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

FCC ID: O556513923

Product： 4G Smart Phone

Trade Mark： LOGIC, UNONU, iSWAG

Model Number： L65T

Family Model： U65L

Report No.： S23102303601005

Prepared for

SWAGTEK

10205 NW 19th Street STE101Miami, FL 33172

Prepared by

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Certificate #4298.01

TEST RESULT CERTIFICATION

Applicant's name	:	SWAGTEK
Address	:	10205 NW 19th Street STE101Miami, FL 33172
Manufacturer's Name	:	SWAGTEK
Address	:	10205 NW 19th Street STE101Miami, FL 33172
Product name	:	4G Smart Phone
Model and/or type reference	:	L65T
Family Model:		U65L
Test sample number		S231023036003
Standards	:	FCC CFR 47 Part 22H, Part 24E, Part 27, Part 90S
Test procedure	:	ANSI C63.26:2015
		ANSI/TIA-603-E-2016

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

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Date of Test .....

Date (s) of performance of tests ..... Oct 23, 2023 ~ Nov 07, 2023

Date of Issue ..... Nov 08, 2023

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

Prepared By : Allen Liu (Project Engineer)

Reviewed By Aaron Cheng (Supervisor)

Approved By : Alex Li (Manager)

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1. GENERAL INFORMATION

1.1 PRODUCT DESCRIPTION

A major technical description of EUT is described as following:

Product Designation:	4G Smart Phone
Trade Mark	LOGIC, UNONU, iSWAG
Model Name	L65T
Family Model	U65L
Model Difference	All models are the same circuit and RF module, except the model name.
FCC ID:	O556513923
Frequency Bands:	U.S. Bands: ☒LTE FDD Band 2, 4, 5, 7, 12, 17, 25, 26, 66,71 LTE TDD Band 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 17 Uplink: 704MHz-716MHz, Downlink: 734MHz-746MHz; LTE FDD Band 25 Uplink: 1850MHz-1915MHz, Downlink: 1930MHz-1995MHz; LTE FDD Band 26 Uplink: 814MHz-849MHz, Downlink: 859MHz-894MHz; LTE TDD Band 41 Uplink: 2496MHz-2690MHz LTE FDD Band 66 Uplink: 1710MHz-1780MHz, Downlink: 2110MHz-2200MHz; LTE FDD Band 71 Uplink: 663MHz-698MHz, Downlink: 617MHz-652MHz;
Type of Modulation:	QPSK/16QAM
Antenna:	PIFA Antenna
Antenna gain:	0.8 dBi
Power Supply:	DC 3.8V/3000mAh from battery or DC 5V from Adapter.

Adapter:	Model: DLX222-0501000 Input: AC 100-240V, 50/60Hz 0.3A Output: DC 5.0V⎓1000mA
Extreme Vol. Limits:	DC 3.4V to DC 4.2V (Nominal DC 3.8V)（Note 1）
HW Version	J518A_8765AD3EFM10_E20T
SW Version	LOGIC_L65T_GENERIC_V2.0
** Note1: The High Voltage 4.2V and Low Voltage 3.4V was declared by manufacturer, The EUT couldn't be operate normally with higher or lower voltage.	

1.2 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: O556513923** filing to comply with the FCC Part 22H&24E &27&90S.

1.3 TEST METHODOLOGY

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

1.4 TEST FACILITY

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

ShenZhen NTEK Testing Technology Co., Ltd.

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

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

FCC Registration No.:463705

IC Registration No.:9270A,

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 17, Band 25, Band 26,Band 41, Band 66, Band 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

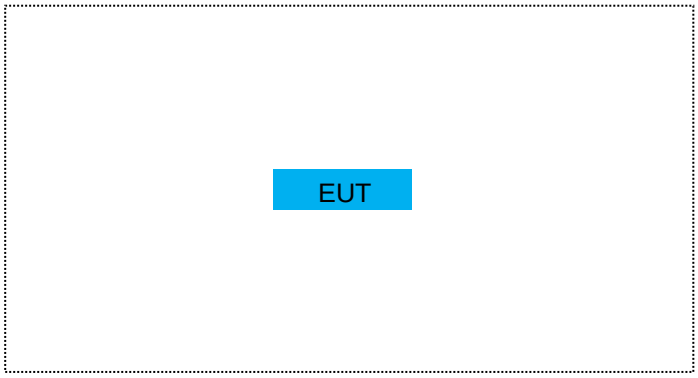
Table 2-1 Equipment Used in EUT System

Item	Equipment	Model No.	ID or Specification	Note
1	4G Smart Phone	L65T	FCC ID: O556513923	EUT

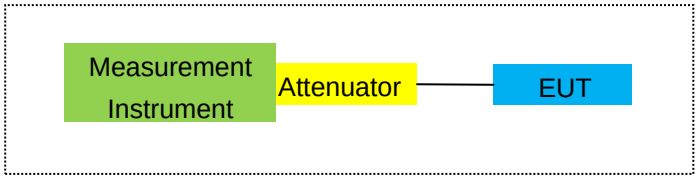
Note: All the accessories have been used during the test.
the following "EUT" in setup diagram means EUT system.

2.4 TEST SETUP

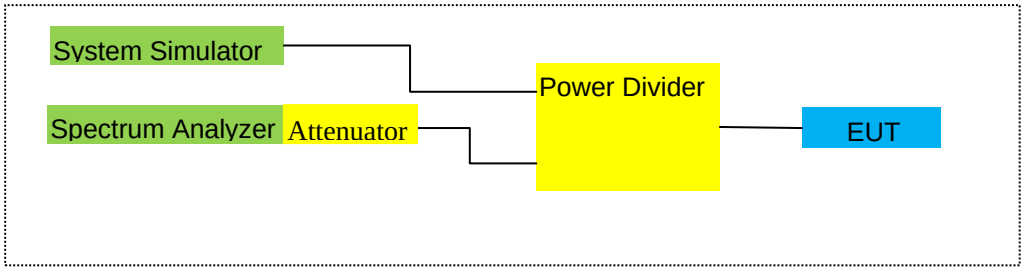
For Radiated Test Cases



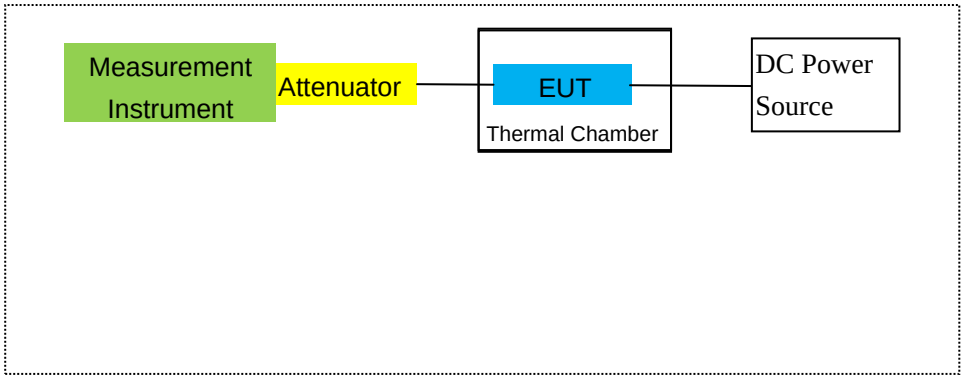
For Conducted Output Power



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 17
- LTE Band 25
- LTE Band 26
- LTE Band 41
- LTE Band 66
- LTE Band 71

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) and §90.691
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 Band2/4/5/7/12/17/25/26/41/66/71

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) and §90.691

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 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.

MODES TESTED

- LTE Band 2/4/5/7/12/17/25/26/41/66/71

7.1 MEASUREMENT METHOD

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

Test data reference attachment.

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) and §90.635

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

RESULTS

Pass

8.2 LTE BAND 2

Radiated Power (EIRP) for Band 2									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	1850.7	-2.53	3.76	28.24	21.95	156.675	Horizontal	Pass
		1880	-2.34	3.91	28.22	21.97	157.398	Horizontal	Pass
		1909.3	-2.25	3.93	28.20	22.02	159.221	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-2.59	3.77	28.23	21.87	153.815	Horizontal	Pass
		1880	-2.44	3.91	28.24	21.89	154.525	Horizontal	Pass
		1908.5	-2.31	3.94	28.25	22.00	158.489	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-2.48	3.77	28.31	22.06	160.694	Horizontal	Pass
		1880	-2.10	3.91	28.22	22.21	166.341	Horizontal	Pass
		1907.5	-2.03	3.94	28.20	22.23	167.109	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1855	-2.34	3.79	28.33	22.20	165.959	Horizontal	Pass
		1880	-2.04	3.95	28.22	22.23	167.109	Horizontal	Pass
		1905	-1.93	3.97	28.19	22.29	169.434	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1857.5	-2.30	3.79	28.34	22.25	167.880	Horizontal	Pass
		1880	-2.09	3.95	28.22	22.18	165.196	Horizontal	Pass
		1902.5	-1.95	3.97	28.18	22.26	168.267	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1860	-2.29	3.81	28.35	22.25	167.880	Horizontal	Pass
		1880	-1.96	3.96	28.22	**22.30**	169.824	Horizontal	Pass
		1900	-1.90	4.00	28.16	22.26	168.267	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1850.7	-3.70	3.76	28.24	20.78	119.674	Vertical	Pass
		1880	-3.16	3.91	28.22	21.15	130.317	Vertical	Pass
		1909.3	-3.36	3.93	28.20	20.91	123.310	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-2.88	3.77	28.23	21.58	143.880	Vertical	Pass
		1880	-2.94	3.91	28.24	21.39	137.721	Vertical	Pass
		1908.5	-3.42	3.94	28.25	20.89	122.744	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-3.66	3.77	28.31	20.88	122.462	Vertical	Pass
		1880	-3.12	3.91	28.22	21.19	131.522	Vertical	Pass
		1907.5	-3.07	3.94	28.20	21.19	131.522	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1855	-3.82	3.79	28.33	20.72	118.032	Vertical	Pass
		1880	-2.86	3.95	28.22	21.41	138.357	Vertical	Pass
		1905	-2.70	3.97	28.19	21.52	141.906	Vertical	Pass

15.0MHz	1/#Mid	1857.5	-3.56	3.79	28.34	20.99	125.603	Vertical	Pass
Band		1880	-3.50	3.95	28.22	20.77	119.399	Vertical	Pass
QPSK		1902.5	-3.46	3.97	28.18	20.75	118.850	Vertical	Pass
20.0MHz	1/#Mid	1860	-2.90	3.81	28.35	21.64	145.881	Vertical	Pass
Band		1880	-3.42	3.96	28.22	20.84	121.339	Vertical	Pass
QPSK		1900	-3.31	4.00	28.16	20.85	121.619	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		1850.7	-3.65	3.76	28.24	20.83	121.060	Horizontal	Pass
Band 16	1/#Mid	1880	-3.12	3.91	28.22	21.19	131.522	Horizontal	Pass
QAM		1909.3	-3.05	3.93	28.20	21.22	132.434	Horizontal	Pass
3.0MHz		1851.5	-3.15	3.77	28.23	21.31	135.207	Horizontal	Pass
Band 16	1/#Mid	1880	-3.23	3.91	28.24	21.10	128.825	Horizontal	Pass
QAM		1908.5	-3.44	3.94	28.25	20.87	122.180	Horizontal	Pass
5.0MHz		1852.5	-3.09	3.77	28.31	21.45	139.637	Horizontal	Pass
Band 16	1/#Mid	1880	-3.00	3.91	28.22	21.31	135.207	Horizontal	Pass
QAM		1907.5	-2.68	3.94	28.20	21.58	143.880	Horizontal	Pass
10.0MHz		1855	-3.14	3.79	28.33	21.40	138.038	Horizontal	Pass
Band 16	1/#Mid	1880	-3.13	3.95	28.22	21.14	130.017	Horizontal	Pass
QAM		1905	-2.60	3.97	28.19	21.62	145.211	Horizontal	Pass
15.0MHz		1857.5	-3.12	3.79	28.34	21.43	138.995	Horizontal	Pass
Band 16	1/#Mid	1880	-2.91	3.95	28.22	21.36	136.773	Horizontal	Pass
QAM		1902.5	-2.87	3.97	28.18	21.34	136.144	Horizontal	Pass
20.0MHz		1860	-3.01	3.81	28.35	21.53	142.233	Horizontal	Pass
Band 16	1/#Mid	1880	-2.71	3.96	28.22	21.55	142.889	Horizontal	Pass
QAM		1900	-2.53	4.00	28.16	**21.63**	145.546	Horizontal	Pass
1.4MHz		1850.7	-4.22	3.76	28.24	20.26	106.170	Vertical	Pass
Band 16	1/#Mid	1880	-4.14	3.91	28.22	20.17	103.992	Vertical	Pass
QAM		1909.3	-3.93	3.93	28.20	20.34	108.143	Vertical	Pass
3.0MHz		1851.5	-4.06	3.77	28.23	20.40	109.648	Vertical	Pass
Band 16	1/#Mid	1880	-3.77	3.91	28.24	20.56	113.763	Vertical	Pass
QAM		1908.5	-4.39	3.94	28.25	19.92	98.175	Vertical	Pass
5.0MHz		1852.5	-4.00	3.77	28.31	20.54	113.240	Vertical	Pass
Band 16	1/#Mid	1880	-3.82	3.91	28.22	20.49	111.944	Vertical	Pass
QAM		1907.5	-4.37	3.94	28.20	19.89	97.499	Vertical	Pass
10.0MHz		1855	-4.40	3.79	28.33	20.14	103.276	Vertical	Pass
Band 16	1/#Mid	1880	-4.27	3.95	28.22	20.00	100.000	Vertical	Pass
QAM		1905	-4.27	3.97	28.19	19.95	98.855	Vertical	Pass
15.0MHz		1857.5	-4.76	3.79	28.34	19.79	95.280	Vertical	Pass
Band 16	1/#Mid	1880	-4.39	3.95	28.22	19.88	97.275	Vertical	Pass
QAM		1902.5	-4.34	3.97	28.18	19.87	97.051	Vertical	Pass

20.0MHz	1/#Mid	1860	-4.31	3.81	28.35	20.23	105.439	Vertical	Pass
Band 16		1880	-4.26	3.96	28.22	20.00	100.000	Vertical	Pass
QAM		1900	-3.94	4.00	28.16	20.22	105.196	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	1/#Mid	1710.7	-2.44	3.12	27.58	22.02	159.221	Horizontal	Pass
Band		1732.5	-2.43	3.27	27.61	21.91	155.239	Horizontal	Pass
QPSK		1754.3	-2.41	3.29	27.63	21.93	155.955	Horizontal	Pass
3.0MHz	1/#Mid	1711.5	-2.61	3.13	27.61	21.87	153.815	Horizontal	Pass
Band		1732.5	-2.53	3.27	27.61	21.81	151.705	Horizontal	Pass
QPSK		1753.5	-2.45	3.30	27.62	21.87	153.815	Horizontal	Pass
5.0MHz	1/#Mid	1712.5	-2.38	3.13	27.63	22.12	162.930	Horizontal	Pass
Band		1732.5	-2.28	3.27	27.61	22.06	160.694	Horizontal	Pass
QPSK		1752.5	-2.16	3.30	27.60	22.14	163.682	Horizontal	Pass
10.0MHz	1/#Mid	1715	-2.32	3.15	27.64	22.17	164.816	Horizontal	Pass
Band		1732.5	-2.09	3.31	27.61	22.21	166.341	Horizontal	Pass
QPSK		1750	-2.11	3.33	27.59	22.15	164.059	Horizontal	Pass
15.0MHz	1/#Mid	1717.5	-2.33	3.15	27.65	22.17	164.816	Horizontal	Pass
Band		1732.5	-2.17	3.31	27.61	22.13	163.305	Horizontal	Pass
QPSK		1747.5	-2.11	3.33	27.57	22.13	163.305	Horizontal	Pass
20.0MHz	1/#Mid	1720	-2.27	3.17	27.66	**22.22**	166.725	Horizontal	Pass
Band		1732.5	-2.10	3.32	27.61	22.19	165.577	Horizontal	Pass
QPSK		1745	-2.04	3.36	27.56	22.16	164.437	Horizontal	Pass
1.4MHz	1/#Mid	1710.7	-3.24	3.12	27.58	21.22	132.434	Vertical	Pass
Band		1732.5	-3.62	3.27	27.61	20.72	118.032	Vertical	Pass
QPSK		1754.3	-3.22	3.29	27.63	21.12	129.420	Vertical	Pass
3.0MHz	1/#Mid	1711.5	-3.14	3.13	27.61	21.34	136.144	Vertical	Pass
Band		1732.5	-2.67	3.27	27.61	21.67	146.893	Vertical	Pass
QPSK		1753.5	-3.51	3.30	27.62	20.81	120.504	Vertical	Pass
5.0MHz	1/#Mid	1712.5	-3.00	3.13	27.63	21.50	141.254	Vertical	Pass
Band		1732.5	-2.84	3.27	27.61	21.50	141.254	Vertical	Pass
QPSK		1752.5	-3.07	3.30	27.60	21.23	132.739	Vertical	Pass
10.0MHz	1/#Mid	1715	-3.57	3.15	27.64	20.92	123.595	Vertical	Pass
Band		1732.5	-3.06	3.31	27.61	21.24	133.045	Vertical	Pass
QPSK		1750	-3.24	3.33	27.59	21.02	126.474	Vertical	Pass
15.0MHz	1/#Mid	1717.5	-3.77	3.15	27.65	20.73	118.304	Vertical	Pass

Band		1732.5	-3.34	3.31	27.61	20.96	124.738	Vertical	Pass
QPSK		1747.5	-3.50	3.33	27.57	20.74	118.577	Vertical	Pass
20.0MHz		1720	-3.73	3.17	27.66	20.76	119.124	Vertical	Pass
Band	1/#Mid	1732.5	-2.68	3.32	27.61	21.61	144.877	Vertical	Pass
QPSK		1745	-3.29	3.36	27.56	20.91	123.310	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	-3.25	3.12	27.58	21.21	132.130	Horizontal	Pass
		1732.5	-3.10	3.27	27.61	21.24	133.045	Horizontal	Pass
		1754.3	-3.10	3.29	27.63	21.24	133.045	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-3.19	3.13	27.61	21.29	134.586	Horizontal	Pass
		1732.5	-3.32	3.27	27.61	21.02	126.474	Horizontal	Pass
		1753.5	-3.54	3.30	27.62	20.78	119.674	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-3.02	3.13	27.63	21.48	140.605	Horizontal	Pass
		1732.5	-2.98	3.27	27.61	21.36	136.773	Horizontal	Pass
		1752.5	-2.67	3.30	27.60	21.63	145.546	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-3.09	3.15	27.64	21.40	138.038	Horizontal	Pass
		1732.5	-3.28	3.31	27.61	21.02	126.474	Horizontal	Pass
		1750	-2.66	3.33	27.59	21.60	144.544	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-2.89	3.15	27.65	21.61	144.877	Horizontal	Pass
		1732.5	-2.95	3.31	27.61	21.35	136.458	Horizontal	Pass
		1747.5	-2.97	3.33	27.57	21.27	133.968	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-2.84	3.17	27.66	**21.65**	146.218	Horizontal	Pass
		1732.5	-2.85	3.32	27.61	21.44	139.316	Horizontal	Pass
		1745	-2.66	3.36	27.56	21.54	142.561	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	-3.89	3.12	27.58	20.57	114.025	Vertical	Pass
		1732.5	-4.15	3.27	27.61	20.19	104.472	Vertical	Pass
		1754.3	-4.39	3.29	27.63	19.95	98.855	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-4.08	3.13	27.61	20.40	109.648	Vertical	Pass
		1732.5	-3.98	3.27	27.61	20.36	108.643	Vertical	Pass
		1753.5	-4.02	3.30	27.62	20.30	107.152	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-4.64	3.13	27.63	19.86	96.828	Vertical	Pass
		1732.5	-4.35	3.27	27.61	19.99	99.770	Vertical	Pass
		1752.5	-3.96	3.30	27.60	20.34	108.143	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-4.77	3.15	27.64	19.72	93.756	Vertical	Pass
		1732.5	-4.11	3.31	27.61	20.19	104.472	Vertical	Pass
		1750	-4.24	3.33	27.59	20.02	100.462	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-4.67	3.15	27.65	19.83	96.161	Vertical	Pass
		1732.5	-4.59	3.31	27.61	19.71	93.541	Vertical	Pass
		1747.5	-4.56	3.33	27.57	19.68	92.897	Vertical	Pass

20.0MHz	1/#Mid	1720	-4.13	3.17	27.66	20.36	108.643	Vertical	Pass
Band 16		1732.5	-4.31	3.32	27.61	19.98	99.541	Vertical	Pass
QAM		1745	-3.97	3.36	27.56	20.23	105.439	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	6.86	2.01	19.68	2.15	22.38	172.982	Horizontal	Pass
		836.5	6.74	2.01	19.77	2.15	22.35	171.791	Horizontal	Pass
		848.3	6.54	2.02	19.82	2.15	22.19	165.577	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	825.5	6.63	2.01	19.70	2.15	22.17	164.816	Horizontal	Pass
		836.5	6.53	2.01	19.77	2.15	22.14	163.682	Horizontal	Pass
		847.5	6.40	2.02	19.81	2.15	22.04	159.956	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	826.5	6.91	2.01	19.71	2.15	22.46	176.198	Horizontal	Pass
		836.5	6.79	2.01	19.77	2.15	22.40	173.780	Horizontal	Pass
		846.5	6.63	2.02	19.79	2.15	22.25	167.880	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	829	6.93	2.01	19.73	2.15	**22.50**	177.828	Horizontal	Pass
		836.5	6.88	2.01	19.77	2.15	22.49	177.419	Horizontal	Pass
		844	6.78	2.02	19.78	2.15	22.39	173.380	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	824.7	5.45	2.01	19.68	2.15	20.97	125.026	Vertical	Pass
		836.5	5.49	2.01	19.77	2.15	21.10	128.825	Vertical	Pass
		848.3	5.82	2.02	19.82	2.15	21.47	140.281	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	825.5	6.13	2.01	19.70	2.15	21.67	146.893	Vertical	Pass
		836.5	5.62	2.01	19.77	2.15	21.23	132.739	Vertical	Pass
		847.5	5.64	2.02	19.81	2.15	21.28	134.276	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	826.5	5.37	2.01	19.71	2.15	20.92	123.595	Vertical	Pass
		836.5	5.57	2.01	19.77	2.15	21.18	131.220	Vertical	Pass
		846.5	5.64	2.02	19.79	2.15	21.26	133.660	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	829	5.23	2.01	19.73	2.15	20.80	120.226	Vertical	Pass
		836.5	5.81	2.01	19.77	2.15	21.42	138.676	Vertical	Pass
		844	6.04	2.02	19.78	2.15	21.65	146.218	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	6.01	2.01	19.68	2.15	21.53	142.233	Horizontal	Pass
		836.5	5.94	2.01	19.77	2.15	21.55	142.889	Horizontal	Pass
		848.3	5.78	2.02	19.82	2.15	21.43	138.995	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	6.09	2.01	19.70	2.15	21.63	145.546	Horizontal	Pass
		836.5	5.80	2.01	19.77	2.15	21.41	138.357	Horizontal	Pass
		847.5	5.28	2.02	19.81	2.15	20.92	123.595	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	6.41	2.01	19.71	2.15	21.96	157.036	Horizontal	Pass
		836.5	6.18	2.01	19.77	2.15	21.79	151.008	Horizontal	Pass
		846.5	5.93	2.02	19.79	2.15	21.55	142.889	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	829	6.41	2.01	19.73	2.15	**21.98**	157.761	Horizontal	Pass
		836.5	6.13	2.01	19.77	2.15	21.74	149.279	Horizontal	Pass
		844	5.67	2.02	19.78	2.15	21.28	134.276	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	824.7	5.15	2.01	19.68	2.15	20.67	116.681	Vertical	Pass
		836.5	6.06	2.01	19.77	2.15	21.67	146.893	Vertical	Pass
		848.3	5.58	2.02	19.82	2.15	21.23	132.739	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	5.46	2.01	19.70	2.15	21.00	125.893	Vertical	Pass
		836.5	4.40	2.01	19.77	2.15	20.01	100.231	Vertical	Pass
		847.5	5.07	2.02	19.81	2.15	20.71	117.761	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	5.11	2.01	19.71	2.15	20.66	116.413	Vertical	Pass
		836.5	4.65	2.01	19.77	2.15	20.26	106.170	Vertical	Pass
		846.5	4.07	2.02	19.79	2.15	19.69	93.111	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	829	4.62	2.01	19.73	2.15	20.19	104.472	Vertical	Pass
		836.5	4.49	2.01	19.77	2.15	20.10	102.329	Vertical	Pass
		844	4.89	2.02	19.78	2.15	20.50	112.202	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	-0.72	4.54	27.75	22.49	177.419	Horizontal	Pass
		2535	-0.55	4.69	27.72	22.48	177.011	Horizontal	Pass
		2567.5	-0.48	4.71	27.71	22.52	178.649	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	2505	-0.65	4.55	27.76	22.56	180.302	Horizontal	Pass
		2535	-0.46	4.69	27.72	22.57	180.717	Horizontal	Pass
		2565	-0.38	4.72	27.70	22.60	181.970	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	-0.66	4.55	27.77	22.56	180.302	Horizontal	Pass
		2535	-0.52	4.69	27.72	22.51	178.238	Horizontal	Pass
		2562.5	-0.42	4.72	27.69	22.55	179.887	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	2510	-0.60	4.57	27.78	**22.61**	182.390	Horizontal	Pass
		2535	-0.42	4.73	27.72	22.57	180.717	Horizontal	Pass
		2560	-0.38	4.75	27.68	22.55	179.887	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	2502.5	-2.52	4.54	27.75	20.69	117.220	Vertical	Pass
		2535	-2.29	4.69	27.72	20.74	118.577	Vertical	Pass
		2567.5	-1.64	4.71	27.71	21.36	136.773	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	2505	-1.92	4.55	27.76	21.29	134.586	Vertical	Pass
		2535	-1.58	4.69	27.72	21.45	139.637	Vertical	Pass
		2565	-2.19	4.72	27.70	20.79	119.950	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	-1.82	4.55	27.77	21.40	138.038	Vertical	Pass
		2535	-1.52	4.69	27.72	21.51	141.579	Vertical	Pass
		2562.5	-2.30	4.72	27.69	20.67	116.681	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	2510	-1.61	4.57	27.78	21.60	144.544	Vertical	Pass
		2535	-2.07	4.73	27.72	20.92	123.595	Vertical	Pass
		2560	-2.25	4.75	27.68	20.68	116.950	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	-1.41	4.54	27.75	21.80	151.356	Horizontal	Pass
		2535	-1.10	4.69	27.72	21.93	155.955	Horizontal	Pass
		2567.5	-1.18	4.71	27.71	21.82	152.055	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	-1.30	4.55	27.76	21.91	155.239	Horizontal	Pass
		2535	-1.31	4.69	27.72	21.72	148.594	Horizontal	Pass
		2565	-1.58	4.72	27.70	21.40	138.038	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	-1.48	4.55	27.77	21.74	149.279	Horizontal	Pass
		2535	-1.45	4.69	27.72	21.58	143.880	Horizontal	Pass
		2562.5	-1.06	4.72	27.69	21.91	155.239	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	-1.36	4.57	27.78	21.85	153.109	Horizontal	Pass
		2535	-1.03	4.73	27.72	**21.96**	157.036	Horizontal	Pass
		2560	-1.13	4.75	27.68	21.80	151.356	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	2502.5	-2.78	4.54	27.75	20.43	110.408	Vertical	Pass
		2535	-2.86	4.69	27.72	20.17	103.992	Vertical	Pass
		2567.5	-1.56	4.71	27.71	21.44	139.316	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	-1.67	4.55	27.76	21.54	142.561	Vertical	Pass
		2535	-2.11	4.69	27.72	20.92	123.595	Vertical	Pass
		2565	-2.15	4.72	27.70	20.83	121.060	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	-2.05	4.55	27.77	21.17	130.918	Vertical	Pass
		2535	-2.31	4.69	27.72	20.72	118.032	Vertical	Pass
		2562.5	-2.49	4.72	27.69	20.48	111.686	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	-3.04	4.57	27.78	20.17	103.992	Vertical	Pass
		2535	-2.79	4.73	27.72	20.20	104.713	Vertical	Pass
		2560	-1.90	4.75	27.68	21.03	126.765	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	7.23	1.91	19.21	2.15	22.38	172.982	Vertical	Pass
		707.5	7.15	1.91	19.26	2.15	22.35	171.791	Vertical	Pass
		715.3	6.93	1.93	19.34	2.15	22.19	165.577	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	700.5	7.02	1.91	19.21	2.15	22.17	164.816	Vertical	Pass
		707.5	6.94	1.91	19.26	2.15	22.14	163.682	Vertical	Pass
		714.5	6.78	1.93	19.34	2.15	22.04	159.956	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	701.5	7.29	1.91	19.23	2.15	22.46	176.198	Vertical	Pass
		707.5	7.20	1.91	19.26	2.15	22.40	173.780	Vertical	Pass
		713.5	6.99	1.92	19.33	2.15	22.25	167.880	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	704	7.31	1.91	19.25	2.15	**22.50**	177.828	Vertical	Pass
		707.5	7.29	1.91	19.26	2.15	22.49	177.419	Vertical	Pass
		711	7.14	1.92	19.32	2.15	22.39	173.380	Vertical	Pass
1.4MHz Band QPSK	1/#Mid	699.7	6.15	1.91	19.21	2.15	21.30	134.896	Horizontal	Pass
		707.5	6.46	1.91	19.26	2.15	21.66	146.555	Horizontal	Pass
		715.3	6.30	1.93	19.34	2.15	21.56	143.219	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	700.5	5.53	1.91	19.21	2.15	20.68	116.950	Horizontal	Pass
		707.5	5.57	1.91	19.26	2.15	20.77	119.399	Horizontal	Pass
		714.5	5.71	1.93	19.34	2.15	20.97	125.026	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	701.5	6.08	1.91	19.23	2.15	21.25	133.352	Horizontal	Pass
		707.5	5.76	1.91	19.26	2.15	20.96	124.738	Horizontal	Pass
		713.5	6.09	1.92	19.33	2.15	21.35	136.458	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	704	6.31	1.91	19.25	2.15	21.50	141.254	Horizontal	Pass
		707.5	5.98	1.91	19.26	2.15	21.18	131.220	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 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	7.14	1.91	19.21	2.15	22.29	169.434	Vertical	Pass
		707.5	7.06	1.91	19.26	2.15	22.26	168.267	Vertical	Pass
		715.3	6.84	1.93	19.34	2.15	22.10	162.181	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	700.5	6.93	1.91	19.21	2.15	22.08	161.436	Vertical	Pass
		707.5	6.85	1.91	19.26	2.15	22.05	160.325	Vertical	Pass
		714.5	6.69	1.93	19.34	2.15	21.95	156.675	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	701.5	7.20	1.91	19.23	2.15	22.37	172.584	Vertical	Pass
		707.5	7.11	1.91	19.26	2.15	22.31	170.216	Vertical	Pass
		713.5	6.90	1.92	19.33	2.15	22.16	164.437	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	704	7.22	1.91	19.25	2.15	**22.41**	174.181	Vertical	Pass
		707.5	7.20	1.91	19.26	2.15	22.40	173.780	Vertical	Pass
		711	7.05	1.92	19.32	2.15	22.30	169.824	Vertical	Pass
1.4MHz Band 16 QAM	1/#Mid	699.7	5.78	1.91	19.21	2.15	20.93	123.880	Horizontal	Pass
		707.5	5.80	1.91	19.26	2.15	21.00	125.893	Horizontal	Pass
		715.3	5.85	1.93	19.34	2.15	21.11	129.122	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	700.5	5.84	1.91	19.21	2.15	20.99	125.603	Horizontal	Pass
		707.5	5.95	1.91	19.26	2.15	21.15	130.317	Horizontal	Pass
		714.5	5.68	1.93	19.34	2.15	20.94	124.165	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	701.5	6.18	1.91	19.23	2.15	21.35	136.458	Horizontal	Pass
		707.5	6.02	1.91	19.26	2.15	21.22	132.434	Horizontal	Pass
		713.5	6.18	1.92	19.33	2.15	21.44	139.316	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	704	5.66	1.91	19.25	2.15	20.85	121.619	Horizontal	Pass
		707.5	5.43	1.91	19.26	2.15	20.63	115.611	Horizontal	Pass
		711	5.59	1.92	19.32	2.15	20.84	121.339	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 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	7.60	1.91	19.23	2.15	22.77	189.234	Vertical	Pass
		710	7.46	1.91	19.26	2.15	22.66	184.502	Vertical	Pass
		713.5	7.36	1.92	19.33	2.15	22.62	182.810	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	709	7.61	1.91	19.25	2.15	**22.80**	190.546	Vertical	Pass
		710	7.56	1.91	19.26	2.15	22.76	188.799	Vertical	Pass
		711	7.52	1.92	19.32	2.15	22.77	189.234	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	706.5	6.17	1.91	19.23	2.15	21.34	136.144	Horizontal	Pass
		710	5.99	1.91	19.26	2.15	21.19	131.522	Horizontal	Pass
		713.5	6.40	1.92	19.33	2.15	21.66	146.555	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	709	7.21	1.91	19.25	2.15	22.40	173.780	Horizontal	Pass
		710	6.87	1.91	19.26	2.15	22.07	161.065	Horizontal	Pass
		711	5.96	1.92	19.32	2.15	21.21	132.130	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	6.82	1.91	19.23	2.15	21.99	158.125	Vertical	Pass
		710	6.73	1.91	19.26	2.15	21.93	155.955	Vertical	Pass
		713.5	6.53	1.92	19.33	2.15	21.79	151.008	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	709	6.36	1.91	19.25	2.15	21.55	142.889	Vertical	Pass
		710	6.89	1.91	19.26	2.15	**22.09**	161.808	Vertical	Pass
		711	6.62	1.92	19.32	2.15	21.87	153.815	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	706.5	5.91	1.91	19.23	2.15	21.08	128.233	Horizontal	Pass
		710	5.77	1.91	19.26	2.15	20.97	125.026	Horizontal	Pass
		713.5	5.36	1.92	19.33	2.15	20.62	115.345	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	709	5.46	1.91	19.25	2.15	20.65	116.145	Horizontal	Pass
		710	5.26	1.91	19.26	2.15	20.46	111.173	Horizontal	Pass
		711	5.50	1.92	19.32	2.15	20.75	118.850	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)

8.8 LTE BAND 25

Radiated Power (EIRP) for Band 25									
Mode	RB/RB SIZE	Frequency	Result					Polarization Of Max. ERP	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)		
1.4MHz Band QPSK	1/#Mid	1850.7	-2.58	3.12	27.58	21.88	154.170	Horizontal	Pass
		1882,5	-2.49	3.27	27.61	21.85	153.109	Horizontal	Pass
		1914.3	-2.65	3.29	27.63	21.69	147.571	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-2.81	3.13	27.61	21.67	146.893	Horizontal	Pass
		1882,5	-2.70	3.27	27.61	21.64	145.881	Horizontal	Pass
		1913.5	-2.78	3.30	27.62	21.54	142.561	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-2.54	3.13	27.63	21.96	157.036	Horizontal	Pass
		1882,5	-2.44	3.27	27.61	21.90	154.882	Horizontal	Pass
		1912.5	-2.55	3.30	27.60	21.75	149.624	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1855	-2.49	3.15	27.64	22.00	158.489	Horizontal	Pass
		1882,5	-2.31	3.31	27.61	21.99	158.125	Horizontal	Pass
		1910	-2.37	3.33	27.59	21.89	154.525	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1857.5	-3.86	3.15	27.65	20.64	115.878	Horizontal	Pass
		1882,5	-3.69	3.31	27.61	20.61	115.080	Horizontal	Pass
		1907.5	-3.83	3.33	27.57	20.41	109.901	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1860	-4.04	3.17	27.66	20.45	110.917	Horizontal	Pass
		1882,5	-2.28	3.32	27.61	22.01	158.855	Horizontal	Pass
		1905	-2.09	3.36	27.56	**22.11**	162.555	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1850.7	-3.61	3.12	27.58	20.85	121.619	Vertical	Pass
		1882,5	-3.35	3.27	27.61	20.99	125.603	Vertical	Pass
		1914.3	-3.49	3.29	27.63	20.85	121.619	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-3.39	3.13	27.61	21.09	128.529	Vertical	Pass
		1882,5	-3.63	3.27	27.61	20.71	117.761	Vertical	Pass
		1913.5	-3.62	3.30	27.62	20.70	117.490	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-3.40	3.13	27.63	21.10	128.825	Vertical	Pass
		1882,5	-3.95	3.27	27.61	20.39	109.396	Vertical	Pass
		1912.5	-3.26	3.30	27.60	21.04	127.057	Vertical	Pass
10.0MHz Band	1/#Mid	1855	-3.95	3.15	27.64	20.54	113.240	Vertical	Pass
		1882,5	-3.41	3.31	27.61	20.89	122.744	Vertical	Pass

QPSK		1910	-3.67	3.33	27.59	20.59	114.551	Vertical	Pass
15.0MHz		1857.5	-4.18	3.15	27.65	20.32	107.647	Vertical	Pass
Band	1/#Mid	1882,5	-3.49	3.31	27.61	20.81	120.504	Vertical	Pass
QPSK		1907.5	-3.23	3.33	27.57	21.01	126.183	Vertical	Pass
20.0MHz		1860	-3.97	3.17	27.66	20.52	112.720	Vertical	Pass
Band	1/#Mid	1882,5	-3.31	3.32	27.61	20.98	125.314	Vertical	Pass
QPSK		1905	-3.89	3.36	27.56	20.31	107.399	Vertical	Pass

Radiated Power (EIRP) for Band 25									
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	-2.48	3.12	27.58	21.98	157.761	Horizontal	Pass
		1882,5	-2.39	3.27	27.61	21.95	156.675	Horizontal	Pass
		1914.3	-2.55	3.29	27.63	21.79	151.008	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-2.71	3.13	27.61	21.77	150.314	Horizontal	Pass
		1882,5	-2.60	3.27	27.61	21.74	149.279	Horizontal	Pass
		1913.5	-2.68	3.30	27.62	21.64	145.881	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-2.44	3.13	27.63	22.06	160.694	Horizontal	Pass
		1882,5	-2.34	3.27	27.61	22.00	158.489	Horizontal	Pass
		1912.5	-2.45	3.30	27.60	21.85	153.109	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-2.39	3.15	27.64	22.10	162.181	Horizontal	Pass
		1882,5	-2.21	3.31	27.61	22.09	161.808	Horizontal	Pass
		1910	-2.08	3.33	27.59	**22.18**	165.196	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-3.44	3.15	27.65	21.06	127.644	Horizontal	Pass
		1882,5	-3.68	3.31	27.61	20.62	115.345	Horizontal	Pass
		1907.5	-3.64	3.33	27.57	20.60	114.815	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1860	-4.10	3.17	27.66	20.39	109.396	Horizontal	Pass
		1882,5	-3.15	3.32	27.61	21.14	130.017	Horizontal	Pass
		1905	-3.82	3.36	27.56	20.38	109.144	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1850.7	-3.81	3.12	27.58	20.65	116.145	Vertical	Pass
		1882,5	-3.36	3.27	27.61	20.98	125.314	Vertical	Pass
		1914.3	-4.02	3.29	27.63	20.32	107.647	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-3.83	3.13	27.61	20.65	116.145	Vertical	Pass
		1882,5	-3.71	3.27	27.61	20.63	115.611	Vertical	Pass
		1913.5	-3.67	3.30	27.62	20.65	116.145	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-3.65	3.13	27.63	20.85	121.619	Vertical	Pass
		1882,5	-3.96	3.27	27.61	20.38	109.144	Vertical	Pass
		1912.5	-3.20	3.30	27.60	21.10	128.825	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-3.95	3.15	27.64	20.54	113.240	Vertical	Pass
		1882,5	-3.27	3.31	27.61	21.03	126.765	Vertical	Pass
		1910	-3.08	3.33	27.59	21.18	131.220	Vertical	Pass
15.0MHz Band 16	1/#Mid	1857.5	-3.43	3.15	27.65	21.07	127.938	Vertical	Pass
		1882,5	-3.22	3.31	27.61	21.08	128.233	Vertical	Pass

QAM		1907.5	-3.72	3.33	27.57	20.52	112.720	Vertical	Pass
20.0MHz	1/#Mid	1860	-3.76	3.17	27.66	20.73	118.304	Vertical	Pass
Band 16		1882,5	-3.34	3.32	27.61	20.95	124.451	Vertical	Pass
QAM		1905	-3.33	3.36	27.56	20.87	122.180	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 26 A

Radiated Power (ERP) for Band 26(814-824)										
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 BW QPSK	6/0	814.7	-0.35	3.76	28.24	2.15	21.98	157.76	Horizontal	Pass
		819	-0.21	3.91	28.22	2.15	21.95	156.68	Horizontal	Pass
		823.3	-0.33	3.93	28.20	2.15	21.79	151.01	Horizontal	Pass
3.0MHz BW QPSK	15/0	815.5	-0.54	3.77	28.23	2.15	21.77	150.31	Horizontal	Pass
		819	-0.44	3.91	28.24	2.15	21.74	149.28	Horizontal	Pass
		822.5	-0.52	3.94	28.25	2.15	21.64	145.88	Horizontal	Pass
5.0MHz BW QPSK	25/0	816.5	-0.33	3.77	28.31	2.15	22.06	160.69	Horizontal	Pass
		819	-0.16	3.91	28.22	2.15	22.00	158.49	Horizontal	Pass
		821.5	-0.26	3.94	28.20	2.15	21.85	153.11	Horizontal	Pass
10.0MHz BW QPSK	50/0	819	-0.06	3.91	28.22	2.15	**22.10**	162.18	Horizontal	Pass
1.4MHz BW QPSK	6/0	814.7	-0.31	3.79	28.34	2.15	22.09	161.81	Vertical	Pass
		819	-0.13	3.95	28.22	2.15	21.99	158.12	Vertical	Pass
		823.3	-0.88	3.97	28.18	2.15	21.18	131.22	Vertical	Pass
3.0MHz BW QPSK	15/0	815.5	-1.88	3.77	28.23	2.15	20.43	110.41	Vertical	Pass
		819	-1.52	3.91	28.24	2.15	20.66	116.41	Vertical	Pass
		822.5	-1.52	3.94	28.25	2.15	20.64	115.88	Vertical	Pass
5.0MHz BW QPSK	25/0	816.5	-1.14	3.77	28.31	2.15	21.25	133.35	Vertical	Pass
		819	-1.30	3.91	28.22	2.15	20.86	121.90	Vertical	Pass
		821.5	-1.15	3.94	28.20	2.15	20.96	124.74	Vertical	Pass
10.0MHz BW QPSK	50/0	819	-1.51	3.91	28.22	2.15	20.65	116.14	Vertical	Pass

Radiated Power (ERP) for Band 26(814-824)										
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 BW 16 QAM	6/0	814.7	-0.44	3.76	28.24	2.15	21.89	154.53	Horizontal	Pass
		819	-0.30	3.91	28.22	2.15	21.86	153.46	Horizontal	Pass
		823.3	-0.42	3.93	28.20	2.15	21.70	147.91	Horizontal	Pass
3.0MHz BW 16 QAM	15/0	815.5	-0.63	3.77	28.23	2.15	21.68	147.23	Horizontal	Pass
		819	-0.53	3.91	28.24	2.15	21.65	146.22	Horizontal	Pass
		822.5	-0.61	3.94	28.25	2.15	21.55	142.89	Horizontal	Pass
5.0MHz BW 16 QAM	25/0	816.5	-0.42	3.77	28.31	2.15	21.97	157.40	Horizontal	Pass
		819	-0.25	3.91	28.22	2.15	21.91	155.24	Horizontal	Pass
		821.5	-0.35	3.94	28.20	2.15	21.76	149.97	Horizontal	Pass
10.0MHz BW 16 QAM	50/0	819	-0.17	3.91	28.24	2.15	**22.01**	158.85	Horizontal	Pass
1.4MHz BW 16 QAM	6/0	814.7	-0.40	3.79	28.34	2.15	22.00	158.49	Vertical	Pass
		819	-0.22	3.95	28.22	2.15	21.90	154.88	Vertical	Pass
		823.3	-1.80	3.97	28.18	2.15	20.26	106.17	Vertical	Pass
3.0MHz BW 16 QAM	15/0	815.5	-1.91	3.77	28.23	2.15	20.40	109.65	Vertical	Pass
		819	-1.16	3.91	28.24	2.15	21.02	126.47	Vertical	Pass
		822.5	-1.18	3.94	28.25	2.15	20.98	125.31	Vertical	Pass
5.0MHz BW 16 QAM	25/0	816.5	-1.39	3.77	28.31	2.15	21.00	125.89	Vertical	Pass
		819	-1.27	3.91	28.22	2.15	20.89	122.74	Vertical	Pass
		821.5	-1.78	3.94	28.20	2.15	20.33	107.89	Vertical	Pass
10.0MHz BW 16 QAM	50/0	819	-1.19	3.91	28.24	2.15	20.99	125.60	Vertical	Pass

8.10 LTE BAND 26B

Radiated Power (ERP) for Band 26(824-849)										
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	6/0	824.7	5.46	2.01	19.68	2.15	20.98	125.31	Horizontal	Pass
		836.5	5.40	2.01	19.77	2.15	21.01	126.18	Horizontal	Pass
		848.3	5.34	2.02	19.82	2.15	20.99	125.60	Horizontal	Pass
3.0MHz Band QPSK	15/0	825.5	5.50	2.01	19.70	2.15	21.04	127.06	Horizontal	Pass
		836.5	5.13	2.01	19.77	2.15	20.74	118.58	Horizontal	Pass
		847.5	5.58	2.02	19.81	2.15	21.22	132.43	Horizontal	Pass
5.0MHz Band QPSK	25/0	826.5	5.76	2.01	19.71	2.15	21.31	135.21	Horizontal	Pass
		836.5	5.58	2.01	19.77	2.15	21.19	131.52	Horizontal	Pass
		846.5	4.95	2.02	19.79	2.15	20.57	114.02	Horizontal	Pass
10.0MHz Band QPSK	50/0	829	4.97	2.01	19.73	2.15	20.54	113.24	Horizontal	Pass
		836.5	5.09	2.01	19.77	2.15	20.70	117.49	Horizontal	Pass
		844	5.69	2.02	19.78	2.15	21.30	134.90	Horizontal	Pass
15.0MHz Band QPSK	75/0	831.5	4.78	2.01	19.73	2.15	20.35	108.39	Horizontal	Pass
		836.5	5.71	2.01	19.77	2.15	**21.32**	135.52	Horizontal	Pass
		841.5	5.44	2.02	19.78	2.15	21.05	127.35	Horizontal	Pass
1.4MHz Band QPSK	6/0	824.7	5.04	2.01	19.68	2.15	20.56	113.76	Vertical	Pass
		836.5	4.98	2.01	19.77	2.15	20.59	114.55	Vertical	Pass
		848.3	5.24	2.02	19.82	2.15	20.89	122.74	Vertical	Pass
3.0MHz Band QPSK	15/0	825.5	5.18	2.01	19.70	2.15	20.72	118.03	Vertical	Pass
		836.5	4.80	2.01	19.77	2.15	20.41	109.90	Vertical	Pass
		847.5	5.05	2.02	19.81	2.15	20.69	117.22	Vertical	Pass
5.0MHz Band QPSK	25/0	826.5	5.20	2.01	19.71	2.15	20.75	118.85	Vertical	Pass
		836.5	4.95	2.01	19.77	2.15	20.56	113.76	Vertical	Pass
		846.5	5.07	2.02	19.79	2.15	20.69	117.22	Vertical	Pass
10.0MHz Band QPSK	50/0	829	4.84	2.01	19.73	2.15	20.41	109.90	Vertical	Pass
		836.5	5.18	2.01	19.77	2.15	20.79	119.95	Vertical	Pass
		844	5.02	2.02	19.78	2.15	20.63	115.61	Vertical	Pass
15.0MHz Band QPSK	75/0	831.5	4.85	2.01	19.73	2.15	20.42	110.15	Vertical	Pass
		836.5	5.60	2.01	19.77	2.15	21.21	132.13	Vertical	Pass
		841.5	5.20	2.02	19.78	2.15	20.81	120.50	Vertical	Pass

Radiated Power (ERP) for Band 26(824-849)										
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	6/0	824.7	5.77	2.01	19.68	2.15	21.29	134.59	Horizontal	Pass
		836.5	5.00	2.01	19.77	2.15	20.61	115.08	Horizontal	Pass
		848.3	4.94	2.02	19.82	2.15	20.59	114.55	Horizontal	Pass
3.0MHz Band 16 QAM	15/0	825.5	5.03	2.01	19.70	2.15	20.57	114.02	Horizontal	Pass
		836.5	5.33	2.01	19.77	2.15	20.94	124.17	Horizontal	Pass
		847.5	5.03	2.02	19.81	2.15	20.67	116.68	Horizontal	Pass
5.0MHz Band 16 QAM	25/0	826.5	5.19	2.01	19.71	2.15	20.74	118.58	Horizontal	Pass
		836.5	5.16	2.01	19.77	2.15	20.77	119.40	Horizontal	Pass
		846.5	5.00	2.02	19.79	2.15	20.62	115.35	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	829	5.40	2.01	19.73	2.15	20.97	125.03	Horizontal	Pass
		836.5	5.72	2.01	19.77	2.15	21.33	135.83	Horizontal	Pass
		844	4.96	2.02	19.78	2.15	20.57	114.02	Horizontal	Pass
15.0MHz Band QPSK	75/0	831.5	5.78	2.01	19.73	2.15	**21.35**	136.46	Horizontal	Pass
		836.5	4.96	2.01	19.77	2.15	20.57	114.02	Horizontal	Pass
		841.5	4.76	2.02	19.78	2.15	20.37	108.89	Horizontal	Pass
1.4MHz Band 16 QAM	6/0	824.7	5.28	2.01	19.68	2.15	20.80	120.23	Vertical	Pass
		836.5	5.67	2.01	19.77	2.15	21.28	134.28	Vertical	Pass
		848.3	5.42	2.02	19.82	2.15	21.07	127.94	Vertical	Pass
3.0MHz Band 16 QAM	15/0	825.5	5.22	2.01	19.70	2.15	20.76	119.12	Vertical	Pass
		836.5	5.04	2.01	19.77	2.15	20.65	116.14	Vertical	Pass
		847.5	5.64	2.02	19.81	2.15	21.28	134.28	Vertical	Pass
5.0MHz Band 16 QAM	25/0	826.5	4.91	2.01	19.71	2.15	20.46	111.17	Vertical	Pass
		836.5	5.35	2.01	19.77	2.15	20.96	124.74	Vertical	Pass
		846.5	4.97	2.02	19.79	2.15	20.59	114.55	Vertical	Pass

10.0MHz		829	5.38	2.01	19.73	2.15	20.95	124.45	Vertical	Pass
Band 16	50/0	836.5	5.60	2.01	19.77	2.15	21.21	132.13	Vertical	Pass
QAM		844	4.98	2.02	19.78	2.15	20.59	114.55	Vertical	Pass
15.0MHz		831.5	4.92	2.01	19.73	2.15	20.49	111.94	Vertical	Pass
Band	75/0	836.5	4.85	2.01	19.77	2.15	20.46	111.17	Vertical	Pass
QPSK		841.5	5.11	2.02	19.78	2.15	20.72	118.03	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 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	2498.5	-1.24	4.54	27.75	21.97	157.398	Horizontal	Pass
		2593	-1.09	4.69	27.72	21.94	156.315	Horizontal	Pass
		2687.5	-0.97	4.71	27.71	22.03	159.588	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	2501	-1.32	4.55	27.76	21.89	154.525	Horizontal	Pass
		2593	-1.18	4.69	27.72	21.85	153.109	Horizontal	Pass
		2685	-1.17	4.72	27.70	21.81	151.705	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	2503.5	-1.15	4.55	27.77	22.07	161.065	Horizontal	Pass
		2593	-0.87	4.69	27.72	22.16	164.437	Horizontal	Pass
		2682.5	-0.92	4.72	27.69	22.05	160.325	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	2506	-0.76	4.57	27.78	**22.45**	175.792	Horizontal	Pass
		2593	-0.81	4.73	27.72	22.18	165.196	Horizontal	Pass
		2680	-0.81	4.75	27.68	22.12	162.930	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	2498.5	-1.04	4.54	27.75	22.17	164.816	Vertical	Pass
		2593	-0.95	4.69	27.72	22.08	161.436	Vertical	Pass
		2687.5	-0.93	4.71	27.71	22.07	161.065	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	2501	-1.02	4.55	27.76	22.19	165.577	Vertical	Pass
		2593	-0.86	4.69	27.72	22.17	164.816	Vertical	Pass
		2685	-0.93	4.72	27.70	22.05	160.325	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	2503.5	-2.62	4.55	27.77	20.60	114.815	Vertical	Pass
		2593	-1.79	4.69	27.72	21.24	133.045	Vertical	Pass
		2682.5	-2.40	4.72	27.69	20.57	114.025	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	2506	-1.91	4.57	27.78	21.30	134.896	Vertical	Pass
		2593	-1.69	4.73	27.72	21.30	134.896	Vertical	Pass
		2680	-2.07	4.75	27.68	20.86	121.899	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	2498.5	-1.30	4.54	27.75	21.91	155.239	Horizontal	Pass
		2593	-1.15	4.69	27.72	21.88	154.170	Horizontal	Pass
		2687.5	-1.03	4.71	27.71	21.97	157.398	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	2501	-1.38	4.55	27.76	21.83	152.405	Horizontal	Pass
		2593	-1.24	4.69	27.72	21.79	151.008	Horizontal	Pass
		2685	-1.23	4.72	27.70	21.75	149.624	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	2503.5	-1.21	4.55	27.77	22.01	158.855	Horizontal	Pass
		2593	-0.93	4.69	27.72	22.10	162.181	Horizontal	Pass
		2682.5	-0.98	4.72	27.69	21.99	158.125	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	2506	-0.93	4.57	27.78	**22.28**	169.044	Horizontal	Pass
		2593	-0.87	4.73	27.72	22.12	162.930	Horizontal	Pass
		2680	-0.87	4.75	27.68	22.06	160.694	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	2498.5	-1.10	4.54	27.75	22.11	162.555	Vertical	Pass
		2593	-1.01	4.69	27.72	22.02	159.221	Vertical	Pass
		2687.5	-0.99	4.71	27.71	22.01	158.855	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	2501	-1.08	4.55	27.76	22.13	163.305	Vertical	Pass
		2593	-0.92	4.69	27.72	22.11	162.555	Vertical	Pass
		2685	-0.99	4.72	27.70	21.99	158.125	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	2503.5	-2.61	4.55	27.77	20.61	115.080	Vertical	Pass
		2593	-2.61	4.69	27.72	20.42	110.154	Vertical	Pass
		2682.5	-1.72	4.72	27.69	21.25	133.352	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	2506	-2.33	4.57	27.78	20.88	122.462	Vertical	Pass
		2593	-2.24	4.73	27.72	20.75	118.850	Vertical	Pass
		2680	-2.44	4.75	27.68	20.49	111.944	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)

8.12 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 Band QPSK	1/#Mid	1710.7	-2.57	3.76	28.24	21.91	155.239	Horizontal	Pass
		1745	-2.43	3.91	28.22	21.88	154.170	Horizontal	Pass
		1779.3	-2.30	3.93	28.2	21.97	157.398	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-2.63	3.77	28.23	21.83	152.405	Horizontal	Pass
		1745	-2.54	3.91	28.24	21.79	151.008	Horizontal	Pass
		1778.5	-2.56	3.94	28.25	21.75	149.624	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-2.53	3.77	28.31	22.01	158.855	Horizontal	Pass
		1745	-2.21	3.91	28.22	22.10	162.181	Horizontal	Pass
		1777.5	-2.27	3.94	28.2	21.99	158.125	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1715	-2.42	3.79	28.33	22.12	162.930	Horizontal	Pass
		1745	-2.15	3.95	28.22	22.12	162.930	Horizontal	Pass
		1775	-2.16	3.97	28.19	22.06	160.694	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-2.44	3.79	28.34	22.11	162.555	Horizontal	Pass
		1745	-2.25	3.95	28.22	22.02	159.221	Horizontal	Pass
		1772.5	-2.20	3.97	28.18	22.01	158.855	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1720	-2.41	3.81	28.35	**22.13**	163.305	Horizontal	Pass
		1745	-2.15	3.96	28.22	22.11	162.555	Horizontal	Pass
		1770	-2.17	4	28.16	21.99	158.125	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1710.7	-3.83	3.76	28.24	20.65	116.145	Vertical	Pass
		1745	-3.58	3.91	28.22	20.73	118.304	Vertical	Pass
		1779.3	-3.54	3.93	28.2	20.73	118.304	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-3.64	3.77	28.23	20.82	120.781	Vertical	Pass
		1745	-2.94	3.91	28.24	21.39	137.721	Vertical	Pass
		1778.5	-3.31	3.94	28.25	21.00	125.893	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-3.75	3.77	28.31	20.79	119.950	Vertical	Pass
		1745	-3.16	3.91	28.22	21.15	130.317	Vertical	Pass
		1777.5	-3.22	3.94	28.2	21.04	127.057	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1715	-3.57	3.79	28.34	20.98	125.314	Vertical	Pass
		1745	-3.17	3.95	28.22	21.10	128.825	Vertical	Pass
		1775	-2.86	3.97	28.18	21.35	136.458	Vertical	Pass

15.0MHz	1/#Mid	1717.5	-3.33	3.81	28.35	21.21	132.130	Vertical	Pass
Band		1745	-3.80	3.96	28.22	20.46	111.173	Vertical	Pass
QPSK		1772.5	-3.53	4	28.16	20.63	115.611	Vertical	Pass
20.0MHz	1/#Mid	1720	-3.82	3.79	28.34	20.73	118.304	Vertical	Pass
Band		1745	-3.03	3.95	28.22	21.24	133.045	Vertical	Pass
QPSK		1770	-3.77	3.97	28.18	20.44	110.662	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	-3.54	3.76	28.24	20.94	124.165	Horizontal	Pass
		1745	-3.15	3.91	28.22	21.16	130.617	Horizontal	Pass
		1779.3	-3.33	3.93	28.2	20.94	124.165	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-3.93	3.77	28.23	20.53	112.980	Horizontal	Pass
		1745	-3.18	3.91	28.24	21.15	130.317	Horizontal	Pass
		1778.5	-3.47	3.94	28.25	20.84	121.339	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-3.35	3.77	28.31	21.19	131.522	Horizontal	Pass
		1745	-3.41	3.91	28.22	20.90	123.027	Horizontal	Pass
		1777.5	-3.08	3.94	28.2	21.18	131.220	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-3.40	3.79	28.33	21.14	130.017	Horizontal	Pass
		1745	-3.06	3.95	28.22	21.21	132.130	Horizontal	Pass
		1775	-3.38	3.97	28.19	20.84	121.339	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-3.39	3.79	28.34	21.16	130.617	Horizontal	Pass
		1745	-3.21	3.95	28.22	21.06	127.644	Horizontal	Pass
		1772.5	-3.00	3.97	28.18	21.21	132.130	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-3.22	3.81	28.35	**21.32**	135.519	Horizontal	Pass
		1745	-3.00	3.96	28.22	21.26	133.660	Horizontal	Pass
		1770	-2.94	4	28.16	21.22	132.434	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	-3.62	3.76	28.24	20.86	121.899	Vertical	Pass
		1745	-4.97	3.91	28.22	19.34	85.901	Vertical	Pass
		1779.3	-3.37	3.93	28.2	20.90	123.027	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-5.01	3.77	28.23	19.45	88.105	Vertical	Pass
		1745	-3.46	3.91	28.24	20.87	122.180	Vertical	Pass
		1778.5	-5.06	3.94	28.25	19.25	84.140	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-4.75	3.77	28.31	19.79	95.280	Vertical	Pass
		1745	-4.93	3.91	28.22	19.38	86.696	Vertical	Pass
		1777.5	-4.62	3.94	28.2	19.64	92.045	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-3.41	3.79	28.34	21.14	130.017	Vertical	Pass
		1745	-3.87	3.95	28.22	20.40	109.648	Vertical	Pass
		1775	-4.92	3.97	28.18	19.29	84.918	Vertical	Pass
15.0MHz Band 16	1/#Mid	1717.5	-5.26	3.81	28.35	19.28	84.723	Vertical	Pass
		1745	-3.25	3.96	28.22	21.01	126.183	Vertical	Pass

QAM		1772.5	-3.54	4	28.16	20.62	115.345	Vertical	Pass
20.0MHz		1720	-4.95	3.79	28.34	19.60	91.201	Vertical	Pass
Band 16	1/#Mid	1745	-4.32	3.95	28.22	19.95	98.855	Vertical	Pass
QAM		1770	-3.23	3.97	28.18	20.98	125.314	Vertical	Pass

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

8.13 LTE BAND 71

Radiated Power (ERP) for Band 71										
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	665.5	6.44	2.01	19.68	2.15	21.96	157.04	Horizontal	Pass
		680.5	6.32	2.01	19.77	2.15	21.93	155.96	Horizontal	Pass
		695.5	6.12	2.02	19.82	2.15	21.77	150.31	Horizontal	Pass
10.0MHz Band QPSK	50/0	668	6.21	2.01	19.70	2.15	21.75	149.62	Horizontal	Pass
		680.5	6.11	2.01	19.77	2.15	21.72	148.59	Horizontal	Pass
		693	5.98	2.02	19.81	2.15	21.62	145.21	Horizontal	Pass
15.0MHz Band QPSK	75/0	670.5	6.49	2.01	19.71	2.15	22.04	159.96	Horizontal	Pass
		680.5	6.37	2.01	19.77	2.15	21.98	157.76	Horizontal	Pass
		690.5	6.21	2.02	19.79	2.15	21.83	152.41	Horizontal	Pass
20.0MHz Band QPSK	100/0	673	6.51	2.01	19.73	2.15	**22.08**	161.44	Horizontal	Pass
		683	6.46	2.01	19.77	2.15	22.07	161.06	Horizontal	Pass
		688	6.36	2.02	19.78	2.15	21.97	157.40	Horizontal	Pass
5.0MHz Band QPSK	25/0	665.5	4.83	2.01	19.68	2.15	20.35	108.39	Vertical	Pass
		680.5	4.67	2.01	19.77	2.15	20.28	106.66	Vertical	Pass
		695.5	5.28	2.02	19.82	2.15	20.93	123.88	Vertical	Pass
15.0MHz Band QPSK	50/0	668	5.00	2.01	19.70	2.15	20.54	113.24	Vertical	Pass
		680.5	5.48	2.01	19.77	2.15	21.09	128.53	Vertical	Pass
		693	4.70	2.02	19.81	2.15	20.34	108.14	Vertical	Pass
15.0MHz Band QPSK	75/0	670.5	4.90	2.01	19.71	2.15	20.45	110.92	Vertical	Pass
		680.5	4.81	2.01	19.77	2.15	20.42	110.15	Vertical	Pass
		690.5	5.59	2.02	19.79	2.15	21.21	132.13	Vertical	Pass
20MHz Band QPSK	100/0	673	5.38	2.01	19.73	2.15	20.95	124.45	Vertical	Pass
		683	5.55	2.01	19.77	2.15	21.16	130.62	Vertical	Pass
		688	4.81	2.02	19.78	2.15	20.42	110.15	Vertical	Pass

Radiated Power (ERP) for Band 71										
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	665.5	6.34	2.01	19.68	2.15	21.86	153.46	Horizontal	Pass
		680.5	6.22	2.01	19.77	2.15	21.83	152.41	Horizontal	Pass
		695.5	6.02	2.02	19.82	2.15	21.67	146.89	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	668	6.11	2.01	19.70	2.15	21.65	146.22	Horizontal	Pass
		680.5	6.01	2.01	19.77	2.15	21.62	145.21	Horizontal	Pass
		693	5.88	2.02	19.81	2.15	21.52	141.91	Horizontal	Pass
15.0MHz Band 16 QAM	75/0	670.5	6.39	2.01	19.71	2.15	21.94	156.31	Horizontal	Pass
		680.5	6.27	2.01	19.77	2.15	21.88	154.17	Horizontal	Pass
		690.5	6.11	2.02	19.79	2.15	21.73	148.94	Horizontal	Pass
20.0MHz Band 16 QAM	100/0	673	6.41	2.01	19.73	2.15	**21.98**	157.76	Horizontal	Pass
		683	6.36	2.01	19.77	2.15	21.97	157.40	Horizontal	Pass
		688	6.26	2.02	19.78	2.15	21.87	153.82	Horizontal	Pass
5.0MHz Band 16 QAM	25/0	665.5	5.11	2.01	19.68	2.15	20.63	115.61	Vertical	Pass
		680.5	5.23	2.01	19.77	2.15	20.84	121.34	Vertical	Pass
		695.5	4.82	2.02	19.82	2.15	20.47	111.43	Vertical	Pass
10.0MHz Band 16 QAM	50/0	668	5.02	2.01	19.70	2.15	20.56	113.76	Vertical	Pass
		680.5	5.24	2.01	19.77	2.15	20.85	121.62	Vertical	Pass
		693	4.68	2.02	19.81	2.15	20.32	107.65	Vertical	Pass
15.0MHz Band 16 QAM	75/0	670.5	5.47	2.01	19.71	2.15	21.02	126.47	Vertical	Pass
		680.5	4.71	2.01	19.77	2.15	20.32	107.65	Vertical	Pass
		690.5	5.52	2.02	19.79	2.15	21.14	130.02	Vertical	Pass
20.0MHz Band 16 QAM	100/0	673	4.70	2.01	19.73	2.15	20.27	106.41	Vertical	Pass
		683	4.54	2.01	19.77	2.15	20.15	103.51	Vertical	Pass
		688	4.91	2.02	19.78	2.15	20.52	112.72	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) and §90.691

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

RESULTS

PASS

9.1 LTE BAND 2

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

Test Results for Low Channel 1850.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3701.4	-45.67	4.04	33.51	-16.20	-13	-3.20	Horizontal
3701.4	-53.94	4.04	33.51	-24.47	-13	-11.47	Vertical
5552.1	-46.13	5.24	35.84	-15.53	-13	-2.53	Vertical
5552.1	-50.00	5.24	35.84	-19.40	-13	-6.40	Horizontal
182.4	-44.05	1.43	16.02	-29.46	-13	-16.46	Vertical
251.1	-42.07	1.30	17.99	-25.38	-13	-12.38	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-48.80	4.04	33.56	-19.28	-13	-6.28	Horizontal
3760.0	-53.28	4.04	33.56	-23.76	-13	-10.76	Vertical
5640.0	-45.91	5.24	35.91	-15.24	-13	-2.24	Vertical
5640.0	-49.31	5.24	35.91	-18.64	-13	-5.64	Horizontal
185.4	-35.45	1.62	16.97	-20.10	-13	-7.10	Vertical
430.7	-39.51	1.74	15.98	-25.28	-13	-12.28	Horizontal
Test Results for High Channel 1909.3MHz							
3818.6	-47.59	4.04	34.00	-17.63	-13	-4.63	Horizontal
3818.6	-46.73	4.04	34.00	-16.77	-13	-3.77	Vertical
5727.9	-46.78	5.24	36.04	-15.98	-13	-2.98	Vertical
5727.9	-50.61	5.24	36.04	-19.81	-13	-6.81	Horizontal
191.2	-40.78	1.42	17.29	-24.91	-13	-11.91	Vertical
245.0	-35.35	1.50	17.90	-18.94	-13	-5.94	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	-52.73	4.07	33.54	-23.26	-13	-10.26	Horizontal
3720.0	-49.47	4.07	33.54	-20.00	-13	-7.00	Vertical
5580.0	-45.94	5.28	35.86	-15.36	-13	-2.36	Vertical
5580.0	-50.06	5.28	35.86	-19.48	-13	-6.48	Horizontal
188.3	-42.42	1.58	16.89	-27.10	-13	-14.10	Vertical
402.3	-41.55	1.76	17.26	-26.05	-13	-13.05	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-49.85	4.04	33.56	-20.33	-13	-7.33	Horizontal
3760.0	-49.86	4.04	33.56	-20.34	-13	-7.34	Vertical
5640.0	-53.01	5.24	35.91	-22.34	-13	-9.34	Vertical
5640.0	-50.32	5.24	35.91	-19.65	-13	-6.65	Horizontal
189.6	-43.02	1.46	16.27	-28.21	-13	-15.21	Vertical
432.7	-34.65	1.59	15.15	-21.09	-13	-8.09	Horizontal
Test Results for High Channel 1900MHz							
3800.0	-53.39	4.04	34.00	-23.43	-13	-10.43	Horizontal
3800.0	-52.77	4.04	34.00	-22.81	-13	-9.81	Vertical
5700.0	-45.49	5.24	36.04	-14.69	-13	**-1.69**	Vertical
5700.0	-49.23	5.24	36.04	-18.43	-13	-5.43	Horizontal
204.2	-42.66	1.36	17.39	-26.62	-13	-13.62	Vertical
237.5	-44.04	1.66	15.39	-30.31	-13	-17.31	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	-47.27	4.02	29.80	-21.49	-13	-8.49	Horizontal
3421.4	-50.47	4.02	29.80	-24.69	-13	-11.69	Vertical
5132.1	-51.10	5.24	35.84	-20.50	-13	-7.50	Vertical
5132.1	-52.90	5.24	35.84	-22.30	-13	-9.30	Horizontal
181.9	-37.07	1.68	16.04	-22.71	-13	-9.71	Vertical
403.3	-39.89	1.78	17.74	-23.93	-13	-10.93	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-47.69	4.03	30.00	-21.72	-13	-8.72	Horizontal
3465.0	-50.36	4.03	30.00	-24.39	-13	-11.39	Vertical
5197.5	-51.81	5.25	35.86	-21.20	-13	-8.20	Vertical
5197.5	-51.69	5.25	35.86	-21.08	-13	-8.08	Horizontal
197.2	-39.63	1.72	17.69	-23.66	-13	-10.66	Vertical
333.3	-34.28	1.62	16.02	-19.87	-13	-6.87	Horizontal
Test Results for High Channel 1754.3MHz							
3508.6	-45.06	4.05	30.01	-19.10	-13	-6.10	Horizontal
3508.6	-50.72	4.05	30.01	-24.76	-13	-11.76	Vertical
5262.9	-45.77	5.26	35.86	-15.17	-13	-2.17	Vertical
5262.9	-49.42	5.26	35.86	-18.82	-13	-5.82	Horizontal
183.9	-44.78	1.80	16.69	-29.89	-13	-16.89	Vertical
256.2	-43.38	1.75	16.66	-28.48	-13	-15.48	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	-47.24	4.02	29.80	-21.46	-13	-8.46	Horizontal
3440.0	-50.69	4.02	29.80	-24.91	-13	-11.91	Vertical
5160.0	-53.69	5.24	35.84	-23.09	-13	-10.09	Vertical
5160.0	-53.95	5.24	35.84	-23.35	-13	-10.35	Horizontal
179.5	-37.09	1.57	17.26	-21.40	-13	-8.40	Vertical
269.4	-34.85	1.78	16.35	-20.28	-13	-7.28	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-48.57	4.03	30.00	-22.60	-13	-9.60	Horizontal
3465.0	-45.78	4.03	30.00	-19.81	-13	-6.81	Vertical
5197.5	-45.05	5.25	35.86	-14.44	-13	**-1.44**	Vertical
5197.5	-53.42	5.25	35.86	-22.81	-13	-9.81	Horizontal
194.6	-39.29	1.44	17.95	-22.78	-13	-9.78	Vertical
338.0	-38.25	1.65	16.09	-23.81	-13	-10.81	Horizontal
Test Results for High Channel 1745MHz							
3490.0	-50.31	2.91	27.68	-25.54	-13	-12.54	Horizontal
3490.0	-49.11	2.91	27.68	-24.34	-13	-11.34	Vertical
5235.0	-49.81	5.26	35.86	-19.21	-13	-6.21	Vertical
5235.0	-53.45	5.26	35.86	-22.85	-13	-9.85	Horizontal
204.0	-40.32	1.61	16.85	-25.08	-13	-12.08	Vertical
272.1	-44.65	1.61	15.19	-31.07	-13	-18.07	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	-49.35	2.78	27.50	-24.63	-13	-11.63	Horizontal
1649.4	-48.37	2.78	27.50	-23.65	-13	-10.65	Vertical
2474.1	-44.21	2.90	27.80	-19.31	-13	-6.31	Vertical
2474.1	-53.41	2.90	27.80	-28.51	-13	-15.51	Horizontal
185.2	-35.80	1.76	17.59	-19.97	-13	-6.97	Vertical
270.3	-38.03	1.63	15.87	-23.79	-13	-10.79	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-49.65	2.80	27.48	-24.97	-13	-11.97	Horizontal
1673.0	-52.76	2.80	27.48	-28.08	-13	-15.08	Vertical
2509.5	-44.73	2.91	27.70	-19.94	-13	-6.94	Vertical
2509.5	-50.92	2.91	27.70	-26.13	-13	-13.13	Horizontal
180.3	-39.11	1.61	15.68	-25.04	-13	-12.04	Vertical
255.0	-42.43	1.59	17.52	-26.51	-13	-13.51	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-47.04	2.82	27.43	-22.43	-13	-9.43	Horizontal
1696.6	-52.16	2.82	27.43	-27.55	-13	-14.55	Vertical
2544.9	-48.83	2.92	27.74	-24.01	-13	-11.01	Vertical
2544.9	-52.28	2.92	27.74	-27.46	-13	-14.46	Horizontal
175.1	-34.56	1.69	16.67	-19.57	-13	-6.57	Vertical
421.9	-39.18	1.70	17.18	-23.70	-13	-10.70	Horizontal

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

Test Results for Low Channel 829MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1658.0	-46.90	2.78	27.50	-22.18	-13	-9.18	Horizontal
1658.0	-44.75	2.78	27.50	-20.03	-13	-7.03	Vertical
2487.0	-46.51	2.90	27.80	-21.61	-13	-8.61	Vertical
2487.0	-53.29	2.90	27.80	-28.39	-13	-15.39	Horizontal
184.6	-35.90	1.71	15.57	-22.04	-13	-9.04	Vertical
407.2	-34.18	1.34	16.40	-19.12	-13	**-6.12**	Horizontal
Test Results for Mid Channel 836.5MHz							
1673.0	-52.45	2.80	27.48	-27.77	-13	-14.77	Horizontal
1673.0	-53.78	2.80	27.48	-29.10	-13	-16.10	Vertical
2509.5	-44.16	2.91	27.70	-19.37	-13	-6.37	Vertical
2509.5	-51.28	2.91	27.70	-26.49	-13	-13.49	Horizontal
208.1	-43.61	1.44	17.04	-28.01	-13	-15.01	Vertical
332.7	-41.02	1.76	17.62	-25.16	-13	-12.16	Horizontal
Test Results for High Channel 844MHz							
1688.0	-49.95	2.82	27.43	-25.34	-13	-12.34	Horizontal
1688.0	-51.05	2.82	27.43	-26.44	-13	-13.44	Vertical
2532.0	-47.12	2.92	27.74	-22.30	-13	-9.30	Vertical
2532.0	-52.73	2.92	27.74	-27.91	-13	-14.91	Horizontal
185.0	-41.97	1.74	17.70	-26.01	-13	-13.01	Vertical
305.6	-41.24	1.41	17.46	-25.18	-13	-12.18	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	-60.64	5.23	35.81	-30.06	-25	-5.06	Horizontal
5005.0	-62.57	5.23	35.81	-31.99	-25	-6.99	Vertical
7507.5	-64.58	5.67	36.85	-33.40	-25	-8.40	Vertical
7507.5	-63.14	5.67	36.85	-31.96	-25	-6.96	Horizontal
199.1	-46.41	1.73	17.97	-30.17	-25	-5.17	Vertical
327.8	-53.85	1.38	15.11	-40.12	-25	-15.12	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-63.95	5.23	35.82	-33.36	-25	-8.36	Horizontal
5070.0	-60.49	5.23	35.82	-29.90	-25	-4.90	Vertical
7605.0	-59.70	5.67	36.85	-28.52	-25	-3.52	Vertical
7605.0	-63.78	5.67	36.85	-32.60	-25	-7.60	Horizontal
190.7	-46.27	1.77	16.17	-31.86	-25	-6.86	Vertical
260.6	-49.26	1.63	15.21	-35.68	-25	-10.68	Horizontal
Test Results for High Channel 2567.5MHz							
5135.0	-64.10	5.24	35.83	-33.51	-25	-8.51	Horizontal
5135.0	-60.42	5.24	35.83	-29.83	-25	-4.83	Vertical
7702.5	-60.32	5.68	36.87	-29.13	-25	-4.13	Vertical
7702.5	-61.91	5.68	36.87	-30.72	-25	-5.72	Horizontal
201.0	-49.74	1.58	17.56	-33.76	-25	-8.76	Vertical
272.6	-44.91	1.45	16.58	-29.78	-25	-4.78	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	-61.75	5.23	35.82	-31.16	-25	-6.16	Horizontal
5020.0	-60.05	5.23	35.82	-29.46	-25	-4.46	Vertical
7530.0	-59.92	5.67	36.86	-28.73	-25	-3.73	Vertical
7530.0	-60.87	5.67	36.86	-29.68	-25	-4.68	Horizontal
209.5	-54.71	1.63	15.76	-40.58	-25	-15.58	Vertical
323.5	-48.20	1.71	15.44	-34.47	-25	-9.47	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-64.16	5.23	35.82	-33.57	-25	-8.57	Horizontal
5070.0	-63.63	5.23	35.82	-33.04	-25	-8.04	Vertical
7605.0	-59.73	5.67	36.85	-28.55	-25	-3.55	Vertical
7605.0	-64.46	5.67	36.85	-33.28	-25	-8.28	Horizontal
195.7	-48.32	1.79	16.84	-33.26	-25	-8.26	Vertical
388.4	-51.90	1.71	17.64	-35.97	-25	-10.97	Horizontal
Test Results for High Channel 2560MHz							
5120.0	-64.91	5.24	35.83	-34.32	-25	-9.32	Horizontal
5120.0	-60.55	5.24	35.83	-29.96	-25	-4.96	Vertical
7680.0	-63.59	5.70	36.88	-32.41	-25	-7.41	Vertical
7680.0	-59.34	5.70	36.88	-28.16	-25	**-3.16**	Horizontal
188.9	-47.32	1.79	16.84	-32.26	-25	-7.26	Vertical
286.9	-47.91	1.71	17.64	-31.98	-25	-6.98	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	-44.58	2.60	27.20	-19.98	-13	-6.98	Horizontal
1399.4	-45.71	2.60	27.20	-21.11	-13	-8.11	Vertical
2099.1	-48.39	2.85	27.54	-23.70	-13	-10.70	Vertical
2099.1	-50.08	2.85	27.54	-25.39	-13	-12.39	Horizontal
197.2	-40.23	1.49	17.78	-23.94	-13	-10.94	Vertical
363.3	-39.65	1.36	17.33	-23.68	-13	-10.68	Horizontal
Test Results For Mid Channel 707.5MHz							
1415.0	-53.30	2.61	27.28	-28.63	-13	-15.63	Horizontal
1415.0	-47.44	2.61	27.28	-22.77	-13	-9.77	Vertical
2122.5	-50.96	2.87	27.59	-26.24	-13	-13.24	Vertical
2122.5	-49.55	2.87	27.59	-24.83	-13	-11.83	Horizontal
189.2	-36.68	1.73	15.74	-22.67	-13	-9.67	Vertical
312.4	-40.22	1.62	15.79	-26.05	-13	-13.05	Horizontal
Test Results for High Channel 715.3MHz							
1430.6	-49.46	2.63	27.28	-24.81	-13	-11.81	Horizontal
1430.6	-46.22	2.63	27.28	-21.57	-13	-8.57	Vertical
2145.9	-44.21	2.88	27.60	-19.49	-13	**-6.49**	Vertical
2145.9	-49.49	2.88	27.60	-24.77	-13	-11.77	Horizontal
187.3	-37.65	1.61	18.00	-21.26	-13	-8.26	Vertical
429.7	-40.76	1.45	15.49	-26.73	-13	-13.73	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	-45.84	2.61	27.26	-21.19	-13	-8.19	Horizontal
1408.0	-46.47	2.61	27.26	-21.82	-13	-8.82	Vertical
2112.0	-44.22	2.87	27.58	-19.51	-13	-6.51	Vertical
2112.0	-51.62	2.87	27.58	-26.91	-13	-13.91	Horizontal
179.6	-43.19	1.31	16.97	-27.53	-13	-14.53	Vertical
350.3	-43.35	1.65	16.70	-28.30	-13	-15.30	Horizontal
Test Results for Mid Channel 707.5MHz							
1415.0	-51.74	2.61	27.28	-27.07	-13	-14.07	Horizontal
1415.0	-53.28	2.61	27.28	-28.61	-13	-15.61	Vertical
2122.5	-52.73	2.87	27.59	-28.01	-13	-15.01	Vertical
2122.5	-51.73	2.87	27.59	-27.01	-13	-14.01	Horizontal
191.6	-44.05	1.72	17.99	-27.78	-13	-14.78	Vertical
454.5	-44.07	1.73	17.94	-27.86	-13	-14.86	Horizontal
Test Results for High Channel 711MHz							
1422.0	-51.50	2.62	27.28	-26.84	-13	-13.84	Horizontal
1422.0	-53.63	2.62	27.28	-28.97	-13	-15.97	Vertical
2133.0	-50.91	2.87	27.60	-26.18	-13	-13.18	Vertical
2133.0	-49.68	2.87	27.60	-24.95	-13	-11.95	Horizontal
191.6	-43.65	1.58	15.93	-29.30	-13	-16.30	Vertical
336.3	-35.91	1.36	15.59	-21.68	-13	-8.68	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 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	-48.13	2.61	27.28	-23.46	-13	-10.46	Horizontal
1413.0	-53.76	2.61	27.28	-29.09	-13	-16.09	Vertical
2119.5	-47.29	2.87	27.59	-22.57	-13	-9.57	Vertical
2119.5	-50.13	2.87	27.59	-25.41	-13	-12.41	Horizontal
202.1	-43.44	1.71	16.15	-29.00	-13	-16.00	Vertical
267.4	-41.20	1.41	17.32	-25.29	-13	-12.29	Horizontal
Test Results For Mid Channel 710MHz							
1420.0	-52.54	2.62	27.30	-27.86	-13	-14.86	Horizontal
1420.0	-51.43	2.62	27.30	-26.75	-13	-13.75	Vertical
2130.0	-48.38	2.87	27.62	-23.63	-13	-10.63	Vertical
2130.0	-50.85	2.87	27.62	-26.10	-13	-13.10	Horizontal
201.6	-39.73	1.42	15.25	-25.91	-13	-12.91	Vertical
231.3	-42.92	1.36	17.19	-27.09	-13	-14.09	Horizontal
Test Results for High Channel 713.5MHz							
1427.0	-45.66	2.66	27.28	-21.04	-13	-8.04	Horizontal
1427.0	-53.63	2.66	27.28	-29.01	-13	-16.01	Vertical
2140.5	-44.55	2.88	27.60	-19.83	-13	-6.83	Vertical
2140.5	-51.73	2.88	27.60	-27.01	-13	-14.01	Horizontal
178.0	-42.66	1.32	17.29	-26.69	-13	-13.69	Vertical
415.9	-42.48	1.72	16.89	-27.31	-13	-14.31	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	-51.62	2.62	27.30	-26.94	-13	-13.94	Horizontal
1418.0	-44.36	2.62	27.30	-19.68	-13	-6.68	Vertical
2127.0	-48.06	2.87	27.62	-23.31	-13	-10.31	Vertical
2127.0	-49.92	2.87	27.62	-25.17	-13	-12.17	Horizontal
197.3	-43.01	1.35	16.91	-27.45	-13	-14.45	Vertical
252.9	-44.71	1.62	16.31	-30.02	-13	-17.02	Horizontal
Test Results for Mid Channel 710MHz							
1420.0	-52.58	2.62	27.30	-27.90	-13	-14.90	Horizontal
1420.0	-48.84	2.62	27.30	-24.16	-13	-11.16	Vertical
2130.0	-53.53	2.87	27.62	-28.78	-13	-15.78	Vertical
2130.0	-49.76	2.87	27.62	-25.01	-13	-12.01	Horizontal
204.5	-34.80	1.51	17.14	-19.17	-13	**-6.17**	Vertical
271.2	-41.33	1.77	16.88	-26.22	-13	-13.22	Horizontal
Test Results for High Channel 711MHz							
1422.0	-44.18	2.62	27.30	-19.50	-13	-6.50	Horizontal
1422.0	-46.92	2.62	27.30	-22.24	-13	-9.24	Vertical
2133.0	-51.34	2.87	27.62	-26.59	-13	-13.59	Vertical
2133.0	-51.42	2.87	27.62	-26.67	-13	-13.67	Horizontal
175.1	-43.00	1.78	15.95	-28.83	-13	-15.83	Vertical
280.7	-38.48	1.34	17.95	-21.88	-13	-8.88	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 25

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

Test Results for Low Channel 1710.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3701.4	-46.88	4.02	29.80	-21.10	-13	-8.10	Horizontal
3701.4	-46.24	4.02	29.80	-20.46	-13	-7.46	Vertical
5552.1	-49.09	5.24	35.84	-18.49	-13	-5.49	Vertical
5552.1	-48.94	5.24	35.84	-18.34	-13	-5.34	Horizontal
93.9	-34.56	1.59	15.11	-21.04	-13	-8.04	Vertical
119.7	-34.77	1.80	15.61	-20.96	-13	-7.96	Horizontal
Test Results for Mid Channel 1732.5MHz							
3765.0	-48.22	4.03	30.00	-22.25	-13	-9.25	Horizontal
3765.0	-48.29	4.03	30.00	-22.32	-13	-9.32	Vertical
5647.5	-49.03	5.25	35.86	-18.42	-13	-5.42	Vertical
5647.5	-46.24	5.25	35.86	-15.63	-13	-2.63	Horizontal
166.1	-32.91	1.37	15.62	-18.66	-13	-5.66	Vertical
274.4	-33.44	1.55	17.51	-17.48	-13	-4.48	Horizontal
Test Results for High Channel 1754.3MHz							
3828.6	-49.08	4.05	30.01	-23.12	-13	-10.12	Horizontal
3828.6	-45.17	4.05	30.01	-19.21	-13	-6.21	Vertical
5742.9	-49.64	5.26	35.86	-19.04	-13	-6.04	Vertical
5742.9	-47.35	5.26	35.86	-16.75	-13	-3.75	Horizontal
108.6	-32.74	1.66	17.19	-17.21	-13	-4.21	Vertical
138.7	-33.16	1.35	17.94	-16.57	-13	-3.57	Horizontal

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

Test Results for Low Channel 1720MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3720.0	-49.71	4.02	29.80	-23.93	-13	-10.93	Horizontal
3720.0	-48.19	4.02	29.80	-22.41	-13	-9.41	Vertical
5580.0	-49.67	5.24	35.84	-19.07	-13	-6.07	Vertical
5580.0	-50.00	5.24	35.84	-19.40	-13	-6.40	Horizontal
146.2	-34.32	1.70	15.24	-20.78	-13	-7.78	Vertical
215.4	-34.47	1.42	16.58	-19.31	-13	-6.31	Horizontal
Test Results for Mid Channel 1732.5MHz							
3765.0	-48.63	4.03	30.00	-22.66	-13	-9.66	Horizontal
3765.0	-49.62	4.03	30.00	-23.65	-13	-10.65	Vertical
5647.5	-47.67	5.25	35.86	-17.06	-13	-4.06	Vertical
5647.5	-47.95	5.25	35.86	-17.34	-13	-4.34	Horizontal
132.2	-32.82	1.64	16.16	-18.30	-13	-5.30	Vertical
133.3	-33.43	1.62	17.37	-17.68	-13	-4.68	Horizontal
Test Results for High Channel 1745MHz							
3810.0	-48.17	2.91	27.68	-23.40	-13	-10.40	Horizontal
3810.0	-42.63	2.91	27.68	-17.86	-13	-4.86	Vertical
5715.0	-47.78	5.26	35.86	-17.18	-13	-4.18	Vertical
5715.0	-46.82	5.26	35.86	-16.22	-13	-3.22	Horizontal
212.6	-33.74	1.49	15.29	-19.94	-13	-6.94	Vertical
275.8	-33.33	1.79	16.42	-18.70	-13	-5.70	Horizontal

9.8 LTE BAND 26

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

Test Results for Low Channel 814.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit（dBm）	Margin(dBm)	Polarity
1629.4	-48.24	2.78	27.50	-23.52	-13	-10.52	Horizontal
1629.4	-46.94	2.78	27.50	-22.22	-13	-9.22	Vertical
2444.1	-49.45	2.90	27.80	-24.55	-13	-11.55	Vertical
2444.1	-47.99	2.90	27.80	-23.09	-13	-10.09	Horizontal
229.6	-33.41	1.54	16.98	-17.97	-13	-4.97	Vertical
83.3	-32.35	1.47	15.82	-18.00	-13	-5.00	Horizontal
Test Results For Mid Channel 819MHz							
1638.0	-48.31	2.80	27.48	-23.63	-13	-10.63	Horizontal
1638.0	-49.87	2.80	27.48	-25.19	-13	-12.19	Vertical
2457.0	-48.70	2.91	27.70	-23.91	-13	-10.91	Vertical
2457.0	-47.28	2.91	27.70	-22.49	-13	-9.49	Horizontal
168.2	-32.50	1.74	16.19	-18.05	-13	-5.05	Vertical
92.9	-33.60	1.46	15.43	-19.63	-13	-6.63	Horizontal
Test Results for High Channel 823.3MHz							
1646.6	-48.23	2.82	27.43	-23.62	-13	-10.62	Horizontal
1646.6	-42.14	2.82	27.43	-17.53	-13	-4.53	Vertical
2469.9	-49.22	2.92	27.74	-24.40	-13	-11.40	Vertical
2469.9	-49.16	2.92	27.74	-24.34	-13	-11.34	Horizontal
213.1	-34.33	1.67	17.05	-18.95	-13	-5.95	Vertical
121.7	-34.64	1.42	16.12	-19.94	-13	-6.94	Horizontal

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

Test Results for Channel 819MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1638.0	-46.25	2.78	27.50	-21.53	-13	-8.53	Horizontal
1638.0	-42.07	2.78	27.50	-17.35	-13	-4.35	Vertical
2457.0	-46.50	2.90	27.80	-21.60	-13	-8.60	Vertical
2457.0	-48.81	2.90	27.80	-23.91	-13	-10.91	Horizontal
253.7	-33.00	1.43	17.34	-17.09	-13	-4.09	Vertical
256.8	-32.18	1.56	15.71	-18.03	-13	-5.03	Horizontal

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

Test Results for Low Channel 824.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1649.4	-46.87	2.78	27.50	-22.15	-13	-9.15	Horizontal
1649.4	-44.22	2.78	27.50	-19.50	-13	-6.50	Vertical
2474.1	-48.60	2.90	27.80	-23.70	-13	-10.70	Vertical
2474.1	-47.13	2.90	27.80	-22.23	-13	-9.23	Horizontal
237.0	-34.86	1.33	17.34	-18.85	-13	-5.85	Vertical
180.5	-34.24	1.47	16.80	-18.91	-13	-5.91	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-49.60	2.80	27.48	-24.92	-13	-11.92	Horizontal
1673.0	-44.83	2.80	27.48	-20.15	-13	-7.15	Vertical
2509.5	-48.45	2.91	27.70	-23.66	-13	-10.66	Vertical
2509.5	-46.60	2.91	27.70	-21.81	-13	-8.81	Horizontal
140.8	-33.96	1.75	15.46	-20.25	-13	-7.25	Vertical
90.6	-32.39	1.52	16.14	-17.77	-13	-4.77	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-49.58	2.82	27.43	-24.97	-13	-11.97	Horizontal
1696.6	-44.79	2.82	27.43	-20.18	-13	-7.18	Vertical
2544.9	-47.85	2.92	27.74	-23.03	-13	-10.03	Vertical
2544.9	-46.98	2.92	27.74	-22.16	-13	-9.16	Horizontal
171.4	-33.52	1.67	16.09	-19.10	-13	-6.10	Vertical
247.2	-33.09	1.80	17.55	-17.34	-13	-4.34	Horizontal

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

Test Results for Low Channel 831.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1663.0	-47.77	2.78	27.50	-23.05	-13	-10.05	Horizontal
1663.0	-44.66	2.78	27.50	-19.94	-13	-6.94	Vertical
2494.5	-46.71	2.90	27.80	-21.81	-13	-8.81	Vertical
2494.5	-47.18	2.90	27.80	-22.28	-13	-9.28	Horizontal
255.4	-33.89	1.52	15.72	-19.69	-13	-6.69	Vertical
163.1	-33.68	1.40	17.03	-18.05	-13	-5.05	Horizontal
Test Results for Mid Channel 836.5MHz							
1673.0	-49.52	2.80	27.48	-24.84	-13	-11.84	Horizontal
1673.0	-48.10	2.80	27.48	-23.42	-13	-10.42	Vertical
2509.5	-48.26	2.91	27.70	-23.47	-13	-10.47	Vertical
2509.5	-47.31	2.91	27.70	-22.52	-13	-9.52	Horizontal
227.1	-32.45	1.74	16.38	-17.81	-13	-4.81	Vertical
101.3	-34.97	1.79	15.20	-21.56	-13	-8.56	Horizontal
Test Results for High Channel841.5MHz							
1683.0	-48.67	2.82	27.43	-24.06	-13	-11.06	Horizontal
1683.0	-49.62	2.82	27.43	-25.01	-13	-12.01	Vertical
2524.5	-46.07	2.92	27.74	-21.25	-13	-8.25	Vertical
2524.5	-48.44	2.92	27.74	-23.62	-13	-10.62	Horizontal
261.1	-32.32	1.78	17.44	-16.66	-13	-3.66	Vertical
120.1	-32.16	1.70	15.93	-17.93	-13	-4.93	Horizontal

9.9 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 Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
4997.0	-60.51	5.23	35.81	-29.93	-25	-4.93	Horizontal
4997.0	-61.64	5.23	35.81	-31.06	-25	-6.06	Vertical
7495.5	-60.36	5.67	36.85	-29.18	-25	-4.18	Vertical
7495.5	-64.80	5.67	36.85	-33.62	-25	-8.62	Horizontal
435.3	-49.11	1.38	15.98	-34.51	-25	-9.51	Vertical
465.8	-46.04	1.62	15.66	-32.00	-25	-7.00	Horizontal
Test Results for Mid Channel 2593MHz							
5186.0	-63.59	5.23	35.82	-33.00	-25	-8.00	Horizontal
5186.0	-62.12	5.23	35.82	-31.53	-25	-6.53	Vertical
7779.0	-60.63	5.67	36.85	-29.45	-25	-4.45	Vertical
7779.0	-61.29	5.67	36.85	-30.11	-25	-5.11	Horizontal
510.4	-47.62	1.62	16.17	-33.07	-25	-8.07	Vertical
562.9	-49.53	1.74	17.63	-33.64	-25	-8.64	Horizontal
Test Results for High Channel 2687.5MHz							
5375.0	-63.46	5.24	35.83	-32.87	-25	-7.87	Horizontal
5375.0	-59.44	5.24	35.83	-28.85	-25	-3.85	Vertical
8062.5	-62.60	5.68	36.87	-31.41	-25	-6.41	Vertical
8062.5	-61.35	5.68	36.87	-30.16	-25	-5.16	Horizontal
197.6	-46.86	1.55	15.84	-32.57	-25	-7.57	Vertical
353.1	-49.60	1.51	17.06	-34.05	-25	-9.05	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 Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
5012.0	-60.15	5.23	35.82	-29.56	-25	-4.56	Horizontal
5012.0	-61.91	5.23	35.82	-31.32	-25	-6.32	Vertical
7518.0	-60.43	5.67	36.86	-29.24	-25	-4.24	Vertical
7518.0	-60.03	5.67	36.86	-28.84	-25	-3.84	Horizontal
128.9	-46.58	1.43	15.51	-32.50	-25	-7.50	Vertical
344.8	-49.00	1.40	16.97	-33.43	-25	-8.43	Horizontal
Test Results for Mid Channel 2593MHz							
5186.0	-64.36	5.23	35.82	-33.77	-25	-8.77	Horizontal
5186.0	-60.02	5.23	35.82	-29.43	-25	-4.43	Vertical
7779.0	-62.94	5.67	36.85	-31.76	-25	-6.76	Vertical
7779.0	-59.01	5.67	36.85	-27.83	-25	**-2.83**	Horizontal
100.8	-49.56	1.77	16.72	-34.61	-25	-9.61	Vertical
263.5	-46.17	1.31	16.99	-30.49	-25	-5.49	Horizontal
Test Results for High Channel 2680MHz							
5360.0	-63.62	5.24	35.83	-33.03	-25	-8.03	Horizontal
5360.0	-59.70	5.24	35.83	-29.11	-25	-4.11	Vertical
8040.0	-60.05	5.70	36.88	-28.87	-25	-3.87	Vertical
8040.0	-60.94	5.70	36.88	-29.76	-25	-4.76	Horizontal
349.9	-48.81	1.70	15.73	-34.78	-25	-9.78	Vertical
110.3	-44.15	1.75	17.33	-28.57	-25	-3.57	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	-51.47	4.02	29.80	-25.69	-13	-12.69	Horizontal
3421.4	-44.29	4.02	29.80	-18.51	-13	-5.51	Vertical
5132.1	-49.56	5.24	35.84	-18.96	-13	-5.96	Vertical
5132.1	-54.75	5.24	35.84	-24.15	-13	-11.15	Horizontal
112.6	-52.67	1.52	15.57	-38.62	-13	-25.62	Vertical
220.5	-54.77	1.33	17.14	-38.96	-13	-25.96	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-51.14	4.03	30.00	-25.17	-13	-12.17	Horizontal
3490.0	-48.88	4.03	30.00	-22.91	-13	-9.91	Vertical
5235.0	-51.75	5.25	35.86	-21.14	-13	-8.14	Vertical
5235.0	-51.79	5.25	35.86	-21.18	-13	-8.18	Horizontal
157.3	-54.37	1.53	17.13	-38.77	-13	-25.77	Vertical
213.1	-49.69	1.41	15.95	-35.15	-13	-22.15	Horizontal
Test Results for High Channel 1779.3MHz							
3558.6	-52.05	4.05	30.01	-26.09	-13	-13.09	Horizontal
3558.6	-53.01	4.05	30.01	-27.05	-13	-14.05	Vertical
5337.9	-53.72	5.26	35.86	-23.12	-13	-10.12	Vertical
5337.9	-48.91	5.26	35.86	-18.31	-13	**-5.31**	Horizontal
170.6	-53.91	1.44	15.51	-39.84	-13	-26.84	Vertical
169.0	-48.16	1.78	15.76	-34.18	-13	-21.18	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	-50.29	4.02	29.80	-24.51	-13	-11.51	Horizontal
3440.0	-49.83	4.02	29.80	-24.05	-13	-11.05	Vertical
5160.0	-50.30	5.24	35.84	-19.70	-13	-6.70	Vertical
5160.0	-49.66	5.24	35.84	-19.06	-13	-6.06	Horizontal
268.8	-47.94	1.62	17.02	-32.54	-13	-19.54	Vertical
161.4	-54.44	1.32	17.31	-38.45	-13	-25.45	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-50.01	4.03	30.00	-24.04	-13	-11.04	Horizontal
3490.0	-54.92	4.03	30.00	-28.95	-13	-15.95	Vertical
5235.0	-49.51	5.25	35.86	-18.90	-13	-5.90	Vertical
5235.0	-52.97	5.25	35.86	-22.36	-13	-9.36	Horizontal
159.9	-49.01	1.45	15.17	-35.29	-13	-22.29	Vertical
172.1	-44.43	1.48	17.82	-28.09	-13	-15.09	Horizontal
Test Results for High Channel 1770MHz							
3540.0	-53.80	2.91	27.68	-29.03	-13	-16.03	Horizontal
3540.0	-54.20	2.91	27.68	-29.43	-13	-16.43	Vertical
5310.0	-51.30	5.26	35.86	-20.70	-13	-7.70	Vertical
5310.0	-53.47	5.26	35.86	-22.87	-13	-9.87	Horizontal
197.3	-45.08	1.76	16.38	-30.46	-13	-17.46	Vertical
158.5	-45.63	1.43	17.13	-29.93	-13	-16.93	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.

9.11 LTE BAND 71

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

Test Results for Low Channel 665.5.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1331	-49.58	2.61	27.28	-24.91	-13	-11.91	Horizontal
1331	-49.65	2.61	27.28	-24.98	-13	-11.98	Vertical
1996.5	-49.03	2.87	27.59	-24.31	-13	-11.31	Vertical
1996.5	-48.35	2.87	27.59	-23.63	-13	-10.63	Horizontal
Test Results For Mid Channel 680.5MHz							
1361	-48.44	2.62	27.30	-23.76	-13	-10.76	Horizontal
1361	-47.59	2.62	27.30	-22.91	-13	-9.91	Vertical
2041.5	-49.92	2.87	27.62	-25.17	-13	-12.17	Vertical
2041.5	-47.48	2.87	27.62	-22.73	-13	-9.73	Horizontal
Test Results for High Channel 695.5MHz							
1391	-47.76	2.66	27.28	-23.14	-13	-10.14	Horizontal
1391	-48.09	2.66	27.28	-23.47	-13	-10.47	Vertical
2086.5	-46.88	2.88	27.60	-22.16	-13	-9.16	Vertical
2086.5	-47.40	2.88	27.60	-22.68	-13	-9.68	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 Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1346	-48.79	2.62	27.30	-24.11	-13	-11.11	Horizontal
1346	-47.45	2.62	27.30	-22.77	-13	-9.77	Vertical
2019	-47.12	2.87	27.62	-22.37	-13	-9.37	Vertical
2019	-49.68	2.87	27.62	-24.93	-13	-11.93	Horizontal
Test Results for Mid Channel 683MHz							
1366	-47.50	2.62	27.30	-22.82	-13	-9.82	Horizontal
1366	-49.75	2.62	27.30	-25.07	-13	-12.07	Vertical
2049	-48.19	2.87	27.62	-23.44	-13	-10.44	Vertical
2049	-47.45	2.87	27.62	-22.70	-13	-9.70	Horizontal
Test Results for High Channel 688MHz							
1376	-47.02	2.62	27.30	-22.34	-13	-9.34	Horizontal
1376	-48.06	2.62	27.30	-23.38	-13	-10.38	Vertical
2064	-48.02	2.87	27.62	-23.27	-13	-10.27	Vertical
2064	-48.15	2.87	27.62	-23.40	-13	-10.40	Horizontal

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

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

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

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

10. FREQUENCY STABILITY

RULE PART(S)

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

LIMITS

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

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

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

- Temp. = −30° to +50°C
- Voltage =low voltage,DC 3.4V, Normal, DC 3.8V and High voltage, DC 4.2V.

Frequency Stability vs Temperature:

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

Frequency Stability vs Voltage:

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

MODES TESTED

- LTE Band 2/4/5/7/12/17/25/26/41/66/71

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	12.3	0.006544	2.5
3.8	1880	14.1	0.007481	2.5
4.2	1880	12.9	0.006857	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	12.4	0.006592	2.5
Extreme (50C)	1880	11.5	0.006115	2.5
Extreme (40C)	1880	13.8	0.007334	2.5
Extreme (30C)	1880	13.2	0.006996	2.5
Extreme (10C)	1880	13.8	0.007346	2.5
Extreme (0C)	1880	11.8	0.006256	2.5
Extreme (-10C)	1880	13.3	0.007060	2.5
Extreme (-20C)	1880	14.1	0.007525	2.5
Extreme (-30C)	1880	15.0	0.007975	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	10.2	0.005442	2.5
3.8	1880	9.2	0.004869	2.5
4.2	1880	7.9	0.004213	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	9.1	0.004857	2.5
Extreme (50C)	1880	8.8	0.004681	2.5
Extreme (40C)	1880	8.3	0.004404	2.5
Extreme (30C)	1880	9.0	0.004769	2.5
Extreme (10C)	1880	9.2	0.004910	2.5
Extreme (0C)	1880	8.2	0.004385	2.5
Extreme (-10C)	1880	8.9	0.004713	2.5
Extreme (-20C)	1880	9.0	0.004782	2.5
Extreme (-30C)	1880	7.7	0.004083	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	8.7	0.005019	2.5
3.8	1732.5	8.9	0.005110	2.5
4.2	1732.5	8.7	0.005034	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	8.8	0.005069	2.5
Extreme (50C)	1732.5	8.7	0.005006	2.5
Extreme (40C)	1732.5	7.8	0.004500	2.5
Extreme (30C)	1732.5	5.5	0.003172	2.5
Extreme (10C)	1732.5	6.8	0.003897	2.5
Extreme (0C)	1732.5	9.4	0.005410	2.5
Extreme (-10C)	1732.5	8.1	0.004678	2.5
Extreme (-20C)	1732.5	7.0	0.004039	2.5
Extreme (-30C)	1732.5	8.3	0.004768	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	9.5	0.005469	2.5
3.8	1732.5	9.0	0.005198	2.5
4.2	1732.5	7.6	0.004415	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	9.5	0.005474	2.5
Extreme (50C)	1732.5	8.8	0.005107	2.5
Extreme (40C)	1732.5	7.9	0.004533	2.5
Extreme (30C)	1732.5	8.6	0.004935	2.5
Extreme (10C)	1732.5	9.3	0.005348	2.5
Extreme (0C)	1732.5	8.2	0.004733	2.5
Extreme (-10C)	1732.5	9.4	0.005433	2.5
Extreme (-20C)	1732.5	8.9	0.005158	2.5
Extreme (-30C)	1732.5	8.5	0.004886	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	5.3	0.006368	2.5
3.8	836.5	6.9	0.008217	2.5
4.2	836.5	4.8	0.005725	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	6.2	0.007453	2.5
Extreme (50C)	836.5	5.5	0.006552	2.5
Extreme (40C)	836.5	6.4	0.007668	2.5
Extreme (30C)	836.5	6.5	0.007740	2.5
Extreme (10C)	836.5	5.8	0.006934	2.5
Extreme (0C)	836.5	5.1	0.006067	2.5
Extreme (-10C)	836.5	5.3	0.006304	2.5
Extreme (-20C)	836.5	6.1	0.007352	2.5
Extreme (-30C)	836.5	6.5	0.007756	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	5.5	0.006535	2.5
3.8	836.5	6.6	0.007900	2.5
4.2	836.5	5.2	0.006169	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	5.8	0.006877	2.5
Extreme (50C)	836.5	5.6	0.006708	2.5
Extreme (40C)	836.5	5.7	0.006867	2.5
Extreme (30C)	836.5	6.8	0.008077	2.5
Extreme (10C)	836.5	5.6	0.006751	2.5
Extreme (0C)	836.5	5.8	0.006931	2.5
Extreme (-10C)	836.5	5.2	0.006253	2.5
Extreme (-20C)	836.5	6.0	0.007155	2.5
Extreme (-30C)	836.5	6.4	0.007702	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	10.1	0.003985	2.5
3.8	2535	8.4	0.003326	2.5
4.2	2535	8.2	0.003253	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	9.5	0.003742	2.5
Extreme (50C)	2535	9.2	0.003619	2.5
Extreme (40C)	2535	8.3	0.003281	2.5
Extreme (30C)	2535	8.9	0.003507	2.5
Extreme (10C)	2535	7.9	0.003099	2.5
Extreme (0C)	2535	8.3	0.003291	2.5
Extreme (-10C)	2535	9.0	0.003550	2.5
Extreme (-20C)	2535	8.4	0.003315	2.5
Extreme (-30C)	2535	8.7	0.003423	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	6.8	0.002691	2.5
3.8	2535	6.9	0.002721	2.5
4.2	2535	5.8	0.002295	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	6.5	0.002569	2.5
Extreme (50C)	2535	5.4	0.002114	2.5
Extreme (40C)	2535	5.0	0.001989	2.5
Extreme (30C)	2535	6.2	0.002464	2.5
Extreme (10C)	2535	6.1	0.002414	2.5
Extreme (0C)	2535	4.6	0.001816	2.5
Extreme (-10C)	2535	5.1	0.002018	2.5
Extreme (-20C)	2535	5.4	0.002144	2.5
Extreme (-30C)	2535	5.6	0.002192	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	8.6	0.012098	2.5
3.8	707.5	10.2	0.014469	2.5
4.2	707.5	9.1	0.012860	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	707.5	9.2	0.013017	2.5
Extreme (50C)	707.5	7.4	0.010419	2.5
Extreme (40C)	707.5	7.6	0.010716	2.5
Extreme (30C)	707.5	8.8	0.012369	2.5
Extreme (10C)	707.5	7.8	0.010967	2.5
Extreme (0C)	707.5	8.7	0.012338	2.5
Extreme (-10C)	707.5	8.0	0.011275	2.5
Extreme (-20C)	707.5	8.9	0.012531	2.5
Extreme (-30C)	707.5	8.0	0.011278	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	7.0	0.009898	2.5
3.8	707.5	8.4	0.011908	2.5
4.2	707.5	7.2	0.010239	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 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	10.1	0.014285	2.5
3.8	710.0	9.1	0.012819	2.5
4.2	710.0	7.7	0.010782	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	9.6	0.013472	2.5
Extreme (50C)	710.0	9.2	0.012898	2.5
Extreme (40C)	710.0	7.7	0.010890	2.5
Extreme (30C)	710.0	8.5	0.011984	2.5
Extreme (10C)	710.0	9.1	0.012874	2.5
Extreme (0C)	710.0	7.9	0.011106	2.5
Extreme (-10C)	710.0	9.5	0.013333	2.5
Extreme (-20C)	710.0	8.6	0.012141	2.5
Extreme (-30C)	710.0	8.0	0.011316	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	10.5	0.014763	2.5
3.8	710.0	9.2	0.012912	2.5
4.2	710.0	8.4	0.011857	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	9.2	0.013005	2.5
Extreme (50C)	710.0	9.4	0.013200	2.5
Extreme (40C)	710.0	8.1	0.011446	2.5
Extreme (30C)	710.0	9.4	0.013178	2.5
Extreme (10C)	710.0	7.7	0.010908	2.5
Extreme (0C)	710.0	8.5	0.011928	2.5
Extreme (-10C)	710.0	9.2	0.012948	2.5
Extreme (-20C)	710.0	8.9	0.012546	2.5
Extreme (-30C)	710.0	8.1	0.011466	2.5

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

10.7 LTE BAND 25

QPSK, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 25 QPSK, (CH 26365 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	1882.5	23	0.012218	2.5
3.8	1882.5	3	0.001594	2.5
4.2	1882.5	24	0.012749	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 25 QPSK, (CH 26365 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1882.5	4.3	0.002307	2.5
Extreme (50C)	1882.5	9.7	0.005155	2.5
Extreme (40C)	1882.5	6.9	0.003673	2.5
Extreme (30C)	1882.5	6.4	0.003406	2.5
Extreme (10C)	1882.5	5.7	0.003023	2.5
Extreme (0C)	1882.5	8.2	0.004337	2.5
Extreme (-10C)	1882.5	1.3	0.000703	2.5
Extreme (-20C)	1882.5	2.5	0.001348	2.5
Extreme (-30C)	1882.5	6.4	0.003391	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 25 16QAM, (CH 26365 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	1882.5	9.1	0.004852	2.5
3.8	1882.5	7.1	0.003786	2.5
4.2	1882.5	5.5	0.002901	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 25 16QAM, (CH 26365 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1882.5	7.9	0.004196	2.5
Extreme (50C)	1882.5	5.2	0.002765	2.5
Extreme (40C)	1882.5	8.2	0.004349	2.5
Extreme (30C)	1882.5	1.2	0.000657	2.5
Extreme (10C)	1882.5	2.8	0.001483	2.5
Extreme (0C)	1882.5	6.9	0.003652	2.5
Extreme (-10C)	1882.5	5.3	0.002807	2.5
Extreme (-20C)	1882.5	7.5	0.003971	2.5
Extreme (-30C)	1882.5	6.7	0.003556	2.5

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

10.8 LTE BAND 26

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26A QPSK, (CH 26740 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
3.4	819	8.6	0.010460	2.5
3.8	819	5.5	0.006763	2.5
4.2	819	6.9	0.008437	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26A QPSK, (CH 26740RB size 50 RB Offset 0 10MHz BANDWIDTH)				
Normal (25C)	819	8.1	0.009840	2.5
Extreme (50C)	819	2.0	0.002398	2.5
Extreme (40C)	819	2.0	0.002502	2.5
Extreme (30C)	819	6.8	0.008304	2.5
Extreme (10C)	819	5.8	0.007081	2.5
Extreme (0C)	819	6.9	0.008477	2.5
Extreme (-10C)	819	8.9	0.010875	2.5
Extreme (-20C)	819	6.4	0.007875	2.5
Extreme (-30C)	819	4.7	0.005764	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26A 16QAM, (CH 26740 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
3.4	819	2.6	0.003220	2.5
3.8	819	6.3	0.007736	2.5
4.2	819	5.1	0.006215	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26A 16QAM, (CH 26740 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
Normal (25C)	819	6.7	0.008233	2.5
Extreme (50C)	819	8.9	0.010912	2.5
Extreme (40C)	819	6.2	0.007555	2.5
Extreme (30C)	819	4.4	0.005336	2.5
Extreme (10C)	819	6.7	0.008219	2.5
Extreme (0C)	819	5.3	0.006445	2.5
Extreme (-10C)	819	8.6	0.010443	2.5
Extreme (-20C)	819	6.8	0.008330	2.5
Extreme (-30C)	819	7.6	0.009278	2.5

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

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26B QPSK, (CH 26915 RB size 75 RB Offset 0 15MHz BANDWIDTH)				
3.4	836.5	8.2	0.009748	2.5
3.8	836.5	6.3	0.007512	2.5
4.2	836.5	8.8	0.010572	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26B QPSK, (CH 26915 RB size 75 RB Offset 0 15MHz BANDWIDTH)				
Normal (25C)	836.5	10.4	0.012435	2.5
Extreme (50C)	836.5	9.7	0.011566	2.5
Extreme (40C)	836.5	6.2	0.007421	2.5
Extreme (30C)	836.5	8.6	0.010226	2.5
Extreme (10C)	836.5	7.5	0.008993	2.5
Extreme (0C)	836.5	9.6	0.011432	2.5
Extreme (-10C)	836.5	1.8	0.002178	2.5
Extreme (-20C)	836.5	8.7	0.010346	2.5
Extreme (-30C)	836.5	7.5	0.009008	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26B 16QAM, (CH 26915 RB size 75 RB Offset 0 15MHz BANDWIDTH)				
3.4	836.5	9.9	0.011825	2.5
3.8	836.5	11.2	0.013430	2.5
4.2	836.5	10.9	0.013036	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26B 16QAM, (CH 26915 RB size 75 RB Offset 0 15MHz BANDWIDTH)				
Normal (25C)	836.5	7.0	0.008331	2.5
Extreme (50C)	836.5	8.5	0.010203	2.5
Extreme (40C)	836.5	7.3	0.008724	2.5
Extreme (30C)	836.5	7.8	0.009309	2.5
Extreme (10C)	836.5	6.4	0.007687	2.5
Extreme (0C)	836.5	5.6	0.006718	2.5
Extreme (-10C)	836.5	5.9	0.007095	2.5
Extreme (-20C)	836.5	3.7	0.011237	2.5
Extreme (-30C)	836.5	8.9	0.007292	2.5

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

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	2593	8.5	0.003278	2.5
3.8	2593	6.3	0.002446	2.5
4.2	2593	7.2	0.002792	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2593	7.2	0.002784	2.5
Extreme (50C)	2593	4.3	0.001677	2.5
Extreme (40C)	2593	5.6	0.002170	2.5
Extreme (30C)	2593	4.8	0.001838	2.5
Extreme (10C)	2593	6.8	0.002630	2.5
Extreme (0C)	2593	4.7	0.001826	2.5
Extreme (-10C)	2593	9.9	0.003826	2.5
Extreme (-20C)	2593	10.7	0.004113	2.5
Extreme (-30C)	2593	6.3	0.002424	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	2593	8.7	0.003367	2.5
3.8	2593	6.6	0.002535	2.5
4.2	2593	6.7	0.002570	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2593	7.9	0.003050	2.5
Extreme (50C)	2593	5.1	0.001982	2.5
Extreme (40C)	2593	5.6	0.002153	2.5
Extreme (30C)	2593	4.9	0.001891	2.5
Extreme (10C)	2593	6.9	0.002642	2.5
Extreme (0C)	2593	4.7	0.001796	2.5
Extreme (-10C)	2593	9.9	0.003813	2.5
Extreme (-20C)	2593	10.4	0.004026	2.5
Extreme (-30C)	2593	6.1	0.002347	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	13.0	0.00744	2.5
3.8	1745	13.9	0.00794	2.5
4.2	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 QPSK, (CH 132322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1745	7.9	0.004509	2.5
Extreme (50C)	1745	4.7	0.002694	2.5
Extreme (40C)	1745	5.8	0.003342	2.5
Extreme (30C)	1745	4.9	0.002835	2.5
Extreme (10C)	1745	6.7	0.003820	2.5
Extreme (0C)	1745	4.4	0.002498	2.5
Extreme (-10C)	1745	9.2	0.005301	2.5
Extreme (-20C)	1745	10.5	0.006045	2.5
Extreme (-30C)	1745	6.0	0.003449	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	12.7	0.007289	2.5
3.8	1745	13.7	0.007856	2.5
4.2	1745	13.4	0.007683	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	7.6	0.004379	2.5
Extreme (50C)	1745	4.4	0.002497	2.5
Extreme (40C)	1745	5.7	0.003257	2.5
Extreme (30C)	1745	5.0	0.002852	2.5
Extreme (10C)	1745	6.5	0.003749	2.5
Extreme (0C)	1745	4.4	0.002521	2.5
Extreme (-10C)	1745	9.2	0.005251	2.5
Extreme (-20C)	1745	10.5	0.005996	2.5
Extreme (-30C)	1745	6.7	0.003825	2.5

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

10.11 LTE BAND 71

QPSK, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 71 QPSK, (CH 133322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	683	8.6	0.01259	2.5
3.8	683	13.4	0.01962	2.5
4.2	683	13	0.01903	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 71 QPSK, (CH 133322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	683	7.7	0.011274	2.5
Extreme (50C)	683	5.2	0.007613	2.5
Extreme (40C)	683	5.1	0.007467	2.5
Extreme (30C)	683	5	0.007321	2.5
Extreme (10C)	683	6.6	0.009663	2.5
Extreme (0C)	683	4.8	0.007028	2.5
Extreme (-10C)	683	9.8	0.014348	2.5
Extreme (-20C)	683	7.2	0.010542	2.5
Extreme (-30C)	683	7.3	0.010688	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 71 16QAM, (CH 133322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	683	12.3	0.018009	2.5
3.8	683	14.2	0.020791	2.5
4.2	683	11.2	0.016398	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 71 16QAM, (CH 133322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	683	7.7	0.011274	2.5
Extreme (50C)	683	4.7	0.006881	2.5
Extreme (40C)	683	5.9	0.008638	2.5
Extreme (30C)	683	5.2	0.007613	2.5
Extreme (10C)	683	5.2	0.007613	2.5
Extreme (0C)	683	6.3	0.009224	2.5
Extreme (-10C)	683	9.4	0.013763	2.5
Extreme (-20C)	683	8.2	0.012006	2.5
Extreme (-30C)	683	8.4	0.012299	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.

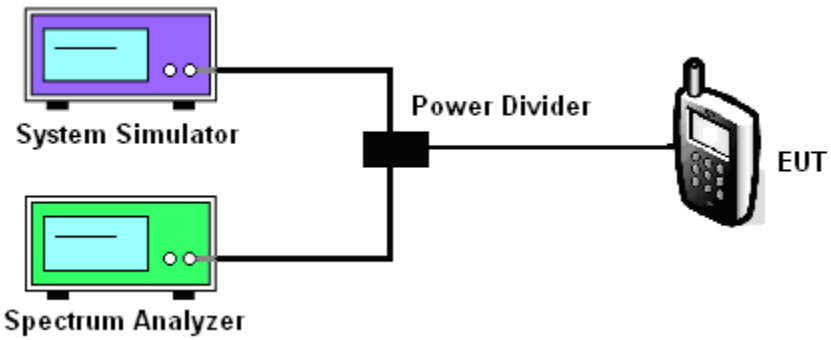
11.2 Measuring Instruments

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

Test data reference attachment.

----END OF REPORT----