

FCC CFR47 PART 22H, 24E, 27 CERTIFICATION TEST REPORT FCC ID: 2BD9H-E62PLUS

Product: mobile phone

Trade Mark: EUDORA

Model No.: E62 Plus

Family Model: N/A

Report No.: S24010505201006

Issue Date: Jan 26, 2024

Prepared for

Eudora Mobile Inc

2610 Columbia ST A, Torrance, CA 90503

Prepared by

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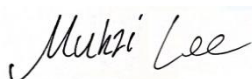
TEST RESULT CERTIFICATION

Applicant's name : Eudora Mobile Inc
Address..... : 2610 Columbia ST A, Torrance, CA 90503
Manufacturer's Name..... : Eudora Mobile Inc
Address..... : 2610 Columbia ST A, Torrance, CA 90503
Product name..... : mobile phone
Model and/or type reference .. : E62 Plus
Trade Mark..... : EUDORA
Family Model..... : N/A
Test Sample Number : S240105052002
Date of Test..... : Jan 05, 2024 ~ Jan 26, 2024
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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Test Result..... **Pass**

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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	EUDORA
Model Name	E62 Plus
Family Model	N/A
Model Difference	N/A
FCC ID:	2BD9H-E62PLUS
Frequency Bands:	U.S. Bands: ☒ LTE FDD Band 2,4,5,12,17,66, TDD Band 41,71
Frequency Range:	LTE FDD Band 2 Uplink: 1850MHz-1910MHz, Downlink: 1930MHz-1990MHz; LTE FDD Band 4 Uplink: 1710MHz-1755MHz, Downlink: 2110MHz-2155MHz; LTE FDD Band 5 Uplink: 824MHz-849MHz, Downlink: 869MHz-894MHz; LTE FDD Band 12 Uplink: 699MHz-716MHz, Downlink: 729MHz-746MHz; LTE FDD Band 17 Uplink: 704MHz-716MHz, Downlink: 734MHz-746MHz; LTE TDD Band 41 Uplink: 2496MHz-2690MHz, LTE FDD Band 66 Uplink: 1710MHz-1780MHz, Downlink: 2110MHz-2200MHz; LTE TDD Band 71 Uplink: 663MHz-698MHz, Downlink: 617MHz-652MHz;
Type of Modulation:	QPSK/16QAM/64QAM(Only Downlink)
Power Class	Class 3
SIM CARD	SIM 1 and SIM 2 is a chipset unit and tested as a single chipset. The SIM 1 is chosen for test.
Antenna:	PIFA Antenna
Antenna gain:	Band 2: 1.8 dBi, Band 4: 1.8 dBi, Band 5: 0.4 dBi, Band 12: 0.3 dBi, Band 17: 0.3 dBi, Band 41: 2.0 dBi, Band 66: 1.8dBi, Band 71: 0.2 dBi
Adapter	Input: 100-240V~50/60Hz 0.15A Output: 5.0V---1A
Battery	DC 3.8V, 3500mAh, 13.3Wh
Power Rating	DC 3.8V from battery or DC 5V from adapter
Extreme Vol. Limits:	DC 3.23V to DC 4.37V (Nominal DC 3.8V) (Note 1)
HW Version	2277TQ_V15
SW Version	Eudora_E62PLus
** Note1: The High Voltage DC 4.37V and Low Voltage 3.23V was declared by manufacturer, The EUT couldn't be operate normally with higher or lower voltage.	

1.2 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2BD9H-E62PLUS** filing to comply with the FCC Part 22H&24E&27&90S.

1.3 TEST METHODOLOGY

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

1.4 TEST FACILITY

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

ShenZhen NTEK Testing Technology Co., Ltd.

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

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

FCC Registration No.:463705

IC Registration No.:9270A-1,

CNAS Registration No.:L5516

MEASUREMENT UNCERTAINTY

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

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

1.5 SPECIAL ACCESSORIES

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

1.6 WORST-CASE CONFIGURATION AND MODE

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

The device has LTE Bands of: Band 2/4/5/12/17/41/66/71

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

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

2. SYSTEM TEST CONFIGURATION

2.1 EUT CONFIGURATION

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

2.2 EUT EXERCISE

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

2.3 CONFIGURATION OF EUT SYSTEM

Table 2-1 Equipment Used in EUT System

Item	Equipment	Model No.	ID or Specification	Note
1	mobile phone	E62 Plus	FCC ID: 2BD9H-E62PLUS	EUT

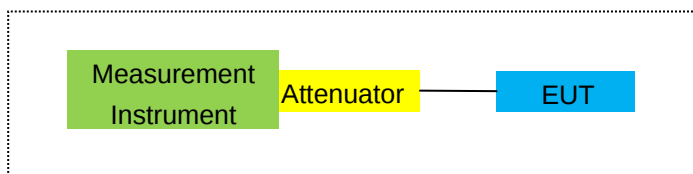
*Note: All the accessories have been used during the test.
the following "EUT" in setup diagram means EUT system.*

2.4 TEST SETUP

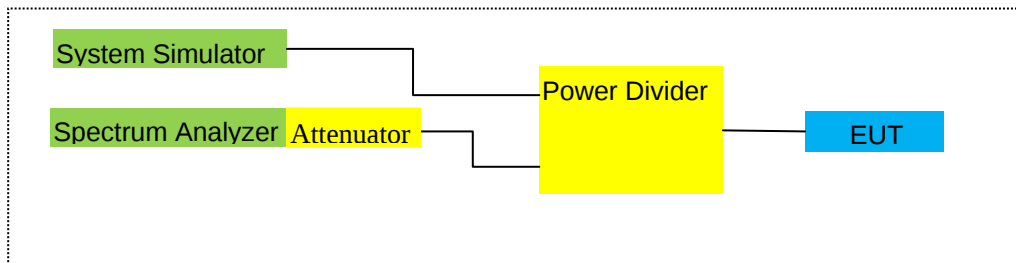
For Radiated Test Cases



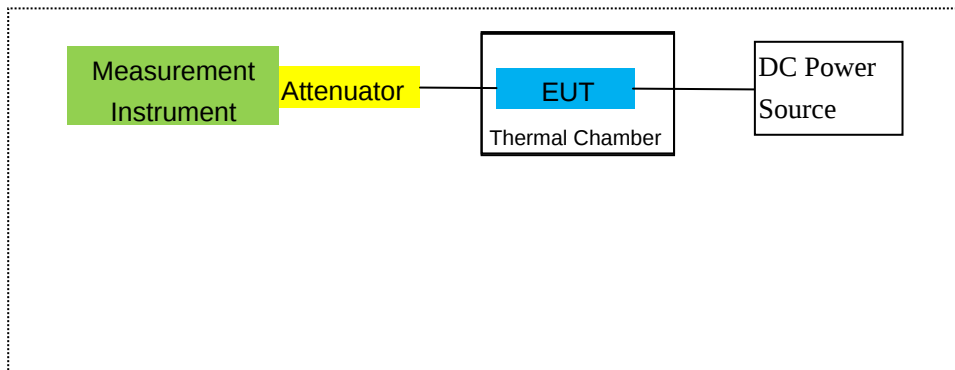
For Conducted Output Power



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



For Frequency Stability



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

3.TEST AND MEASUREMENT EQUIPMENT

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

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	MXA Signal Analyzer	Agilent	N9020A	MY49100060	2023.05.29	2024.05.28	1 year
2	Test Receiver	R&S	ESPI	101318	2023.03.27	2024.03.26	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2023.03.16	2024.03.15	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2023.05.06	2026.05.05	3 year
5	Horn Antenna	EM	EM-AH-10180	2011071402	2022.03.31	2025.03.30	3 year
6	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2022.11.07	2025.11.06	3 year
7	Amplifier	EM	EM-30180	060538	2023.05.29	2024.05.28	1 year
8	Loop Antenna	ARA	PLA-1030/B	1029	2023.11.03	2026.11.02	3 year
9	Power Meter	R&S	NRVS	100696	2023.05.29	2024.05.28	1 year
10	Power Sensor	R&S	URV5-Z4	0395.1619.05	2023.05.29	2024.05.28	1 year
11	Test Cable	N/A	R-01	N/A	2022.06.17	2025.06.16	3 year
12	Test Cable	N/A	R-02	N/A	2022.06.17	2025.06.16	3 year
13	Test 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	20170402923	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

☐

Band 2/4/5/12/17/41/66/71

RESULTS

PASS

Test data reference attachment.

6. BANDEDGE AND EMISSION MASK

RULE PART(S)

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

FCC: §22.359

LIMITS

FCC: §22.917, §24.238, §27.53

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log (P)$ dB.

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

(c)(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;

FCC: §90.691 Emission mask requirements for EA-based systems.

(a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $116 \log_{10}(f/6.1)$ decibels or $50 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

TEST PROCEDURE

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

For each band edge measurement:

Set the spectrum analyzer span to include the block edge frequency

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

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

MODES TESTED

Band 2/4/5/12/17/41/66/71

RESULTS

Test data reference attachment.

7. OUT OF BAND EMISSIONS

RULE PART(S)

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

LIMITS

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

TEST PROCEDURE

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

For each out of band emissions measurement:

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

MODES TESTED

- ☐ Band 2/4/5/12/17/41/66/71
- ☐

7.1 MEASUREMENT METHOD

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

Test data reference attachment.

8. RADIATED MEASUREMENT

8.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

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

LIMITS:

22.913(a) - The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

27.50 (c) (10) the following power and antenna height requirements apply to stations transmitting in the 698–746 MHz band, the portable stations (hand-held devices) are limited to 3 watts ERP.

27.50 (b)(10) Portable stations (hand-held devices) transmitting in the 746–757 MHz, 758–763 MHz, 776–793 MHz, and 805–806 MHz bands are limited to 3 watts ERP.

27.50 (d)(4) The following power and antenna height requirements apply to stations transmitting in the 1710–1755 MHz and 2110–2155 MHz bands: Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP.

27.50 (h)(2) Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

90.635(b) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

TEST PROCEDURE

ANSI/TIA-603-E Clause 2.2.17

KDB 971168 v02r01 RF power output using broadband peak and average power meter method.

KDB 971168 D01 Power Meas License Digital Systems v02r01, "Measurement Guidance for Certification of Licensed Digital Transmitters"

MODES TESTED

☐ Band 2/4/5/12/17/41/66/71

RESULTS

Pass

8.2 LTE BAND 2

Radiated Power (EIRP) for Band 2									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	1850.7	-1.13	3.76	28.24	23.35	216.272	Horizontal	Pass
		1880	-0.96	3.91	28.22	23.35	216.272	Horizontal	Pass
		1909.3	-0.97	3.93	28.20	23.30	213.796	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-1.06	3.77	28.23	23.40	218.776	Horizontal	Pass
		1880	-0.98	3.91	28.24	23.35	216.272	Horizontal	Pass
		1908.5	-1.06	3.94	28.25	23.25	211.349	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-1.31	3.77	28.31	23.23	210.378	Horizontal	Pass
		1880	-1.03	3.91	28.22	23.28	212.814	Horizontal	Pass
		1907.5	-1.03	3.94	28.20	23.23	210.378	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1855	-1.17	3.79	28.33	23.37	217.270	Horizontal	Pass
		1880	-0.97	3.95	28.22	23.30	213.796	Horizontal	Pass
		1905	-0.97	3.97	28.19	23.25	211.349	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1857.5	-1.15	3.79	28.34	23.40	218.776	Horizontal	Pass
		1880	-0.99	3.95	28.22	23.28	212.814	Horizontal	Pass
		1902.5	-0.86	3.97	28.18	23.35	216.272	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1860	-1.17	3.81	28.35	23.37	217.270	Horizontal	Pass
		1880	-1.02	3.96	28.22	23.24	210.863	Horizontal	Pass
		1900	-0.90	4.00	28.16	23.26	211.836	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1850.7	-1.17	3.76	28.24	23.31	214.289	Vertical	Pass
		1880	-0.95	3.91	28.22	23.36	216.770	Vertical	Pass
		1909.3	-0.89	3.93	28.20	23.38	217.771	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-1.16	3.77	28.23	23.30	213.796	Vertical	Pass
		1880	-0.96	3.91	28.24	23.37	217.270	Vertical	Pass
		1908.5	-0.92	3.94	28.25	23.39	218.273	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-1.28	3.77	28.31	23.26	211.836	Vertical	Pass
		1880	-0.92	3.91	28.22	23.39	218.273	Vertical	Pass
		1907.5	-1.01	3.94	28.20	23.25	211.349	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1855	-1.19	3.79	28.33	23.35	216.272	Vertical	Pass
		1880	-0.90	3.95	28.22	23.37	217.270	Vertical	Pass
		1905	-0.96	3.97	28.19	23.26	211.836	Vertical	Pass

15.0MHz	1/#Mid	1857.5	-1.18	3.79	28.34	23.37	217.270	Vertical	Pass
Band		1880	-0.88	3.95	28.22	23.39	218.273	Vertical	Pass
QPSK		1902.5	-0.91	3.97	28.18	23.30	213.796	Vertical	Pass
20.0MHz	1/#Mid	1860	-1.13	3.81	28.35	23.41	219.280	Vertical	Pass
Band		1880	-0.86	3.96	28.22	23.40	218.776	Vertical	Pass
QPSK		1900	-0.74	4.00	28.16	23.42	219.786	Vertical	Pass

Radiated Power (EIRP) for Band 2									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz	1/#Mid	1850.7	-1.90	3.76	28.24	22.58	181.134	Horizontal	Pass
Band 16		1880	-1.79	3.91	28.22	22.52	178.649	Horizontal	Pass
QAM		1909.3	-1.72	3.93	28.20	22.55	179.887	Horizontal	Pass
3.0MHz	1/#Mid	1851.5	-1.98	3.77	28.23	22.48	177.011	Horizontal	Pass
Band 16		1880	-1.88	3.91	28.24	22.45	175.792	Horizontal	Pass
QAM		1908.5	-1.77	3.94	28.25	22.54	179.473	Horizontal	Pass
5.0MHz	1/#Mid	1852.5	-2.07	3.77	28.31	22.47	176.604	Horizontal	Pass
Band 16		1880	-1.88	3.91	28.22	22.43	174.985	Horizontal	Pass
QAM		1907.5	-1.66	3.94	28.20	22.60	181.970	Horizontal	Pass
10.0MHz	1/#Mid	1855	-2.01	3.79	28.33	22.53	179.061	Horizontal	Pass
Band 16		1880	-1.77	3.95	28.22	22.50	177.828	Horizontal	Pass
QAM		1905	-1.67	3.97	28.19	22.55	179.887	Horizontal	Pass
15.0MHz	1/#Mid	1857.5	-2.10	3.79	28.34	22.45	175.792	Horizontal	Pass
Band 16		1880	-1.67	3.95	28.22	22.60	181.970	Horizontal	Pass
QAM		1902.5	-1.63	3.97	28.18	22.58	181.134	Horizontal	Pass
20.0MHz	1/#Mid	1860	-1.99	3.81	28.35	22.55	179.887	Horizontal	Pass
Band 16		1880	-1.75	3.96	28.22	22.51	178.238	Horizontal	Pass
QAM		1900	-1.65	4.00	28.16	22.51	178.238	Horizontal	Pass
1.4MHz	1/#Mid	1850.7	-1.97	3.76	28.24	22.51	178.238	Vertical	Pass
Band 16		1880	-1.80	3.91	28.22	22.51	178.238	Vertical	Pass
QAM		1909.3	-1.70	3.93	28.20	22.57	180.717	Vertical	Pass
3.0MHz	1/#Mid	1851.5	-1.94	3.77	28.23	22.52	178.649	Vertical	Pass
Band 16		1880	-1.86	3.91	28.24	22.47	176.604	Vertical	Pass
QAM		1908.5	-1.79	3.94	28.25	22.52	178.649	Vertical	Pass
5.0MHz	1/#Mid	1852.5	-2.03	3.77	28.31	22.51	178.238	Vertical	Pass

Band 16		1880	-1.88	3.91	28.22	22.43	174.985	Vertical	Pass
QAM		1907.5	-1.73	3.94	28.20	22.53	179.061	Vertical	Pass
10.0MHz	1/#Mid	1855	-2.03	3.79	28.33	22.51	178.238	Vertical	Pass
Band 16		1880	-1.73	3.95	28.22	22.54	179.473	Vertical	Pass
QAM		1905	-1.67	3.97	28.19	22.55	179.887	Vertical	Pass
15.0MHz	1/#Mid	1857.5	-1.99	3.79	28.34	22.56	180.302	Vertical	Pass
Band 16		1880	-1.76	3.95	28.22	22.51	178.238	Vertical	Pass
QAM		1902.5	-1.72	3.97	28.18	22.49	177.419	Vertical	Pass
20.0MHz	1/#Mid	1860	-1.90	3.81	28.35	22.64	183.654	Vertical	Pass
Band 16		1880	-1.65	3.96	28.22	22.61	182.390	Vertical	Pass
QAM		1900	-1.54	4.00	28.16	22.62	182.810	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

8.3 LTE BAND 4

Radiated Power (EIRP) for Band 4									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	1710.7	-1.93	3.12	27.58	22.53	179.061	Horizontal	Pass
		1732.5	-1.82	3.27	27.61	22.52	178.649	Horizontal	Pass
		1754.3	-1.77	3.29	27.63	22.57	180.717	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-2.00	3.13	27.61	22.48	177.011	Horizontal	Pass
		1732.5	-1.79	3.27	27.61	22.55	179.887	Horizontal	Pass
		1753.5	-1.82	3.30	27.62	22.50	177.828	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-1.95	3.13	27.63	22.55	179.887	Horizontal	Pass
		1732.5	-1.81	3.27	27.61	22.53	179.061	Horizontal	Pass
		1752.5	-1.80	3.30	27.60	22.50	177.828	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1715	-1.94	3.15	27.64	22.55	179.887	Horizontal	Pass
		1732.5	-1.70	3.31	27.61	22.60	181.970	Horizontal	Pass
		1750	-1.75	3.33	27.59	22.51	178.238	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-1.90	3.15	27.65	22.60	181.970	Horizontal	Pass
		1732.5	-1.84	3.31	27.61	22.46	176.198	Horizontal	Pass
		1747.5	-1.66	3.33	27.57	22.58	181.134	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1720	-2.04	3.17	27.66	22.45	175.792	Horizontal	Pass
		1732.5	-1.71	3.32	27.61	22.58	181.134	Horizontal	Pass
		1745	-1.66	3.36	27.56	22.54	179.473	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1710.7	-1.89	3.12	27.58	22.57	180.717	Vertical	Pass
		1732.5	-1.89	3.27	27.61	22.45	175.792	Vertical	Pass
		1754.3	-1.88	3.29	27.63	22.46	176.198	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-2.00	3.13	27.61	22.48	177.011	Vertical	Pass
		1732.5	-1.89	3.27	27.61	22.45	175.792	Vertical	Pass
		1753.5	-1.81	3.30	27.62	22.51	178.238	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-2.04	3.13	27.63	22.46	176.198	Vertical	Pass
		1732.5	-1.90	3.27	27.61	22.44	175.388	Vertical	Pass
		1752.5	-1.74	3.30	27.60	22.56	180.302	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1715	-1.98	3.15	27.64	22.51	178.238	Vertical	Pass
		1732.5	-1.85	3.31	27.61	22.45	175.792	Vertical	Pass
		1750	-1.69	3.33	27.59	22.57	180.717	Vertical	Pass

15.0MHz Band QPSK	1/#Mid	1717.5	-1.93	3.15	27.65	22.57	180.717	Vertical	Pass
		1732.5	-1.71	3.31	27.61	22.59	181.552	Vertical	Pass
		1747.5	-1.65	3.33	27.57	22.59	181.552	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	1720	-1.84	3.17	27.66	22.65	184.077	Vertical	Pass
		1732.5	-1.68	3.32	27.61	22.61	182.390	Vertical	Pass
		1745	-1.59	3.36	27.56	22.61	182.390	Vertical	Pass

Radiated Power (EIRP) for Band 4									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mid	1710.7	-2.60	3.12	27.58	21.86	153.462	Horizontal	Pass
		1732.5	-2.56	3.27	27.61	21.78	150.661	Horizontal	Pass
		1754.3	-2.47	3.29	27.63	21.87	153.815	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-2.65	3.13	27.61	21.83	152.405	Horizontal	Pass
		1732.5	-2.58	3.27	27.61	21.76	149.968	Horizontal	Pass
		1753.5	-2.57	3.30	27.62	21.75	149.624	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-2.70	3.13	27.63	21.80	151.356	Horizontal	Pass
		1732.5	-2.62	3.27	27.61	21.72	148.594	Horizontal	Pass
		1752.5	-2.46	3.30	27.60	21.84	152.757	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-2.66	3.15	27.64	21.83	152.405	Horizontal	Pass
		1732.5	-2.46	3.31	27.61	21.84	152.757	Horizontal	Pass
		1750	-2.51	3.33	27.59	21.75	149.624	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-2.74	3.15	27.65	21.76	149.968	Horizontal	Pass
		1732.5	-2.47	3.31	27.61	21.83	152.405	Horizontal	Pass
		1747.5	-2.40	3.33	27.57	21.84	152.757	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-2.60	3.17	27.66	21.89	154.525	Horizontal	Pass
		1732.5	-2.53	3.32	27.61	21.76	149.968	Horizontal	Pass
		1745	-2.48	3.36	27.56	21.72	148.594	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	-2.66	3.12	27.58	21.80	151.356	Vertical	Pass
		1732.5	-2.49	3.27	27.61	21.85	153.109	Vertical	Pass
		1754.3	-2.55	3.29	27.63	21.79	151.008	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-2.58	3.13	27.61	21.90	154.882	Vertical	Pass
		1732.5	-2.60	3.27	27.61	21.74	149.279	Vertical	Pass
		1753.5	-2.50	3.30	27.62	21.82	152.055	Vertical	Pass
5.0MHz	1/#Mid	1712.5	-2.64	3.13	27.63	21.86	153.462	Vertical	Pass

Band 16 QAM		1732.5	-2.61	3.27	27.61	21.73	148.936	Vertical	Pass
		1752.5	-2.47	3.30	27.60	21.83	152.405	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-2.65	3.15	27.64	21.84	152.757	Vertical	Pass
		1732.5	-2.41	3.31	27.61	21.89	154.525	Vertical	Pass
		1750	-2.38	3.33	27.59	21.88	154.170	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-2.60	3.15	27.65	21.90	154.882	Vertical	Pass
		1732.5	-2.52	3.31	27.61	21.78	150.661	Vertical	Pass
		1747.5	-2.48	3.33	27.57	21.76	149.968	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-2.59	3.17	27.66	21.90	154.882	Vertical	Pass
		1732.5	-2.37	3.32	27.61	21.92	155.597	Vertical	Pass
		1745	-2.27	3.36	27.56	21.93	155.955	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

8.4 LTE BAND 5

Radiated Power (ERP) for Band 5										
Mode	RB/RB SIZE	Frequency	Result							Conclusi on
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Correction (dB)	Max. ERP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	824.7	5.64	2.01	19.68	2.15	21.16	130.617	Horizontal	Pass
		836.5	5.49	2.01	19.77	2.15	21.10	128.825	Horizontal	Pass
		848.3	5.40	2.02	19.82	2.15	21.05	127.350	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	825.5	5.55	2.01	19.70	2.15	21.09	128.529	Horizontal	Pass
		836.5	5.55	2.01	19.77	2.15	21.16	130.617	Horizontal	Pass
		847.5	5.49	2.02	19.81	2.15	21.13	129.718	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	826.5	5.57	2.01	19.71	2.15	21.12	129.420	Horizontal	Pass
		836.5	5.57	2.01	19.77	2.15	21.18	131.220	Horizontal	Pass
		846.5	5.56	2.02	19.79	2.15	21.18	131.220	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	829	5.44	2.01	19.73	2.15	21.01	126.183	Horizontal	Pass
		836.5	5.53	2.01	19.77	2.15	21.14	130.017	Horizontal	Pass
		844	5.56	2.02	19.78	2.15	21.17	130.918	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	824.7	5.60	2.01	19.68	2.15	21.12	129.420	Vertical	Pass
		836.5	5.46	2.01	19.77	2.15	21.07	127.938	Vertical	Pass
		848.3	5.43	2.02	19.82	2.15	21.08	128.233	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	825.5	5.51	2.01	19.70	2.15	21.05	127.350	Vertical	Pass
		836.5	5.45	2.01	19.77	2.15	21.06	127.644	Vertical	Pass
		847.5	5.48	2.02	19.81	2.15	21.12	129.420	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	826.5	5.51	2.01	19.71	2.15	21.06	127.644	Vertical	Pass
		836.5	5.50	2.01	19.77	2.15	21.11	129.122	Vertical	Pass
		846.5	5.48	2.02	19.79	2.15	21.10	128.825	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	829	5.65	2.01	19.73	2.15	21.22	132.434	Vertical	Pass
		836.5	5.63	2.01	19.77	2.15	21.24	133.045	Vertical	Pass
		844	5.61	2.02	19.78	2.15	21.22	132.434	Vertical	Pass

Radiated Power (ERP) for Band 5										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Correction (dB)	Max. ERP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mid	824.7	5.09	2.01	19.68	2.15	20.61	115.080	Horizontal	Pass
		836.5	4.98	2.01	19.77	2.15	20.59	114.551	Horizontal	Pass
		848.3	5.05	2.02	19.82	2.15	20.70	117.490	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	5.12	2.01	19.70	2.15	20.66	116.413	Horizontal	Pass
		836.5	4.98	2.01	19.77	2.15	20.59	114.551	Horizontal	Pass
		847.5	4.93	2.02	19.81	2.15	20.57	114.025	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	5.02	2.01	19.71	2.15	20.57	114.025	Horizontal	Pass
		836.5	5.07	2.01	19.77	2.15	20.68	116.950	Horizontal	Pass
		846.5	4.97	2.02	19.79	2.15	20.59	114.551	Horizontal	Pass
10.0MHz z Band 16 QAM	1/#Mid	829	5.03	2.01	19.73	2.15	20.60	114.815	Horizontal	Pass
		836.5	5.06	2.01	19.77	2.15	20.67	116.681	Horizontal	Pass
		844	5.00	2.02	19.78	2.15	20.61	115.080	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	824.7	5.07	2.01	19.68	2.15	20.59	114.551	Vertical	Pass
		836.5	5.04	2.01	19.77	2.15	20.65	116.145	Vertical	Pass
		848.3	5.05	2.02	19.82	2.15	20.70	117.490	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	5.15	2.01	19.70	2.15	20.69	117.220	Vertical	Pass
		836.5	4.96	2.01	19.77	2.15	20.57	114.025	Vertical	Pass
		847.5	5.01	2.02	19.81	2.15	20.65	116.145	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	5.07	2.01	19.71	2.15	20.62	115.345	Vertical	Pass
		836.5	4.93	2.01	19.77	2.15	20.54	113.240	Vertical	Pass
		846.5	4.99	2.02	19.79	2.15	20.61	115.080	Vertical	Pass
10.0MHz z Band 16 QAM	1/#Mid	829	5.15	2.01	19.73	2.15	20.72	118.032	Vertical	Pass
		836.5	5.13	2.01	19.77	2.15	20.74	118.577	Vertical	Pass
		844	5.11	2.02	19.78	2.15	20.72	118.032	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

8.6 LTE BAND 12

Radiated Power (ERP) for Band 12										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Correction (dB)	Max. ERP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	699.7	6.15	1.91	19.21	2.15	21.30	134.896	Vertical	Pass
		707.5	6.18	1.91	19.26	2.15	21.38	137.404	Vertical	Pass
		715.3	6.05	1.93	19.34	2.15	21.31	135.207	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	700.5	6.16	1.91	19.21	2.15	21.31	135.207	Vertical	Pass
		707.5	6.07	1.91	19.26	2.15	21.27	133.968	Vertical	Pass
		714.5	6.09	1.93	19.34	2.15	21.35	136.458	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	701.5	6.22	1.91	19.23	2.15	21.39	137.721	Vertical	Pass
		707.5	6.12	1.91	19.26	2.15	21.32	135.519	Vertical	Pass
		713.5	6.04	1.92	19.33	2.15	21.30	134.896	Vertical	Pass
10.0Hz Band QPSK	1/#Mid	704	6.19	1.91	19.25	2.15	21.38	137.404	Vertical	Pass
		707.5	6.10	1.91	19.26	2.15	21.30	134.896	Vertical	Pass
		711	6.10	1.92	19.32	2.15	21.35	136.458	Vertical	Pass
1.4MHz Band QPSK	1/#Mid	699.7	6.12	1.91	19.21	2.15	21.27	133.968	Horizontal	Pass
		707.5	6.09	1.91	19.26	2.15	21.29	134.586	Horizontal	Pass
		715.3	6.11	1.93	19.34	2.15	21.37	137.088	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	700.5	6.11	1.91	19.21	2.15	21.26	133.660	Horizontal	Pass
		707.5	6.15	1.91	19.26	2.15	21.35	136.458	Horizontal	Pass
		714.5	6.00	1.93	19.34	2.15	21.26	133.660	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	701.5	6.10	1.91	19.23	2.15	21.27	133.968	Horizontal	Pass
		707.5	6.17	1.91	19.26	2.15	21.37	137.088	Horizontal	Pass
		713.5	5.98	1.92	19.33	2.15	21.24	133.045	Horizontal	Pass
10.0Hz Band QPSK	1/#Mid	704	6.22	1.91	19.25	2.15	21.41	138.357	Horizontal	Pass
		707.5	6.21	1.91	19.26	2.15	21.41	138.357	Horizontal	Pass
		711	6.17	1.92	19.32	2.15	21.42	138.676	Horizontal	Pass

Radiated Power (ERP) for Band 12										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mid	699.7	5.04	1.91	19.21	2.15	20.19	104.472	Vertical	Pass
		707.5	5.05	1.91	19.26	2.15	20.25	105.925	Vertical	Pass
		715.3	5.02	1.93	19.34	2.15	20.28	106.660	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	700.5	5.03	1.91	19.21	2.15	20.18	104.232	Vertical	Pass
		707.5	4.98	1.91	19.26	2.15	20.18	104.232	Vertical	Pass
		714.5	4.93	1.93	19.34	2.15	20.19	104.472	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	701.5	5.03	1.91	19.23	2.15	20.20	104.713	Vertical	Pass
		707.5	5.00	1.91	19.26	2.15	20.20	104.713	Vertical	Pass
		713.5	4.95	1.92	19.33	2.15	20.21	104.954	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	704	4.93	1.91	19.25	2.15	20.12	102.802	Vertical	Pass
		707.5	4.96	1.91	19.26	2.15	20.16	103.753	Vertical	Pass
		711	4.99	1.92	19.32	2.15	20.24	105.682	Vertical	Pass
1.4MHz Band 16 QAM	1/#Mid	699.7	5.13	1.91	19.21	2.15	20.28	106.660	Horizontal	Pass
		707.5	5.05	1.91	19.26	2.15	20.25	105.925	Horizontal	Pass
		715.3	4.96	1.93	19.34	2.15	20.22	105.196	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	700.5	5.05	1.91	19.21	2.15	20.20	104.713	Horizontal	Pass
		707.5	5.07	1.91	19.26	2.15	20.27	106.414	Horizontal	Pass
		714.5	5.00	1.93	19.34	2.15	20.26	106.170	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	701.5	5.12	1.91	19.23	2.15	20.29	106.905	Horizontal	Pass
		707.5	4.95	1.91	19.26	2.15	20.15	103.514	Horizontal	Pass
		713.5	4.94	1.92	19.33	2.15	20.20	104.713	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	704	5.15	1.91	19.25	2.15	20.34	108.143	Horizontal	Pass
		707.5	5.13	1.91	19.26	2.15	20.33	107.895	Horizontal	Pass
		711	5.07	1.92	19.32	2.15	20.32	107.647	Horizontal	Pass

Note:

SG Level= Signal generator output

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

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

8.7 LTE BAND 17

Radiated Power (ERP) for Band 17										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level	Cable Loss	Factor	Correction	Max. ERP	Max. ERP	Polarization	
			(dBm)	(dBm)	(dB)		Average	Average	Of Max. ERP	
							(dBm)	(mW)		
5.0MHz Band QPSK	1/#Mid	706.5	6.25	1.91	19.23	2.15	21.42	138.676	Vertical	Pass
		710	6.28	1.91	19.26	2.15	21.48	140.605	Vertical	Pass
		713.5	6.23	1.92	19.33	2.15	21.49	140.929	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	709	6.27	1.91	19.25	2.15	21.46	139.959	Vertical	Pass
		710	6.16	1.91	19.26	2.15	21.36	136.773	Vertical	Pass
		711	6.19	1.92	19.32	2.15	21.44	139.316	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	706.5	6.31	1.91	19.23	2.15	21.48	140.605	Horizontal	Pass
		710	6.22	1.91	19.26	2.15	21.42	138.676	Horizontal	Pass
		713.5	6.17	1.92	19.33	2.15	21.43	138.995	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	709	6.33	1.91	19.25	2.15	21.52	141.906	Horizontal	Pass
		710	6.33	1.91	19.26	2.15	21.53	142.233	Horizontal	Pass
		711	6.27	1.92	19.32	2.15	21.52	141.906	Horizontal	Pass

Radiated Power (ERP) for Band 17										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level	Cable Loss	Factor	Correction	Max. ERP	Max. ERP	Polarization	
			(dBm)	(dBm)	(dB)	(dB)	Average	Average	Of Max. ERP	
							(dBm)	(mW)		
5.0MHz Band 16 QAM	1/#Mid	706.5	5.12	1.91	19.23	2.15	20.29	106.905	Vertical	Pass
		710	5.01	1.91	19.26	2.15	20.21	104.954	Vertical	Pass
		713.5	4.92	1.92	19.33	2.15	20.18	104.232	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	709	5.03	1.91	19.25	2.15	20.22	105.196	Vertical	Pass
		710	5.09	1.91	19.26	2.15	20.29	106.905	Vertical	Pass
		711	5.02	1.92	19.32	2.15	20.27	106.414	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	706.5	4.99	1.91	19.23	2.15	20.16	103.753	Horizontal	Pass
		710	4.96	1.91	19.26	2.15	20.16	103.753	Horizontal	Pass
		713.5	4.93	1.92	19.33	2.15	20.19	104.472	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	709	5.15	1.91	19.25	2.15	20.34	108.143	Horizontal	Pass
		710	5.14	1.91	19.26	2.15	20.34	108.143	Horizontal	Pass
		711	5.05	1.92	19.32	2.15	20.30	107.152	Horizontal	Pass

Note:

SG Level= Signal generator output

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

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

8.8 LTE BAND 41

Radiated Power (EIRP) for Band 41									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band QPSK	1/#Mid	2498.5	0.86	4.54	27.75	24.07	255.270	Horizontal	Pass
		2593	1.03	4.69	27.72	24.06	254.683	Horizontal	Pass
		2687.5	1.07	4.71	27.71	24.07	255.270	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	2501	0.84	4.55	27.76	24.05	254.097	Horizontal	Pass
		2593	1.14	4.69	27.72	24.17	261.216	Horizontal	Pass
		2685	1.19	4.72	27.70	24.17	261.216	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	2503.5	0.90	4.55	27.77	24.12	258.226	Horizontal	Pass
		2593	1.12	4.69	27.72	24.15	260.016	Horizontal	Pass
		2682.5	1.05	4.72	27.69	24.02	252.348	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	2506	0.91	4.57	27.78	24.12	258.226	Horizontal	Pass
		2593	1.18	4.73	27.72	24.17	261.216	Horizontal	Pass
		2680	1.20	4.75	27.68	24.13	258.821	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	2498.5	0.99	4.54	27.75	24.20	263.027	Vertical	Pass
		2593	1.13	4.69	27.72	24.16	260.615	Vertical	Pass
		2687.5	1.09	4.71	27.71	24.09	256.448	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	2501	0.85	4.55	27.76	24.06	254.683	Vertical	Pass
		2593	1.01	4.69	27.72	24.04	253.513	Vertical	Pass
		2685	1.17	4.72	27.70	24.15	260.016	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	2503.5	0.82	4.55	27.77	24.04	253.513	Vertical	Pass
		2593	1.16	4.69	27.72	24.19	262.422	Vertical	Pass
		2682.5	1.11	4.72	27.69	24.08	255.859	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	2506	1.04	4.57	27.78	24.25	266.073	Vertical	Pass
		2593	1.23	4.73	27.72	24.22	264.241	Vertical	Pass
		2680	1.29	4.75	27.68	24.22	264.241	Vertical	Pass

Radiated Power (EIRP) for Band 41									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	1/#Mid	2502.5	0.21	4.54	27.75	23.42	219.786	Horizontal	Pass
		2535	0.43	4.69	27.72	23.46	221.820	Horizontal	Pass
		2567.5	0.39	4.71	27.71	23.39	218.273	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	0.27	4.55	27.76	23.48	222.844	Horizontal	Pass
		2535	0.45	4.69	27.72	23.48	222.844	Horizontal	Pass
		2565	0.48	4.72	27.70	23.46	221.820	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	0.24	4.55	27.77	23.46	221.820	Horizontal	Pass
		2535	0.30	4.69	27.72	23.33	215.278	Horizontal	Pass
		2562.5	0.39	4.72	27.69	23.36	216.770	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	0.26	4.57	27.78	23.47	222.331	Horizontal	Pass
		2535	0.42	4.73	27.72	23.41	219.280	Horizontal	Pass
		2560	0.55	4.75	27.68	23.48	222.844	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	2502.5	0.23	4.54	27.75	23.44	220.800	Vertical	Pass
		2535	0.38	4.69	27.72	23.41	219.280	Vertical	Pass
		2567.5	0.46	4.71	27.71	23.46	221.820	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	0.20	4.55	27.76	23.41	219.280	Vertical	Pass
		2535	0.33	4.69	27.72	23.36	216.770	Vertical	Pass
		2565	0.52	4.72	27.70	23.50	223.872	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	0.16	4.55	27.77	23.38	217.771	Vertical	Pass
		2535	0.36	4.69	27.72	23.39	218.273	Vertical	Pass
		2562.5	0.45	4.72	27.69	23.42	219.786	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	0.29	4.57	27.78	23.50	223.872	Vertical	Pass
		2535	0.54	4.73	27.72	23.53	225.424	Vertical	Pass
		2560	0.61	4.75	27.68	23.54	225.944	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)

8.9 LTE BAND 66

Radiated Power (EIRP) for Band 66									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	6/0	1710.7	-1.52	3.76	28.24	22.96	197.697	Horizontal	Pass
		1745	-1.29	3.91	28.22	23.02	200.447	Horizontal	Pass
		1779.3	-1.30	3.93	28.2	22.97	198.153	Horizontal	Pass
3.0MHz Band QPSK	15/0	1711.5	-1.48	3.77	28.23	22.98	198.609	Horizontal	Pass
		1745	-1.35	3.91	28.24	22.98	198.609	Horizontal	Pass
		1778.5	-1.26	3.94	28.25	23.05	201.837	Horizontal	Pass
5.0MHz Band QPSK	25/0	1712.5	-1.61	3.77	28.31	22.93	196.336	Horizontal	Pass
		1745	-1.23	3.91	28.22	23.08	203.236	Horizontal	Pass
		1777.5	-1.29	3.94	28.2	22.97	198.153	Horizontal	Pass
10.0MHz Band QPSK	50/0	1715	-1.57	3.79	28.33	22.97	198.153	Horizontal	Pass
		1745	-1.29	3.95	28.22	22.98	198.609	Horizontal	Pass
		1775	-1.25	3.97	28.19	22.97	198.153	Horizontal	Pass
15.0MHz Band QPSK	75/0	1717.5	-1.48	3.79	28.34	23.07	202.768	Horizontal	Pass
		1745	-1.32	3.95	28.22	22.95	197.242	Horizontal	Pass
		1772.5	-1.25	3.97	28.18	22.96	197.697	Horizontal	Pass
20.0MHz Band QPSK	100/0	1720	-1.54	3.81	28.35	23.00	199.526	Horizontal	Pass
		1745	-1.31	3.96	28.22	22.95	197.242	Horizontal	Pass
		1770	-1.14	4	28.16	23.02	200.447	Horizontal	Pass
1.4MHz Band QPSK	6/0	1710.7	-1.41	3.76	28.24	23.07	202.768	Vertical	Pass
		1745	-1.23	3.91	28.22	23.08	203.236	Vertical	Pass
		1779.3	-1.21	3.93	28.2	23.06	202.302	Vertical	Pass
3.0MHz Band QPSK	15/0	1711.5	-1.41	3.77	28.23	23.05	201.837	Vertical	Pass
		1745	-1.38	3.91	28.24	22.95	197.242	Vertical	Pass
		1778.5	-1.22	3.94	28.25	23.09	203.704	Vertical	Pass
5.0MHz Band QPSK	25/0	1712.5	-1.48	3.77	28.31	23.06	202.302	Vertical	Pass
		1745	-1.33	3.91	28.22	22.98	198.609	Vertical	Pass
		1777.5	-1.31	3.94	28.2	22.95	197.242	Vertical	Pass
10.0MHz	50/0	1715	-1.52	3.79	28.34	23.03	200.909	Vertical	Pass

Band QPSK		1745	-1.31	3.95	28.22	22.96	197.697	Vertical	Pass
		1775	-1.14	3.97	28.18	23.07	202.768	Vertical	Pass
15.0MHz Band QPSK	75/0	1717.5	-1.44	3.81	28.35	23.10	204.174	Vertical	Pass
		1745	-1.16	3.96	28.22	23.10	204.174	Vertical	Pass
		1772.5	-1.18	4	28.16	22.98	198.609	Vertical	Pass
20.0MHz Band QPSK	100/0	1720	-1.43	3.79	28.34	23.12	205.116	Vertical	Pass
		1745	-1.16	3.95	28.22	23.11	204.644	Vertical	Pass
		1770	-1.11	3.97	28.18	23.10	204.174	Vertical	Pass

Radiated Power (EIRP) for Band 66									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	6/0	1710.7	-2.56	3.76	28.24	21.92	155.597	Horizontal	Pass
		1745	-2.35	3.91	28.22	21.96	157.036	Horizontal	Pass
		1779.3	-2.36	3.93	28.2	21.91	155.239	Horizontal	Pass
3.0MHz Band 16 QAM	15/0	1711.5	-2.57	3.77	28.23	21.89	154.525	Horizontal	Pass
		1745	-2.42	3.91	28.24	21.91	155.239	Horizontal	Pass
		1778.5	-2.44	3.94	28.25	21.87	153.815	Horizontal	Pass
5.0MHz Band 16 QAM	25/0	1712.5	-2.69	3.77	28.31	21.85	153.109	Horizontal	Pass
		1745	-2.38	3.91	28.22	21.93	155.955	Horizontal	Pass
		1777.5	-2.39	3.94	28.2	21.87	153.815	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	1715	-2.67	3.79	28.33	21.87	153.815	Horizontal	Pass
		1745	-2.27	3.95	28.22	22.00	158.489	Horizontal	Pass
		1775	-2.23	3.97	28.19	21.99	158.125	Horizontal	Pass
15.0MHz Band 16 QAM	75/0	1717.5	-2.60	3.79	28.34	21.95	156.675	Horizontal	Pass
		1745	-2.36	3.95	28.22	21.91	155.239	Horizontal	Pass
		1772.5	-2.22	3.97	28.18	21.99	158.125	Horizontal	Pass
20.0MHz Band 16 QAM	100/0	1720	-2.57	3.81	28.35	21.97	157.398	Horizontal	Pass
		1745	-2.26	3.96	28.22	22.00	158.489	Horizontal	Pass
		1770	-2.17	4	28.16	21.99	158.125	Horizontal	Pass
1.4MHz Band 16 QAM	6/0	1710.7	-2.49	3.76	28.24	21.99	158.125	Vertical	Pass
		1745	-2.42	3.91	28.22	21.89	154.525	Vertical	Pass
		1779.3	-2.35	3.93	28.2	21.92	155.597	Vertical	Pass
3.0MHz Band 16 QAM	15/0	1711.5	-2.60	3.77	28.23	21.86	153.462	Vertical	Pass
		1745	-2.34	3.91	28.24	21.99	158.125	Vertical	Pass
		1778.5	-2.44	3.94	28.25	21.87	153.815	Vertical	Pass

5.0MHz	25/0	1712.5	-2.55	3.77	28.31	21.99	158.125	Vertical	Pass
Band 16		1745	-2.43	3.91	28.22	21.88	154.170	Vertical	Pass
QAM		1777.5	-2.39	3.94	28.2	21.87	153.815	Vertical	Pass
10.0MHz	50/0	1715	-2.57	3.79	28.34	21.98	157.761	Vertical	Pass
Band 16		1745	-2.28	3.95	28.22	21.99	158.125	Vertical	Pass
QAM		1775	-2.28	3.97	28.18	21.93	155.955	Vertical	Pass
15.0MHz	75/0	1717.5	-2.67	3.81	28.35	21.87	153.815	Vertical	Pass
Band 16		1745	-2.41	3.96	28.22	21.85	153.109	Vertical	Pass
QAM		1772.5	-2.32	4	28.16	21.84	152.757	Vertical	Pass
20.0MHz	100/0	1720	-2.55	3.79	28.34	22.00	158.489	Vertical	Pass
Band 16		1745	-2.23	3.95	28.22	22.04	159.956	Vertical	Pass
QAM		1770	-2.20	3.97	28.18	22.01	158.855	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

8.10 LTE BAND 71

Radiated Power (ERP) for Band 71										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Correction (dB)	Max. ERP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band QPSK	1/#Mid	665.5	5.62	1.91	19.21	2.15	20.77	119.399	Vertical	Pass
		680.5	5.58	1.91	19.26	2.15	20.78	119.674	Vertical	Pass
		695.5	5.54	1.93	19.34	2.15	20.80	120.226	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	668	5.53	1.91	19.21	2.15	20.68	116.950	Vertical	Pass
		680.5	5.51	1.91	19.26	2.15	20.71	117.761	Vertical	Pass
		693	5.48	1.93	19.34	2.15	20.74	118.577	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	670.5	5.59	1.91	19.23	2.15	20.76	119.124	Vertical	Pass
		680.5	5.50	1.91	19.26	2.15	20.70	117.490	Vertical	Pass
		690.5	5.43	1.92	19.33	2.15	20.69	117.220	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	673	5.58	1.91	19.25	2.15	20.77	119.399	Vertical	Pass
		683	5.47	1.91	19.26	2.15	20.67	116.681	Vertical	Pass
		688	5.38	1.92	19.32	2.15	20.63	115.611	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	665.5	5.58	1.91	19.21	2.15	20.73	118.304	Horizontal	Pass
		680.5	5.54	1.91	19.26	2.15	20.74	118.577	Horizontal	Pass
		695.5	5.50	1.93	19.34	2.15	20.76	119.124	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	668	5.62	1.91	19.21	2.15	20.77	119.399	Horizontal	Pass
		680.5	5.57	1.91	19.26	2.15	20.77	119.399	Horizontal	Pass
		693	5.46	1.93	19.34	2.15	20.72	118.032	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	670.5	5.50	1.91	19.23	2.15	20.67	116.681	Horizontal	Pass
		680.5	5.51	1.91	19.26	2.15	20.71	117.761	Horizontal	Pass
		690.5	5.54	1.92	19.33	2.15	20.80	120.226	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	673	5.66	1.91	19.25	2.15	20.85	121.619	Horizontal	Pass
		683	5.64	1.91	19.26	2.15	20.84	121.339	Horizontal	Pass
		688	5.61	1.92	19.32	2.15	20.86	121.899	Horizontal	Pass

Radiated Power (ERP) for Band 71										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Correction (dB)	Max. ERP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	1/#Mid	665.5	4.80	1.91	19.21	2.15	19.95	98.855	Vertical	Pass
		680.5	4.74	1.91	19.26	2.15	19.94	98.628	Vertical	Pass
		695.5	4.78	1.93	19.34	2.15	20.04	100.925	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	668	4.88	1.91	19.21	2.15	20.03	100.693	Vertical	Pass
		680.5	4.78	1.91	19.26	2.15	19.98	99.541	Vertical	Pass
		693	4.71	1.93	19.34	2.15	19.97	99.312	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	670.5	4.85	1.91	19.23	2.15	20.02	100.462	Vertical	Pass
		680.5	4.87	1.91	19.26	2.15	20.07	101.625	Vertical	Pass
		690.5	4.70	1.92	19.33	2.15	19.96	99.083	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	673	4.73	1.91	19.25	2.15	19.92	98.175	Vertical	Pass
		683	4.75	1.91	19.26	2.15	19.95	98.855	Vertical	Pass
		688	4.68	1.92	19.32	2.15	19.93	98.401	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	665.5	4.81	1.91	19.21	2.15	19.96	99.083	Horizontal	Pass
		680.5	4.86	1.91	19.26	2.15	20.06	101.391	Horizontal	Pass
		695.5	4.75	1.93	19.34	2.15	20.01	100.231	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	668	4.82	1.91	19.21	2.15	19.97	99.312	Horizontal	Pass
		680.5	4.79	1.91	19.26	2.15	19.99	99.770	Horizontal	Pass
		693	4.75	1.93	19.34	2.15	20.01	100.231	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	670.5	4.75	1.91	19.23	2.15	19.92	98.175	Horizontal	Pass
		680.5	4.72	1.91	19.26	2.15	19.92	98.175	Horizontal	Pass
		690.5	4.78	1.92	19.33	2.15	20.04	100.925	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	673	4.91	1.91	19.25	2.15	20.10	102.329	Horizontal	Pass
		683	4.92	1.91	19.26	2.15	20.12	102.802	Horizontal	Pass
		688	4.87	1.92	19.32	2.15	20.12	102.802	Horizontal	Pass

Note:

SG Level= Signal generator output

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

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

9. SPURIOUS RADIATION EMISSION

RULE PART(S)

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

LIMIT

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

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

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

TEST PROCEDURE

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

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

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

The power of any unwanted emissions measured from the channel edge of the equipment shall be attenuated below the transmitter power, P (dBW), as follows:

- a. for base station and subscriber equipment, other than mobile subscriber equipment, the attenuation shall not be less than $43 + 10 \log_{10}(p)$, dB; and
- b. for mobile subscriber equipment, the attenuation shall not be less than $43 + 10 \log_{10}(p)$, dB at the channel edges and $55 + 10 \log_{10}(p)$ at 5.5 MHz away and beyond the channel edges where p in (a) and (b) is the transmitter power measured in watts.

MODES TESTED

LTE Band 2/4/5/12/17/41/66/71

RESULTS

PASS

9.1 LTE BAND 2

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

Test Results for Low Channel 1850.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3701.4	-48.58	4.04	33.51	-19.11	-13	-6.11	Horizontal
3701.4	-53.43	4.04	33.51	-23.96	-13	-10.96	Vertical
5552.1	-49.14	5.24	35.84	-18.54	-13	-5.54	Vertical
5552.1	-49.59	5.24	35.84	-18.99	-13	-5.99	Horizontal
211.0	-34.09	1.43	16.02	-19.50	-13	-6.50	Vertical
389.6	-35.36	1.30	17.99	-18.67	-13	-5.67	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-48.90	4.04	33.56	-19.38	-13	-6.38	Horizontal
3760.0	-49.21	4.04	33.56	-19.69	-13	-6.69	Vertical
5640.0	-47.53	5.24	35.91	-16.86	-13	-3.86	Vertical
5640.0	-53.77	5.24	35.91	-23.10	-13	-10.10	Horizontal
175.8	-36.38	1.62	16.97	-21.03	-13	-8.03	Vertical
371.5	-39.11	1.74	15.98	-24.88	-13	-11.88	Horizontal
Test Results for High Channel 1909.3MHz							
3818.6	-49.71	4.04	34.00	-19.75	-13	-6.75	Horizontal
3818.6	-50.06	4.04	34.00	-20.10	-13	-7.10	Vertical
5727.9	-49.13	5.24	36.04	-18.33	-13	-5.33	Vertical
5727.9	-50.75	5.24	36.04	-19.95	-13	-6.95	Horizontal
209.2	-42.78	1.42	17.29	-26.91	-13	-13.91	Vertical
336.3	-36.27	1.50	17.90	-19.86	-13	-6.86	Horizontal

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

Test Results for Low Channel 1860MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3720.0	-53.50	4.07	33.54	-24.03	-13	-11.03	Horizontal
3720.0	-49.90	4.07	33.54	-20.43	-13	-7.43	Vertical
5580.0	-48.95	5.28	35.86	-18.37	-13	-5.37	Vertical
5580.0	-49.33	5.28	35.86	-18.75	-13	-5.75	Horizontal
185.4	-41.40	1.58	16.89	-26.08	-13	-13.08	Vertical
452.8	-43.62	1.76	17.26	-28.12	-13	-15.12	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-50.87	4.04	33.56	-21.35	-13	-8.35	Horizontal
3760.0	-49.10	4.04	33.56	-19.58	-13	-6.58	Vertical
5640.0	-49.21	5.24	35.91	-18.54	-13	-5.54	Vertical
5640.0	-51.66	5.24	35.91	-20.99	-13	-7.99	Horizontal
196.9	-34.35	1.46	16.27	-19.54	-13	-6.54	Vertical
260.7	-39.40	1.59	15.15	-25.84	-13	-12.84	Horizontal
Test Results for High Channel 1900MHz							
3800.0	-44.84	4.04	34.00	-14.88	-13	-1.88	Horizontal
3800.0	-44.57	4.04	34.00	-14.61	-13	-1.61	Vertical
5700.0	-51.83	5.24	36.04	-21.03	-13	-8.03	Vertical
5700.0	-52.46	5.24	36.04	-21.66	-13	-8.66	Horizontal
183.7	-39.12	1.36	17.39	-23.08	-13	-10.08	Vertical
444.0	-41.06	1.66	15.39	-27.33	-13	-14.33	Horizontal

Note: P_{Mea}(dBm)= Power(dBm)+ AR_{pl} (dBm)

. Over Limit= : P_{Mea}(dBm)-Limit(dBm)

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

9.2 LTE BAND 4

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

Test Results for Low Channel 1710.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3421.4	-45.39	4.02	29.80	-19.61	-13	-6.61	Horizontal
3421.4	-49.66	4.02	29.80	-23.88	-13	-10.88	Vertical
5132.1	-51.37	5.24	35.84	-20.77	-13	-7.77	Vertical
5132.1	-50.09	5.24	35.84	-19.49	-13	-6.49	Horizontal
186.1	-35.69	1.68	16.04	-21.33	-13	-8.33	Vertical
397.4	-38.30	1.78	17.74	-22.34	-13	-9.34	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-51.11	4.03	30.00	-25.14	-13	-12.14	Horizontal
3465.0	-53.48	4.03	30.00	-27.51	-13	-14.51	Vertical
5197.5	-45.87	5.25	35.86	-15.26	-13	-2.26	Vertical
5197.5	-52.51	5.25	35.86	-21.90	-13	-8.90	Horizontal
188.4	-37.44	1.72	17.69	-21.47	-13	-8.47	Vertical
268.5	-36.26	1.62	16.02	-21.85	-13	-8.85	Horizontal
Test Results for High Channel 1754.3MHz							
3508.6	-48.03	4.05	30.01	-22.07	-13	-9.07	Horizontal
3508.6	-47.50	4.05	30.01	-21.54	-13	-8.54	Vertical
5262.9	-45.86	5.26	35.86	-15.26	-13	-2.26	Vertical
5262.9	-49.32	5.26	35.86	-18.72	-13	-5.72	Horizontal
183.6	-43.36	1.80	16.69	-28.47	-13	-15.47	Vertical
345.6	-40.86	1.75	16.66	-25.96	-13	-12.96	Horizontal

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

Test Results for Low Channel 1720MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3440.0	-48.32	4.02	29.80	-22.54	-13	-9.54	Horizontal
3440.0	-50.27	4.02	29.80	-24.49	-13	-11.49	Vertical
5160.0	-49.56	5.24	35.84	-18.96	-13	-5.96	Vertical
5160.0	-49.32	5.24	35.84	-18.72	-13	-5.72	Horizontal
211.5	-42.63	1.57	17.26	-26.94	-13	-13.94	Vertical
347.6	-44.86	1.78	16.35	-30.29	-13	-17.29	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-46.57	4.03	30.00	-20.60	-13	-7.60	Horizontal
3465.0	-47.80	4.03	30.00	-21.83	-13	-8.83	Vertical
5197.5	-50.73	5.25	35.86	-20.12	-13	-7.12	Vertical
5197.5	-49.29	5.25	35.86	-18.68	-13	-5.68	Horizontal
212.0	-40.79	1.44	17.95	-24.28	-13	-11.28	Vertical
421.2	-36.68	1.65	16.09	-22.24	-13	-9.24	Horizontal
Test Results for High Channel 1745MHz							
3490.0	-52.46	4.05	27.68	-28.83	-13	-15.83	Horizontal
3490.0	-46.37	4.05	27.68	-22.74	-13	-9.74	Vertical
5235.0	-53.75	5.26	35.86	-23.15	-13	-10.15	Vertical
5235.0	-51.90	5.26	35.86	-21.30	-13	-8.30	Horizontal
175.2	-42.17	1.61	16.85	-26.93	-13	-13.93	Vertical
455.9	-37.56	1.61	15.19	-23.98	-13	-10.98	Horizontal

Note: P_{Mea}(dBm)= Power(dBm)+ AR_{pl} (dBm)

. Over Limit= : P_{Mea}(dBm)-Limit(dBm)

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

9.3 LTE BAND 5

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

Test Results for Low Channel 824.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1649.4	-53.60	2.78	27.50	-28.88	-13	-15.88	Horizontal
1649.4	-52.04	2.78	27.50	-27.32	-13	-14.32	Vertical
2474.1	-53.11	2.90	27.80	-28.21	-13	-15.21	Vertical
2474.1	-51.19	2.90	27.80	-26.29	-13	-13.29	Horizontal
184.1	-34.55	1.76	17.59	-18.72	-13	-5.72	Vertical
400.4	-39.88	1.63	15.87	-25.64	-13	-12.64	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-53.89	2.80	27.48	-29.21	-13	-16.21	Horizontal
1673.0	-49.77	2.80	27.48	-25.09	-13	-12.09	Vertical
2509.5	-52.43	2.91	27.70	-27.64	-13	-14.64	Vertical
2509.5	-52.91	2.91	27.70	-28.12	-13	-15.12	Horizontal
196.4	-44.71	1.61	15.68	-30.64	-13	-17.64	Vertical
314.6	-37.60	1.59	17.52	-21.68	-13	-8.68	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-50.82	2.82	27.43	-26.21	-13	-13.21	Horizontal
1696.6	-52.26	2.82	27.43	-27.65	-13	-14.65	Vertical
2544.9	-47.33	2.92	27.74	-22.51	-13	-9.51	Vertical
2544.9	-52.58	2.92	27.74	-27.76	-13	-14.76	Horizontal
208.9	-40.13	1.69	16.67	-25.14	-13	-12.14	Vertical
360.7	-40.41	1.70	17.18	-24.93	-13	-11.93	Horizontal

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

Test Results for Low Channel 829MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1658.0	-48.43	2.78	27.50	-23.71	-13	-10.71	Horizontal
1658.0	-44.73	2.78	27.50	-20.01	-13	-7.01	Vertical
2487.0	-48.42	2.90	27.80	-23.52	-13	-10.52	Vertical
2487.0	-51.67	2.90	27.80	-26.77	-13	-13.77	Horizontal
182.4	-37.42	1.71	15.57	-23.56	-13	-10.56	Vertical
398.2	-37.40	1.34	16.40	-22.34	-13	-9.34	Horizontal
Test Results for Mid Channel 836.5MHz							
1673.0	-44.48	2.80	27.48	-19.80	-13	-6.80	Horizontal
1673.0	-46.20	2.80	27.48	-21.52	-13	-8.52	Vertical
2509.5	-52.34	2.91	27.70	-27.55	-13	-14.55	Vertical
2509.5	-49.85	2.91	27.70	-25.06	-13	-12.06	Horizontal
193.1	-44.23	1.44	17.04	-28.63	-13	-15.63	Vertical
340.3	-35.12	1.76	17.62	-19.26	-13	-6.26	Horizontal
Test Results for High Channel 844MHz							
1688.0	-52.00	2.82	27.43	-27.39	-13	-14.39	Horizontal
1688.0	-47.15	2.82	27.43	-22.54	-13	-9.54	Vertical
2532.0	-46.83	2.92	27.74	-22.01	-13	-9.01	Vertical
2532.0	-53.31	2.92	27.74	-28.49	-13	-15.49	Horizontal
197.7	-36.67	1.74	17.70	-20.71	-13	-7.71	Vertical
421.7	-35.82	1.41	17.46	-19.76	-13	-6.76	Horizontal

Note: P_{Mea}(dBm)= Power(dBm)+ AR_{pl} (dBm)

. Over Limit= : P_{Mea}(dBm)-Limit(dBm)

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

9.5 LTE BAND 12

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

Test Results for Low Channel 699.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1399.4	-50.20	2.60	27.20	-25.60	-13	-12.60	Horizontal
1399.4	-44.38	2.60	27.20	-19.78	-13	-6.78	Vertical
2099.1	-49.04	2.85	27.54	-24.35	-13	-11.35	Vertical
2099.1	-51.56	2.85	27.54	-26.87	-13	-13.87	Horizontal
210.5	-37.35	1.49	17.78	-21.06	-13	-8.06	Vertical
359.0	-44.37	1.36	17.33	-28.40	-13	-15.40	Horizontal
Test Results For Mid Channel 707.5MHz							
1415.0	-44.77	2.61	27.28	-20.10	-13	-7.10	Horizontal
1415.0	-45.44	2.61	27.28	-20.77	-13	-7.77	Vertical
2122.5	-53.87	2.87	27.59	-29.15	-13	-16.15	Vertical
2122.5	-52.73	2.87	27.59	-28.01	-13	-15.01	Horizontal
178.2	-35.91	1.73	15.74	-21.90	-13	-8.90	Vertical
337.0	-43.20	1.62	15.79	-29.03	-13	-16.03	Horizontal
Test Results for High Channel 715.3MHz							
1430.6	-45.35	2.63	27.28	-20.70	-13	-7.70	Horizontal
1430.6	-51.68	2.63	27.28	-27.03	-13	-14.03	Vertical
2145.9	-50.55	2.88	27.60	-25.83	-13	-12.83	Vertical
2145.9	-49.65	2.88	27.60	-24.93	-13	-11.93	Horizontal
192.1	-36.19	1.61	18.00	-19.80	-13	-6.80	Vertical
333.0	-43.49	1.45	15.49	-29.46	-13	-16.46	Horizontal

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

Test Results for Low Channel 704MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1408.0	-50.64	2.61	27.26	-25.99	-13	-12.99	Horizontal
1408.0	-51.45	2.61	27.26	-26.80	-13	-13.80	Vertical
2112.0	-44.10	2.87	27.58	-19.39	-13	-6.39	Vertical
2112.0	-52.78	2.87	27.58	-28.07	-13	-15.07	Horizontal
196.4	-38.08	1.31	16.97	-22.42	-13	-9.42	Vertical
361.2	-34.98	1.65	16.70	-19.93	-13	-6.93	Horizontal
Test Results for Mid Channel 707.5MHz							
1415.0	-48.97	2.61	27.28	-24.30	-13	-11.30	Horizontal
1415.0	-49.75	2.61	27.28	-25.08	-13	-12.08	Vertical
2122.5	-44.18	2.87	27.59	-19.46	-13	-6.46	Vertical
2122.5	-52.20	2.87	27.59	-27.48	-13	-14.48	Horizontal
199.5	-39.72	1.72	17.99	-23.45	-13	-10.45	Vertical
408.7	-40.55	1.73	17.94	-24.34	-13	-11.34	Horizontal
Test Results for High Channel 711MHz							
1422.0	-44.29	2.62	27.28	-19.63	-13	-6.63	Horizontal
1422.0	-50.65	2.62	27.28	-25.99	-13	-12.99	Vertical
2133.0	-48.91	2.87	27.60	-24.18	-13	-11.18	Vertical
2133.0	-49.86	2.87	27.60	-25.13	-13	-12.13	Horizontal
203.9	-42.49	1.58	15.93	-28.14	-13	-15.14	Vertical
464.0	-37.91	1.36	15.59	-23.68	-13	-10.68	Horizontal

Note: P_{Mea}(dBm)= Power(dBm)+ AR_{pl} (dBm)

. Over Limit= : P_{Mea}(dBm)-Limit(dBm)

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

9.6 LTE BAND 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	-45.93	2.61	27.28	-21.26	-13	-8.26	Horizontal
1413.0	-51.48	2.61	27.28	-26.81	-13	-13.81	Vertical
2119.5	-52.89	2.87	27.59	-28.17	-13	-15.17	Vertical
2119.5	-51.83	2.87	27.59	-27.11	-13	-14.11	Horizontal
208.4	-39.62	1.71	16.15	-25.18	-13	-12.18	Vertical
346.1	-44.55	1.41	17.32	-28.64	-13	-15.64	Horizontal
Test Results For Mid Channel 710MHz							
1420.0	-52.75	2.62	27.30	-28.07	-13	-15.07	Horizontal
1420.0	-44.71	2.62	27.30	-20.03	-13	-7.03	Vertical
2130.0	-45.77	2.87	27.62	-21.02	-13	-8.02	Vertical
2130.0	-50.61	2.87	27.62	-25.86	-13	-12.86	Horizontal
176.6	-42.18	1.42	15.25	-28.36	-13	-15.36	Vertical
263.2	-35.44	1.36	17.19	-19.61	-13	-6.61	Horizontal
Test Results for High Channel 713.5MHz							
1427.0	-48.85	2.66	27.28	-24.23	-13	-11.23	Horizontal
1427.0	-52.16	2.66	27.28	-27.54	-13	-14.54	Vertical
2140.5	-50.40	2.88	27.60	-25.68	-13	-12.68	Vertical
2140.5	-49.63	2.88	27.60	-24.91	-13	-11.91	Horizontal
197.3	-34.06	1.32	17.29	-18.09	-13	-5.09	Vertical
252.2	-42.40	1.72	16.89	-27.23	-13	-14.23	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	-46.18	2.62	27.30	-21.50	-13	-8.50	Horizontal
1418.0	-53.48	2.62	27.30	-28.80	-13	-15.80	Vertical
2127.0	-45.86	2.87	27.62	-21.11	-13	-8.11	Vertical
2127.0	-53.96	2.87	27.62	-29.21	-13	-16.21	Horizontal
176.0	-42.06	1.35	16.91	-26.50	-13	-13.50	Vertical
395.7	-42.82	1.62	16.31	-28.13	-13	-15.13	Horizontal
Test Results for Mid Channel 710MHz							
1420.0	-49.94	2.62	27.30	-25.26	-13	-12.26	Horizontal
1420.0	-45.23	2.62	27.30	-20.55	-13	-7.55	Vertical
2130.0	-51.00	2.87	27.62	-26.25	-13	-13.25	Vertical
2130.0	-49.56	2.87	27.62	-24.81	-13	-11.81	Horizontal
175.3	-40.60	1.51	17.14	-24.97	-13	-11.97	Vertical
314.9	-38.18	1.77	16.88	-23.07	-13	-10.07	Horizontal
Test Results for High Channel 711MHz							
1422.0	-47.01	2.62	27.30	-22.33	-13	-9.33	Horizontal
1422.0	-47.12	2.62	27.30	-22.44	-13	-9.44	Vertical
2133.0	-46.83	2.87	27.62	-22.08	-13	-9.08	Vertical
2133.0	-52.91	2.87	27.62	-28.16	-13	-15.16	Horizontal
187.2	-43.19	1.78	15.95	-29.02	-13	-16.02	Vertical
463.9	-35.57	1.34	17.95	-18.97	-13	-5.97	Horizontal

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

. Margin = Spurious Emission Level - Limit

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

9.7 LTE BAND 41

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

Test Results for Low Channel 2498.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
4997.0	-59.23	5.13	35.81	-28.55	-25	-3.55	Horizontal
4997.0	-64.25	5.13	35.81	-33.57	-25	-8.57	Vertical
7495.5	-61.45	5.42	36.85	-30.02	-25	-5.02	Vertical
7495.5	-63.82	5.42	36.85	-32.39	-25	-7.39	Horizontal
192.5	-53.01	1.56	17.97	-36.60	-25	-11.60	Vertical
327.8	-49.29	1.33	15.11	-35.51	-25	-10.51	Horizontal
Test Results for Mid Channel 2593MHz							
5186.0	-61.69	5.16	35.82	-31.03	-25	-6.03	Horizontal
5186.0	-63.38	5.16	35.82	-32.72	-25	-7.72	Vertical
7779.0	-64.33	5.53	36.85	-33.01	-25	-8.01	Vertical
7779.0	-61.09	5.53	36.85	-29.77	-25	-4.77	Horizontal
207.1	-50.05	1.77	16.17	-35.64	-25	-10.64	Vertical
448.0	-54.36	1.63	15.21	-40.78	-25	-15.78	Horizontal
Test Results for High Channel 2687.5MHz							
5375.0	-59.77	5.23	35.83	-29.17	-25	-4.17	Horizontal
5375.0	-64.42	5.23	35.83	-33.82	-25	-8.82	Vertical
8062.5	-62.76	5.62	36.87	-31.51	-25	-6.51	Vertical
8062.5	-64.65	5.62	36.87	-33.40	-25	-8.40	Horizontal
196.0	-48.38	1.58	17.56	-32.40	-25	-7.40	Vertical
249.5	-44.24	1.45	16.58	-29.11	-25	-4.11	Horizontal

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

Test Results for Low Channel 2506MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5012.0	-61.16	5.23	35.82	-30.57	-25	-5.57	Horizontal
5012.0	-60.21	5.23	35.82	-29.62	-25	-4.62	Vertical
7518.0	-62.03	5.67	36.86	-30.84	-25	-5.84	Vertical
7518.0	-62.09	5.67	36.86	-30.90	-25	-5.90	Horizontal
211.2	-48.12	1.55	15.76	-33.91	-25	-8.91	Vertical
422.6	-44.14	1.62	15.44	-30.32	-25	-5.32	Horizontal
Test Results for Mid Channel 2593MHz							
5186.0	-60.39	5.16	35.82	-29.73	-25	-4.73	Horizontal
5186.0	-63.47	5.16	35.82	-32.81	-25	-7.81	Vertical
7779.0	-63.23	5.53	36.85	-31.91	-25	-6.91	Vertical
7779.0	-59.23	5.53	36.85	-27.91	-25	-2.91	Horizontal
199.8	-47.76	1.58	16.84	-32.50	-25	-7.50	Vertical
309.9	-47.93	1.61	17.64	-31.90	-25	-6.90	Horizontal
Test Results for High Channel 2680MHz							
5360.0	-59.90	5.24	35.83	-29.31	-25	-4.31	Horizontal
5360.0	-62.16	5.24	35.83	-31.57	-25	-6.57	Vertical
8040.0	-64.24	5.70	36.88	-33.06	-25	-8.06	Vertical
8040.0	-59.11	5.70	36.88	-27.93	-25	-2.93	Horizontal
201.3	-46.59	1.48	16.84	-31.23	-25	-6.23	Vertical
466.7	-44.34	1.59	17.64	-28.29	-25	-3.29	Horizontal

Note: P_{Mea}(dBm)= Power(dBm)+ AR_{pl} (dBm)

Over Limit= : P_{Mea}(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.

9.8 LTE BAND 66

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

Test Results for Low Channel 1710.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3421.4	-59.48	3.84	35.81	-27.51	-13	-14.51	Horizontal
3421.4	-61.96	3.84	35.81	-29.99	-13	-16.99	Vertical
5132.1	-62.27	5.18	36.85	-30.60	-13	-17.60	Vertical
5132.1	-61.13	5.18	36.85	-29.46	-13	-16.46	Horizontal
203.9	-50.10	1.56	17.97	-33.69	-13	-20.69	Vertical
305.7	-52.95	1.33	15.11	-39.17	-13	-26.17	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-63.82	3.85	35.82	-31.85	-13	-18.85	Horizontal
3490.0	-62.10	3.85	35.82	-30.13	-13	-17.13	Vertical
5235.0	-61.57	5.21	36.85	-29.93	-13	-16.93	Vertical
5235.0	-63.02	5.21	36.85	-31.38	-13	-18.38	Horizontal
187.3	-49.02	1.77	16.17	-34.61	-13	-21.61	Vertical
390.0	-49.18	1.63	15.21	-35.60	-13	-22.60	Horizontal
Test Results for High Channel 1779.3MHz							
3558.6	-60.14	3.86	35.83	-28.17	-13	-15.17	Horizontal
3558.6	-60.10	3.86	35.83	-28.13	-13	-15.13	Vertical
5337.9	-59.17	5.24	36.87	-27.54	-13	-14.54	Vertical
5337.9	-61.96	5.24	36.87	-30.33	-13	-17.33	Horizontal
198.1	-47.53	1.58	17.56	-31.55	-13	-18.55	Vertical
268.4	-51.44	1.45	16.58	-36.31	-13	-23.31	Horizontal

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

Test Results for Low Channel 1720MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3440.0	-63.88	3.84	35.82	-31.90	-13	-18.90	Horizontal
3440.0	-63.80	3.84	35.82	-31.82	-13	-18.82	Vertical
5160.0	-61.65	5.18	36.86	-29.97	-13	-16.97	Vertical
5160.0	-64.35	5.18	36.86	-32.67	-13	-19.67	Horizontal
180.4	-51.96	1.56	15.76	-37.76	-13	-24.76	Vertical
323.5	-47.43	1.33	15.44	-33.32	-13	-20.32	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-60.32	3.85	35.82	-28.35	-13	-15.35	Horizontal
3490.0	-63.46	3.85	35.82	-31.49	-13	-18.49	Vertical
5235.0	-64.21	5.21	36.85	-32.57	-13	-19.57	Vertical
5235.0	-59.39	5.21	36.85	-27.75	-13	-14.75	Horizontal
182.6	-47.31	1.77	16.84	-32.23	-13	-19.23	Vertical
251.6	-53.42	1.63	17.64	-37.41	-13	-24.41	Horizontal
Test Results for High Channel 1770MHz							
3540.0	-59.47	3.86	35.83	-27.50	-13	-14.50	Horizontal
3540.0	-61.31	3.86	35.83	-29.34	-13	-16.34	Vertical
5310.0	-60.77	5.24	36.88	-29.13	-13	-16.13	Vertical
5310.0	-60.33	5.24	36.88	-28.69	-13	-15.69	Horizontal
182.3	-47.79	1.58	16.84	-32.52	-13	-19.52	Vertical
310.2	-48.82	1.45	17.64	-32.63	-13	-19.63	Horizontal

Note: P_{Mea}(dBm)= Power(dBm)+ AR_{pl} (dBm)

Over Limit= : P_{Mea}(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 71

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

Test Results for Low Channel 665.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1331.0	-64.43	2.16	35.81	-30.78	-13	-17.78	Horizontal
1331.0	-60.10	2.16	35.81	-26.45	-13	-13.45	Vertical
1996.5	-63.04	2.89	36.85	-29.08	-13	-16.08	Vertical
1996.5	-59.48	2.89	36.85	-25.52	-13	-12.52	Horizontal
199.0	-44.89	1.56	17.97	-28.48	-13	-15.48	Vertical
467.2	-44.95	1.33	15.11	-31.17	-13	-18.17	Horizontal
Test Results for Mid Channel 680.5MHz							
1361.0	-64.64	2.17	35.82	-30.99	-13	-17.99	Horizontal
1361.0	-60.78	2.17	35.82	-27.13	-13	-14.13	Vertical
2041.5	-59.83	2.90	36.85	-25.88	-13	-12.88	Vertical
2041.5	-64.34	2.90	36.85	-30.39	-13	-17.39	Horizontal
206.6	-45.89	1.77	16.17	-31.48	-13	-18.48	Vertical
338.3	-48.36	1.63	15.21	-34.78	-13	-21.78	Horizontal
Test Results for High Channel 695.5MHz							
1391.0	-62.92	2.19	35.83	-29.28	-13	-16.28	Horizontal
1391.0	-63.88	2.19	35.83	-30.24	-13	-17.24	Vertical
2086.5	-63.73	2.95	36.87	-29.81	-13	-16.81	Vertical
2086.5	-61.76	2.95	36.87	-27.84	-13	-14.84	Horizontal
179.2	-48.77	1.58	17.56	-32.79	-13	-19.79	Vertical
298.8	-44.75	1.45	16.58	-29.62	-13	-16.62	Horizontal

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

Test Results for Low Channel 673MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1346.0	-62.10	2.16	35.82	-28.44	-13	-15.44	Horizontal
1346.0	-59.36	2.16	35.82	-25.70	-13	-12.70	Vertical
2019.0	-59.43	2.89	36.86	-25.46	-13	-12.46	Vertical
2019.0	-61.04	2.89	36.86	-27.07	-13	-14.07	Horizontal
211.8	-44.71	1.56	15.76	-30.51	-13	-17.51	Vertical
324.2	-47.47	1.33	15.44	-33.36	-13	-20.36	Horizontal
Test Results for Mid Channel 683MHz							
1366.0	-62.80	2.17	35.82	-29.15	-13	-16.15	Horizontal
1366.0	-60.15	2.17	35.82	-26.50	-13	-13.50	Vertical
2049.0	-62.02	2.90	36.85	-28.07	-13	-15.07	Vertical
2049.0	-61.93	2.90	36.85	-27.98	-13	-14.98	Horizontal
204.6	-50.40	1.77	16.84	-35.32	-13	-22.32	Vertical
417.5	-51.79	1.63	17.64	-35.78	-13	-22.78	Horizontal
Test Results for High Channel 688MHz							
1376.0	-59.63	2.19	35.83	-25.99	-13	-12.99	Horizontal
1376.0	-63.15	2.19	35.83	-29.51	-13	-16.51	Vertical
2064.0	-62.54	2.95	36.88	-28.61	-13	-15.61	Vertical
2064.0	-62.33	2.95	36.88	-28.40	-13	-15.40	Horizontal
189.0	-47.29	1.58	16.84	-32.02	-13	-19.02	Vertical
305.1	-47.38	1.45	17.64	-31.19	-13	-18.19	Horizontal

Note: P_{Mea}(dBm)= Power(dBm)+ AR_{pl} (dBm)

Over Limit= : P_{Mea}(dBm)-Limit(dBm)

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

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

10. FREQUENCY STABILITY

RULE PART(S)

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

LIMITS

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

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

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

- ☐ Temp. = -30° to $+50^{\circ}\text{C}$
- ☐ Voltage = low voltage, DC 3.23V, Normal, DC 3.8V and High voltage, DC 4.37V.

Frequency Stability vs Temperature:

The EUT is placed inside a temperature chamber. The temperature is set to -30°C 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 $+50^{\circ}\text{C}$ is reached.

Frequency Stability vs Voltage:

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

MODES TESTED

LTE Band 2/4/5/12/17/41/66/71

RESULTS

See the following pages.

10.1 LTE BAND 2

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.23	1880	12.7	0.006730	2.5
3.8	1880	14.1	0.007527	2.5
4.37	1880	13.8	0.007329	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	13.0	0.006925	2.5
Extreme (50C)	1880	11.5	0.006119	2.5
Extreme (40C)	1880	14.1	0.007488	2.5
Extreme (30C)	1880	13.1	0.006954	2.5
Extreme (10C)	1880	14.1	0.007510	2.5
Extreme (0C)	1880	11.6	0.006194	2.5
Extreme (-10C)	1880	13.2	0.007047	2.5
Extreme (-20C)	1880	14.0	0.007453	2.5
Extreme (-30C)	1880	15.0	0.007990	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.23	1880	10.3	0.005462	2.5
3.8	1880	8.9	0.004730	2.5
4.37	1880	8.5	0.004542	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	10.1	0.005369	2.5
Extreme (50C)	1880	9.2	0.004895	2.5
Extreme (40C)	1880	8.0	0.004237814	2.5
Extreme (30C)	1880	9.1	0.004851623	2.5
Extreme (10C)	1880	9.1	0.004856742	2.5
Extreme (0C)	1880	8.2	0.004368386	2.5
Extreme (-10C)	1880	8.9	0.004748605	2.5
Extreme (-20C)	1880	9.1	0.004830722	2.5
Extreme (-30C)	1880	8.2	0.00434857	2.5

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

10.2 LTE BAND 4

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.23	1732.5	8.5	0.004921	2.5
3.8	1732.5	8.6	0.004943	2.5
4.37	1732.5	8.2	0.004730	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	8.1	0.004703	2.5
Extreme (50C)	1732.5	9.4	0.005398	2.5
Extreme (40C)	1732.5	7.6	0.004372	2.5
Extreme (30C)	1732.5	5.7	0.003280	2.5
Extreme (10C)	1732.5	6.9	0.003960	2.5
Extreme (0C)	1732.5	9.9	0.005711	2.5
Extreme (-10C)	1732.5	8.9	0.005137	2.5
Extreme (-20C)	1732.5	6.5	0.003774	2.5
Extreme (-30C)	1732.5	8.7	0.005022	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.23	1732.5	9.4	0.005416	2.5
3.8	1732.5	8.7	0.005004	2.5
4.37	1732.5	8.2	0.004729	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	10.1	0.005856	2.5
Extreme (50C)	1732.5	9.3	0.005378	2.5
Extreme (40C)	1732.5	7.6	0.004393	2.5
Extreme (30C)	1732.5	9.2	0.005336	2.5
Extreme (10C)	1732.5	9.0	0.005185	2.5
Extreme (0C)	1732.5	7.7	0.004427	2.5
Extreme (-10C)	1732.5	9.3	0.005361	2.5
Extreme (-20C)	1732.5	8.4	0.004870	2.5
Extreme (-30C)	1732.5	7.9	0.004588	2.5

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

10.3 LTE BAND 5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.23	836.5	5.5	0.006617	2.5
3.8	836.5	6.4	0.007606	2.5
4.37	836.5	4.5	0.005412	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	6.5	0.007763	2.5
Extreme (50C)	836.5	5.6	0.006747	2.5
Extreme (40C)	836.5	6.4	0.007693	2.5
Extreme (30C)	836.5	6.6	0.007950	2.5
Extreme (10C)	836.5	5.3	0.006395	2.5
Extreme (0C)	836.5	5.1	0.006085	2.5
Extreme (-10C)	836.5	5.6	0.006649	2.5
Extreme (-20C)	836.5	6.4	0.007621	2.5
Extreme (-30C)	836.5	6.6	0.007883	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.23	836.5	5.4	0.006400	2.5
3.8	836.5	6.6	0.007872	2.5
4.37	836.5	4.7	0.005617	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	6.5	0.007765	2.5
Extreme (50C)	836.5	6.1	0.007296	2.5
Extreme (40C)	836.5	5.9	0.007066	2.5
Extreme (30C)	836.5	6.1	0.007242	2.5
Extreme (10C)	836.5	5.3	0.006383	2.5
Extreme (0C)	836.5	4.9	0.005830	2.5
Extreme (-10C)	836.5	5.2	0.006210	2.5
Extreme (-20C)	836.5	5.9	0.007108	2.5
Extreme (-30C)	836.5	6.0	0.007185	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]
3.23	707.5	8.4	0.011874	2.5
3.8	707.5	10.4	0.014700	2.5
4.37	707.5	8.4	0.011903	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	707.5	9.0	0.012730	2.5
Extreme (50C)	707.5	7.9	0.011154	2.5
Extreme (40C)	707.5	7.3	0.010345	2.5
Extreme (30C)	707.5	8.4	0.011910	2.5
Extreme (10C)	707.5	7.3	0.010355	2.5
Extreme (0C)	707.5	8.7	0.012317	2.5
Extreme (-10C)	707.5	8.6	0.012146	2.5
Extreme (-20C)	707.5	9.1	0.012933	2.5
Extreme (-30C)	707.5	8.2	0.011630	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]
3.23	707.5	7.4	0.010442	2.5
3.8	707.5	8.3	0.011790	2.5
4.37	707.5	7.7	0.010882	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	707.5	8.9	0.012648	2.5
Extreme (50C)	707.5	8.3	0.011796	2.5
Extreme (40C)	707.5	9.1	0.012837	2.5
Extreme (30C)	707.5	7.8	0.010978	2.5
Extreme (10C)	707.5	8.8	0.012456	2.5
Extreme (0C)	707.5	7.6	0.010697	2.5
Extreme (-10C)	707.5	7.2	0.010122	2.5
Extreme (-20C)	707.5	9.1	0.012881	2.5
Extreme (-30C)	707.5	8.1	0.011449	2.5

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

10.6 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]
3.27	710.0	10.1	0.014251	2.5
3.85	710.0	8.8	0.012340	2.5
4.43	710.0	7.7	0.010808	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	9.3	0.013144	2.5
Extreme (50C)	710.0	9.0	0.012668	2.5
Extreme (40C)	710.0	8.5	0.011905	2.5
Extreme (30C)	710.0	8.5	0.011978	2.5
Extreme (10C)	710.0	8.6	0.012129	2.5
Extreme (0C)	710.0	8.4	0.011874	2.5
Extreme (-10C)	710.0	9.2	0.013015	2.5
Extreme (-20C)	710.0	8.6	0.012085	2.5
Extreme (-30C)	710.0	8.2	0.011609	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]
3.27	710.0	10.5	0.014735	2.5
3.85	710.0	8.8	0.012423	2.5
4.43	710.0	8.7	0.012303	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	9.8	0.013756	2.5
Extreme (50C)	710.0	8.5	0.011949	2.5
Extreme (40C)	710.0	8.5	0.012022	2.5
Extreme (30C)	710.0	9.0	0.012642	2.5
Extreme (10C)	710.0	8.1	0.011383	2.5
Extreme (0C)	710.0	8.7	0.012198	2.5
Extreme (-10C)	710.0	9.2	0.013016	2.5
Extreme (-20C)	710.0	9.3	0.013160	2.5
Extreme (-30C)	710.0	8.9	0.012521	2.5

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

10.7 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]
3.23	2593	10.4	0.003992	2.5
3.8	2593	8.7	0.003358	2.5
4.37	2593	8.1	0.003115	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2593	9.5	0.003659	2.5
Extreme (50C)	2593	9.1	0.003528	2.5
Extreme (40C)	2593	8.4	0.003222	2.5
Extreme (30C)	2593	8.7	0.003369	2.5
Extreme (10C)	2593	7.8	0.003018	2.5
Extreme (0C)	2593	8.1	0.003118	2.5
Extreme (-10C)	2593	9.1	0.003511	2.5
Extreme (-20C)	2593	9.3	0.003601	2.5
Extreme (-30C)	2593	8.8	0.003405	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]
3.23	2593	6.9	0.002661	2.5
3.8	2593	6.7	0.002579	2.5
4.37	2593	5.2	0.002010	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2593	6.9	0.002661	2.5
Extreme (50C)	2593	5.2	0.002019	2.5
Extreme (40C)	2593	5.0	0.001943	2.5
Extreme (30C)	2593	6.5	0.002496	2.5
Extreme (10C)	2593	5.5	0.002135	2.5
Extreme (0C)	2593	5.4	0.002086	2.5
Extreme (-10C)	2593	5.4	0.002068	2.5
Extreme (-20C)	2593	5.6	0.002166	2.5
Extreme (-30C)	2593	6.1	0.002372	2.5

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

10.8 LTE BAND 66

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.23	1745	6.0	0.003462	2.5
3.8	1745	7.2	0.004098	2.5
4.37	1745	7.3	0.004176	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1745	5.4	0.003119	2.5
Extreme (50C)	1745	7.6	0.004330	2.5
Extreme (40C)	1745	6.3	0.003590	2.5
Extreme (30C)	1745	7.4	0.004241	2.5
Extreme (10C)	1745	7.3	0.004182	2.5
Extreme (0C)	1745	6.7	0.003816	2.5
Extreme (-10C)	1745	5.4	0.003083	2.5
Extreme (-20C)	1745	6.2	0.003558	2.5
Extreme (-30C)	1745	6.0	0.003431	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.23	1745	8.2	0.004685	2.5
3.8	1745	7.3	0.004193	2.5
4.37	1745	9.6	0.005500	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1745	8.5	0.004875	2.5
Extreme (50C)	1745	8.1	0.004618	2.5
Extreme (40C)	1745	8.1	0.004670	2.5
Extreme (30C)	1745	7.8	0.004478	2.5
Extreme (10C)	1745	8.9	0.005093	2.5
Extreme (0C)	1745	6.6	0.003806	2.5
Extreme (-10C)	1745	8.7	0.004973	2.5
Extreme (-20C)	1745	8.6	0.004942	2.5
Extreme (-30C)	1745	5.9	0.003384	2.5

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

10.9 LTE BAND 71

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.23	1745	6.5	0.003730	2.5
3.8	1745	6.7	0.003850	2.5
4.37	1745	7.6	0.004377	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1745	5.3	0.003037	2.5
Extreme (50C)	1745	7.0	0.004035	2.5
Extreme (40C)	1745	6.9	0.003963	2.5
Extreme (30C)	1745	7.1	0.004047	2.5
Extreme (10C)	1745	7.1	0.004068	2.5
Extreme (0C)	1745	6.4	0.003669	2.5
Extreme (-10C)	1745	5.8	0.003298	2.5
Extreme (-20C)	1745	6.4	0.003687	2.5
Extreme (-30C)	1745	5.3	0.003035	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.23	1745	8.3	0.004752	2.5
3.8	1745	7.3	0.004162	2.5
4.37	1745	9.8	0.005622	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1745	8.9	0.005109	2.5
Extreme (50C)	1745	8.4	0.004833	2.5
Extreme (40C)	1745	8.7	0.005009	2.5
Extreme (30C)	1745	8.0	0.004585	2.5
Extreme (10C)	1745	8.8	0.005060	2.5
Extreme (0C)	1745	6.2	0.003578	2.5
Extreme (-10C)	1745	8.2	0.004680	2.5
Extreme (-20C)	1745	8.7	0.004996	2.5
Extreme (-30C)	1745	5.6	0.003187	2.5

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

11. Peak-to-Average Ratio

11.1 Description of the PAR Measurement

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

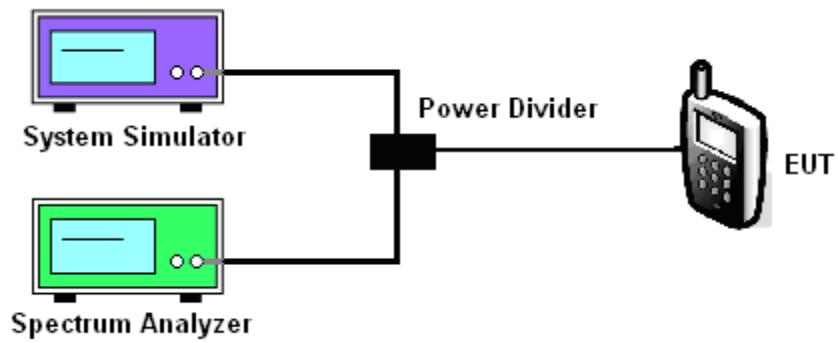
11.2 Measuring Instruments

See list of measuring instruments of this test report.

11.3 Test Procedures

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

11.4 Test Setup



MODES TESTED

LTE Band 2/4/5/12/17/41/66/71

Test data reference attachment.

-----END OF REPORT-----