	19.43	87.700	Vertical	Pass
		844	3.84	2.02	19.78	2.15	19.45	88.105	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	3.55	2.01	19.68	2.15	19.07	80.724	Horizontal	Pass
		836.5	3.50	2.01	19.77	2.15	19.11	81.470	Horizontal	Pass
		848.3	3.40	2.02	19.82	2.15	19.05	80.353	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	3.53	2.01	19.70	2.15	19.07	80.724	Horizontal	Pass
		836.5	3.39	2.01	19.77	2.15	19.00	79.433	Horizontal	Pass
		847.5	3.38	2.02	19.81	2.15	19.02	79.799	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	3.57	2.01	19.71	2.15	19.12	81.658	Horizontal	Pass
		836.5	3.50	2.01	19.77	2.15	19.11	81.470	Horizontal	Pass
		846.5	3.35	2.02	19.79	2.15	18.97	78.886	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	829	3.39	2.01	19.73	2.15	18.96	78.705	Horizontal	Pass
		836.5	3.32	2.01	19.77	2.15	18.93	78.163	Horizontal	Pass
		844	3.48	2.02	19.78	2.15	19.09	81.096	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	824.7	3.48	2.01	19.68	2.15	19.00	79.433	Vertical	Pass
		836.5	3.43	2.01	19.77	2.15	19.04	80.168	Vertical	Pass
		848.3	3.42	2.02	19.82	2.15	19.07	80.724	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	3.54	2.01	19.70	2.15	19.08	80.910	Vertical	Pass
		836.5	3.42	2.01	19.77	2.15	19.03	79.983	Vertical	Pass
		847.5	3.42	2.02	19.81	2.15	19.06	80.538	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	3.43	2.01	19.71	2.15	18.98	79.068	Vertical	Pass
		836.5	3.35	2.01	19.77	2.15	18.96	78.705	Vertical	Pass
		846.5	3.33	2.02	19.79	2.15	18.95	78.524	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	829	3.59	2.01	19.73	2.15	19.16	82.414	Vertical	Pass
		836.5	3.54	2.01	19.77	2.15	19.15	82.224	Vertical	Pass
		844	3.56	2.02	19.78	2.15	19.17	82.604	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)	Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band QPSK	1/#Mid	2502.5	-2.42	4.54	27.75	20.79	119.950	Horizontal	Pass
		2535	-2.25	4.69	27.72	20.78	119.674	Horizontal	Pass
		2567.5	-2.20	4.71	27.71	20.80	120.226	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	2505	-2.46	4.55	27.76	20.75	118.850	Horizontal	Pass
		2535	-2.26	4.69	27.72	20.77	119.399	Horizontal	Pass
		2565	-2.14	4.72	27.70	20.84	121.339	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	-2.47	4.55	27.77	20.75	118.850	Horizontal	Pass
		2535	-2.18	4.69	27.72	20.85	121.619	Horizontal	Pass
		2562.5	-2.24	4.72	27.69	20.73	118.304	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	2510	-2.44	4.57	27.78	20.77	119.399	Horizontal	Pass
		2535	-2.19	4.73	27.72	20.80	120.226	Horizontal	Pass
		2560	-2.06	4.75	27.68	20.87	122.180	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	2502.5	-2.39	4.54	27.75	20.82	120.781	Vertical	Pass
		2535	-2.26	4.69	27.72	20.77	119.399	Vertical	Pass
		2567.5	-2.17	4.71	27.71	20.83	121.060	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	2505	-2.37	4.55	27.76	20.84	121.339	Vertical	Pass
		2535	-2.16	4.69	27.72	20.87	122.180	Vertical	Pass
		2565	-2.12	4.72	27.70	20.86	121.899	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	-2.36	4.55	27.77	20.86	121.899	Vertical	Pass
		2535	-2.29	4.69	27.72	20.74	118.577	Vertical	Pass
		2562.5	-2.26	4.72	27.69	20.71	117.761	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	2510	-2.32	4.57	27.78	20.89	122.744	Vertical	Pass
		2535	-2.07	4.73	27.72	20.92	123.595	Vertical	Pass
		2560	-2.01	4.75	27.68	20.92	123.595	Vertical	Pass

Radiated Power (EIRP) for Band 7									
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	2502.5	-3.11	4.54	27.75	20.10	102.329	Horizontal	Pass
		2535	-2.89	4.69	27.72	20.14	103.276	Horizontal	Pass
		2567.5	-2.90	4.71	27.71	20.10	102.329	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	-3.08	4.55	27.76	20.13	103.039	Horizontal	Pass
		2535	-2.96	4.69	27.72	20.07	101.625	Horizontal	Pass
		2565	-2.85	4.72	27.70	20.13	103.039	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	-3.14	4.55	27.77	20.08	101.859	Horizontal	Pass
		2535	-2.90	4.69	27.72	20.13	103.039	Horizontal	Pass
		2562.5	-2.91	4.72	27.69	20.06	101.391	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	-3.12	4.57	27.78	20.09	102.094	Horizontal	Pass
		2535	-2.85	4.73	27.72	20.14	103.276	Horizontal	Pass
		2560	-2.78	4.75	27.68	20.15	103.514	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	2502.5	-3.13	4.54	27.75	20.08	101.859	Vertical	Pass
		2535	-2.86	4.69	27.72	20.17	103.992	Vertical	Pass
		2567.5	-2.87	4.71	27.71	20.13	103.039	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	-3.17	4.55	27.76	20.04	100.925	Vertical	Pass
		2535	-2.86	4.69	27.72	20.17	103.992	Vertical	Pass
		2565	-2.92	4.72	27.70	20.06	101.391	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	-3.09	4.55	27.77	20.13	103.039	Vertical	Pass
		2535	-2.92	4.69	27.72	20.11	102.565	Vertical	Pass
		2562.5	-2.88	4.72	27.69	20.09	102.094	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	-2.99	4.57	27.78	20.22	105.196	Vertical	Pass
		2535	-2.76	4.73	27.72	20.23	105.439	Vertical	Pass
		2560	-2.73	4.75	27.68	20.20	104.713	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)	Factor (dB)	Correction (dB)	Max. ERP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	699.7	3.91	1.91	19.21	2.15	19.06	80.538	Vertical	Pass
		707.5	3.81	1.91	19.26	2.15	19.01	79.616	Vertical	Pass
		715.3	3.74	1.93	19.34	2.15	19.00	79.433	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	700.5	3.95	1.91	19.21	2.15	19.10	81.283	Vertical	Pass
		707.5	3.83	1.91	19.26	2.15	19.03	79.983	Vertical	Pass
		714.5	3.87	1.93	19.34	2.15	19.13	81.846	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	701.5	3.85	1.91	19.23	2.15	19.02	79.799	Vertical	Pass
		707.5	3.94	1.91	19.26	2.15	19.14	82.035	Vertical	Pass
		713.5	3.81	1.92	19.33	2.15	19.07	80.724	Vertical	Pass
10.0Hz Band QPSK	1/#Mid	704	3.80	1.91	19.25	2.15	18.99	79.250	Vertical	Pass
		707.5	3.95	1.91	19.26	2.15	19.15	82.224	Vertical	Pass
		711	3.85	1.92	19.32	2.15	19.10	81.283	Vertical	Pass
1.4MHz Band QPSK	1/#Mid	699.7	3.98	1.91	19.21	2.15	19.13	81.846	Horizontal	Pass
		707.5	3.90	1.91	19.26	2.15	19.10	81.283	Horizontal	Pass
		715.3	3.87	1.93	19.34	2.15	19.13	81.846	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	700.5	3.95	1.91	19.21	2.15	19.10	81.283	Horizontal	Pass
		707.5	3.84	1.91	19.26	2.15	19.04	80.168	Horizontal	Pass
		714.5	3.86	1.93	19.34	2.15	19.12	81.658	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	701.5	3.83	1.91	19.23	2.15	19.00	79.433	Horizontal	Pass
		707.5	3.93	1.91	19.26	2.15	19.13	81.846	Horizontal	Pass
		713.5	3.87	1.92	19.33	2.15	19.13	81.846	Horizontal	Pass
10.0Hz Band QPSK	1/#Mid	704	3.98	1.91	19.25	2.15	19.17	82.604	Horizontal	Pass
		707.5	3.95	1.91	19.26	2.15	19.15	82.224	Horizontal	Pass
		711	3.93	1.92	19.32	2.15	19.18	82.794	Horizontal	Pass

Radiated Power (ERP) for Band 12										
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	699.7	3.67	1.91	19.21	2.15	18.82	76.208	Vertical	Pass
		707.5	3.53	1.91	19.26	2.15	18.73	74.645	Vertical	Pass
		715.3	3.44	1.93	19.34	2.15	18.70	74.131	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	700.5	3.70	1.91	19.21	2.15	18.85	76.736	Vertical	Pass
		707.5	3.59	1.91	19.26	2.15	18.79	75.683	Vertical	Pass
		714.5	3.45	1.93	19.34	2.15	18.71	74.302	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	701.5	3.58	1.91	19.23	2.15	18.75	74.989	Vertical	Pass
		707.5	3.49	1.91	19.26	2.15	18.69	73.961	Vertical	Pass
		713.5	3.43	1.92	19.33	2.15	18.69	73.961	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	704	3.66	1.91	19.25	2.15	18.85	76.736	Vertical	Pass
		707.5	3.55	1.91	19.26	2.15	18.75	74.989	Vertical	Pass
		711	3.43	1.92	19.32	2.15	18.68	73.790	Vertical	Pass
1.4MHz Band 16 QAM	1/#Mid	699.7	3.63	1.91	19.21	2.15	18.78	75.509	Horizontal	Pass
		707.5	3.52	1.91	19.26	2.15	18.72	74.473	Horizontal	Pass
		715.3	3.47	1.93	19.34	2.15	18.73	74.645	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	700.5	3.59	1.91	19.21	2.15	18.74	74.817	Horizontal	Pass
		707.5	3.57	1.91	19.26	2.15	18.77	75.336	Horizontal	Pass
		714.5	3.53	1.93	19.34	2.15	18.79	75.683	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	701.5	3.60	1.91	19.23	2.15	18.77	75.336	Horizontal	Pass
		707.5	3.49	1.91	19.26	2.15	18.69	73.961	Horizontal	Pass
		713.5	3.52	1.92	19.33	2.15	18.78	75.509	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	704	3.67	1.91	19.25	2.15	18.86	76.913	Horizontal	Pass
		707.5	3.66	1.91	19.26	2.15	18.86	76.913	Horizontal	Pass
		711	3.63	1.92	19.32	2.15	18.88	77.268	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. ERP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	1/#Mid	779.5	4.02	1.95	19.23	2.15	19.15	82.224	Vertical	Pass
		782	3.89	1.95	19.26	2.15	19.05	80.353	Vertical	Pass
		784.5	3.92	1.96	19.33	2.15	19.14	82.035	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	782	3.99	1.95	19.25	2.15	19.14	82.035	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	779.5	3.99	1.95	19.23	2.15	19.12	81.658	Horizontal	Pass
		782	4.02	1.95	19.26	2.15	19.18	82.794	Horizontal	Pass
		784.5	3.83	1.96	19.33	2.15	19.05	80.353	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	782	4.05	1.95	19.25	2.15	19.2	83.176	Horizontal	Pass

Radiated Power (ERP) for Band 13										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level	Cable Loss (dBm)	Factor (dB)	Correction (dB)	Max. EPR	Max. EPR	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	1/#Mid	779.5	3.17	1.95	19.23	2.15	18.30	67.608	Vertical	Pass
		782	3.14	1.95	19.26	2.15	18.30	67.608	Vertical	Pass
		784.5	3.15	1.96	19.33	2.15	18.37	68.707	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	782	3.18	1.95	19.25	2.15	18.33	68.077	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	779.5	3.26	1.95	19.23	2.15	18.39	69.024	Horizontal	Pass
		782	3.20	1.95	19.26	2.15	18.36	68.549	Horizontal	Pass
		784.5	3.08	1.96	19.33	2.15	18.30	67.608	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	782	3.25	1.95	19.25	2.15	18.4	69.183	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)

8.8 LTE BAND 17

Radiated Power (ERP) for Band 17										
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	
5.0MHz Band QPSK	1/#Mid	706.5	3.58	1.91	19.23	2.15	18.75	74.989	Vertical	Pass
		710	3.52	1.91	19.26	2.15	18.72	74.473	Vertical	Pass
		713.5	3.52	1.92	19.33	2.15	18.78	75.509	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	709	3.48	1.91	19.25	2.15	18.67	73.621	Vertical	Pass
		710	3.54	1.91	19.26	2.15	18.74	74.817	Vertical	Pass
		711	3.53	1.92	19.32	2.15	18.78	75.509	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	706.5	3.50	1.91	19.23	2.15	18.67	73.621	Horizontal	Pass
		710	3.52	1.91	19.26	2.15	18.72	74.473	Horizontal	Pass
		713.5	3.42	1.92	19.33	2.15	18.68	73.790	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	709	3.66	1.91	19.25	2.15	18.85	76.736	Horizontal	Pass
		710	3.61	1.91	19.26	2.15	18.81	76.033	Horizontal	Pass
		711	3.59	1.92	19.32	2.15	18.84	76.560	Horizontal	Pass

Radiated Power (ERP) for Band 17										
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	
5.0MHz Band 16 QAM	1/#Mid	706.5	3.33	1.91	19.23	2.15	18.50	70.795	Vertical	Pass
		710	3.39	1.91	19.26	2.15	18.59	72.277	Vertical	Pass
		713.5	3.27	1.92	19.33	2.15	18.53	71.285	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	709	3.32	1.91	19.25	2.15	18.51	70.958	Vertical	Pass
		710	3.26	1.91	19.26	2.15	18.46	70.146	Vertical	Pass
		711	3.19	1.92	19.32	2.15	18.44	69.823	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	706.5	3.37	1.91	19.23	2.15	18.54	71.450	Horizontal	Pass
		710	3.27	1.91	19.26	2.15	18.47	70.307	Horizontal	Pass
		713.5	3.32	1.92	19.33	2.15	18.58	72.111	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	709	3.45	1.91	19.25	2.15	18.64	73.114	Horizontal	Pass
		710	3.40	1.91	19.26	2.15	18.60	72.444	Horizontal	Pass
		711	3.37	1.92	19.32	2.15	18.62	72.778	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 38

Radiated Power (EIRP) for Band38									
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	25/0	2572.5	-2.76	4.44	27.75	20.55	113.501	Horizontal	Pass
		2595	-2.45	4.67	27.72	20.60	114.815	Horizontal	Pass
		2617.5	-2.50	4.62	27.71	20.59	114.551	Horizontal	Pass
10.0MHz Band QPSK	50/0	2575	-2.74	4.51	27.76	20.51	112.460	Horizontal	Pass
		2595	-2.57	4.60	27.72	20.55	113.501	Horizontal	Pass
		2615	-2.45	4.70	27.70	20.55	113.501	Horizontal	Pass
15.0MHz Band QPSK	75/0	2577.5	-2.81	4.47	27.77	20.49	111.944	Horizontal	Pass
		2595	-2.53	4.65	27.72	20.54	113.240	Horizontal	Pass
		2612.5	-2.43	4.66	27.69	20.60	114.815	Horizontal	Pass
20.0MHz Band QPSK	100/0	2580	-2.69	4.50	27.78	20.59	114.551	Horizontal	Pass
		2595	-2.51	4.66	27.72	20.55	113.501	Horizontal	Pass
		2610	-2.45	4.68	27.68	20.55	113.501	Horizontal	Pass
5.0MHz Band QPSK	25/0	2572.5	-2.72	4.48	27.75	20.55	113.501	Vertical	Pass
		2595	-2.52	4.62	27.72	20.58	114.288	Vertical	Pass
		2617.5	-2.51	4.63	27.71	20.57	114.025	Vertical	Pass
10.0MHz Band QPSK	50/0	2575	-2.74	4.46	27.76	20.56	113.763	Vertical	Pass
		2595	-2.43	4.65	27.72	20.64	115.878	Vertical	Pass
		2615	-2.52	4.69	27.70	20.49	111.944	Vertical	Pass
15.0MHz Band QPSK	75/0	2577.5	-2.70	4.47	27.77	20.60	114.815	Vertical	Pass
		2595	-2.48	4.65	27.72	20.59	114.551	Vertical	Pass
		2612.5	-2.38	4.66	27.69	20.65	116.145	Vertical	Pass
20.0MHz Band QPSK	100/0	2580	-2.57	4.53	27.78	20.68	116.950	Vertical	Pass
		2595	-2.38	4.66	27.72	20.68	116.950	Vertical	Pass
		2610	-2.34	4.68	27.68	20.66	116.413	Vertical	Pass

Radiated Power (EIRP) for Band38									
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	25/0	2572.5	-4.11	4.44	27.75	19.20	83.176	Horizontal	Pass
		2595	-3.75	4.67	27.72	19.30	85.114	Horizontal	Pass
		2617.5	-3.79	4.62	27.71	19.30	85.114	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	2575	-3.95	4.51	27.76	19.30	85.114	Horizontal	Pass
		2595	-3.86	4.60	27.72	19.26	84.333	Horizontal	Pass
		2615	-3.72	4.70	27.70	19.28	84.723	Horizontal	Pass
15.0MHz Band 16 QAM	75/0	2577.5	-4.11	4.47	27.77	19.19	82.985	Horizontal	Pass
		2595	-3.86	4.65	27.72	19.21	83.368	Horizontal	Pass
		2612.5	-3.78	4.66	27.69	19.25	84.140	Horizontal	Pass
20.0MHz Band 16 QAM	100/0	2580	-3.96	4.50	27.78	19.32	85.507	Horizontal	Pass
		2595	-3.75	4.66	27.72	19.31	85.310	Horizontal	Pass
		2610	-3.78	4.68	27.68	19.22	83.560	Horizontal	Pass
5.0MHz Band 16 QAM	25/0	2572.5	-4.02	4.48	27.75	19.25	84.140	Vertical	Pass
		2595	-3.84	4.62	27.72	19.26	84.333	Vertical	Pass
		2617.5	-3.80	4.63	27.71	19.28	84.723	Vertical	Pass
10.0MHz Band 16 QAM	50/0	2575	-4.00	4.46	27.76	19.30	85.114	Vertical	Pass
		2595	-3.81	4.65	27.72	19.26	84.333	Vertical	Pass
		2615	-3.70	4.69	27.70	19.31	85.310	Vertical	Pass
15.0MHz Band 16 QAM	75/0	2577.5	-4.02	4.47	27.77	19.28	84.723	Vertical	Pass
		2595	-3.87	4.65	27.72	19.20	83.176	Vertical	Pass
		2612.5	-3.83	4.66	27.69	19.20	83.176	Vertical	Pass
20.0MHz Band 16 QAM	100/0	2580	-3.88	4.53	27.78	19.37	86.497	Vertical	Pass
		2595	-3.70	4.66	27.72	19.36	86.298	Vertical	Pass
		2610	-3.64	4.68	27.68	19.36	86.298	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 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	2537.5	-3.56	4.54	27.75	19.65	92.257	Horizontal	Pass
		2595	-3.52	4.69	27.72	19.51	89.331	Horizontal	Pass
		2652.5	-3.45	4.71	27.71	19.55	90.157	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	2540	-3.70	4.55	27.76	19.51	89.331	Horizontal	Pass
		2595	-3.38	4.69	27.72	19.65	92.257	Horizontal	Pass
		2650	-3.37	4.72	27.70	19.61	91.411	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	2542.5	-3.72	4.55	27.77	19.50	89.125	Horizontal	Pass
		2595	-3.54	4.69	27.72	19.49	88.920	Horizontal	Pass
		2647.5	-3.33	4.72	27.69	19.64	92.045	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	2545	-3.62	4.57	27.78	19.59	90.991	Horizontal	Pass
		2595	-3.44	4.73	27.72	19.55	90.157	Horizontal	Pass
		2645	-3.35	4.75	27.68	19.58	90.782	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	2537.5	-3.65	4.54	27.75	19.56	90.365	Vertical	Pass
		2595	-3.45	4.69	27.72	19.58	90.782	Vertical	Pass
		2652.5	-3.48	4.71	27.71	19.52	89.536	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	2540	-3.68	4.55	27.76	19.53	89.743	Vertical	Pass
		2595	-3.43	4.69	27.72	19.60	91.201	Vertical	Pass
		2650	-3.48	4.72	27.70	19.50	89.125	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	2542.5	-3.69	4.55	27.77	19.53	89.743	Vertical	Pass
		2595	-3.47	4.69	27.72	19.56	90.365	Vertical	Pass
		2647.5	-3.35	4.72	27.69	19.62	91.622	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	2545	-3.53	4.57	27.78	19.68	92.897	Vertical	Pass
		2595	-3.31	4.73	27.72	19.68	92.897	Vertical	Pass
		2645	-3.25	4.75	27.68	19.68	92.897	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	2537.5	-4.28	4.54	27.75	18.93	78.163	Horizontal	Pass
		2595	-4.09	4.69	27.72	18.94	78.343	Horizontal	Pass
		2652.5	-4.15	4.71	27.71	18.85	76.736	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	2540	-4.30	4.55	27.76	18.91	77.804	Horizontal	Pass
		2595	-4.20	4.69	27.72	18.83	76.384	Horizontal	Pass
		2650	-4.02	4.72	27.70	18.96	78.705	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	2542.5	-4.39	4.55	27.77	18.83	76.384	Horizontal	Pass
		2595	-4.09	4.69	27.72	18.94	78.343	Horizontal	Pass
		2647.5	-4.03	4.72	27.69	18.94	78.343	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	2545	-4.34	4.57	27.78	18.87	77.090	Horizontal	Pass
		2595	-4.13	4.73	27.72	18.86	76.913	Horizontal	Pass
		2645	-4.00	4.75	27.68	18.93	78.163	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	2537.5	-4.28	4.54	27.75	18.93	78.163	Vertical	Pass
		2595	-4.11	4.69	27.72	18.92	77.983	Vertical	Pass
		2652.5	-4.15	4.71	27.71	18.85	76.736	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	2540	-4.29	4.55	27.76	18.92	77.983	Vertical	Pass
		2595	-4.17	4.69	27.72	18.86	76.913	Vertical	Pass
		2650	-4.13	4.72	27.70	18.85	76.736	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	2542.5	-4.32	4.55	27.77	18.90	77.625	Vertical	Pass
		2595	-4.09	4.69	27.72	18.94	78.343	Vertical	Pass
		2647.5	-4.09	4.72	27.69	18.88	77.268	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	2545	-4.24	4.57	27.78	18.97	78.886	Vertical	Pass
		2595	-3.99	4.73	27.72	19.00	79.433	Vertical	Pass
		2645	-3.96	4.75	27.68	18.97	78.886	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)

8.11 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	-3.81	3.76	28.24	20.67	116.681	Horizontal	Pass
		1745	-3.66	3.91	28.22	20.65	116.145	Horizontal	Pass
		1779.3	-3.61	3.93	28.2	20.66	116.413	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-3.78	3.77	28.23	20.68	116.950	Horizontal	Pass
		1745	-3.61	3.91	28.24	20.72	118.032	Horizontal	Pass
		1778.5	-3.63	3.94	28.25	20.68	116.950	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-3.84	3.77	28.31	20.70	117.490	Horizontal	Pass
		1745	-3.60	3.91	28.22	20.71	117.761	Horizontal	Pass
		1777.5	-3.56	3.94	28.2	20.70	117.490	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1715	-3.82	3.79	28.33	20.72	118.032	Horizontal	Pass
		1745	-3.60	3.95	28.22	20.67	116.681	Horizontal	Pass
		1775	-3.50	3.97	28.19	20.72	118.032	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-3.93	3.79	28.34	20.62	115.345	Horizontal	Pass
		1745	-3.54	3.95	28.22	20.73	118.304	Horizontal	Pass
		1772.5	-3.47	3.97	28.18	20.74	118.577	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1720	-3.81	3.81	28.35	20.73	118.304	Horizontal	Pass
		1745	-3.55	3.96	28.22	20.71	117.761	Horizontal	Pass
		1770	-3.43	4	28.16	20.73	118.304	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1710.7	-3.73	3.76	28.24	20.75	118.850	Vertical	Pass
		1745	-3.60	3.91	28.22	20.71	117.761	Vertical	Pass
		1779.3	-3.51	3.93	28.2	20.76	119.124	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-3.81	3.77	28.23	20.65	116.145	Vertical	Pass
		1745	-3.64	3.91	28.24	20.69	117.220	Vertical	Pass
		1778.5	-3.55	3.94	28.25	20.76	119.124	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-3.88	3.77	28.31	20.66	116.413	Vertical	Pass
		1745	-3.57	3.91	28.22	20.74	118.577	Vertical	Pass
		1777.5	-3.51	3.94	28.2	20.75	118.850	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1715	-3.79	3.79	28.34	20.76	119.124	Vertical	Pass
		1745	-3.60	3.95	28.22	20.67	116.681	Vertical	Pass
		1775	-3.45	3.97	28.18	20.76	119.124	Vertical	Pass
15.0MHz	1/#Mid	1717.5	-3.90	3.81	28.35	20.64	115.878	Vertical	Pass

Band QPSK		1745	-3.59	3.96	28.22	20.67	116.681	Vertical	Pass
		1772.5	-3.48	4	28.16	20.68	116.950	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	1720	-3.75	3.79	28.34	20.80	120.226	Vertical	Pass
		1745	-3.46	3.95	28.22	20.81	120.504	Vertical	Pass
		1770	-3.41	3.97	28.18	20.80	120.226	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	-4.03	3.76	28.24	20.45	110.917	Horizontal	Pass
		1745	-3.81	3.91	28.22	20.50	112.202	Horizontal	Pass
		1779.3	-3.80	3.93	28.2	20.47	111.429	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-3.94	3.77	28.23	20.52	112.720	Horizontal	Pass
		1745	-3.80	3.91	28.24	20.53	112.980	Horizontal	Pass
		1778.5	-3.78	3.94	28.25	20.53	112.980	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-3.97	3.77	28.31	20.57	114.025	Horizontal	Pass
		1745	-3.77	3.91	28.22	20.54	113.240	Horizontal	Pass
		1777.5	-3.74	3.94	28.2	20.52	112.720	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-4.03	3.79	28.33	20.51	112.460	Horizontal	Pass
		1745	-3.76	3.95	28.22	20.51	112.460	Horizontal	Pass
		1775	-3.77	3.97	28.19	20.45	110.917	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-4.06	3.79	28.34	20.49	111.944	Horizontal	Pass
		1745	-3.83	3.95	28.22	20.44	110.662	Horizontal	Pass
		1772.5	-3.73	3.97	28.18	20.48	111.686	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-4.06	3.81	28.35	20.48	111.686	Horizontal	Pass
		1745	-3.84	3.96	28.22	20.42	110.154	Horizontal	Pass
		1770	-3.60	4	28.16	20.56	113.763	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	-4.05	3.76	28.24	20.43	110.408	Vertical	Pass
		1745	-3.80	3.91	28.22	20.51	112.460	Vertical	Pass
		1779.3	-3.82	3.93	28.2	20.45	110.917	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-3.92	3.77	28.23	20.54	113.240	Vertical	Pass
		1745	-3.90	3.91	28.24	20.43	110.408	Vertical	Pass
		1778.5	-3.75	3.94	28.25	20.56	113.763	Vertical	Pass
5.0MHz Band 16	1/#Mid	1712.5	-4.06	3.77	28.31	20.48	111.686	Vertical	Pass
		1745	-3.86	3.91	28.22	20.45	110.917	Vertical	Pass

QAM		1777.5	-3.86	3.94	28.2	20.40	109.648	Vertical	Pass
10.0MHz	1/#Mid	1715	-4.07	3.79	28.34	20.48	111.686	Vertical	Pass
Band 16		1745	-3.84	3.95	28.22	20.43	110.408	Vertical	Pass
QAM		1775	-3.71	3.97	28.18	20.50	112.202	Vertical	Pass
15.0MHz	1/#Mid	1717.5	-4.00	3.81	28.35	20.54	113.240	Vertical	Pass
Band 16		1745	-3.78	3.96	28.22	20.48	111.686	Vertical	Pass
QAM		1772.5	-3.63	4	28.16	20.53	112.980	Vertical	Pass
20.0MHz	1/#Mid	1720	-3.93	3.79	28.34	20.62	115.345	Vertical	Pass
Band 16		1745	-3.68	3.95	28.22	20.59	114.551	Vertical	Pass
QAM		1770	-3.61	3.97	28.18	20.60	114.815	Vertical	Pass

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

9. SPURIOUS RADIATION EMISSION

RULE PART(S)

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

LIMIT

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

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

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

TEST PROCEDURE

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

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

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

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

MODES TESTED

LTE Band 2/4/5/7/12/13/17/38/41/66

RESULTS

PASS

9.1 LTE BAND 2

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

Test Results for Low Channel 1850.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3701.4	-49.81	4.04	33.51	-20.34	-13	-7.34	Horizontal
3701.4	-44.76	4.04	33.51	-15.29	-13	-2.29	Vertical
5552.1	-50.12	5.24	35.84	-19.52	-13	-6.52	Vertical
5552.1	-51.07	5.24	35.84	-20.47	-13	-7.47	Horizontal
190.0	-41.37	1.43	16.02	-26.78	-13	-13.78	Vertical
287.6	-35.08	1.30	17.99	-18.39	-13	-5.39	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-46.74	4.04	33.56	-17.22	-13	-4.22	Horizontal
3760.0	-47.01	4.04	33.56	-17.49	-13	-4.49	Vertical
5640.0	-45.27	5.24	35.91	-14.60	-13	-1.60	Vertical
5640.0	-52.87	5.24	35.91	-22.20	-13	-9.20	Horizontal
196.6	-42.11	1.62	16.97	-26.76	-13	-13.76	Vertical
246.3	-41.08	1.74	15.98	-26.85	-13	-13.85	Horizontal
Test Results for High Channel 1909.3MHz							
3818.6	-44.20	4.04	34.00	-14.24	-13	-1.24	Horizontal
3818.6	-53.57	4.04	34.00	-23.61	-13	-10.61	Vertical
5727.9	-51.32	5.24	36.04	-20.52	-13	-7.52	Vertical
5727.9	-50.62	5.24	36.04	-19.82	-13	-6.82	Horizontal
201.2	-41.69	1.42	17.29	-25.82	-13	-12.82	Vertical
363.8	-38.45	1.50	17.90	-22.04	-13	-9.04	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	-52.70	4.07	33.54	-23.23	-13	-10.23	Horizontal
3720.0	-47.14	4.07	33.54	-17.67	-13	-4.67	Vertical
5580.0	-44.50	5.28	35.86	-13.92	-13	-0.92	Vertical
5580.0	-53.02	5.28	35.86	-22.44	-13	-9.44	Horizontal
186.2	-43.24	1.58	16.89	-27.92	-13	-14.92	Vertical
267.7	-44.10	1.76	17.26	-28.60	-13	-15.60	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-51.49	4.04	33.56	-21.97	-13	-8.97	Horizontal
3760.0	-44.64	4.04	33.56	-15.12	-13	-2.12	Vertical
5640.0	-44.73	5.24	35.91	-14.06	-13	-1.06	Vertical
5640.0	-52.77	5.24	35.91	-22.10	-13	-9.10	Horizontal
199.3	-44.81	1.46	16.27	-30.00	-13	-17.00	Vertical
407.9	-41.08	1.59	15.15	-27.52	-13	-14.52	Horizontal
Test Results for High Channel 1900MHz							
3800.0	-51.83	4.04	34.00	-21.87	-13	-8.87	Horizontal
3800.0	-48.79	4.04	34.00	-18.83	-13	-5.83	Vertical
5700.0	-53.58	5.24	36.04	-22.78	-13	-9.78	Vertical
5700.0	-49.09	5.24	36.04	-18.29	-13	-5.29	Horizontal
180.6	-43.94	1.36	17.39	-27.90	-13	-14.90	Vertical
452.7	-41.71	1.66	15.39	-27.98	-13	-14.98	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	-53.21	4.02	29.80	-27.43	-13	-14.43	Horizontal
3421.4	-49.56	4.02	29.80	-23.78	-13	-10.78	Vertical
5132.1	-52.71	5.24	35.84	-22.11	-13	-9.11	Vertical
5132.1	-53.13	5.24	35.84	-22.53	-13	-9.53	Horizontal
182.9	-35.77	1.68	16.04	-21.41	-13	-8.41	Vertical
301.6	-38.21	1.78	17.74	-22.25	-13	-9.25	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-49.49	4.03	30.00	-23.52	-13	-10.52	Horizontal
3465.0	-47.73	4.03	30.00	-21.76	-13	-8.76	Vertical
5197.5	-52.84	5.25	35.86	-22.23	-13	-9.23	Vertical
5197.5	-52.92	5.25	35.86	-22.31	-13	-9.31	Horizontal
182.9	-36.99	1.72	17.69	-21.02	-13	-8.02	Vertical
378.2	-36.01	1.62	16.02	-21.60	-13	-8.60	Horizontal
Test Results for High Channel 1754.3MHz							
3508.6	-53.30	4.05	30.01	-27.34	-13	-14.34	Horizontal
3508.6	-48.53	4.05	30.01	-22.57	-13	-9.57	Vertical
5262.9	-50.64	5.26	35.86	-20.04	-13	-7.04	Vertical
5262.9	-51.75	5.26	35.86	-21.15	-13	-8.15	Horizontal
178.6	-38.68	1.80	16.69	-23.79	-13	-10.79	Vertical
312.2	-41.01	1.75	16.66	-26.11	-13	-13.11	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	-49.28	4.02	29.80	-23.50	-13	-10.50	Horizontal
3440.0	-51.49	4.02	29.80	-25.71	-13	-12.71	Vertical
5160.0	-47.23	5.24	35.84	-16.63	-13	-3.63	Vertical
5160.0	-52.73	5.24	35.84	-22.13	-13	-9.13	Horizontal
202.5	-35.25	1.57	17.26	-19.56	-13	-6.56	Vertical
259.6	-34.15	1.78	16.35	-19.58	-13	-6.58	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-48.96	4.03	30.00	-22.99	-13	-9.99	Horizontal
3465.0	-51.70	4.03	30.00	-25.73	-13	-12.73	Vertical
5197.5	-48.48	5.25	35.86	-17.87	-13	-4.87	Vertical
5197.5	-49.06	5.25	35.86	-18.45	-13	-5.45	Horizontal
181.5	-39.78	1.44	17.95	-23.27	-13	-10.27	Vertical
267.6	-38.71	1.65	16.09	-24.27	-13	-11.27	Horizontal
Test Results for High Channel 1745MHz							
3490.0	-48.13	4.05	27.68	-24.50	-13	-11.50	Horizontal
3490.0	-52.92	4.05	27.68	-29.29	-13	-16.29	Vertical
5235.0	-51.11	5.26	35.86	-20.51	-13	-7.51	Vertical
5235.0	-49.53	5.26	35.86	-18.93	-13	-5.93	Horizontal
190.9	-37.17	1.61	16.85	-21.93	-13	-8.93	Vertical
293.4	-36.52	1.61	15.19	-22.94	-13	-9.94	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	-49.41	2.78	27.50	-24.69	-13	-11.69	Horizontal
1649.4	-45.64	2.78	27.50	-20.92	-13	-7.92	Vertical
2474.1	-46.03	2.90	27.80	-21.13	-13	-8.13	Vertical
2474.1	-49.73	2.90	27.80	-24.83	-13	-11.83	Horizontal
175.3	-39.41	1.76	17.59	-23.58	-13	-10.58	Vertical
333.1	-39.16	1.63	15.87	-24.92	-13	-11.92	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-53.83	2.80	27.48	-29.15	-13	-16.15	Horizontal
1673.0	-47.85	2.80	27.48	-23.17	-13	-10.17	Vertical
2509.5	-47.70	2.91	27.70	-22.91	-13	-9.91	Vertical
2509.5	-51.70	2.91	27.70	-26.91	-13	-13.91	Horizontal
180.5	-39.52	1.61	15.68	-25.45	-13	-12.45	Vertical
344.6	-39.69	1.59	17.52	-23.77	-13	-10.77	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-46.68	2.82	27.43	-22.07	-13	-9.07	Horizontal
1696.6	-48.52	2.82	27.43	-23.91	-13	-10.91	Vertical
2544.9	-49.17	2.92	27.74	-24.35	-13	-11.35	Vertical
2544.9	-53.36	2.92	27.74	-28.54	-13	-15.54	Horizontal
184.4	-41.35	1.69	16.67	-26.36	-13	-13.36	Vertical
234.8	-42.05	1.70	17.18	-26.57	-13	-13.57	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	-48.92	2.78	27.50	-24.20	-13	-11.20	Horizontal
1658.0	-53.54	2.78	27.50	-28.82	-13	-15.82	Vertical
2487.0	-48.53	2.90	27.80	-23.63	-13	-10.63	Vertical
2487.0	-49.13	2.90	27.80	-24.23	-13	-11.23	Horizontal
202.8	-35.99	1.71	15.57	-22.13	-13	-9.13	Vertical
398.8	-42.69	1.34	16.40	-27.63	-13	-14.63	Horizontal
Test Results for Mid Channel 836.5MHz							
1673.0	-50.57	2.80	27.48	-25.89	-13	-12.89	Horizontal
1673.0	-52.62	2.80	27.48	-27.94	-13	-14.94	Vertical
2509.5	-51.75	2.91	27.70	-26.96	-13	-13.96	Vertical
2509.5	-52.14	2.91	27.70	-27.35	-13	-14.35	Horizontal
205.1	-40.36	1.44	17.04	-24.76	-13	-11.76	Vertical
458.0	-39.49	1.76	17.62	-23.63	-13	-10.63	Horizontal
Test Results for High Channel 844MHz							
1688.0	-45.73	2.82	27.43	-21.12	-13	-8.12	Horizontal
1688.0	-47.13	2.82	27.43	-22.52	-13	-9.52	Vertical
2532.0	-46.96	2.92	27.74	-22.14	-13	-9.14	Vertical
2532.0	-51.55	2.92	27.74	-26.73	-13	-13.73	Horizontal
180.3	-43.40	1.74	17.70	-27.44	-13	-14.44	Vertical
430.7	-34.22	1.41	17.46	-18.16	-13	-5.16	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	-61.29	5.23	35.81	-30.71	-25	-5.71	Horizontal
5005.0	-61.57	5.23	35.81	-30.99	-25	-5.99	Vertical
7507.5	-61.55	5.67	36.85	-30.37	-25	-5.37	Vertical
7507.5	-61.23	5.67	36.85	-30.05	-25	-5.05	Horizontal
182.6	-52.87	1.73	17.97	-36.63	-25	-11.63	Vertical
276.9	-45.93	1.38	15.11	-32.20	-25	-7.20	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-60.68	5.23	35.82	-30.09	-25	-5.09	Horizontal
5070.0	-62.05	5.23	35.82	-31.46	-25	-6.46	Vertical
7605.0	-60.49	5.67	36.85	-29.31	-25	-4.31	Vertical
7605.0	-59.41	5.67	36.85	-28.23	-25	-3.23	Horizontal
186.3	-47.64	1.77	16.17	-33.23	-25	-8.23	Vertical
270.9	-49.67	1.63	15.21	-36.09	-25	-11.09	Horizontal
Test Results for High Channel 2567.5MHz							
5135.0	-61.50	5.24	35.83	-30.91	-25	-5.91	Horizontal
5135.0	-62.10	5.24	35.83	-31.51	-25	-6.51	Vertical
7702.5	-61.23	5.68	36.87	-30.04	-25	-5.04	Vertical
7702.5	-63.87	5.68	36.87	-32.68	-25	-7.68	Horizontal
206.6	-51.75	1.58	17.56	-35.77	-25	-10.77	Vertical
247.2	-45.21	1.45	16.58	-30.08	-25	-5.08	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	-59.83	5.23	35.82	-29.24	-25	-4.24	Horizontal
5020.0	-61.17	5.23	35.82	-30.58	-25	-5.58	Vertical
7530.0	-60.30	5.67	36.86	-29.11	-25	-4.11	Vertical
7530.0	-61.53	5.67	36.86	-30.34	-25	-5.34	Horizontal
202.6	-54.25	1.63	15.76	-40.12	-25	-15.12	Vertical
244.6	-50.57	1.71	15.44	-36.84	-25	-11.84	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-64.25	5.23	35.82	-33.66	-25	-8.66	Horizontal
5070.0	-64.16	5.23	35.82	-33.57	-25	-8.57	Vertical
7605.0	-64.01	5.67	36.85	-32.83	-25	-7.83	Vertical
7605.0	-59.22	5.67	36.85	-28.04	-25	-3.04	Horizontal
208.2	-44.37	1.79	16.84	-29.31	-25	-4.31	Vertical
281.5	-49.72	1.71	17.64	-33.79	-25	-8.79	Horizontal
Test Results for High Channel 2560MHz							
5120.0	-62.19	5.24	35.83	-31.60	-25	-6.60	Horizontal
5120.0	-59.61	5.24	35.83	-29.02	-25	-4.02	Vertical
7680.0	-61.07	5.70	36.88	-29.89	-25	-4.89	Vertical
7680.0	-63.07	5.70	36.88	-31.89	-25	-6.89	Horizontal
204.2	-46.32	1.79	16.84	-31.26	-25	-6.26	Vertical
387.4	-48.66	1.71	17.64	-32.73	-25	-7.73	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	-52.69	2.60	27.20	-28.09	-13	-15.09	Horizontal
1399.4	-46.53	2.60	27.20	-21.93	-13	-8.93	Vertical
2099.1	-48.20	2.85	27.54	-23.51	-13	-10.51	Vertical
2099.1	-50.49	2.85	27.54	-25.80	-13	-12.80	Horizontal
201.8	-44.94	1.49	17.78	-28.65	-13	-15.65	Vertical
423.3	-36.28	1.36	17.33	-20.31	-13	-7.31	Horizontal
Test Results For Mid Channel 707.5MHz							
1415.0	-44.64	2.61	27.28	-19.97	-13	-6.97	Horizontal
1415.0	-52.90	2.61	27.28	-28.23	-13	-15.23	Vertical
2122.5	-50.08	2.87	27.59	-25.36	-13	-12.36	Vertical
2122.5	-49.51	2.87	27.59	-24.79	-13	-11.79	Horizontal
201.0	-38.42	1.73	15.74	-24.41	-13	-11.41	Vertical
407.5	-35.44	1.62	15.79	-21.27	-13	-8.27	Horizontal
Test Results for High Channel 715.3MHz							
1430.6	-51.39	2.63	27.28	-26.74	-13	-13.74	Horizontal
1430.6	-47.58	2.63	27.28	-22.93	-13	-9.93	Vertical
2145.9	-46.07	2.88	27.60	-21.35	-13	-8.35	Vertical
2145.9	-51.53	2.88	27.60	-26.81	-13	-13.81	Horizontal
209.4	-38.49	1.61	18.00	-22.10	-13	-9.10	Vertical
358.7	-44.88	1.45	15.49	-30.85	-13	-17.85	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	-47.73	2.61	27.26	-23.08	-13	-10.08	Horizontal
1408.0	-44.64	2.61	27.26	-19.99	-13	-6.99	Vertical
2112.0	-47.40	2.87	27.58	-22.69	-13	-9.69	Vertical
2112.0	-51.10	2.87	27.58	-26.39	-13	-13.39	Horizontal
183.5	-44.98	1.31	16.97	-29.32	-13	-16.32	Vertical
452.0	-38.24	1.65	16.70	-23.19	-13	-10.19	Horizontal
Test Results for Mid Channel 707.5MHz							
1415.0	-45.70	2.61	27.28	-21.03	-13	-8.03	Horizontal
1415.0	-50.29	2.61	27.28	-25.62	-13	-12.62	Vertical
2122.5	-52.36	2.87	27.59	-27.64	-13	-14.64	Vertical
2122.5	-51.42	2.87	27.59	-26.70	-13	-13.70	Horizontal
182.3	-41.92	1.72	17.99	-25.65	-13	-12.65	Vertical
460.3	-42.94	1.73	17.94	-26.73	-13	-13.73	Horizontal
Test Results for High Channel 711MHz							
1422.0	-45.36	2.62	27.28	-20.70	-13	-7.70	Horizontal
1422.0	-49.00	2.62	27.28	-24.34	-13	-11.34	Vertical
2133.0	-51.75	2.87	27.60	-27.02	-13	-14.02	Vertical
2133.0	-51.46	2.87	27.60	-26.73	-13	-13.73	Horizontal
191.0	-43.68	1.58	15.93	-29.33	-13	-16.33	Vertical
373.1	-40.43	1.36	15.59	-26.20	-13	-13.20	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 Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1559.0	-76.29	2.61	27.28	-51.62	-40	-11.62	Horizontal
1559.0	-74.47	2.61	27.28	-49.80	-40	-9.80	Vertical
2338.5	-73.85	2.87	27.59	-49.13	-13	-36.13	Vertical
2338.5	-70.84	2.87	27.59	-46.12	-13	-33.12	Horizontal
207.9	-68.99	1.71	16.15	-54.55	-13	-41.55	Vertical
322.7	-69.05	1.41	17.32	-53.14	-13	-40.14	Horizontal
Test Results For Mid Channel 782MHz							
1564.0	-74.80	2.62	27.30	-50.12	-40	-10.12	Horizontal
1564.0	-67.63	2.62	27.30	-42.95	-40	-2.95	Vertical
2346.0	-67.76	2.87	27.62	-43.01	-13	-30.01	Vertical
2346.0	-68.14	2.87	27.62	-43.39	-13	-30.39	Horizontal
209.8	-68.19	1.42	15.25	-54.37	-13	-41.37	Vertical
256.7	-67.87	1.36	17.19	-52.04	-13	-39.04	Horizontal
Test Results for High Channel 784.5MHz							
1569.0	-69.14	2.66	27.28	-44.52	-40	-4.52	Horizontal
1569.0	-77.62	2.66	27.28	-53.00	-40	-13.00	Vertical
2353.5	-68.36	2.88	27.60	-43.64	-13	-30.64	Vertical
2353.5	-69.73	2.88	27.60	-45.01	-13	-32.01	Horizontal
187.5	-72.12	1.32	17.29	-56.15	-13	-43.15	Vertical
468.9	-67.90	1.72	16.89	-52.73	-13	-39.73	Horizontal

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

Test Results for Low Channel 782MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1564.0	-74.24	2.62	27.30	-49.56	-40	-9.56	Horizontal
1564.0	-74.48	2.62	27.30	-49.80	-40	-9.80	Vertical
2346.0	-69.44	2.87	27.62	-44.69	-13	-31.69	Vertical
2346.0	-72.57	2.87	27.62	-47.82	-13	-34.82	Horizontal
202.2	-69.71	1.35	16.91	-54.15	-13	-41.15	Vertical
461.5	-73.49	1.62	16.31	-58.80	-13	-45.80	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.

9.7 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	-47.93	2.61	27.28	-23.26	-13	-10.26	Horizontal
1413.0	-51.92	2.61	27.28	-27.25	-13	-14.25	Vertical
2119.5	-48.65	2.87	27.59	-23.93	-13	-10.93	Vertical
2119.5	-52.87	2.87	27.59	-28.15	-13	-15.15	Horizontal
178.7	-40.39	1.71	16.15	-25.95	-13	-12.95	Vertical
303.9	-44.77	1.41	17.32	-28.86	-13	-15.86	Horizontal
Test Results For Mid Channel 710MHz							
1420.0	-51.73	2.62	27.30	-27.05	-13	-14.05	Horizontal
1420.0	-47.84	2.62	27.30	-23.16	-13	-10.16	Vertical
2130.0	-53.12	2.87	27.62	-28.37	-13	-15.37	Vertical
2130.0	-53.04	2.87	27.62	-28.29	-13	-15.29	Horizontal
208.7	-39.61	1.42	15.25	-25.79	-13	-12.79	Vertical
243.6	-44.96	1.36	17.19	-29.13	-13	-16.13	Horizontal
Test Results for High Channel 713.5MHz							
1427.0	-51.30	2.66	27.28	-26.68	-13	-13.68	Horizontal
1427.0	-48.52	2.66	27.28	-23.90	-13	-10.90	Vertical
2140.5	-49.03	2.88	27.60	-24.31	-13	-11.31	Vertical
2140.5	-52.67	2.88	27.60	-27.95	-13	-14.95	Horizontal
206.7	-36.82	1.32	17.29	-20.85	-13	-7.85	Vertical
400.5	-36.28	1.72	16.89	-21.11	-13	-8.11	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	-44.95	2.62	27.30	-20.27	-13	-7.27	Horizontal
1418.0	-48.61	2.62	27.30	-23.93	-13	-10.93	Vertical
2127.0	-48.49	2.87	27.62	-23.74	-13	-10.74	Vertical
2127.0	-52.23	2.87	27.62	-27.48	-13	-14.48	Horizontal
175.7	-39.01	1.35	16.91	-23.45	-13	-10.45	Vertical
291.3	-39.76	1.62	16.31	-25.07	-13	-12.07	Horizontal
Test Results for Mid Channel 710MHz							
1420.0	-52.64	2.62	27.30	-27.96	-13	-14.96	Horizontal
1420.0	-53.60	2.62	27.30	-28.92	-13	-15.92	Vertical
2130.0	-49.22	2.87	27.62	-24.47	-13	-11.47	Vertical
2130.0	-49.55	2.87	27.62	-24.80	-13	-11.80	Horizontal
178.0	-41.79	1.51	17.14	-26.16	-13	-13.16	Vertical
321.0	-42.86	1.77	16.88	-27.75	-13	-14.75	Horizontal
Test Results for High Channel 711MHz							
1422.0	-52.34	2.62	27.30	-27.66	-13	-14.66	Horizontal
1422.0	-47.08	2.62	27.30	-22.40	-13	-9.40	Vertical
2133.0	-46.02	2.87	27.62	-21.27	-13	-8.27	Vertical
2133.0	-51.98	2.87	27.62	-27.23	-13	-14.23	Horizontal
194.9	-37.99	1.78	15.95	-23.82	-13	-10.82	Vertical
447.2	-37.13	1.34	17.95	-20.53	-13	-7.53	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 38

QPSK EIRP POWER FOR LTE BAND 38 (5MHZ BANDWIDTH)

Test Results for Low Channel 2572.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
5145.0	-62.88	5.13	35.81	-32.20	-25	-7.20	Horizontal
5145.0	-64.95	5.13	35.81	-34.27	-25	-9.27	Vertical
7717.5	-61.75	5.42	36.85	-30.32	-25	-5.32	Vertical
7717.5	-61.89	5.42	36.85	-30.46	-25	-5.46	Horizontal
190.4	-45.47	1.56	17.97	-29.06	-25	-4.06	Vertical
242.6	-52.76	1.33	15.11	-38.98	-25	-13.98	Horizontal
Test Results For Mid Channel 2595MHz							
5190.0	-60.20	5.16	35.82	-29.54	-25	-4.54	Horizontal
5190.0	-60.77	5.16	35.82	-30.11	-25	-5.11	Vertical
7785.0	-62.09	5.53	36.85	-30.77	-25	-5.77	Vertical
7785.0	-61.93	5.53	36.85	-30.61	-25	-5.61	Horizontal
207.4	-49.29	1.77	16.17	-34.88	-25	-9.88	Vertical
435.1	-48.21	1.63	15.21	-34.63	-25	-9.63	Horizontal
Test Results for High Channel 2617.5MHz							
5235.0	-63.10	5.23	35.83	-32.50	-25	-7.50	Horizontal
5235.0	-61.58	5.23	35.83	-30.98	-25	-5.98	Vertical
7852.5	-59.18	5.62	36.87	-27.93	-25	-2.93	Vertical
7852.5	-63.33	5.62	36.87	-32.08	-25	-7.08	Horizontal
177.3	-48.51	1.58	17.56	-32.53	-25	-7.53	Vertical
320.2	-50.43	1.45	16.58	-35.30	-25	-10.30	Horizontal

QPSK EIRP POWER FOR LTE BAND 38 (20MHZ BANDWIDTH)

Test Results for Low Channel 2580MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
5160.0	-59.36	5.23	35.82	-28.77	-25	-3.77	Horizontal
5160.0	-62.00	5.23	35.82	-31.41	-25	-6.41	Vertical
7740.0	-63.21	5.67	36.86	-32.02	-25	-7.02	Vertical
7740.0	-63.08	5.67	36.86	-31.89	-25	-6.89	Horizontal
199.9	-48.93	1.55	15.76	-34.72	-25	-9.72	Vertical
283.0	-53.77	1.62	15.44	-39.95	-25	-14.95	Horizontal
Test Results for Mid Channel 2595MHz							
5190.0	-63.06	5.16	35.82	-32.40	-25	-7.40	Horizontal
5190.0	-64.85	5.16	35.82	-34.19	-25	-9.19	Vertical
7785.0	-64.38	5.53	36.85	-33.06	-25	-8.06	Vertical
7785.0	-62.14	5.53	36.85	-30.82	-25	-5.82	Horizontal
202.0	-48.07	1.58	16.84	-32.81	-25	-7.81	Vertical
286.3	-46.49	1.61	17.64	-30.46	-25	-5.46	Horizontal
Test Results for High Channel 2610MHz							
5220.0	-61.63	5.24	35.83	-31.04	-25	-6.04	Horizontal
5220.0	-59.04	5.24	35.83	-28.45	-25	-3.45	Vertical
7830.0	-63.72	5.70	36.88	-32.54	-25	-7.54	Vertical
7830.0	-60.05	5.70	36.88	-28.87	-25	-3.87	Horizontal
175.9	-46.10	1.48	16.84	-30.74	-25	-5.74	Vertical
250.8	-48.59	1.59	17.64	-32.54	-25	-7.54	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.

9.9 LTE BAND 41

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

Test Results for Low Channel 2537.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
4997.0	-62.02	5.13	35.81	-31.34	-25	-6.34	Horizontal
4997.0	-62.49	5.13	35.81	-31.81	-25	-6.81	Vertical
7495.5	-61.23	5.42	36.85	-29.80	-25	-4.80	Vertical
7495.5	-59.29	5.42	36.85	-27.86	-25	-2.86	Horizontal
197.0	-49.30	1.56	17.97	-32.89	-25	-7.89	Vertical
359.1	-54.59	1.33	15.11	-40.81	-25	-15.81	Horizontal
Test Results for Mid Channel 2595MHz							
5186.0	-62.96	5.16	35.82	-32.30	-25	-7.30	Horizontal
5186.0	-59.89	5.16	35.82	-29.23	-25	-4.23	Vertical
7779.0	-60.97	5.53	36.85	-29.65	-25	-4.65	Vertical
7779.0	-59.80	5.53	36.85	-28.48	-25	-3.48	Horizontal
195.5	-51.19	1.77	16.17	-36.78	-25	-11.78	Vertical
272.6	-53.10	1.63	15.21	-39.52	-25	-14.52	Horizontal
Test Results for High Channel 2652.5MHz							
5375.0	-62.55	5.23	35.83	-31.95	-25	-6.95	Horizontal
5375.0	-60.59	5.23	35.83	-29.99	-25	-4.99	Vertical
8062.5	-62.72	5.62	36.87	-31.47	-25	-6.47	Vertical
8062.5	-59.39	5.62	36.87	-28.14	-25	-3.14	Horizontal
197.1	-47.86	1.58	17.56	-31.88	-25	-6.88	Vertical
446.9	-53.58	1.45	16.58	-38.45	-25	-13.45	Horizontal

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

Test Results for Low Channel 2545MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
5012.0	-64.27	5.23	35.82	-33.68	-25	-8.68	Horizontal
5012.0	-60.52	5.23	35.82	-29.93	-25	-4.93	Vertical
7518.0	-61.50	5.67	36.86	-30.31	-25	-5.31	Vertical
7518.0	-63.91	5.67	36.86	-32.72	-25	-7.72	Horizontal
176.4	-48.48	1.55	15.76	-34.27	-25	-9.27	Vertical
437.7	-46.75	1.62	15.44	-32.93	-25	-7.93	Horizontal
Test Results for Mid Channel 2595MHz							
5186.0	-63.47	5.16	35.82	-32.81	-25	-7.81	Horizontal
5186.0	-64.35	5.16	35.82	-33.69	-25	-8.69	Vertical
7779.0	-59.24	5.53	36.85	-27.92	-25	-2.92	Vertical
7779.0	-64.33	5.53	36.85	-33.01	-25	-8.01	Horizontal
195.8	-46.91	1.58	16.84	-31.65	-25	-6.65	Vertical
466.4	-45.85	1.61	17.64	-29.82	-25	-4.82	Horizontal
Test Results for High Channel 2645MHz							
5360.0	-61.32	5.24	35.83	-30.73	-25	-5.73	Horizontal
5360.0	-60.14	5.24	35.83	-29.55	-25	-4.55	Vertical
8040.0	-64.52	5.70	36.88	-33.34	-25	-8.34	Vertical
8040.0	-64.42	5.70	36.88	-33.24	-25	-8.24	Horizontal
204.9	-49.44	1.48	16.84	-34.08	-25	-9.08	Vertical
426.4	-45.88	1.59	17.64	-29.83	-25	-4.83	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.

9.10 LTE BAND 66

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

Test Results for Low Channel 1710.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3421.4	-62.98	3.84	35.81	-31.01	-13	-18.01	Horizontal
3421.4	-63.36	3.84	35.81	-31.39	-13	-18.39	Vertical
5132.1	-63.73	5.18	36.85	-32.06	-13	-19.06	Vertical
5132.1	-61.56	5.18	36.85	-29.89	-13	-16.89	Horizontal
193.0	-44.23	1.56	17.97	-27.82	-13	-14.82	Vertical
278.0	-49.53	1.33	15.11	-35.75	-13	-22.75	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-64.85	3.85	35.82	-32.88	-13	-19.88	Horizontal
3490.0	-64.91	3.85	35.82	-32.94	-13	-19.94	Vertical
5235.0	-62.31	5.21	36.85	-30.67	-13	-17.67	Vertical
5235.0	-59.67	5.21	36.85	-28.03	-13	-15.03	Horizontal
194.7	-49.51	1.77	16.17	-35.10	-13	-22.10	Vertical
235.2	-44.70	1.63	15.21	-31.12	-13	-18.12	Horizontal
Test Results for High Channel 1779.3MHz							
3558.6	-64.54	3.86	35.83	-32.57	-13	-19.57	Horizontal
3558.6	-64.23	3.86	35.83	-32.26	-13	-19.26	Vertical
5337.9	-62.55	5.24	36.87	-30.92	-13	-17.92	Vertical
5337.9	-62.79	5.24	36.87	-31.16	-13	-18.16	Horizontal
191.9	-53.46	1.58	17.56	-37.48	-13	-24.48	Vertical
398.0	-47.73	1.45	16.58	-32.60	-13	-19.60	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	-60.55	3.84	35.82	-28.57	-13	-15.57	Horizontal
3440.0	-63.66	3.84	35.82	-31.68	-13	-18.68	Vertical
5160.0	-60.50	5.18	36.86	-28.82	-13	-15.82	Vertical
5160.0	-60.59	5.18	36.86	-28.91	-13	-15.91	Horizontal
210.2	-47.27	1.56	15.76	-33.07	-13	-20.07	Vertical
265.5	-49.22	1.33	15.44	-35.11	-13	-22.11	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-62.37	3.85	35.82	-30.40	-13	-17.40	Horizontal
3490.0	-64.22	3.85	35.82	-32.25	-13	-19.25	Vertical
5235.0	-64.62	5.21	36.85	-32.98	-13	-19.98	Vertical
5235.0	-59.20	5.21	36.85	-27.56	-13	-14.56	Horizontal
203.9	-47.09	1.77	16.84	-32.01	-13	-19.01	Vertical
248.9	-54.51	1.63	17.64	-38.50	-13	-25.50	Horizontal
Test Results for High Channel 1770MHz							
3540.0	-62.47	3.86	35.83	-30.50	-13	-17.50	Horizontal
3540.0	-63.76	3.86	35.83	-31.79	-13	-18.79	Vertical
5310.0	-60.05	5.24	36.88	-28.41	-13	-15.41	Vertical
5310.0	-64.31	5.24	36.88	-32.67	-13	-19.67	Horizontal
194.5	-46.60	1.58	16.84	-31.33	-13	-18.33	Vertical
307.7	-45.24	1.45	17.64	-29.05	-13	-16.05	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.

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 3.29, Normal, DC 3.87V and High voltage, DC 4.45V.

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 2/4/5/7/12/13/17/38/41/66

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]
3.29	1880	12.6	0.006678	2.5
3.87	1880	14.0	0.007445	2.5
4.45	1880	13.0	0.006892	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	12.3	0.006552	2.5
Extreme (50C)	1880	11.7	0.006214	2.5
Extreme (40C)	1880	13.5	0.007157	2.5
Extreme (30C)	1880	13.2	0.007010	2.5
Extreme (10C)	1880	13.5	0.007168	2.5
Extreme (0C)	1880	12.0	0.006398	2.5
Extreme (-10C)	1880	12.9	0.006860	2.5
Extreme (-20C)	1880	14.4	0.007646	2.5
Extreme (-30C)	1880	14.2	0.007558	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]
3.29	1880	9.4	0.005021	2.5
3.87	1880	8.6	0.004600	2.5
4.45	1880	8.3	0.004435	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	9.4	0.004994	2.5
Extreme (50C)	1880	8.5	0.004537	2.5
Extreme (40C)	1880	7.9	0.004191992	2.5
Extreme (30C)	1880	8.7	0.004642564	2.5
Extreme (10C)	1880	9.2	0.004868239	2.5
Extreme (0C)	1880	8.2	0.004371778	2.5
Extreme (-10C)	1880	9.4	0.004981084	2.5
Extreme (-20C)	1880	9.2	0.004905258	2.5
Extreme (-30C)	1880	8.1	0.004319587	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]
3.29	1732.5	8.6	0.004942	2.5
3.87	1732.5	9.0	0.005169	2.5
4.45	1732.5	8.0	0.004622	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	8.7	0.005036	2.5
Extreme (50C)	1732.5	8.5	0.004927	2.5
Extreme (40C)	1732.5	7.6	0.004392	2.5
Extreme (30C)	1732.5	6.3	0.003637	2.5
Extreme (10C)	1732.5	7.4	0.004284	2.5
Extreme (0C)	1732.5	8.9	0.005146	2.5
Extreme (-10C)	1732.5	8.7	0.005000	2.5
Extreme (-20C)	1732.5	6.8	0.003906	2.5
Extreme (-30C)	1732.5	8.3	0.004768	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]
3.29	1732.5	9.7	0.005627	2.5
3.87	1732.5	8.5	0.004921	2.5
4.45	1732.5	8.1	0.004653	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	9.4	0.005447	2.5
Extreme (50C)	1732.5	9.3	0.005365	2.5
Extreme (40C)	1732.5	7.9	0.004551	2.5
Extreme (30C)	1732.5	8.8	0.005088	2.5
Extreme (10C)	1732.5	8.6	0.004990	2.5
Extreme (0C)	1732.5	7.6	0.004405	2.5
Extreme (-10C)	1732.5	9.1	0.005268	2.5
Extreme (-20C)	1732.5	8.6	0.004935	2.5
Extreme (-30C)	1732.5	8.5	0.004914	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]
3.29	836.5	5.8	0.006960	2.5
3.87	836.5	6.7	0.008057	2.5
4.45	836.5	5.2	0.006247	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	6.5	0.007776	2.5
Extreme (50C)	836.5	5.4	0.006481	2.5
Extreme (40C)	836.5	6.0	0.007154	2.5
Extreme (30C)	836.5	6.3	0.007519	2.5
Extreme (10C)	836.5	5.0	0.005931	2.5
Extreme (0C)	836.5	4.9	0.005917	2.5
Extreme (-10C)	836.5	5.7	0.006808	2.5
Extreme (-20C)	836.5	6.1	0.007243	2.5
Extreme (-30C)	836.5	6.4	0.007635	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]
3.29	836.5	6.1	0.007335	2.5
3.87	836.5	7.2	0.008553	2.5
4.45	836.5	4.6	0.005553	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	6.3	0.007558	2.5
Extreme (50C)	836.5	5.9	0.007104	2.5
Extreme (40C)	836.5	6.0	0.007119	2.5
Extreme (30C)	836.5	6.5	0.007770	2.5
Extreme (10C)	836.5	5.5	0.006575	2.5
Extreme (0C)	836.5	5.3	0.006342	2.5
Extreme (-10C)	836.5	5.5	0.006523	2.5
Extreme (-20C)	836.5	6.2	0.007433	2.5
Extreme (-30C)	836.5	5.8	0.006977	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]
3.29	2535	9.7	0.003836	2.5
3.87	2535	9.1	0.003584	2.5
4.45	2535	8.4	0.003310	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2535	9.5	0.003764	2.5
Extreme (50C)	2535	8.8	0.003484	2.5
Extreme (40C)	2535	8.7	0.003445	2.5
Extreme (30C)	2535	8.8	0.003485	2.5
Extreme (10C)	2535	7.6	0.003007	2.5
Extreme (0C)	2535	8.5	0.003368	2.5
Extreme (-10C)	2535	9.5	0.003764	2.5
Extreme (-20C)	2535	8.5	0.003350	2.5
Extreme (-30C)	2535	8.3	0.003262	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]
3.29	2535	6.9	0.002722	2.5
3.87	2535	6.0	0.002386	2.5
4.45	2535	5.4	0.002117	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	5.2	0.002036	2.5
Extreme (40C)	2535	5.3	0.002100	2.5
Extreme (30C)	2535	6.6	0.002591	2.5
Extreme (10C)	2535	5.8	0.002300	2.5
Extreme (0C)	2535	5.4	0.002138	2.5
Extreme (-10C)	2535	5.0	0.001953	2.5
Extreme (-20C)	2535	5.5	0.002185	2.5
Extreme (-30C)	2535	6.1	0.002418	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]
3.29	707.5	8.7	0.012247	2.5
3.87	707.5	10.3	0.014598	2.5
4.45	707.5	8.5	0.012030	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	707.5	8.6	0.012175	2.5
Extreme (50C)	707.5	7.2	0.010115	2.5
Extreme (40C)	707.5	7.1	0.009995	2.5
Extreme (30C)	707.5	8.1	0.011412	2.5
Extreme (10C)	707.5	7.0	0.009964	2.5
Extreme (0C)	707.5	8.6	0.012162	2.5
Extreme (-10C)	707.5	8.7	0.012348	2.5
Extreme (-20C)	707.5	8.6	0.012124	2.5
Extreme (-30C)	707.5	8.1	0.011490	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]
3.29	707.5	7.2	0.010213	2.5
3.87	707.5	8.5	0.011948	2.5
4.45	707.5	7.2	0.010144	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	707.5	9.1	0.012904	2.5
Extreme (50C)	707.5	8.2	0.011534	2.5
Extreme (40C)	707.5	9.2	0.013046	2.5
Extreme (30C)	707.5	7.5	0.010647	2.5
Extreme (10C)	707.5	8.6	0.012112	2.5
Extreme (0C)	707.5	7.3	0.010325	2.5
Extreme (-10C)	707.5	7.8	0.010984	2.5
Extreme (-20C)	707.5	9.2	0.012955	2.5
Extreme (-30C)	707.5	8.1	0.011490	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]
3.29	782.0	12.5	0.016042	2.5
3.87	782.0	13.8	0.017703	2.5
4.45	782.0	13.4	0.017156	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	782.0	14.5	0.018493	2.5
Extreme (50C)	782.0	13.6	0.017449	2.5
Extreme (40C)	782.0	14.7	0.018818	2.5
Extreme (30C)	782.0	13.8	0.017606	2.5
Extreme (10C)	782.0	14.4	0.018364	2.5
Extreme (0C)	782.0	13.9	0.017780	2.5
Extreme (-10C)	782.0	13.7	0.017573	2.5
Extreme (-20C)	782.0	14.0	0.017935	2.5
Extreme (-30C)	782.0	13.7	0.017472	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]
3.29	782.0	12.5	0.016021	2.5
3.87	782.0	14.0	0.017865	2.5
4.45	782.0	13.6	0.017374	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	782.0	13.2	0.016868	2.5
Extreme (50C)	782.0	11.6	0.014777	2.5
Extreme (40C)	782.0	13.9	0.017740	2.5
Extreme (30C)	782.0	13.2	0.016892	2.5
Extreme (10C)	782.0	14.2	0.018107	2.5
Extreme (0C)	782.0	12.0	0.015340	2.5
Extreme (-10C)	782.0	12.7	0.016238	2.5
Extreme (-20C)	782.0	13.7	0.017556	2.5
Extreme (-30C)	782.0	14.4	0.018443	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]
3.29	710.0	9.4	0.013223	2.5
3.87	710.0	8.9	0.012530	2.5
4.45	710.0	8.4	0.011765	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	10.2	0.014328	2.5
Extreme (50C)	710.0	8.7	0.012231	2.5
Extreme (40C)	710.0	8.0	0.011285	2.5
Extreme (30C)	710.0	9.2	0.012925	2.5
Extreme (10C)	710.0	9.1	0.012761	2.5
Extreme (0C)	710.0	8.4	0.011837	2.5
Extreme (-10C)	710.0	8.6	0.012047	2.5
Extreme (-20C)	710.0	8.6	0.012144	2.5
Extreme (-30C)	710.0	8.5	0.012023	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]
3.29	710.0	10.3	0.014468	2.5
3.87	710.0	9.1	0.012762	2.5
4.45	710.0	8.7	0.012217	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	9.1	0.012829	2.5
Extreme (50C)	710.0	9.0	0.012712	2.5
Extreme (40C)	710.0	8.9	0.012486	2.5
Extreme (30C)	710.0	9.2	0.012892	2.5
Extreme (10C)	710.0	8.2	0.011504	2.5
Extreme (0C)	710.0	8.4	0.011841	2.5
Extreme (-10C)	710.0	9.7	0.013635	2.5
Extreme (-20C)	710.0	9.0	0.012632	2.5
Extreme (-30C)	710.0	8.2	0.011524	2.5

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

10.8 LTE BAND 38

Band 38 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]
3.29	2595	10.0	0.003862	2.5
3.87	2595	8.8	0.003387	2.5
4.45	2595	8.0	0.003065	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2595	9.3	0.003574	2.5
Extreme (50C)	2595	9.4	0.003607	2.5
Extreme (40C)	2595	8.8	0.003379	2.5
Extreme (30C)	2595	9.1	0.003498	2.5
Extreme (10C)	2595	8.6	0.003305	2.5
Extreme (0C)	2595	8.0	0.003094	2.5
Extreme (-10C)	2595	9.3	0.003597	2.5
Extreme (-20C)	2595	8.5	0.003288	2.5
Extreme (-30C)	2595	8.5	0.003261	2.5

Band 38 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]
3.29	2595	6.9	0.002659	2.5
3.87	2595	6.0	0.002321	2.5
4.45	2595	5.4	0.002091	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2595	6.9	0.002659	2.5
Extreme (50C)	2595	5.7	0.002188	2.5
Extreme (40C)	2595	5.1	0.001951	2.5
Extreme (30C)	2595	6.6	0.002552	2.5
Extreme (10C)	2595	5.7	0.002196	2.5
Extreme (0C)	2595	5.2	0.002001	2.5
Extreme (-10C)	2595	5.5	0.002112	2.5
Extreme (-20C)	2595	5.6	0.002140	2.5
Extreme (-30C)	2595	5.7	0.002180	2.5

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

10.9 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]
3.29	2595	10.4	0.004004	2.5
3.87	2595	8.8	0.003375	2.5
4.45	2595	8.6	0.003320	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2595	8.9	0.003438	2.5
Extreme (50C)	2595	8.5	0.003269	2.5
Extreme (40C)	2595	8.2	0.003144	2.5
Extreme (30C)	2595	9.3	0.003580	2.5
Extreme (10C)	2595	8.6	0.003309	2.5
Extreme (0C)	2595	8.2	0.003157	2.5
Extreme (-10C)	2595	9.1	0.003496	2.5
Extreme (-20C)	2595	8.5	0.003285	2.5
Extreme (-30C)	2595	8.7	0.003358	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]
3.29	2595	6.9	0.002661	2.5
3.87	2595	6.9	0.002648	2.5
4.45	2595	5.3	0.002026	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2595	6.9	0.002661	2.5
Extreme (50C)	2595	5.2	0.002002	2.5
Extreme (40C)	2595	5.8	0.002242	2.5
Extreme (30C)	2595	7.1	0.002732	2.5
Extreme (10C)	2595	6.1	0.002353	2.5
Extreme (0C)	2595	5.4	0.002072	2.5
Extreme (-10C)	2595	5.1	0.001948	2.5
Extreme (-20C)	2595	5.8	0.002219	2.5
Extreme (-30C)	2595	5.7	0.002184	2.5

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

10.10 LTE BAND 66

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]
3.29	1745	6.9	0.003946	2.5
3.87	1745	7.4	0.004248	2.5
4.45	1745	7.5	0.004281	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1745	5.3	0.003064	2.5
Extreme (50C)	1745	7.3	0.004159	2.5
Extreme (40C)	1745	6.5	0.003715	2.5
Extreme (30C)	1745	7.0	0.004027	2.5
Extreme (10C)	1745	7.1	0.004079	2.5
Extreme (0C)	1745	6.4	0.003653	2.5
Extreme (-10C)	1745	5.2	0.002989	2.5
Extreme (-20C)	1745	6.3	0.003633	2.5
Extreme (-30C)	1745	5.5	0.003126	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]
3.29	1745	8.7	0.005003	2.5
3.87	1745	7.0	0.004013	2.5
4.45	1745	9.3	0.005346	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1745	8.9	0.005128	2.5
Extreme (50C)	1745	7.8	0.004459	2.5
Extreme (40C)	1745	8.0	0.004592	2.5
Extreme (30C)	1745	7.8	0.004484	2.5
Extreme (10C)	1745	8.8	0.005054	2.5
Extreme (0C)	1745	6.3	0.003598	2.5
Extreme (-10C)	1745	8.2	0.004717	2.5
Extreme (-20C)	1745	8.3	0.004738	2.5
Extreme (-30C)	1745	5.3	0.003029	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.

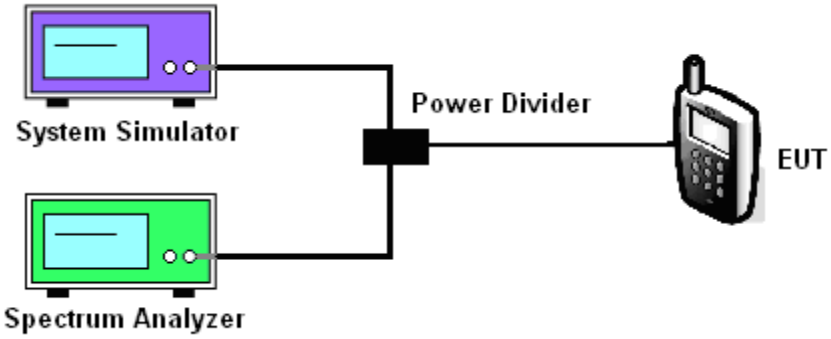
11.2 Measuring Instruments

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 2/4/5/7/12/13/17/38//41/66

Test data reference attachment.

----END OF REPORT----