FCC CFR47 PART 22H, 24E, 27
CERTIFICATION TEST REPORT
FCC ID: 2AZYA-AX64

Product：	Mobile Phone
Trade Mark：	ACER
Model Number：	SOSPIRO-AX64
Family Model：	SOSPIRO-AX64-B, SOSPIRO-AX64-N
Report No.：	S23071202212005

Prepared for

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

Carretera Mexico-Toluca No. 5324 PB, Colonia 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 PB, Colonia 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-AX64
Family Model：	SOSPIRO-AX64-B, SOSPIRO-AX64-N
Test sample number	S230712022012
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 14, 2023 ~ Aug 03, 2023

Date of Issue ..... Aug 03, 2023

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

Testing Engineer : 

(Allen Liu)

Authorized Signatory : 

(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-AX64
Family Model	SOSPIRO-AX64-B, SOSPIRO-AX64-N
Model Difference	All models are the same circuit and RF module, except the model name and colour.
FCC ID:	2AZYA-AX64
Frequency Bands:	U.S. Bands: ☒LTE FDD Band 2, 4, 5, 7, 12, 13, 17, 66 LTE TDD Band 38, 41
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: 2570 MHz to 2620 MHz LTE TDD Band 41 :Uplink & Downlink: 2535MHz-2655MHz, (see note 2) LTE FDD Band 66 Uplink: 1710MHz-1780MHz, Downlink: 2110MHz-2200MHz;
Type of Modulation:	QPSK/16QAM
Antenna:	PIFA Antenna
Antenna gain:	Band 2:-0.61 dBi; Band 4:-0.68 dBi; Band 5:-0.94 dBi; Band 7:-1.2 dBi; Band 12:-1.34 dBi; Band 13:-1 dBi; Band 17:-1.35 dBi; Band 38:-0.68 dBi; Band 41:-1.63 dBi; Band 66:-0.71 dBi;
Power Supply:	DC 3.87V/4900mAh from battery or DC 5V from Adapter.
Adapter:	Model: SGCH0018

	Input: 100-240Vca 50/60Hz 0.5A Output: 5.0Vcc 3A, 9.0Vcc 2A 18W
Extreme Vol. Limits:	DC 3.4V to DC 4.4V (Nominal DC 3.87V)（Note 1）
HW Version	ums5121h10_V1.0
SW Version	Acer_AX64_Ver01

** Note1: The High Voltage DC 4.4V and Low Voltage DC 3.4V was declared by manufacturer, The EUT couldn't be operate normally with higher or lower voltage.

Note2:channel list:

Test Frequency ID	Bandwidth(MHz)	EARFCN	Frequency (UL and DL) (MHz)
Low Range	5	40065	2537.5
	10	40090	2540
	15	40115	2542.5
	20	40140	2545
Mid Range	5/10/15/20	40640	2595
High Range	5	41215	2652.5
	10	41190	2650
	15	41165	2647.5
	20	41140	2645

1.2 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2AZYA-AX64** filing to comply with the FCC Part 22H&24E &27.

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 C63.46:2015.

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 C63.46:2015& ANSI C63.4: 2014.

FCC Registration No.:463705

IC Registration No.:9270A-1,

CNAS Registration No.:L5516

MEASUREMENT UNCERTAINTY

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

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

1.5 SPECIAL ACCESSORIES

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

1.6 WORST-CASE CONFIGURATION AND MODE

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

The device has LTE Bands of: Band 2, Band 4, Band 5, Band 7, Band 12, Band 13, Band 17, Band 38, Band 41, Band 66.

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

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

2. SYSTEM TEST CONFIGURATION

2.1 EUT CONFIGURATION

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

2.2 EUT EXERCISE

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

2.3 CONFIGURATION OF EUT SYSTEM

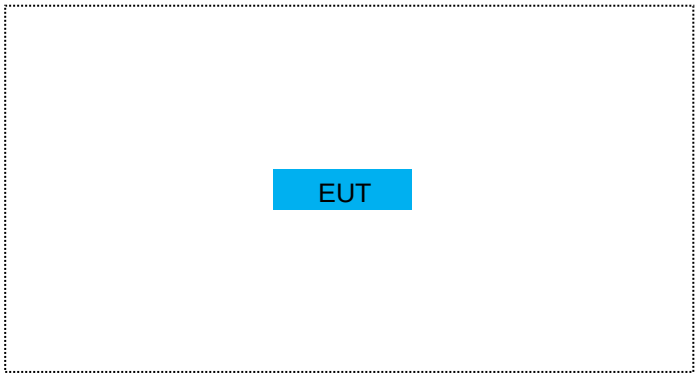
Table 2-1 Equipment Used in EUT System

Item	Equipment	Model No.	ID or Specification	Note
1	Mobile Phone	SOSPIRO-AX64	FCC ID: 2AZYA-AX64	EUT

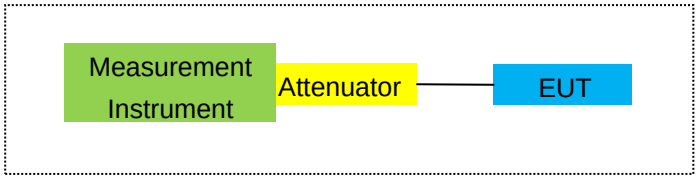
Note: All the accessories have been used during the test.
the following "EUT" in setup diagram means EUT system.

2.4 TEST SETUP

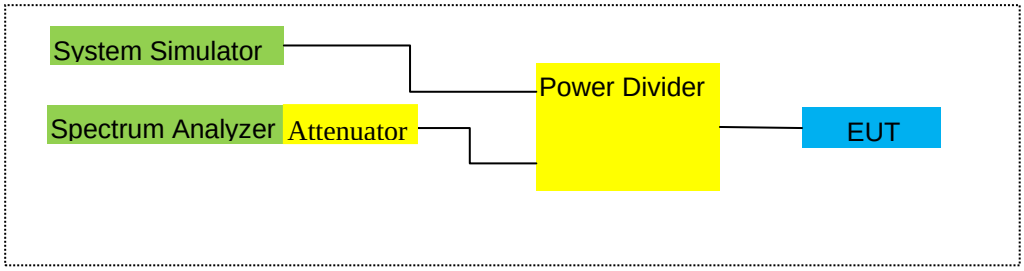
For Radiated Test Cases



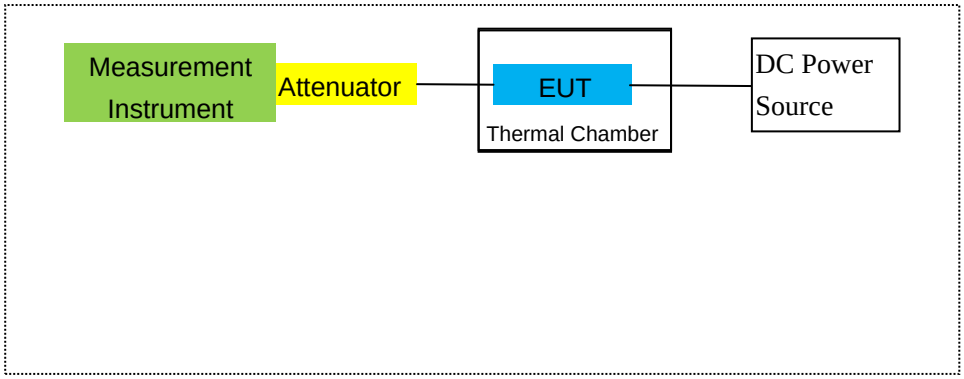
For Conducted Output Power



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	2023.03.27	2024.03.26	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	2023.03.27	2024.03.26	1 year
6	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2023.05.29	2024.05.28	1 year
7	Amplifier	EM	EM-30180	060538	2023.05.29	2024.05.28	1 year
8	Loop Antenna	ARA	PLA-1030/B	1029	2023.03.27	2024.03.26	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	2023.03.27	2024.03.26	1 year
11	Test Cable	N/A	R-01	N/A	2022.06.17	2025.06.16	3 year
12	Test Cable	N/A	R-02	N/A	2022.06.17	2025.06.16	3 year
13	Test Cable	N/A	R-03	N/A	2022.06.17	2025.06.16	3 year
14	Test Receiver	R&S	ESCI	101160	2023.03.27	2024.03.26	1 year
15	LISN	R&S	ENV216	101313	2023.03.27	2024.03.26	1 year
16	LISN	EMCO	3816/2	00042990	2023.03.27	2024.03.26	1 year
17	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2023.03.27	2024.03.26	1 year
18	Passive Voltage Probe	R&S	ESH2-Z3	100196	2023.03.27	2024.03.26	1 year
19	Test Cable	N/A	C01	N/A	2023.05.06	2026.05.05	3 year
20	Test Cable	N/A	C02	N/A	2023.05.06	2026.05.05	3 year
21	Test Cable	N/A	C03	N/A	2023.05.06	2026.05.05	3 year
22	Attenuator	MCE	24-10-34	BN9258	2023.03.27	2024.03.26	1 year
23	Spectrum Analyzer	agilent	e4440a	us44300399	2023.03.27	2024.03.26	1 year
24	test receiver	R&S	ESCI	a0304218	2023.03.27	2024.03.26	1 year
25	Communication Tester	R&S	CMU200	A0304247	2023.05.29	2024.05.28	1 year

26	Thermal Chamber	Ten Billion	TTC-B3C	TBN-960502	2023.03.27	2024.03.26	1 year
27	DC Power Source	N/A	PS-6005D	2017040292 3	2023.05.06	2026.05.05	3 year
28	MXG Vector Signal Generator	Agilent	N5182A	MY47070317	2023.05.29	2024.05.28	1 year
29	Communication Tester	R&S	CMW500	148500	2023.05.29	2024.05.28	1 year

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

4. OUTPUT POWER

4.1 OUTPUT POWER MEASUREMENT

LTE Measurement Procedure:

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

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

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

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

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

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

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

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

Test data reference attachment.

5. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

LIMITS

For reporting purposes only

TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the low, middle and high channel in each band. The -26dB bandwidth was also measured and recorded.

MODES TESTED

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

RESULTS

PASS

Test data reference attachment.

6. BANDEDGE AND EMISSION MASK

RULE PART(S)

FCC: §2.1051,§22.917(a), §24.238(a), §27.53(c)(g)(h)(m)

FCC: §2.1046, §22.913, §24.232

LIMITS

The minimum permissible attenuation level of any spurious emission is 43 + log10(P[Watts]), where P is the transmitter power in Watts.

The minimum permissible attenuation level for Band 7 is as following.

Per 27.53(g) for operations in the 698-746 MHz band, in the 100 kHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least 30 kHz may be employed to demonstrate compliance with the out-of-band emissions limit.

Per 27.53(c.5) for operations in the 776-788 MHz band, in the 100 kHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least 30 kHz may be employed to demonstrate compliance with the out-of-band emissions limit.

For all plots showing emissions in the 763 – 775MHz and 793 – 805MHz band, the FCC limit per 27.53(c.4) is 65 + 10log10(P) = -35dBm in a 6.25kHz bandwidth.

Per 27.53(m) for operations in the BRS/EBS bands, 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.

TEST PROCEDURE

The transmitter output was connected to a CMW500Test 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 display line

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

MODES TESTED

- LTE Band2/4/5/7/12/13/17/38/41/66

RESULTS

Test data reference attachment.

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

7. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051,§22.917(a), §24.238(a), §27.53(c)(g)(h)(m)

LIMITS

The minimum permissible attenuation level of any spurious emission is 43 + log10(P[Watts]), where P is the transmitter power in Watts.
The minimum permissible attenuation level for Band 7 is as following.
Per 27.53(g) for operations in the 698-746 MHz band, in the 100 kHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least 30 kHz may be employed to demonstrate compliance with the out-of-band emissions limit.
Per 27.53(c.5) for operations in the 776-788 MHz band, in the 100 kHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least 30 kHz may be employed to demonstrate compliance with the out-of-band emissions limit.
For all plots showing emissions in the 763 – 775MHz and 793 – 805MHz band, the FCC limit per 27.53(c.4) is 65 + 10log10(P) = -35dBm in a 6.25kHz bandwidth.
Per 27.53(m) for operations in the BRS/EBS bands, 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.

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

MODES TESTED

- LTE Band 2

LTE Band 4
LTE Band 5
LTE Band 7
LTE Band 12
LTE Band 13
LTE Band 17

LTE Band 38
LTE Band 41
LTE Band 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.

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

8. RADIATED MEASUREMENT

8.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §22.913(a)(2), §24.232(c) and §27.50 (h)(2), (b)(10), (c)(10), (d)(4)

LIMITS:

22.913(a) (2)- The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.
24.232 (c) Mobile and portable stations are limited to 2 watts EIRP.
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 in the 2500–2570 MHz and 2620–2690 MHz bands. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

TEST PROCEDURE

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

MODES TESTED

- LTE Band 2
- LTE Band 4
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 17
- LTE Band 38
- LTE Band 41
- LTE Band 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)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	1850.7	-2.86	3.76	28.24	21.62	145.211	Horizontal	Pass
		1880	-2.67	3.91	28.22	21.64	145.881	Horizontal	Pass
		1909.3	-2.58	3.93	28.20	21.69	147.571	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-2.92	3.77	28.23	21.54	142.561	Horizontal	Pass
		1880	-2.77	3.91	28.24	21.56	143.219	Horizontal	Pass
		1908.5	-2.64	3.94	28.25	21.67	146.893	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-2.81	3.77	28.31	21.73	148.936	Horizontal	Pass
		1880	-2.43	3.91	28.22	21.88	154.170	Horizontal	Pass
		1907.5	-2.36	3.94	28.20	21.90	154.882	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1855	-2.67	3.79	28.33	21.87	153.815	Horizontal	Pass
		1880	-2.37	3.95	28.22	21.90	154.882	Horizontal	Pass
		1905	-2.26	3.97	28.19	21.96	157.036	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1857.5	-2.63	3.79	28.34	21.92	155.597	Horizontal	Pass
		1880	-2.42	3.95	28.22	21.85	153.109	Horizontal	Pass
		1902.5	-2.28	3.97	28.18	21.93	155.955	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1860	-2.62	3.81	28.35	21.92	155.597	Horizontal	Pass
		1880	-2.29	3.96	28.22	**21.97**	157.398	Horizontal	Pass
		1900	-2.23	4.00	28.16	21.93	155.955	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1850.7	-3.22	3.76	28.24	21.26	133.660	Vertical	Pass
		1880	-3.85	3.91	28.22	20.46	111.173	Vertical	Pass
		1909.3	-3.11	3.93	28.20	21.16	130.617	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-3.93	3.77	28.23	20.53	112.980	Vertical	Pass
		1880	-3.81	3.91	28.24	20.52	112.720	Vertical	Pass
		1908.5	-3.59	3.94	28.25	20.72	118.032	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-3.88	3.77	28.31	20.66	116.413	Vertical	Pass
		1880	-3.27	3.91	28.22	21.04	127.057	Vertical	Pass
		1907.5	-3.71	3.94	28.20	20.55	113.501	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1855	-3.60	3.79	28.33	20.94	124.165	Vertical	Pass
		1880	-3.08	3.95	28.22	21.19	131.522	Vertical	Pass
		1905	-3.46	3.97	28.19	20.76	119.124	Vertical	Pass

15.0MHz Band QPSK	1/#Mid	1857.5	-3.78	3.79	28.34	20.77	119.399	Vertical	Pass
		1880	-3.19	3.95	28.22	21.08	128.233	Vertical	Pass
		1902.5	-3.20	3.97	28.18	21.01	126.183	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	1860	-3.32	3.81	28.35	21.22	132.434	Vertical	Pass
		1880	-3.19	3.96	28.22	21.07	127.938	Vertical	Pass
		1900	-3.57	4.00	28.16	20.59	114.551	Vertical	Pass

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

Radiated Power (EIRP) for Band 2									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mid	1850.7	-3.98	3.76	28.24	20.50	112.202	Horizontal	Pass
		1880	-3.45	3.91	28.22	20.86	121.899	Horizontal	Pass
		1909.3	-3.38	3.93	28.20	20.89	122.744	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-3.48	3.77	28.23	20.98	125.314	Horizontal	Pass
		1880	-3.56	3.91	28.24	20.77	119.399	Horizontal	Pass
		1908.5	-3.77	3.94	28.25	20.54	113.240	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-3.42	3.77	28.31	21.12	129.420	Horizontal	Pass
		1880	-3.33	3.91	28.22	20.98	125.314	Horizontal	Pass
		1907.5	-3.01	3.94	28.20	21.25	133.352	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-3.47	3.79	28.33	21.07	127.938	Horizontal	Pass
		1880	-3.46	3.95	28.22	20.81	120.504	Horizontal	Pass
		1905	-2.93	3.97	28.19	21.29	134.586	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-3.45	3.79	28.34	21.10	128.825	Horizontal	Pass
		1880	-3.24	3.95	28.22	21.03	126.765	Horizontal	Pass
		1902.5	-3.20	3.97	28.18	21.01	126.183	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1860	-3.34	3.81	28.35	21.20	131.826	Horizontal	Pass
		1880	-3.04	3.96	28.22	21.22	132.434	Horizontal	Pass
		1900	-2.86	4.00	28.16	**21.30**	134.896	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1850.7	-4.82	3.76	28.24	19.66	92.470	Vertical	Pass
		1880	-4.68	3.91	28.22	19.63	91.833	Vertical	Pass
		1909.3	-4.27	3.93	28.20	20.00	100.000	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-4.30	3.77	28.23	20.16	103.753	Vertical	Pass
		1880	-4.84	3.91	28.24	19.49	88.920	Vertical	Pass
		1908.5	-4.70	3.94	28.25	19.61	91.411	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-4.84	3.77	28.31	19.70	93.325	Vertical	Pass
		1880	-4.43	3.91	28.22	19.88	97.275	Vertical	Pass
		1907.5	-4.18	3.94	28.20	20.08	101.859	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-4.58	3.79	28.33	19.96	99.083	Vertical	Pass
		1880	-4.57	3.95	28.22	19.70	93.325	Vertical	Pass
		1905	-4.51	3.97	28.19	19.71	93.541	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-4.48	3.79	28.34	20.07	101.625	Vertical	Pass
		1880	-4.09	3.95	28.22	20.18	104.232	Vertical	Pass
		1902.5	-4.63	3.97	28.18	19.58	90.782	Vertical	Pass

20.0MHz	1/#Mid	1860	-4.24	3.81	28.35	20. 30	107.152	Vertical	Pass
Band 16		1880	-4.32	3.96	28.22	19. 94	98.628	Vertical	Pass
QAM		1900	-4.31	4.00	28.16	19. 85	96.605	Vertical	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Factor 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						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	1710.7	-2.77	3.12	27.58	21.69	147.571	Horizontal	Pass
		1732.5	-2.76	3.27	27.61	21.58	143.880	Horizontal	Pass
		1754.3	-2.74	3.29	27.63	21.60	144.544	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-2.94	3.13	27.61	21.54	142.561	Horizontal	Pass
		1732.5	-2.86	3.27	27.61	21.48	140.605	Horizontal	Pass
		1753.5	-2.78	3.30	27.62	21.54	142.561	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-2.71	3.13	27.63	21.79	151.008	Horizontal	Pass
		1732.5	-2.61	3.27	27.61	21.73	148.936	Horizontal	Pass
		1752.5	-2.49	3.30	27.60	21.81	151.705	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1715	-2.65	3.15	27.64	21.84	152.757	Horizontal	Pass
		1732.5	-2.42	3.31	27.61	21.88	154.170	Horizontal	Pass
		1750	-2.44	3.33	27.59	21.82	152.055	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-2.66	3.15	27.65	21.84	152.757	Horizontal	Pass
		1732.5	-2.50	3.31	27.61	21.80	151.356	Horizontal	Pass
		1747.5	-2.44	3.33	27.57	21.80	151.356	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1720	-2.60	3.17	27.66	21.89	154.525	Horizontal	Pass
		1732.5	-2.43	3.32	27.61	21.86	153.462	Horizontal	Pass
		1745	-2.37	3.36	27.56	21.83	152.405	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1710.7	-3.33	3.12	27.58	21.13	129.718	Vertical	Pass
		1732.5	-3.33	3.27	27.61	21.01	126.183	Vertical	Pass
		1754.3	-3.33	3.29	27.63	21.01	126.183	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-3.19	3.13	27.61	21.29	134.586	Vertical	Pass
		1732.5	-3.64	3.27	27.61	20.70	117.490	Vertical	Pass
		1753.5	-3.35	3.30	27.62	20.97	125.026	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-3.98	3.13	27.63	20.52	112.720	Vertical	Pass
		1732.5	-3.02	3.27	27.61	21.32	135.519	Vertical	Pass
		1752.5	-3.38	3.30	27.60	20.92	123.595	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1715	-3.26	3.15	27.64	21.23	132.739	Vertical	Pass
		1732.5	-3.82	3.31	27.61	20.48	111.686	Vertical	Pass
		1750	-3.90	3.33	27.59	20.36	108.643	Vertical	Pass
15.0MHz	1/#Mid	1717.5	-3.49	3.15	27.65	21.01	126.183	Vertical	Pass

Band		1732.5	-3.81	3.31	27.61	20.49	111.944	Vertical	Pass
QPSK		1747.5	-3.72	3.33	27.57	20.52	112.720	Vertical	Pass
20.0MHz		1720	-3.87	3.17	27.66	20.62	115.345	Vertical	Pass
Band	1/#Mid	1732.5	-3.16	3.32	27.61	21.13	129.718	Vertical	Pass
QPSK		1745	-3.53	3.36	27.56	20.67	116.681	Vertical	Pass

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

Radiated Power (EIRP) for Band 4									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mid	1710.7	-3.58	3.12	27.58	20.88	122.462	Horizontal	Pass
		1732.5	-3.43	3.27	27.61	20.91	123.310	Horizontal	Pass
		1754.3	-3.43	3.29	27.63	20.91	123.310	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-3.52	3.13	27.61	20.96	124.738	Horizontal	Pass
		1732.5	-3.65	3.27	27.61	20.69	117.220	Horizontal	Pass
		1753.5	-3.87	3.30	27.62	20.45	110.917	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-3.35	3.13	27.63	21.15	130.317	Horizontal	Pass
		1732.5	-3.31	3.27	27.61	21.03	126.765	Horizontal	Pass
		1752.5	-3.00	3.30	27.60	21.30	134.896	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-3.42	3.15	27.64	21.07	127.938	Horizontal	Pass
		1732.5	-3.61	3.31	27.61	20.69	117.220	Horizontal	Pass
		1750	-2.99	3.33	27.59	21.27	133.968	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-3.22	3.15	27.65	21.28	134.276	Horizontal	Pass
		1732.5	-3.28	3.31	27.61	21.02	126.474	Horizontal	Pass
		1747.5	-3.30	3.33	27.57	20.94	124.165	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-3.17	3.17	27.66	**21.32**	135.519	Horizontal	Pass
		1732.5	-3.18	3.32	27.61	21.11	129.122	Horizontal	Pass
		1745	-2.99	3.36	27.56	21.21	132.130	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	-4.54	3.12	27.58	19.92	98.175	Vertical	Pass
		1732.5	-4.74	3.27	27.61	19.60	91.201	Vertical	Pass
		1754.3	-4.24	3.29	27.63	20.10	102.329	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-4.95	3.13	27.61	19.53	89.743	Vertical	Pass
		1732.5	-4.08	3.27	27.61	20.26	106.170	Vertical	Pass
		1753.5	-4.32	3.30	27.62	20.00	100.000	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-4.23	3.13	27.63	20.27	106.414	Vertical	Pass
		1732.5	-4.45	3.27	27.61	19.89	97.499	Vertical	Pass
		1752.5	-4.20	3.30	27.60	20.10	102.329	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-4.57	3.15	27.64	19.92	98.175	Vertical	Pass
		1732.5	-4.14	3.31	27.61	20.16	103.753	Vertical	Pass
		1750	-4.10	3.33	27.59	20.16	103.753	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-4.52	3.15	27.65	19.98	99.541	Vertical	Pass
		1732.5	-4.34	3.31	27.61	19.96	99.083	Vertical	Pass
		1747.5	-4.18	3.33	27.57	20.06	101.391	Vertical	Pass

20.0MHz	1/#Mid	1720	-4.63	3.17	27.66	19.86	96.828	Vertical	Pass
Band 16		1732.5	-4.25	3.32	27.61	20.04	100.925	Vertical	Pass
QAM		1745	-4.06	3.36	27.56	20.14	103.276	Vertical	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Factor 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)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	3/#Mid	824.7	6.53	2.01	19.68	2.15	22.05	160.325	Horizontal	Pass
		836.5	6.41	2.01	19.77	2.15	22.02	159.221	Horizontal	Pass
		848.3	6.21	2.02	19.82	2.15	21.86	153.462	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	825.5	6.30	2.01	19.70	2.15	21.84	152.757	Horizontal	Pass
		836.5	6.20	2.01	19.77	2.15	21.81	151.705	Horizontal	Pass
		847.5	6.07	2.02	19.81	2.15	21.71	148.252	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	826.5	6.58	2.01	19.71	2.15	22.13	163.305	Horizontal	Pass
		836.5	6.46	2.01	19.77	2.15	22.07	161.065	Horizontal	Pass
		846.5	6.30	2.02	19.79	2.15	21.92	155.597	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	829	6.60	2.01	19.73	2.15	**22.17**	164.816	Horizontal	Pass
		836.5	6.55	2.01	19.77	2.15	22.16	164.437	Horizontal	Pass
		844	6.45	2.02	19.78	2.15	22.06	160.694	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	824.7	5.16	2.01	19.68	2.15	20.68	116.950	Vertical	Pass
		836.5	4.87	2.01	19.77	2.15	20.48	111.686	Vertical	Pass
		848.3	4.87	2.02	19.82	2.15	20.52	112.720	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	825.5	4.86	2.01	19.70	2.15	20.40	109.648	Vertical	Pass
		836.5	4.79	2.01	19.77	2.15	20.40	109.648	Vertical	Pass
		847.5	4.74	2.02	19.81	2.15	20.38	109.144	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	826.5	5.70	2.01	19.71	2.15	21.25	133.352	Vertical	Pass
		836.5	5.46	2.01	19.77	2.15	21.07	127.938	Vertical	Pass
		846.5	5.60	2.02	19.79	2.15	21.22	132.434	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	829	5.47	2.01	19.73	2.15	21.04	127.057	Vertical	Pass
		836.5	5.21	2.01	19.77	2.15	20.82	120.781	Vertical	Pass
		844	5.29	2.02	19.78	2.15	20.90	123.027	Vertical	Pass

Radiated Power (ERP) for Band 5

Radiated Power (ERP) for Band 5										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	3/#Mid	824.7	5.68	2.01	19.68	2.15	21.20	131.826	Horizontal	Pass
		836.5	5.61	2.01	19.77	2.15	21.22	132.434	Horizontal	Pass
		848.3	5.45	2.02	19.82	2.15	21.10	128.825	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	5.76	2.01	19.70	2.15	21.30	134.896	Horizontal	Pass
		836.5	5.47	2.01	19.77	2.15	21.08	128.233	Horizontal	Pass
		847.5	4.95	2.02	19.81	2.15	20.59	114.551	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	6.08	2.01	19.71	2.15	21.63	145.546	Horizontal	Pass
		836.5	5.85	2.01	19.77	2.15	21.46	139.959	Horizontal	Pass
		846.5	5.60	2.02	19.79	2.15	21.22	132.434	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	829	6.08	2.01	19.73	2.15	**21.65**	146.218	Horizontal	Pass
		836.5	5.80	2.01	19.77	2.15	21.41	138.357	Horizontal	Pass
		844	5.34	2.02	19.78	2.15	20.95	124.451	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	824.7	3.88	2.01	19.68	2.15	19.40	87.096	Vertical	Pass
		836.5	5.49	2.01	19.77	2.15	21.10	128.825	Vertical	Pass
		848.3	4.17	2.02	19.82	2.15	19.82	95.940	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	5.31	2.01	19.70	2.15	20.85	121.619	Vertical	Pass
		836.5	4.23	2.01	19.77	2.15	19.84	96.383	Vertical	Pass
		847.5	4.31	2.02	19.81	2.15	19.95	98.855	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	5.71	2.01	19.71	2.15	21.26	133.660	Vertical	Pass
		836.5	4.34	2.01	19.77	2.15	19.95	98.855	Vertical	Pass
		846.5	4.26	2.02	19.79	2.15	19.88	97.275	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	829	4.81	2.01	19.73	2.15	20.38	109.144	Vertical	Pass
		836.5	4.50	2.01	19.77	2.15	20.11	102.565	Vertical	Pass
		844	5.00	2.02	19.78	2.15	20.61	115.080	Vertical	Pass

Note:
ERP=EIRP-2.15
SG Level= Signal generator output
Max. EIRP Average (dBm)= Factor Gain (dB)+ SG Level (dBm)- Cable Loss(dBm)
Factor Gain(dB)=Antenna Gain(dB) + Amplifier Factor (dB)

8.5 LTE BAND 7

Radiated Power (EIRP) for Band 7									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band QPSK	1/#Mid	2502.5	-1.05	4.54	27.75	22.16	164.437	Horizontal	Pass
		2535	-0.88	4.69	27.72	22.15	164.059	Horizontal	Pass
		2567.5	-0.81	4.71	27.71	22.19	165.577	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	2505	-0.98	4.55	27.76	22.23	167.109	Horizontal	Pass
		2535	-0.79	4.69	27.72	22.24	167.494	Horizontal	Pass
		2565	-0.71	4.72	27.70	22.27	168.655	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	-0.99	4.55	27.77	22.23	167.109	Horizontal	Pass
		2535	-0.85	4.69	27.72	22.18	165.196	Horizontal	Pass
		2562.5	-0.75	4.72	27.69	22.22	166.725	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	2510	-0.93	4.57	27.78	**22.28**	169.044	Horizontal	Pass
		2535	-0.75	4.73	27.72	22.24	167.494	Horizontal	Pass
		2560	-0.71	4.75	27.68	22.22	166.725	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	2502.5	-2.31	4.54	27.75	20.90	123.027	Vertical	Pass
		2535	-1.69	4.69	27.72	21.34	136.144	Vertical	Pass
		2567.5	-1.99	4.71	27.71	21.01	126.183	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	2505	-2.11	4.55	27.76	21.10	128.825	Vertical	Pass
		2535	-2.69	4.69	27.72	20.34	108.143	Vertical	Pass
		2565	-2.11	4.72	27.70	20.87	122.180	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	-2.34	4.55	27.77	20.88	122.462	Vertical	Pass
		2535	-2.03	4.69	27.72	21.00	125.893	Vertical	Pass
		2562.5	-2.59	4.72	27.69	20.38	109.144	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	2510	-2.13	4.57	27.78	21.08	128.233	Vertical	Pass
		2535	-2.29	4.73	27.72	20.70	117.490	Vertical	Pass
		2560	-1.83	4.75	27.68	21.10	128.825	Vertical	Pass

Radiated Power (EIRP) for Band 7									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	1/#Mid	2502.5	-1.74	4.54	27.75	21.47	140.281	Horizontal	Pass
		2535	-1.43	4.69	27.72	21.60	144.544	Horizontal	Pass
		2567.5	-1.51	4.71	27.71	21.49	140.929	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	-1.63	4.55	27.76	21.58	143.880	Horizontal	Pass
		2535	-1.64	4.69	27.72	21.39	137.721	Horizontal	Pass
		2565	-1.91	4.72	27.70	21.07	127.938	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	-1.81	4.55	27.77	21.41	138.357	Horizontal	Pass
		2535	-1.78	4.69	27.72	21.25	133.352	Horizontal	Pass
		2562.5	-1.39	4.72	27.69	21.58	143.880	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	-1.69	4.57	27.78	21.52	141.906	Horizontal	Pass
		2535	-1.36	4.73	27.72	21.63	145.546	Horizontal	Pass
		2560	-1.46	4.75	27.68	21.47	140.281	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	2502.5	-2.93	4.54	27.75	20.28	106.660	Vertical	Pass
		2535	-3.47	4.69	27.72	19.56	90.365	Vertical	Pass
		2567.5	-1.73	4.71	27.71	21.27	133.968	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	-3.75	4.55	27.76	19.46	88.308	Vertical	Pass
		2535	-2.67	4.69	27.72	20.36	108.643	Vertical	Pass
		2565	-2.46	4.72	27.70	20.52	112.720	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	-3.08	4.55	27.77	20.14	103.276	Vertical	Pass
		2535	-2.50	4.69	27.72	20.53	112.980	Vertical	Pass
		2562.5	-3.09	4.72	27.69	19.88	97.275	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	-3.37	4.57	27.78	19.84	96.383	Vertical	Pass
		2535	-2.00	4.73	27.72	20.99	125.603	Vertical	Pass
		2560	-2.69	4.75	27.68	20.24	105.682	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

8.6 LTE BAND 12

Radiated Power (ERP) for Band 12										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	699.7	6.90	1.91	19.21	2.15	22.05	160.325	Vertical	Pass
		707.5	6.82	1.91	19.26	2.15	22.02	159.221	Vertical	Pass
		715.3	6.60	1.93	19.34	2.15	21.86	153.462	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	700.5	6.69	1.91	19.21	2.15	21.84	152.757	Vertical	Pass
		707.5	6.61	1.91	19.26	2.15	21.81	151.705	Vertical	Pass
		714.5	6.45	1.93	19.34	2.15	21.71	148.252	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	701.5	6.96	1.91	19.23	2.15	22.13	163.305	Vertical	Pass
		707.5	6.87	1.91	19.26	2.15	22.07	161.065	Vertical	Pass
		713.5	6.66	1.92	19.33	2.15	21.92	155.597	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	704	6.98	1.91	19.25	2.15	**22.17**	164.816	Vertical	Pass
		707.5	6.96	1.91	19.26	2.15	22.16	164.437	Vertical	Pass
		711	6.81	1.92	19.32	2.15	22.06	160.694	Vertical	Pass
1.4MHz Band QPSK	1/#Mid	699.7	5.51	1.91	19.21	2.15	20.66	116.413	Horizontal	Pass
		707.5	5.91	1.91	19.26	2.15	21.11	129.122	Horizontal	Pass
		715.3	5.43	1.93	19.34	2.15	20.69	117.220	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	700.5	5.98	1.91	19.21	2.15	21.13	129.718	Horizontal	Pass
		707.5	6.07	1.91	19.26	2.15	21.27	133.968	Horizontal	Pass
		714.5	5.23	1.93	19.34	2.15	20.49	111.944	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	701.5	5.69	1.91	19.23	2.15	20.86	121.899	Horizontal	Pass
		707.5	6.02	1.91	19.26	2.15	21.22	132.434	Horizontal	Pass
		713.5	5.20	1.92	19.33	2.15	20.46	111.173	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	704	5.91	1.91	19.25	2.15	21.10	128.825	Horizontal	Pass
		707.5	5.87	1.91	19.26	2.15	21.07	127.938	Horizontal	Pass
		711	5.70	1.92	19.32	2.15	20.95	124.451	Horizontal	Pass

Radiated Power (ERP) for Band 12										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mid	699.7	6.85	1.91	19.21	2.15	22.00	158.489	Vertical	Pass
		707.5	6.77	1.91	19.26	2.15	21.97	157.398	Vertical	Pass
		715.3	6.55	1.93	19.34	2.15	21.81	151.705	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	700.5	6.64	1.91	19.21	2.15	21.79	151.008	Vertical	Pass
		707.5	6.56	1.91	19.26	2.15	21.76	149.968	Vertical	Pass
		714.5	6.40	1.93	19.34	2.15	21.66	146.555	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	701.5	6.91	1.91	19.23	2.15	22.08	161.436	Vertical	Pass
		707.5	6.82	1.91	19.26	2.15	22.02	159.221	Vertical	Pass
		713.5	6.61	1.92	19.33	2.15	21.87	153.815	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	704	6.93	1.91	19.25	2.15	**22.12**	162.930	Vertical	Pass
		707.5	6.91	1.91	19.26	2.15	22.11	162.555	Vertical	Pass
		711	6.76	1.92	19.32	2.15	22.01	158.855	Vertical	Pass
1.4MHz Band 16 QAM	1/#Mid	699.7	5.28	1.91	19.21	2.15	20.43	110.408	Horizontal	Pass
		707.5	5.73	1.91	19.26	2.15	20.93	123.880	Horizontal	Pass
		715.3	5.34	1.93	19.34	2.15	20.60	114.815	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	700.5	5.58	1.91	19.21	2.15	20.73	118.304	Horizontal	Pass
		707.5	6.08	1.91	19.26	2.15	21.28	134.276	Horizontal	Pass
		714.5	5.63	1.93	19.34	2.15	20.89	122.744	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	701.5	5.50	1.91	19.23	2.15	20.67	116.681	Horizontal	Pass
		707.5	5.17	1.91	19.26	2.15	20.37	108.893	Horizontal	Pass
		713.5	5.50	1.92	19.33	2.15	20.76	119.124	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	704	5.99	1.91	19.25	2.15	21.18	131.220	Horizontal	Pass
		707.5	5.86	1.91	19.26	2.15	21.06	127.644	Horizontal	Pass
		711	5.25	1.92	19.32	2.15	20.50	112.202	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)

8.7 LTE BAND 13

Radiated Power (ERP) for Band 13										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band QPSK	25/0	779.5	6.84	1.91	19.23	2.15	22.01	158.85	Horizontal	Pass
		782	6.69	1.91	19.26	2.15	21.89	154.53	Horizontal	Pass
		784.5	5.22	1.92	19.33	2.15	20.48	111.69	Horizontal	Pass
10.0MHz Band QPSK	50/0	782	5.11	1.91	19.25	2.15	20.30	107.15	Horizontal	Pass
			6.99	1.91	19.26	2.15	**22.19**	165.58	Horizontal	Pass
			5.06	1.92	19.32	2.15	20.31	107.40	Horizontal	Pass
5.0MHz Band QPSK	25/0	779.5	5.41	1.91	19.23	2.15	20.58	114.29	Vertical	Pass
		782	5.09	1.91	19.26	2.15	20.29	106.91	Vertical	Pass
		784.5	5.76	1.92	19.33	2.15	21.02	126.47	Vertical	Pass
10.0MHz Band QPSK	50/0	782	5.19	1.91	19.25	2.15	20.38	109.14	Vertical	Pass
			5.82	1.91	19.26	2.15	21.02	126.47	Vertical	Pass
			5.17	1.92	19.32	2.15	20.42	110.15	Vertical	Pass

Radiated Power (ERP) for Band 13										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	25/0	779.5	6.86	1.91	19.23	2.15	22.03	159.59	Horizontal	Pass
		782	5.34	1.91	19.26	2.15	20.54	113.24	Horizontal	Pass
		784.5	5.35	1.92	19.33	2.15	20.61	115.08	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	782	5.23	1.91	19.25	2.15	20.42	110.15	Horizontal	Pass
			6.85	1.91	19.26	2.15	**22.05**	160.32	Horizontal	Pass
			5.93	1.92	19.32	2.15	21.18	131.22	Horizontal	Pass
5.0MHz Band 16 QAM	25/0	779.5	6.08	1.91	19.23	2.15	21.25	133.35	Vertical	Pass
		782	5.11	1.91	19.26	2.15	20.31	107.40	Vertical	Pass
		784.5	5.55	1.92	19.33	2.15	20.81	120.50	Vertical	Pass
10.0MHz Band 16 QAM	50/0	782	5.43	1.91	19.25	2.15	20.62	115.35	Vertical	Pass
			5.42	1.91	19.26	2.15	20.62	115.35	Vertical	Pass
			5.17	1.92	19.32	2.15	20.42	110.15	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)

8.8 LTE BAND 17

Radiated Power (ERP) for Band 17										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band QPSK	1/#Mid	706.5	7.27	1.91	19.23	2.15	22.44	175.388	Vertical	Pass
		710	7.13	1.91	19.26	2.15	22.33	171.002	Vertical	Pass
		713.5	7.03	1.92	19.33	2.15	22.29	169.434	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	709	7.28	1.91	19.25	2.15	**22.47**	176.604	Vertical	Pass
		710	7.23	1.91	19.26	2.15	22.43	174.985	Vertical	Pass
		711	7.19	1.92	19.32	2.15	22.44	175.388	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	706.5	5.12	1.91	19.23	2.15	20.29	106.905	Horizontal	Pass
		710	5.14	1.91	19.26	2.15	20.34	108.143	Horizontal	Pass
		713.5	5.51	1.92	19.33	2.15	20.77	119.399	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	709	6.47	1.91	19.25	2.15	21.66	146.555	Horizontal	Pass
		710	5.23	1.91	19.26	2.15	20.43	110.408	Horizontal	Pass
		711	6.30	1.92	19.32	2.15	21.55	142.889	Horizontal	Pass

Radiated Power (ERP) for Band 17										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	1/#Mid	706.5	6.62	1.91	19.23	2.15	21.79	151.008	Vertical	Pass
		710	6.53	1.91	19.26	2.15	21.73	148.936	Vertical	Pass
		713.5	6.33	1.92	19.33	2.15	21.59	144.212	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	709	6.16	1.91	19.25	2.15	21.35	136.458	Vertical	Pass
		710	6.69	1.91	19.26	2.15	**21.89**	154.525	Vertical	Pass
		711	6.42	1.92	19.32	2.15	21.67	146.893	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	706.5	5.11	1.91	19.23	2.15	20.28	106.660	Horizontal	Pass
		710	5.74	1.91	19.26	2.15	20.94	124.165	Horizontal	Pass
		713.5	4.99	1.92	19.33	2.15	20.25	105.925	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	709	6.02	1.91	19.25	2.15	21.21	132.130	Horizontal	Pass
		710	5.10	1.91	19.26	2.15	20.30	107.152	Horizontal	Pass
		711	5.45	1.92	19.32	2.15	20.70	117.490	Horizontal	Pass

Note:

ERP=EIRP-2.15

SG Level= Signal generator output

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

8.9 LTE BAND 38

Radiated Power (EIRP) for Band 38									
Mode	RB/RB SIZE	Frequency	Result					Polarization Of Max. ERP	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)		
5.0MHz Band QPSK	25/0	2572.5	-2.12	4.95	27.79	20.21	104.954	Vertical	Pass
		2595	-2.64	4.88	27.71	20.33	107.895	Vertical	Pass
		2617.5	-2.58	4.93	27.95	20.37	108.893	Vertical	Pass
5.0MHz Band 16 QAM	25/0	2572.5	-2.37	4.81	27.73	21.14	130.017	Vertical	Pass
		2595	-2.47	4.95	27.81	20.78	119.674	Vertical	Pass
		2617.5	-2.59	5.03	27.69	20.29	106.905	Vertical	Pass
10.0MHz Band QPSK	50/0	2575	-2.98	5.01	27.86	20.76	119.124	Vertical	Pass
		2595	-2.6	5	27.65	20.33	107.895	Vertical	Pass
		2615	-2.67	4.87	27.89	20.35	108.393	Vertical	Pass
10.0MHz Band 16 QAM	50/0	2575	-2.71	4.77	27.78	20.35	108.393	Vertical	Pass
		2595	-2.38	4.87	27.87	20.26	106.170	Vertical	Pass
		2615	-2.56	4.94	27.77	20.88	122.462	Vertical	Pass
15.0MHz Band QPSK	75/0	2577.5	-2.9	4.89	27.88	20.84	121.339	Vertical	Pass
		2595	-2.32	4.87	27.84	20.69	117.220	Vertical	Pass
		2612.5	-2.52	4.92	27.93	20.41	109.901	Vertical	Pass
15.0MHz Band 16 QAM	75/0	2577.5	-2.53	4.75	27.78	20.45	110.917	Vertical	Pass
		2595	-2.53	4.98	27.82	20.53	112.980	Vertical	Pass
		2612.5	-2.6	4.95	27.83	20.77	119.399	Vertical	Pass
20.0MHz Band QPSK	100/0	2580	-2.53	4.86	27.8	20.59	114.551	Vertical	Pass
		2595	-2.37	4.79	27.83	**21.79**	151.008	Vertical	Pass
		2610	-2.68	4.89	27.87	21.15	130.317	Vertical	Pass
20.0MHz Band 16 QAM	100/0	2580	-2.87	4.95	27.73	20.76	119.124	Vertical	Pass
		2595	-2.88	4.91	27.71	20.48	111.686	Vertical	Pass
		2610	-2.81	4.96	27.92	20.81	120.504	Vertical	Pass

Radiated Power (EIRP) for Band 38									
Mode	RB/RB SIZE	Frequency	Result					Polarization Of Max. ERP	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)		
5.0MHz Band QPSK	25/0	2572.5	-2.12	4.95	27.79	20.77	119.399	Horizontal	Pass
		2595	-2.64	4.88	27.71	20.84	121.339	Horizontal	Pass
		2617.5	-2.58	4.93	27.95	21.29	134.586	Horizontal	Pass
5.0MHz Band 16 QAM	25/0	2572.5	-2.37	4.81	27.73	20.56	113.763	Horizontal	Pass
		2595	-2.47	4.95	27.81	21.20	131.826	Horizontal	Pass
		2617.5	-2.59	5.03	27.69	21.20	131.826	Horizontal	Pass
10.0MHz Band QPSK	50/0	2575	-2.98	5.01	27.86	20.45	110.917	Horizontal	Pass
		2595	-2.6	5	27.65	21.09	128.529	Horizontal	Pass
		2615	-2.67	4.87	27.89	21.22	132.434	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	2575	-2.71	4.77	27.78	20.59	114.551	Horizontal	Pass
		2595	-2.38	4.87	27.87	20.96	124.738	Horizontal	Pass
		2615	-2.56	4.94	27.77	20.36	108.643	Horizontal	Pass
15.0MHz Band QPSK	75/0	2577.5	-2.9	4.89	27.88	20.67	116.681	Horizontal	Pass
		2595	-2.32	4.87	27.84	20.53	112.980	Horizontal	Pass
		2612.5	-2.52	4.92	27.93	20.84	121.339	Horizontal	Pass
15.0MHz Band 16 QAM	75/0	2577.5	-2.53	4.75	27.78	20.81	120.504	Horizontal	Pass
		2595	-2.53	4.98	27.82	20.64	115.878	Horizontal	Pass
		2612.5	-2.6	4.95	27.83	20.59	114.551	Horizontal	Pass
20.0MHz Band QPSK	100/0	2580	-2.53	4.86	27.8	20.36	108.643	Horizontal	Pass
		2595	-2.37	4.79	27.83	20.91	123.310	Horizontal	Pass
		2610	-2.68	4.89	27.87	21.09	128.529	Horizontal	Pass
20.0MHz Band 16 QAM	100/0	2580	-2.87	4.95	27.73	21.15	130.317	Horizontal	Pass
		2595	-2.88	4.91	27.71	20.90	123.027	Horizontal	Pass
		2610	-2.81	4.96	27.92	**21.92**	155.597	Horizontal	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Factor 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)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band QPSK	1/#Mid	2537.5	-1.44	4.54	27.75	21.77	150.314	Horizontal	Pass
		2595	-1.29	4.69	27.72	21.74	149.279	Horizontal	Pass
		2652.5	-1.17	4.71	27.71	21.83	152.405	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	2540	-1.52	4.55	27.76	21.69	147.571	Horizontal	Pass
		2595	-1.38	4.69	27.72	21.65	146.218	Horizontal	Pass
		2650	-1.37	4.72	27.70	21.61	144.877	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	2542.5	-1.35	4.55	27.77	21.87	153.815	Horizontal	Pass
		2595	-1.07	4.69	27.72	21.96	157.036	Horizontal	Pass
		2647.5	-1.12	4.72	27.69	21.85	153.109	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	2545	-0.96	4.57	27.78	**22.25**	167.880	Horizontal	Pass
		2595	-1.01	4.73	27.72	21.98	157.761	Horizontal	Pass
		2645	-1.01	4.75	27.68	21.92	155.597	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	2537.5	-1.24	4.54	27.75	21.97	157.398	Vertical	Pass
		2595	-1.15	4.69	27.72	21.88	154.170	Vertical	Pass
		2652.5	-1.13	4.71	27.71	21.87	153.815	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	2540	-1.22	4.55	27.76	21.99	158.125	Vertical	Pass
		2595	-1.06	4.69	27.72	21.97	157.398	Vertical	Pass
		2650	-1.13	4.72	27.70	21.85	153.109	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	2542.5	-2.90	4.55	27.77	20.32	107.647	Vertical	Pass
		2595	-2.28	4.69	27.72	20.75	118.850	Vertical	Pass
		2647.5	-1.75	4.72	27.69	21.22	132.434	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	2545	-2.19	4.57	27.78	21.02	126.474	Vertical	Pass
		2595	-2.54	4.73	27.72	20.45	110.917	Vertical	Pass
		2645	-1.89	4.75	27.68	21.04	127.057	Vertical	Pass

Radiated Power (EIRP) for Band 41									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	1/#Mid	2537.5	-1.50	4.54	27.75	21.71	148.252	Horizontal	Pass
		2595	-1.35	4.69	27.72	21.68	147.231	Horizontal	Pass
		2652.5	-1.23	4.71	27.71	21.77	150.314	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	2540	-1.58	4.55	27.76	21.63	145.546	Horizontal	Pass
		2595	-1.44	4.69	27.72	21.59	144.212	Horizontal	Pass
		2650	-1.43	4.72	27.70	21.55	142.889	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	2542.5	-1.41	4.55	27.77	21.81	151.705	Horizontal	Pass
		2595	-1.13	4.69	27.72	21.90	154.882	Horizontal	Pass
		2647.5	-1.18	4.72	27.69	21.79	151.008	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	2545	-1.13	4.57	27.78	22.08	161.436	Horizontal	Pass
		2595	-1.07	4.73	27.72	21.92	155.597	Horizontal	Pass
		2645	-1.07	4.75	27.68	21.86	153.462	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	2537.5	-1.30	4.54	27.75	21.91	155.239	Vertical	Pass
		2595	-1.21	4.69	27.72	21.82	152.055	Vertical	Pass
		2652.5	-1.19	4.71	27.71	21.81	151.705	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	2540	-1.28	4.55	27.76	21.93	155.955	Vertical	Pass
		2595	-1.12	4.69	27.72	21.91	155.239	Vertical	Pass
		2650	-1.19	4.72	27.70	21.79	151.008	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	2542.5	-2.75	4.55	27.77	20.47	111.429	Vertical	Pass
		2595	-2.19	4.69	27.72	20.84	121.339	Vertical	Pass
		2647.5	-2.54	4.72	27.69	20.43	110.408	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	2545	-2.21	4.57	27.78	21.00	125.893	Vertical	Pass
		2595	-1.97	4.73	27.72	21.02	126.474	Vertical	Pass
		2645	-2.53	4.75	27.68	20.40	109.648	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)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz		1710.7	-2.77	3.76	28.24	21.71	148.252	Horizontal	Pass
Band	1/#Mid	1745	-2.63	3.91	28.22	21.68	147.231	Horizontal	Pass
QPSK		1779.3	-2.50	3.93	28.2	21.77	150.314	Horizontal	Pass
3.0MHz		1711.5	-2.83	3.77	28.23	21.63	145.546	Horizontal	Pass
Band	1/#Mid	1745	-2.74	3.91	28.24	21.59	144.212	Horizontal	Pass
QPSK		1778.5	-2.76	3.94	28.25	21.55	142.889	Horizontal	Pass
5.0MHz		1712.5	-2.73	3.77	28.31	21.81	151.705	Horizontal	Pass
Band	1/#Mid	1745	-2.41	3.91	28.22	21.90	154.882	Horizontal	Pass
QPSK		1777.5	-2.47	3.94	28.2	21.79	151.008	Horizontal	Pass
10.0MHz		1715	-2.62	3.79	28.33	21.92	155.597	Horizontal	Pass
Band	1/#Mid	1745	-2.35	3.95	28.22	21.92	155.597	Horizontal	Pass
QPSK		1775	-2.36	3.97	28.19	21.86	153.462	Horizontal	Pass
15.0MHz		1717.5	-2.64	3.79	28.34	21.91	155.239	Horizontal	Pass
Band	1/#Mid	1745	-2.45	3.95	28.22	21.82	152.055	Horizontal	Pass
QPSK		1772.5	-2.40	3.97	28.18	21.81	151.705	Horizontal	Pass
20.0MHz		1720	-2.61	3.81	28.35	**21.93**	155.955	Horizontal	Pass
Band	1/#Mid	1745	-2.35	3.96	28.22	21.91	155.239	Horizontal	Pass
QPSK		1770	-2.37	4	28.16	21.79	151.008	Horizontal	Pass
1.4MHz		1710.7	-3.30	3.76	28.24	21.18	131.220	Vertical	Pass
Band	1/#Mid	1745	-3.71	3.91	28.22	20.60	114.815	Vertical	Pass
QPSK		1779.3	-3.97	3.93	28.2	20.30	107.152	Vertical	Pass
3.0MHz		1711.5	-4.18	3.77	28.23	20.28	106.660	Vertical	Pass
Band	1/#Mid	1745	-3.66	3.91	28.24	20.67	116.681	Vertical	Pass
QPSK		1778.5	-3.40	3.94	28.25	20.91	123.310	Vertical	Pass
5.0MHz		1712.5	-4.02	3.77	28.31	20.52	112.720	Vertical	Pass
Band	1/#Mid	1745	-3.40	3.91	28.22	20.91	123.310	Vertical	Pass
QPSK		1777.5	-3.32	3.94	28.2	20.94	124.165	Vertical	Pass
10.0MHz		1715	-4.02	3.79	28.34	20.53	112.980	Vertical	Pass
Band	1/#Mid	1745	-3.08	3.95	28.22	21.19	131.522	Vertical	Pass
QPSK		1775	-3.54	3.97	28.18	20.67	116.681	Vertical	Pass

15.0MHz	1/#Mid	1717.5	-3.88	3.81	28.35	20.66	116.413	Vertical	Pass
Band		1745	-3.39	3.96	28.22	20.87	122.180	Vertical	Pass
QPSK		1772.5	-3.31	4	28.16	20.85	121.619	Vertical	Pass
20.0MHz	1/#Mid	1720	-3.40	3.79	28.34	21.15	130.317	Vertical	Pass
Band		1745	-3.82	3.95	28.22	20.45	110.917	Vertical	Pass
QPSK		1770	-3.61	3.97	28.18	20.60	114.815	Vertical	Pass

Radiated Power (EIRP) for Band 66									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mid	1710.7	-3.60	3.76	28.24	20.88	122.462	Horizontal	Pass
		1745	-3.21	3.91	28.22	21.10	128.825	Horizontal	Pass
		1779.3	-3.39	3.93	28.2	20.88	122.462	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-3.99	3.77	28.23	20.47	111.429	Horizontal	Pass
		1745	-3.24	3.91	28.24	21.09	128.529	Horizontal	Pass
		1778.5	-3.53	3.94	28.25	20.78	119.674	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-3.41	3.77	28.31	21.13	129.718	Horizontal	Pass
		1745	-3.47	3.91	28.22	20.84	121.339	Horizontal	Pass
		1777.5	-3.14	3.94	28.2	21.12	129.420	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-3.46	3.79	28.33	21.08	128.233	Horizontal	Pass
		1745	-3.12	3.95	28.22	21.15	130.317	Horizontal	Pass
		1775	-3.44	3.97	28.19	20.78	119.674	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-3.45	3.79	28.34	21.10	128.825	Horizontal	Pass
		1745	-3.27	3.95	28.22	21.00	125.893	Horizontal	Pass
		1772.5	-3.06	3.97	28.18	21.15	130.317	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-3.28	3.81	28.35	21.26	133.660	Horizontal	Pass
		1745	-3.06	3.96	28.22	21.20	131.826	Horizontal	Pass
		1770	-3.00	4	28.16	21.16	130.617	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	-3.53	3.76	28.24	20.95	124.451	Vertical	Pass
		1745	-4.24	3.91	28.22	20.07	101.625	Vertical	Pass
		1779.3	-3.27	3.93	28.2	21.00	125.893	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-3.88	3.77	28.23	20.58	114.288	Vertical	Pass
		1745	-3.46	3.91	28.24	20.87	122.180	Vertical	Pass
		1778.5	-3.42	3.94	28.25	20.89	122.744	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-3.98	3.77	28.31	20.56	113.763	Vertical	Pass
		1745	-3.64	3.91	28.22	20.67	116.681	Vertical	Pass
		1777.5	-4.25	3.94	28.2	20.01	100.231	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-4.62	3.79	28.34	19.93	98.401	Vertical	Pass
		1745	-4.34	3.95	28.22	19.93	98.401	Vertical	Pass
		1775	-3.24	3.97	28.18	20.97	125.026	Vertical	Pass
15.0MHz Band 16	1/#Mid	1717.5	-4.61	3.81	28.35	19.93	98.401	Vertical	Pass
		1745	-3.43	3.96	28.22	20.83	121.060	Vertical	Pass

QAM		1772.5	-3.62	4	28.16	20.54	113.240	Vertical	Pass
20.0MHz		1720	-5.09	3.79	28.34	19.46	88.308	Vertical	Pass
Band 16	1/#Mid	1745	-3.30	3.95	28.22	20.97	125.026	Vertical	Pass
QAM		1770	-3.05	3.97	28.18	21.16	130.617	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: §2.1051,§22.917(a), §24.238(a), §27.53(c)(g)(h)(m)

LIMIT

For Band 7, the minimum permissible attenuation level of any spurious emission is 55 + log10 (P [Watts]).

The minimum permissible attenuation level of any spurious emission is 43 + log10 (P [Watts]), where P is the transmitter power in Watts.

TEST PROCEDURE

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

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

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

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

MODES TESTED

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

RESULTS

PASS

9.1 LTE BAND 2

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

Test Results for Low Channel 1850.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3701.4	-51.20	4.04	33.51	-21.73	-13	-8.73	Horizontal
3701.4	-48.41	4.04	33.51	-18.94	-13	-5.94	Vertical
5552.1	-53.21	5.24	35.84	-22.61	-13	-9.61	Vertical
5552.1	-49.88	5.24	35.84	-19.28	-13	-6.28	Horizontal
179.2	-39.99	1.43	16.02	-25.40	-13	-12.40	Vertical
361.8	-40.07	1.30	17.99	-23.38	-13	-10.38	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-52.35	4.04	33.56	-22.83	-13	-9.83	Horizontal
3760.0	-53.20	4.04	33.56	-23.68	-13	-10.68	Vertical
5640.0	-50.25	5.24	35.91	-19.58	-13	-6.58	Vertical
5640.0	-52.20	5.24	35.91	-21.53	-13	-8.53	Horizontal
204.5	-43.04	1.62	16.97	-27.69	-13	-14.69	Vertical
372.9	-34.62	1.74	15.98	-20.39	-13	-7.39	Horizontal
Test Results for High Channel 1909.3MHz							
3818.6	-49.68	4.04	34.00	-19.72	-13	-6.72	Horizontal
3818.6	-51.36	4.04	34.00	-21.40	-13	-8.40	Vertical
5727.9	-52.06	5.24	36.04	-21.26	-13	-8.26	Vertical
5727.9	-53.55	5.24	36.04	-22.75	-13	-9.75	Horizontal
181.7	-39.15	1.42	17.29	-23.28	-13	-10.28	Vertical
442.5	-38.67	1.50	17.90	-22.26	-13	-9.26	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 Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3720.0	-49.07	4.07	33.54	-19.60	-13	-6.60	Horizontal
3720.0	-49.66	4.07	33.54	-20.19	-13	-7.19	Vertical
5580.0	-51.39	5.28	35.86	-20.81	-13	-7.81	Vertical
5580.0	-49.11	5.28	35.86	-18.53	-13	-5.53	Horizontal
184.3	-37.68	1.58	16.89	-22.36	-13	-9.36	Vertical
271.9	-35.20	1.76	17.26	-19.70	-13	-6.70	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-47.44	4.04	33.56	-17.92	-13	-4.92	Horizontal
3760.0	-52.94	4.04	33.56	-23.42	-13	-10.42	Vertical
5640.0	-48.74	5.24	35.91	-18.07	-13	-5.07	Vertical
5640.0	-51.75	5.24	35.91	-21.08	-13	-8.08	Horizontal
204.4	-41.92	1.46	16.27	-27.11	-13	-14.11	Vertical
297.4	-38.06	1.59	15.15	-24.50	-13	-11.50	Horizontal
Test Results for High Channel 1900MHz							
3800.0	-51.02	4.04	34.00	-21.06	-13	-8.06	Horizontal
3800.0	-52.18	4.04	34.00	-22.22	-13	-9.22	Vertical
5700.0	-51.66	5.24	36.04	-20.86	-13	-7.86	Vertical
5700.0	-52.89	5.24	36.04	-22.09	-13	-9.09	Horizontal
177.0	-44.67	1.36	17.39	-28.63	-13	-15.63	Vertical
290.9	-44.38	1.66	15.39	-30.65	-13	-17.65	Horizontal

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 Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3421.4	-49.26	4.02	29.80	-23.48	-13	-10.48	Horizontal
3421.4	-52.10	4.02	29.80	-26.32	-13	-13.32	Vertical
5132.1	-52.02	5.24	35.84	-21.42	-13	-8.42	Vertical
5132.1	-52.53	5.24	35.84	-21.93	-13	-8.93	Horizontal
188.9	-39.71	1.68	16.04	-25.35	-13	-12.35	Vertical
396.8	-40.79	1.78	17.74	-24.83	-13	-11.83	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-47.32	4.03	30.00	-21.35	-13	-8.35	Horizontal
3465.0	-44.27	4.03	30.00	-18.30	-13	-5.30	Vertical
5197.5	-51.48	5.25	35.86	-20.87	-13	-7.87	Vertical
5197.5	-49.56	5.25	35.86	-18.95	-13	-5.95	Horizontal
179.0	-41.33	1.72	17.69	-25.36	-13	-12.36	Vertical
338.0	-44.15	1.62	16.02	-29.74	-13	-16.74	Horizontal
Test Results for High Channel 1754.3MHz							
3508.6	-44.74	4.05	30.01	-18.78	-13	-5.78	Horizontal
3508.6	-45.61	4.05	30.01	-19.65	-13	-6.65	Vertical
5262.9	-53.02	5.26	35.86	-22.42	-13	-9.42	Vertical
5262.9	-51.68	5.26	35.86	-21.08	-13	-8.08	Horizontal
192.8	-37.68	1.80	16.69	-22.79	-13	-9.79	Vertical
321.4	-40.85	1.75	16.66	-25.95	-13	-12.95	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 Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3440.0	-51.99	4.02	29.80	-26.21	-13	-13.21	Horizontal
3440.0	-53.53	4.02	29.80	-27.75	-13	-14.75	Vertical
5160.0	-51.19	5.24	35.84	-20.59	-13	-7.59	Vertical
5160.0	-51.68	5.24	35.84	-21.08	-13	-8.08	Horizontal
207.1	-36.08	1.57	17.26	-20.39	-13	-7.39	Vertical
294.3	-39.34	1.78	16.35	-24.77	-13	-11.77	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-51.19	4.03	30.00	-25.22	-13	-12.22	Horizontal
3465.0	-47.20	4.03	30.00	-21.23	-13	-8.23	Vertical
5197.5	-50.20	5.25	35.86	-19.59	-13	-6.59	Vertical
5197.5	-53.88	5.25	35.86	-23.27	-13	-10.27	Horizontal
207.5	-44.85	1.44	17.95	-28.34	-13	-15.34	Vertical
308.9	-42.59	1.65	16.09	-28.15	-13	-15.15	Horizontal
Test Results for High Channel 1745MHz							
3490.0	-51.15	2.91	27.68	-26.38	-13	-13.38	Horizontal
3490.0	-53.74	2.91	27.68	-28.97	-13	-15.97	Vertical
5235.0	-49.11	5.26	35.86	-18.51	-13	-5.51	Vertical
5235.0	-51.10	5.26	35.86	-20.50	-13	-7.50	Horizontal
177.6	-38.27	1.61	16.85	-23.03	-13	-10.03	Vertical
339.5	-38.53	1.61	15.19	-24.95	-13	-11.95	Horizontal

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 Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1649.4	-48.93	2.78	27.50	-24.21	-13	-11.21	Horizontal
1649.4	-51.52	2.78	27.50	-26.80	-13	-13.80	Vertical
2474.1	-51.15	2.90	27.80	-26.25	-13	-13.25	Vertical
2474.1	-53.99	2.90	27.80	-29.09	-13	-16.09	Horizontal
181.2	-35.51	1.76	17.59	-19.68	-13	-6.68	Vertical
442.4	-34.99	1.63	15.87	-20.75	-13	-7.75	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-53.10	2.80	27.48	-28.42	-13	-15.42	Horizontal
1673.0	-52.58	2.80	27.48	-27.90	-13	-14.90	Vertical
2509.5	-52.14	2.91	27.70	-27.35	-13	-14.35	Vertical
2509.5	-49.03	2.91	27.70	-24.24	-13	-11.24	Horizontal
181.8	-37.94	1.61	15.68	-23.87	-13	-10.87	Vertical
450.4	-36.29	1.59	17.52	-20.37	-13	-7.37	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-51.08	2.82	27.43	-26.47	-13	-13.47	Horizontal
1696.6	-45.97	2.82	27.43	-21.36	-13	-8.36	Vertical
2544.9	-48.00	2.92	27.74	-23.18	-13	-10.18	Vertical
2544.9	-49.33	2.92	27.74	-24.51	-13	-11.51	Horizontal
177.4	-42.04	1.69	16.67	-27.05	-13	-14.05	Vertical
308.4	-42.16	1.70	17.18	-26.68	-13	-13.68	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 Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1658.0	-46.03	2.78	27.50	-21.31	-13	-8.31	Horizontal
1658.0	-48.38	2.78	27.50	-23.66	-13	-10.66	Vertical
2487.0	-50.24	2.90	27.80	-25.34	-13	-12.34	Vertical
2487.0	-53.79	2.90	27.80	-28.89	-13	-15.89	Horizontal
195.1	-41.35	1.71	15.57	-27.49	-13	-14.49	Vertical
258.4	-44.81	1.34	16.40	-29.75	-13	-16.75	Horizontal
Test Results for Mid Channel 836.5MHz							
1673.0	-52.00	2.80	27.48	-27.32	-13	-14.32	Horizontal
1673.0	-44.52	2.80	27.48	-19.84	-13	-6.84	Vertical
2509.5	-53.62	2.91	27.70	-28.83	-13	-15.83	Vertical
2509.5	-50.35	2.91	27.70	-25.56	-13	-12.56	Horizontal
185.9	-37.56	1.44	17.04	-21.96	-13	-8.96	Vertical
425.6	-39.21	1.76	17.62	-23.35	-13	-10.35	Horizontal
Test Results for High Channel 844MHz							
1688.0	-46.43	2.82	27.43	-21.82	-13	-8.82	Horizontal
1688.0	-53.78	2.82	27.43	-29.17	-13	-16.17	Vertical
2532.0	-51.25	2.92	27.74	-26.43	-13	-13.43	Vertical
2532.0	-50.51	2.92	27.74	-25.69	-13	-12.69	Horizontal
186.3	-44.91	1.74	17.70	-28.95	-13	-15.95	Vertical
378.2	-37.93	1.41	17.46	-21.87	-13	-8.87	Horizontal

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	-62.12	5.23	35.81	-31.54	-25	-6.54	Horizontal
5005.0	-62.30	5.23	35.81	-31.72	-25	-6.72	Vertical
7507.5	-61.85	5.67	36.85	-30.67	-25	-5.67	Vertical
7507.5	-64.51	5.67	36.85	-33.33	-25	-8.33	Horizontal
198.1	-52.42	1.73	17.97	-36.18	-25	-11.18	Vertical
389.8	-47.53	1.38	15.11	-33.80	-25	-8.80	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-65.30	5.23	35.82	-34.71	-25	-9.71	Horizontal
5070.0	-66.50	5.23	35.82	-35.91	-25	-10.91	Vertical
7605.0	-65.80	5.67	36.85	-34.62	-25	-9.62	Vertical
7605.0	-64.93	5.67	36.85	-33.75	-25	-8.75	Horizontal
191.2	-47.77	1.77	16.17	-33.36	-25	-8.36	Vertical
456.8	-46.70	1.63	15.21	-33.12	-25	-8.12	Horizontal
Test Results for High Channel 2567.5MHz							
5135.0	-63.39	5.24	35.83	-32.80	-25	-7.80	Horizontal
5135.0	-61.32	5.24	35.83	-30.73	-25	-5.73	Vertical
7702.5	-65.20	5.68	36.87	-34.01	-25	-9.01	Vertical
7702.5	-66.30	5.68	36.87	-35.11	-25	-10.11	Horizontal
198.0	-50.32	1.58	17.56	-34.34	-25	-9.34	Vertical
246.7	-51.02	1.45	16.58	-35.89	-25	-10.89	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	-60.83	5.23	35.82	-30.24	-25	-5.24	Horizontal
5020.0	-61.69	5.23	35.82	-31.10	-25	-6.10	Vertical
7530.0	-59.25	5.67	36.86	-28.06	-25	-3.06	Vertical
7530.0	-59.33	5.67	36.86	-28.14	-25	-3.14	Horizontal
207.6	-48.57	1.63	15.76	-34.44	-25	-9.44	Vertical
365.3	-46.24	1.71	15.44	-32.51	-25	-7.51	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-59.19	5.23	35.82	-28.60	-25	-3.60	Horizontal
5070.0	-61.01	5.23	35.82	-30.42	-25	-5.42	Vertical
7605.0	-60.62	5.67	36.85	-29.44	-25	-4.44	Vertical
7605.0	-63.88	5.67	36.85	-32.70	-25	-7.70	Horizontal
194.5	-53.81	1.79	16.84	-38.75	-25	-13.75	Vertical
419.2	-49.09	1.71	17.64	-33.16	-25	-8.16	Horizontal
Test Results for High Channel 2560MHz							
5120.0	-59.62	5.24	35.83	-29.03	-25	-4.03	Horizontal
5120.0	-61.08	5.24	35.83	-30.49	-25	-5.49	Vertical
7680.0	-59.99	5.70	36.88	-28.81	-25	-3.81	Vertical
7680.0	-61.32	5.70	36.88	-30.14	-25	-5.14	Horizontal
202.9	-46.55	1.79	16.84	-31.49	-25	-6.49	Vertical
258.3	-47.39	1.71	17.64	-31.46	-25	-6.46	Horizontal

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 Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1399.4	-53.35	2.60	27.20	-28.75	-13	-15.75	Horizontal
1399.4	-49.63	2.60	27.20	-25.03	-13	-12.03	Vertical
2099.1	-50.34	2.85	27.54	-25.65	-13	-12.65	Vertical
2099.1	-52.97	2.85	27.54	-28.28	-13	-15.28	Horizontal
193.0	-40.63	1.49	17.78	-24.34	-13	-11.34	Vertical
332.7	-35.66	1.36	17.33	-19.69	-13	-6.69	Horizontal
Test Results For Mid Channel 707.5MHz							
1415.0	-53.71	2.61	27.28	-29.04	-13	-16.04	Horizontal
1415.0	-52.71	2.61	27.28	-28.04	-13	-15.04	Vertical
2122.5	-47.32	2.87	27.59	-22.60	-13	-9.60	Vertical
2122.5	-51.48	2.87	27.59	-26.76	-13	-13.76	Horizontal
181.1	-40.05	1.73	15.74	-26.04	-13	-13.04	Vertical
370.6	-43.93	1.62	15.79	-29.76	-13	-16.76	Horizontal
Test Results for High Channel 715.3MHz							
1430.6	-47.33	2.63	27.28	-22.68	-13	-9.68	Horizontal
1430.6	-51.47	2.63	27.28	-26.82	-13	-13.82	Vertical
2145.9	-44.72	2.88	27.60	-20.00	-13	-7.00	Vertical
2145.9	-51.62	2.88	27.60	-26.90	-13	-13.90	Horizontal
200.8	-41.20	1.61	18.00	-24.81	-13	-11.81	Vertical
386.7	-36.62	1.45	15.49	-22.59	-13	-9.59	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 Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1408.0	-48.85	2.61	27.26	-24.20	-13	-11.20	Horizontal
1408.0	-46.23	2.61	27.26	-21.58	-13	-8.58	Vertical
2112.0	-46.28	2.87	27.58	-21.57	-13	-8.57	Vertical
2112.0	-50.23	2.87	27.58	-25.52	-13	-12.52	Horizontal
196.2	-34.07	1.31	16.97	-18.41	-13	-5.41	Vertical
296.4	-40.85	1.65	16.70	-25.80	-13	-12.80	Horizontal
Test Results for Mid Channel 707.5MHz							
1415.0	-49.40	2.61	27.28	-24.73	-13	-11.73	Horizontal
1415.0	-50.51	2.61	27.28	-25.84	-13	-12.84	Vertical
2122.5	-51.72	2.87	27.59	-27.00	-13	-14.00	Vertical
2122.5	-53.67	2.87	27.59	-28.95	-13	-15.95	Horizontal
180.9	-39.05	1.72	17.99	-22.78	-13	-9.78	Vertical
390.6	-40.02	1.73	17.94	-23.81	-13	-10.81	Horizontal
Test Results for High Channel 711MHz							
1422.0	-47.15	2.62	27.28	-22.49	-13	-9.49	Horizontal
1422.0	-46.55	2.62	27.28	-21.89	-13	-8.89	Vertical
2133.0	-46.90	2.87	27.60	-22.17	-13	-9.17	Vertical
2133.0	-52.29	2.87	27.60	-27.56	-13	-14.56	Horizontal
181.4	-38.23	1.58	15.93	-23.88	-13	-10.88	Vertical
417.6	-41.80	1.36	15.59	-27.57	-13	-14.57	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

9.6 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	-72.73	2.61	27.28	-48.06	-40	-8.06	Horizontal
1559.0	-70.39	2.61	27.28	-45.72	-40	-5.72	Vertical
2338.5	-50.20	2.87	27.59	-25.48	-13	-12.48	Vertical
2338.5	-42.49	2.87	27.59	-17.77	-13	-4.77	Horizontal
120.1	-39.87	1.54	15.61	-25.80	-13	-12.80	Vertical
197.8	-37.85	1.51	15.21	-24.15	-13	-11.15	Horizontal
Test Results For Mid Channel 782MHz							
1564.0	-70.59	2.62	27.30	-45.91	-40	-5.91	Horizontal
1564.0	-70.75	2.62	27.30	-46.07	-40	-6.07	Vertical
2346.0	-41.71	2.87	27.62	-16.96	-13	-3.96	Vertical
2346.0	-42.09	2.87	27.62	-17.34	-13	-4.34	Horizontal
131.2	-34.30	1.65	16.17	-19.78	-13	-6.78	Vertical
267.5	-36.60	1.48	16.88	-21.20	-13	-8.20	Horizontal
Test Results for High Channel 784.5MHz							
1569.0	-73.08	2.66	27.28	-48.46	-40	-8.46	Horizontal
1569.0	-69.62	2.66	27.28	-45.00	-40	-5.00	Vertical
2353.5	-45.20	2.88	27.60	-20.48	-13	-7.48	Vertical
2353.5	-44.19	2.88	27.60	-19.47	-13	-6.47	Horizontal
80.8	-38.78	1.54	16.40	-23.92	-13	-10.92	Vertical
155.6	-39.38	1.43	15.77	-25.04	-13	-12.04	Horizontal

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

Test Results for Channel 782MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1564.0	-70.01	2.62	27.30	-45.33	-40	-5.33	Horizontal
1564.0	-74.55	2.62	27.30	-49.87	-40	-9.87	Vertical
2346.0	-40.98	2.87	27.62	-16.23	-13	-3.23	Vertical
2346.0	-41.84	2.87	27.62	-17.09	-13	-4.09	Horizontal
129.1	-37.38	1.43	17.03	-21.78	-13	-8.78	Vertical
86.9	-37.65	1.62	16.63	-22.64	-13	-9.64	Horizontal

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

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

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

9.7 LTE BAND 17

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

Test Results for Low Channel 706.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1413.0	-44.22	2.61	27.28	-19.55	-13	-6.55	Horizontal
1413.0	-52.41	2.61	27.28	-27.74	-13	-14.74	Vertical
2119.5	-47.48	2.87	27.59	-22.76	-13	-9.76	Vertical
2119.5	-53.97	2.87	27.59	-29.25	-13	-16.25	Horizontal
188.6	-43.99	1.71	16.15	-29.55	-13	-16.55	Vertical
453.5	-34.44	1.41	17.32	-18.53	-13	-5.53	Horizontal
Test Results For Mid Channel 710MHz							
1420.0	-47.51	2.62	27.30	-22.83	-13	-9.83	Horizontal
1420.0	-44.23	2.62	27.30	-19.55	-13	-6.55	Vertical
2130.0	-47.39	2.87	27.62	-22.64	-13	-9.64	Vertical
2130.0	-53.52	2.87	27.62	-28.77	-13	-15.77	Horizontal
197.8	-34.70	1.42	15.25	-20.88	-13	-7.88	Vertical
443.6	-38.91	1.36	17.19	-23.08	-13	-10.08	Horizontal
Test Results for High Channel 713.5MHz							
1427.0	-46.64	2.66	27.28	-22.02	-13	-9.02	Horizontal
1427.0	-48.39	2.66	27.28	-23.77	-13	-10.77	Vertical
2140.5	-52.61	2.88	27.60	-27.89	-13	-14.89	Vertical
2140.5	-53.85	2.88	27.60	-29.13	-13	-16.13	Horizontal
192.3	-36.53	1.32	17.29	-20.56	-13	-7.56	Vertical
314.7	-34.48	1.72	16.89	-19.31	-13	-6.31	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	-46.26	2.62	27.30	-21.58	-13	-8.58	Horizontal
1418.0	-52.93	2.62	27.30	-28.25	-13	-15.25	Vertical
2127.0	-50.92	2.87	27.62	-26.17	-13	-13.17	Vertical
2127.0	-53.06	2.87	27.62	-28.31	-13	-15.31	Horizontal
206.3	-37.26	1.35	16.91	-21.70	-13	-8.70	Vertical
376.1	-42.93	1.62	16.31	-28.24	-13	-15.24	Horizontal
Test Results for Mid Channel 710MHz							
1420.0	-52.79	2.62	27.30	-28.11	-13	-15.11	Horizontal
1420.0	-52.54	2.62	27.30	-27.86	-13	-14.86	Vertical
2130.0	-48.67	2.87	27.62	-23.92	-13	-10.92	Vertical
2130.0	-52.07	2.87	27.62	-27.32	-13	-14.32	Horizontal
199.9	-37.85	1.51	17.14	-22.22	-13	-9.22	Vertical
326.9	-43.02	1.77	16.88	-27.91	-13	-14.91	Horizontal
Test Results for High Channel 711MHz							
1422.0	-52.22	2.62	27.30	-27.54	-13	-14.54	Horizontal
1422.0	-45.59	2.62	27.30	-20.91	-13	-7.91	Vertical
2133.0	-45.28	2.87	27.62	-20.53	-13	-7.53	Vertical
2133.0	-49.96	2.87	27.62	-25.21	-13	-12.21	Horizontal
212.6	-35.74	1.78	15.95	-21.57	-13	-8.57	Vertical
272.2	-40.41	1.34	17.95	-23.81	-13	-10.81	Horizontal

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

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

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

9.8 LTE BAND 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	-57.98	4.01	27.5	-34.49	-25	-9.49	Horizontal
5145	-57.04	4.01	27.5	-33.55	-25	-8.55	Vertical
7717.5	-56.94	5.09	27.8	-34.23	-25	-9.23	Vertical
7717.5	-59.31	5.09	27.8	-36.60	-25	-11.60	Horizontal
Test Results For Mid Channel 2595MHz							
5190	-57.55	4.1	27.48	-34.17	-25	-9.17	Horizontal
5190	-55.71	4.1	27.48	-32.33	-25	-7.33	Vertical
7785	-55.23	5.42	27.7	-32.95	-25	-7.95	Vertical
7785	-56.34	5.42	27.7	-34.06	-25	-9.06	Horizontal
Test Results for High Channel 2617.5MHz							
5234	-56.90	4.11	27.43	-33.58	-25	-8.58	Horizontal
5234	-57.66	4.11	27.43	-34.34	-25	-9.34	Vertical
7851	-56.71	5.31	27.74	-34.28	-25	-9.28	Vertical
7851	-57.87	5.31	27.74	-35.44	-25	-10.44	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	-58.89	3.89	27.5	-35.28	-25	-10.28	Horizontal
5160	-54.40	3.89	27.5	-30.79	-25	-5.79	Vertical
7740	-55.66	5.33	27.8	-33.19	-25	-8.19	Vertical
7740	-57.81	5.33	27.8	-35.34	-25	-10.34	Horizontal
Test Results for Mid Channel 2595MHz							
5190	-58.28	4.1	27.48	-34.90	-25	-9.90	Horizontal
5190	-59.36	4.1	27.48	-35.98	-25	-10.98	Vertical
7785	-56.42	5.42	27.7	-34.14	-25	-9.14	Vertical
7785	-59.73	5.42	27.7	-37.45	-25	-12.45	Horizontal
Test Results for High Channel 2610MHz							
5220	-54.63	4.01	27.43	-31.21	-25	-6.21	Horizontal
5220	-56.19	4.01	27.43	-32.77	-25	-7.77	Vertical
7830	-57.09	5.34	27.74	-34.69	-25	-9.69	Vertical
7830	-59.36	5.34	27.74	-36.96	-25	-11.96	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 Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
5075.0	-62.83	5.23	35.81	-32.25	-25	-7.25	Horizontal
5075.0	-62.91	5.23	35.81	-32.33	-25	-7.33	Vertical
7612.5	-61.60	5.67	36.85	-30.42	-25	-5.42	Vertical
7612.5	-62.30	5.67	36.85	-31.12	-25	-6.12	Horizontal
435.3	-49.16	1.38	15.98	-34.56	-25	-9.56	Vertical
465.8	-49.06	1.62	15.66	-35.02	-25	-10.02	Horizontal
Test Results for Mid Channel 2595MHz							
5190.0	-59.64	5.23	35.82	-29.05	-25	-4.05	Horizontal
5190.0	-64.80	5.23	35.82	-34.21	-25	-9.21	Vertical
7785.0	-62.34	5.67	36.85	-31.16	-25	-6.16	Vertical
7785.0	-61.89	5.67	36.85	-30.71	-25	-5.71	Horizontal
510.4	-49.99	1.62	16.17	-35.44	-25	-10.44	Vertical
562.9	-48.76	1.74	17.63	-32.87	-25	-7.87	Horizontal
Test Results for High Channel 2652.5MHz							
5305.0	-63.71	5.24	35.83	-33.12	-25	-8.12	Horizontal
5305.0	-63.82	5.24	35.83	-33.23	-25	-8.23	Vertical
7957.5	-61.37	5.68	36.87	-30.18	-25	-5.18	Vertical
7957.5	-64.11	5.68	36.87	-32.92	-25	-7.92	Horizontal
197.6	-46.62	1.55	15.84	-32.33	-25	-7.33	Vertical
353.1	-47.64	1.51	17.06	-32.09	-25	-7.09	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 Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
5090.0	-61.82	5.23	35.82	-31.23	-25	-6.23	Horizontal
5090.0	-61.52	5.23	35.82	-30.93	-25	-5.93	Vertical
7635.0	-63.61	5.67	36.86	-32.42	-25	-7.42	Vertical
7635.0	-63.89	5.67	36.86	-32.70	-25	-7.70	Horizontal
128.9	-46.44	1.43	15.51	-32.36	-25	-7.36	Vertical
344.8	-49.56	1.40	16.97	-33.99	-25	-8.99	Horizontal
Test Results for Mid Channel 2595MHz							
5190.0	-63.30	5.23	35.82	-32.71	-25	-7.71	Horizontal
5190.0	-60.85	5.23	35.82	-30.26	-25	-5.26	Vertical
7785.0	-61.83	5.67	36.85	-30.65	-25	-5.65	Vertical
7785.0	-60.19	5.67	36.85	-29.01	-25	-4.01	Horizontal
100.8	-48.92	1.77	16.72	-33.97	-25	-8.97	Vertical
263.5	-45.27	1.31	16.99	-29.59	-25	-4.59	Horizontal
Test Results for High Channel 2645MHz							
5290.0	-61.31	5.24	35.83	-30.72	-25	-5.72	Horizontal
5290.0	-60.68	5.24	35.83	-30.09	-25	-5.09	Vertical
7935.0	-60.96	5.70	36.88	-29.78	-25	-4.78	Vertical
7935.0	-64.75	5.70	36.88	-33.57	-25	-8.57	Horizontal
349.9	-47.70	1.70	15.73	-33.67	-25	-8.67	Vertical
110.3	-46.63	1.75	17.33	-31.05	-25	-6.05	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 1710.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3421.4	-53.79	4.02	29.80	-28.01	-13	-15.01	Horizontal
3421.4	-51.12	4.02	29.80	-25.34	-13	-12.34	Vertical
5132.1	-50.33	5.24	35.84	-19.73	-13	-6.73	Vertical
5132.1	-49.96	5.24	35.84	-19.36	-13	-6.36	Horizontal
112.6	-46.47	1.52	15.57	-32.42	-13	-19.42	Vertical
220.5	-47.71	1.33	17.14	-31.90	-13	-18.90	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-52.31	4.03	30.00	-26.34	-13	-13.34	Horizontal
3490.0	-44.66	4.03	30.00	-18.69	-13	-5.69	Vertical
5235.0	-49.91	5.25	35.86	-19.30	-13	-6.30	Vertical
5235.0	-51.15	5.25	35.86	-20.54	-13	-7.54	Horizontal
157.3	-48.54	1.53	17.13	-32.94	-13	-19.94	Vertical
213.1	-44.89	1.41	15.95	-30.35	-13	-17.35	Horizontal
Test Results for High Channel 1779.3MHz							
3558.6	-48.09	4.05	30.01	-22.13	-13	-9.13	Horizontal
3558.6	-49.13	4.05	30.01	-23.17	-13	-10.17	Vertical
5337.9	-51.31	5.26	35.86	-20.71	-13	-7.71	Vertical
5337.9	-49.37	5.26	35.86	-18.77	-13	-5.77	Horizontal
170.6	-47.43	1.44	15.51	-33.36	-13	-20.36	Vertical
169.0	-53.83	1.78	15.76	-39.85	-13	-26.85	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 Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3440.0	-51.94	4.02	29.80	-26.16	-13	-13.16	Horizontal
3440.0	-45.59	4.02	29.80	-19.81	-13	-6.81	Vertical
5160.0	-52.78	5.24	35.84	-22.18	-13	-9.18	Vertical
5160.0	-48.75	5.24	35.84	-18.15	-13	-5.15	Horizontal
268.8	-48.10	1.62	17.02	-32.70	-13	-19.70	Vertical
161.4	-50.09	1.32	17.31	-34.10	-13	-21.10	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-54.19	4.03	30.00	-28.22	-13	-15.22	Horizontal
3490.0	-46.88	4.03	30.00	-20.91	-13	-7.91	Vertical
5235.0	-52.56	5.25	35.86	-21.95	-13	-8.95	Vertical
5235.0	-53.17	5.25	35.86	-22.56	-13	-9.56	Horizontal
159.9	-52.51	1.45	15.17	-38.79	-13	-25.79	Vertical
172.1	-46.58	1.48	17.82	-30.24	-13	-17.24	Horizontal
Test Results for High Channel 1770MHz							
3540.0	-44.69	2.91	27.68	-19.92	-13	-6.92	Horizontal
3540.0	-51.46	2.91	27.68	-26.69	-13	-13.69	Vertical
5310.0	-51.38	5.26	35.86	-20.78	-13	-7.78	Vertical
5310.0	-53.08	5.26	35.86	-22.48	-13	-9.48	Horizontal
197.3	-51.30	1.76	16.38	-36.68	-13	-23.68	Vertical
158.5	-48.87	1.43	17.13	-33.17	-13	-20.17	Horizontal

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

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

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

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

10. FREQUENCY STABILITY

RULE PART(S)

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

LIMITS

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

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

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

- Temp. = −30° to +50°C
- Voltage =low voltage, DC 3.4V, Normal,DC 3.87V and High voltage, DC 4.4V.

Frequency Stability vs Temperature:

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

Frequency Stability vs Voltage:

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

MODES TESTED

- LTE Band 2

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

RESULTS

See the following pages.

10.1 LTE BAND 2

QPSK, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 2 QPSK, (CH 18900 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	1880	12.9	0.006859	2.5
3.87	1880	13.6	0.007228	2.5
4.4	1880	13.7	0.007263	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 2 QPSK, (CH 18900 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1880	12.2	0.006505	2.5
Extreme (50C)	1880	11.2	0.005964	2.5
Extreme (40C)	1880	13.8	0.007337	2.5
Extreme (30C)	1880	13.4	0.007136	2.5
Extreme (10C)	1880	13.5	0.007184	2.5
Extreme (0C)	1880	12.3	0.006561	2.5
Extreme (-10C)	1880	12.7	0.006763	2.5
Extreme (-20C)	1880	14.6	0.007749	2.5
Extreme (-30C)	1880	14.5	0.007692	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 2 16QAM, (CH 18900 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	1880	9.5	0.005047	2.5
3.87	1880	8.5	0.004519	2.5
4.4	1880	7.7	0.004110	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 2 16QAM, (CH 18900 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1880	9.8	0.005220	2.5
Extreme (50C)	1880	9.4	0.004986	2.5
Extreme (40C)	1880	8.1	0.004309	2.5
Extreme (30C)	1880	8.5	0.004540	2.5
Extreme (10C)	1880	9.1	0.004835	2.5
Extreme (0C)	1880	8.2	0.004366	2.5
Extreme (-10C)	1880	9.3	0.004971	2.5
Extreme (-20C)	1880	9.2	0.004906	2.5
Extreme (-30C)	1880	8.0	0.004232	2.5

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

10.2 LTE BAND 4

QPSK, (10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 4 QPSK, (CH 20175 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	1732.5	8.5	0.004880	2.5
3.87	1732.5	8.9	0.005120	2.5
4.4	1732.5	8.8	0.005087	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 4 QPSK, (CH 20175 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1732.5	8.4	0.004826	2.5
Extreme (50C)	1732.5	9.3	0.005395	2.5
Extreme (40C)	1732.5	7.9	0.004539	2.5
Extreme (30C)	1732.5	6.1	0.003519	2.5
Extreme (10C)	1732.5	7.0	0.004025	2.5
Extreme (0C)	1732.5	9.2	0.005282	2.5
Extreme (-10C)	1732.5	8.3	0.004769	2.5
Extreme (-20C)	1732.5	6.8	0.003948	2.5
Extreme (-30C)	1732.5	8.9	0.005133	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 4 16QAM, (CH 20175 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	1732.5	9.6	0.005554	2.5
3.87	1732.5	8.7	0.005042	2.5
4.4	1732.5	8.1	0.004676	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 4 16QAM, (CH 20175 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1732.5	9.4	0.005422	2.5
Extreme (50C)	1732.5	8.6	0.004954	2.5
Extreme (40C)	1732.5	8.0	0.004617	2.5
Extreme (30C)	1732.5	8.5	0.004927	2.5
Extreme (10C)	1732.5	8.6	0.004951	2.5
Extreme (0C)	1732.5	8.2	0.004760	2.5
Extreme (-10C)	1732.5	8.8	0.005085	2.5
Extreme (-20C)	1732.5	9.0	0.005173	2.5
Extreme (-30C)	1732.5	8.4	0.004824	2.5

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

10.3 LTE BAND 5

QPSK, (10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 5 QPSK, (CH 20525 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
3.4	836.5	6.1	0.007314	2.5
3.87	836.5	7.1	0.008541	2.5
4.4	836.5	4.8	0.005731	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 5 QPSK, (CH 20525 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
Normal (25C)	836.5	6.4	0.007703	2.5
Extreme (50C)	836.5	5.6	0.006688	2.5
Extreme (40C)	836.5	5.8	0.006954	2.5
Extreme (30C)	836.5	6.2	0.007366	2.5
Extreme (10C)	836.5	5.4	0.006513	2.5
Extreme (0C)	836.5	5.4	0.006451	2.5
Extreme (-10C)	836.5	5.1	0.006146	2.5
Extreme (-20C)	836.5	6.3	0.007502	2.5
Extreme (-30C)	836.5	6.6	0.007895	2.5

16QAM, (10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 5 16QAM, (CH 20525 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
3.4	836.5	5.7	0.006774	2.5
3.87	836.5	6.4	0.007623	2.5
4.4	836.5	5.1	0.006063	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 5 16QAM, (CH 20525 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
Normal (25C)	836.5	5.7	0.006812	2.5
Extreme (50C)	836.5	5.7	0.006783	2.5
Extreme (40C)	836.5	6.5	0.007761	2.5
Extreme (30C)	836.5	6.7	0.007955	2.5
Extreme (10C)	836.5	5.6	0.006720	2.5
Extreme (0C)	836.5	4.9	0.005905	2.5
Extreme (-10C)	836.5	5.5	0.006606	2.5
Extreme (-20C)	836.5	5.7	0.006873	2.5
Extreme (-30C)	836.5	6.7	0.008050	2.5

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

10.4 LTE BAND 7

QPSK, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 7 QPSK, (CH 21100 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	2535	9.6	0.003769	2.5
3.87	2535	8.8	0.003471	2.5
4.4	2535	8.5	0.003366	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 7 QPSK, (CH 21100 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	2535	9.6	0.003772	2.5
Extreme (50C)	2535	9.1	0.003575	2.5
Extreme (40C)	2535	8.8	0.003457	2.5
Extreme (30C)	2535	8.7	0.003449	2.5
Extreme (10C)	2535	8.2	0.003231	2.5
Extreme (0C)	2535	8.0	0.003153	2.5
Extreme (-10C)	2535	9.6	0.003772	2.5
Extreme (-20C)	2535	8.9	0.003505	2.5
Extreme (-30C)	2535	8.8	0.003475	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 7 16QAM, (CH 21100 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	2535	6.2	0.002464	2.5
3.87	2535	6.1	0.002401	2.5
4.4	2535	5.8	0.002282	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 7 16QAM, (CH 21100 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	2535	6.8	0.002664	2.5
Extreme (50C)	2535	5.8	0.002301	2.5
Extreme (40C)	2535	5.3	0.002098	2.5
Extreme (30C)	2535	6.6	0.002617	2.5
Extreme (10C)	2535	6.0	0.002357	2.5
Extreme (0C)	2535	5.3	0.002109	2.5
Extreme (-10C)	2535	4.9	0.001951	2.5
Extreme (-20C)	2535	6.2	0.002462	2.5
Extreme (-30C)	2535	6.0	0.002380	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]
3.4	707.5	9.0	0.012735	2.5
3.87	707.5	9.6	0.013622	2.5
4.4	707.5	8.8	0.012464	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	707.5	8.9	0.012600	2.5
Extreme (50C)	707.5	7.8	0.011088	2.5
Extreme (40C)	707.5	7.0	0.009840	2.5
Extreme (30C)	707.5	8.6	0.012141	2.5
Extreme (10C)	707.5	7.8	0.011090	2.5
Extreme (0C)	707.5	9.1	0.012839	2.5
Extreme (-10C)	707.5	8.3	0.011760	2.5
Extreme (-20C)	707.5	8.7	0.012279	2.5
Extreme (-30C)	707.5	7.4	0.010400	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]
3.4	707.5	7.4	0.010462	2.5
3.87	707.5	8.4	0.011887	2.5
4.4	707.5	7.0	0.009827	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	707.5	6.5	0.009175	2.5
Extreme (50C)	707.5	5.5	0.007765	2.5
Extreme (40C)	707.5	6.4	0.009110	2.5
Extreme (30C)	707.5	-7.7	-0.010912	2.5
Extreme (10C)	707.5	-8.2	-0.011590	2.5
Extreme (0C)	707.5	2.9	0.004100	2.5
Extreme (-10C)	707.5	-5.2	-0.007292	2.5
Extreme (-20C)	707.5	-8.7	-0.012302	2.5
Extreme (-30C)	707.5	-10.2	-0.014350	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]
3.4	782.0	12.7	0.017863	2.5
3.87	782.0	13.3	0.018784	2.5
4.4	782.0	12.9	0.018229	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	782.0	14.5	0.020408	2.5
Extreme (50C)	782.0	13.7	0.019322	2.5
Extreme (40C)	782.0	15.6	0.021930	2.5
Extreme (30C)	782.0	14.2	0.020032	2.5
Extreme (10C)	782.0	14.1	0.019837	2.5
Extreme (0C)	782.0	13.7	0.019329	2.5
Extreme (-10C)	782.0	14.0	0.019653	2.5
Extreme (-20C)	782.0	14.5	0.020476	2.5
Extreme (-30C)	782.0	13.7	0.019308	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]
3.4	782.0	12.7	0.017899	2.5
3.87	782.0	13.6	0.019213	2.5
4.4	782.0	13.6	0.019117	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	782.0	13.1	0.018495	2.5
Extreme (50C)	782.0	11.9	0.016800	2.5
Extreme (40C)	782.0	13.7	0.019275	2.5
Extreme (30C)	782.0	13.9	0.019603	2.5
Extreme (10C)	782.0	13.4	0.018885	2.5
Extreme (0C)	782.0	11.9	0.016808	2.5
Extreme (-10C)	782.0	13.1	0.018500	2.5
Extreme (-20C)	782.0	14.0	0.019778	2.5
Extreme (-30C)	782.0	14.6	0.020549	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]
3.4	710.0	9.7	0.013692	2.5
3.87	710.0	9.2	0.012948	2.5
4.4	710.0	8.5	0.011951	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	10.1	0.014258	2.5
Extreme (50C)	710.0	8.4	0.011857	2.5
Extreme (40C)	710.0	7.9	0.011143	2.5
Extreme (30C)	710.0	8.6	0.012070	2.5
Extreme (10C)	710.0	8.7	0.012206	2.5
Extreme (0C)	710.0	8.0	0.011275	2.5
Extreme (-10C)	710.0	9.2	0.012898	2.5
Extreme (-20C)	710.0	8.5	0.012036	2.5
Extreme (-30C)	710.0	7.7	0.010877	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]
3.4	710.0	10.3	0.014493	2.5
3.87	710.0	8.9	0.012574	2.5
4.4	710.0	7.9	0.011174	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	9.3	0.013161	2.5
Extreme (50C)	710.0	9.0	0.012663	2.5
Extreme (40C)	710.0	7.9	0.011164	2.5
Extreme (30C)	710.0	8.7	0.012184	2.5
Extreme (10C)	710.0	8.1	0.011388	2.5
Extreme (0C)	710.0	8.7	0.012287	2.5
Extreme (-10C)	710.0	9.7	0.013729	2.5
Extreme (-20C)	710.0	9.2	0.012973	2.5
Extreme (-30C)	710.0	8.4	0.011803	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

QPSK, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 38 QPSK, (CH 37850 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	2595	8.1	0.00310	2.5
3.87	2595	6.5	0.00250	2.5
4.4	2595	7.8	0.00302	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 38 QPSK, (CH 37850 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	2595	7.5	0.00290	2.5
Extreme (50C)	2595	4.7	0.00182	2.5
Extreme (40C)	2595	5.8	0.00225	2.5
Extreme (30C)	2595	4.3	0.00167	2.5
Extreme (10C)	2595	6.4	0.00246	2.5
Extreme (0C)	2595	5.1	0.00196	2.5
Extreme (-10C)	2595	9.4	0.00361	2.5
Extreme (-20C)	2595	10.4	0.00402	2.5
Extreme (-30C)	2595	6.5	0.00252	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 38 16QAM, (CH 37850 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	2595	8.6	0.00332	2.5
3.87	2595	6.2	0.00241	2.5
4.4	2595	6.6	0.00254	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 38 16QAM, (CH 37850 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	2595	7.8	0.00301	2.5
Extreme (50C)	2595	4.5	0.00172	2.5
Extreme (40C)	2595	5.8	0.00224	2.5
Extreme (30C)	2595	4.6	0.00178	2.5
Extreme (10C)	2595	6.8	0.00264	2.5
Extreme (0C)	2595	4.5	0.00174	2.5
Extreme (-10C)	2595	9.6	0.00368	2.5
Extreme (-20C)	2595	11.2	0.00431	2.5
Extreme (-30C)	2595	6.1	0.00236	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]
3.4	2595	8.8	0.00341	2.5
3.87	2595	6.2	0.00237	2.5
4.4	2595	7.4	0.00285	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2595	7.1	0.00274	2.5
Extreme (50C)	2595	4.7	0.00183	2.5
Extreme (40C)	2595	5.0	0.00192	2.5
Extreme (30C)	2595	4.5	0.00173	2.5
Extreme (10C)	2595	6.8	0.00262	2.5
Extreme (0C)	2595	5.0	0.00194	2.5
Extreme (-10C)	2595	9.6	0.00369	2.5
Extreme (-20C)	2595	10.9	0.00421	2.5
Extreme (-30C)	2595	6.3	0.00244	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]
3.4	2595	8.3	0.00319	2.5
3.87	2595	6.7	0.00257	2.5
4.4	2595	6.6	0.00256	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2595	7.7	0.00298	2.5
Extreme (50C)	2595	4.4	0.00169	2.5
Extreme (40C)	2595	5.3	0.00203	2.5
Extreme (30C)	2595	5.2	0.00199	2.5
Extreme (10C)	2595	6.7	0.00259	2.5
Extreme (0C)	2595	4.7	0.00180	2.5
Extreme (-10C)	2595	9.1	0.00351	2.5
Extreme (-20C)	2595	10.3	0.00399	2.5
Extreme (-30C)	2595	5.9	0.00226	2.5

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

10.10 LTE BAND 66

QPSK, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 66 QPSK, (CH 132322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	1745	12.6	0.00720	2.5
3.87	1745	14.1	0.00807	2.5
4.4	1745	13.2	0.00756	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 66 QPSK, (CH 132322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1745	7.3	0.00418	2.5
Extreme (50C)	1745	4.5	0.00259	2.5
Extreme (40C)	1745	5.8	0.00331	2.5
Extreme (30C)	1745	5.2	0.00296	2.5
Extreme (10C)	1745	6.3	0.00359	2.5
Extreme (0C)	1745	4.6	0.00261	2.5
Extreme (-10C)	1745	9.5	0.00542	2.5
Extreme (-20C)	1745	10.3	0.00593	2.5
Extreme (-30C)	1745	6.5	0.00373	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 66 16QAM, (CH 132322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	1745	12.5	0.00714	2.5
3.87	1745	14.2	0.00815	2.5
4.4	1745	13.0	0.00746	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 66 16QAM, (CH 132322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1745	7.4	0.00423	2.5
Extreme (50C)	1745	4.9	0.00280	2.5
Extreme (40C)	1745	5.9	0.00336	2.5
Extreme (30C)	1745	5.0	0.00286	2.5
Extreme (10C)	1745	6.8	0.00392	2.5
Extreme (0C)	1745	4.3	0.00249	2.5
Extreme (-10C)	1745	9.3	0.00533	2.5
Extreme (-20C)	1745	11.2	0.00641	2.5
Extreme (-30C)	1745	5.7	0.00326	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.

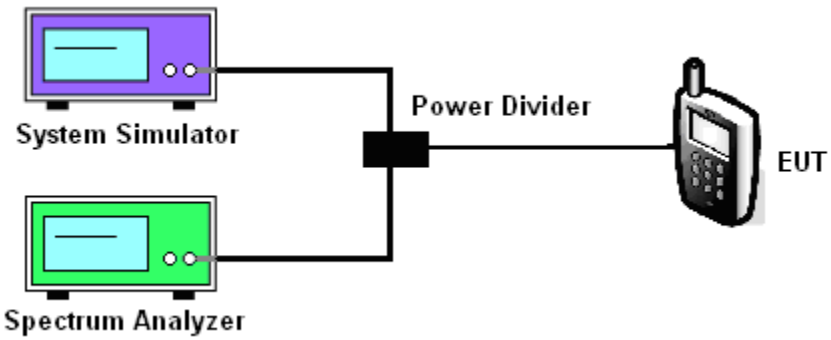
11.2 Measuring Instruments

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 GSM/EGPRS operating modes:
   a. Set the RBW = 1MHz, VBW = 1MHz, Peak detector in spectrum analyzer.
   b. Set EUT in maximum power output, and triggered the burst signal.
   c. Measured respectively the Peak level and Mean level, and the deviation was recorded as Peak to Average Ratio.
4. For UMTS 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 Band2/4/5/7/12/13/17/38/41/66
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Test data reference attachment.

----END OF REPORT----