

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

FCC ID: O556522923

Product: 4G Smart Phone

Trade Mark: LOGIC, iSWAG, UNONU

Model No.: L66 PRO

Family Model: FOX, 6605

Report No.: S23080403201006

Issue Date: Aug 30, 2023

Prepared for

SWAGTEK

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Prepared by

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TEST RESULT CERTIFICATION

Applicant's name.....: SWAGTEK
Address.....: 10205 NW 19th Street STE101 Miami, FL 33172,United States
Manufacturer's Name.....: SWAGTEK
Address.....: 10205 NW 19th Street STE101 Miami, FL 33172,United States
Product name.....: 4G Smart Phone
Trade Mark.....: LOGIC, iSWAG, UNONU
Model and/or type reference.....: L66 PRO
Family Model.....: FOX, 6605
Test Sample Number.....: S230804032001
Standards.....: FCC CFR 47 Part 22H, Part 24E, Part 27
Test procedure.....: ANSI C63.26:2015
ANSI/TIA-603-E-2016

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

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Date of Test

Date (s) of performance of tests Aug 04, 2023 ~Aug 30, 2023

Date of Issue Aug 30, 2023

Test Result..... Pass

Testing Engineer : Mukzi Lee
(Mukzi Lee)
Authorized Signatory : Alex
(Alex Li)

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1. GENERAL INFORMATION

1.1 PRODUCT DESCRIPTION

A major technical description of EUT is described as following:

Product Designation:	4G Smart Phone
Trade Mark	LOGIC, iSWAG, UNONU
Model Name	L66 PRO
Family Model	FOX, 6605
Model Difference	All the model are the same circuit and RF module, except the model names.
FCC ID:	O556522923
Frequency Bands:	<input checked="" type="checkbox"/> LTE FDD Band 2,4,5,7,12,13,17 LTE TDD Band 66
Frequency Range:	LTE FDD Band 2 Uplink: 1850MHz-1910MHz, Downlink: 1930MHz-1990MHz; LTE FDD Band 4 Uplink: 1710MHz-1755MHz, Downlink: 2110MHz-2155MHz; LTE FDD Band 5 Uplink: 824MHz-849MHz, Downlink: 869MHz-894MHz; LTE-FDD Band 7 Uplink: 2500MHz-2570MHz, Downlink: 2620MHz-2690MHz; LTE FDD Band 12 Uplink: 699MHz-716MHz, Downlink: 729MHz-746MHz; LTE FDD Band 13 Uplink: 777MHz-787MHz, Downlink: 746MHz-756MHz; LTE FDD Band 17 Uplink: 704MHz-716MHz, Downlink: 734MHz-746MHz; LTE TDD Band 66 Uplink: 1710MHz-1780MHz, Downlink: 2110MHz-2200MHz;
Type of Modulation:	QPSK/16QAM/64QAM(Only Downlink)
Power Class	Class 3
SIM Card:	SIM 1 and SIM 2 is a chipset unit and tested as a single chipset. The SIM 1 is chosen for test.
Antenna:	PIFA Antenna
Antenna gain:	Band 2: -1.27dBi, Band 4: -1.75dBi, Band 5: -4.97dBi, Band 7: 2.04dBi, Band 12: -6.66dBi, Band 13: -5.65dBi, Band 17: -6.66dBi, Band 66: -1.54dBi
Adapter	Model: CMAX2U Input: AC100-240V, 50-60Hz 0.2A Output: DC 5.0V $\overline{\text{---}}$ 2000mA
Battery	DC 3.87V, 5000mAh, 19.35Wh
Power supply	DC 3.87V from battery or DC 5V from Adapter.
Extreme Vol. Limits:	DC 3.29 to DC 4.45V (Nominal DC 3.87V) (Note 1)
HW Version	E93A_C41_30M15
SW Version	LOGIC_L66_PRO_GENERIC_V1.0
** Note1: The High Voltage DC 4.45V and Low Voltage 3.29V was declared by manufacturer, The EUT couldn't be operate normally with higher or lower voltage.	

Revision History

Report No.	Version	Description	Issued Date
S23080403201006	Rev.01	Initial issue of report	Aug 30, 2023

1.2 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: O556522923** filing to comply with the FCC Part 22H&24E&27&90S.

1.3 TEST METHODOLOGY

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

1.4 TEST FACILITY

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

ShenZhen NTEK Testing Technology Co., Ltd.

1&5/F, Building C, 1&2/F, Building E, Fenda Science Park, Sanwei Community, Hangcheng Street, Baoan District, Shenzhen ,Guangdong, China

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

FCC Registration No.:463705

IC Registration No.:9270A-1,

CNAS Registration No.:L5516

1.5 MEASUREMENT UNCERTAINTY

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

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

1.6 SPECIAL ACCESSORIES

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

1.7 WORST-CASE CONFIGURATION AND MODE

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

The device has LTE Bands of: Band 2/4/5/7/12/13/17/66

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

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

2. SYSTEM TEST CONFIGURATION

2.1 EUT CONFIGURATION

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

2.2 EUT EXERCISE

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

2.3 CONFIGURATION OF EUT SYSTEM

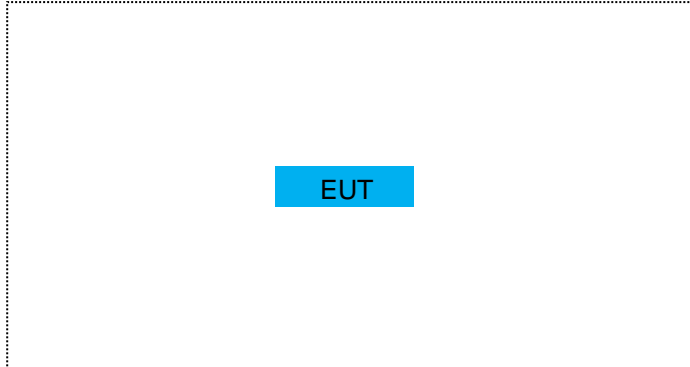
Table 2-1 Equipment Used in EUT System

Item	Equipment	Model No.	ID or Specification	Note
1	4G Smart Phone	L66 PRO	FCC ID: O556522923	EUT

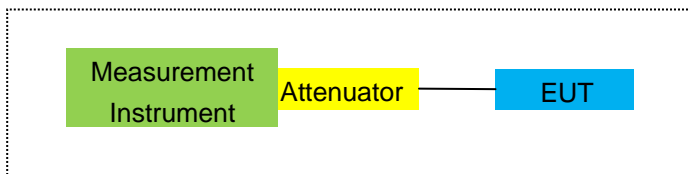
*Note: All the accessories have been used during the test.
the following "EUT" in setup diagram means EUT system.*

2.4 TEST SETUP

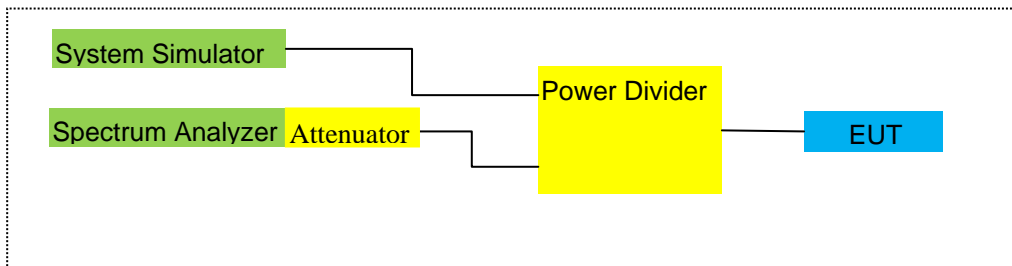
For Radiated Test Cases



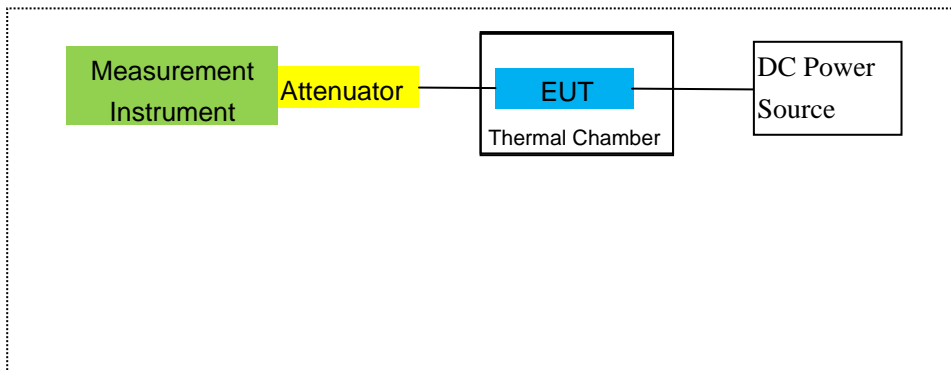
For Conducted Output Power



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



For Frequency Stability



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

3. TEST AND MEASUREMENT EQUIPMENT

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

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	MXA Signal Analyzer	Agilent	N9020A	MY49100060	2023.05.29	2024.05.28	1 year
2	Test Receiver	R&S	ESPI	101318	2023.03.27	2024.03.26	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2023.03.16	2024.03.15	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2023.05.06	2026.05.05	3 year
5	Horn Antenna	EM	EM-AH-10180	2011071402	2022.03.31	2025.03.30	3 year
6	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2022.11.07	2023.11.06	1 year
7	Amplifier	EM	EM-30180	060538	2023.05.29	2024.05.28	1 year
8	Loop Antenna	ARA	PLA-1030/B	1029	2022.11.04	2023.11.05	1 year
9	Power Meter	R&S	NRVS	100696	2023.05.29	2024.05.28	1 year
10	Power Sensor	R&S	URV5-Z4	0395.1619.05	2023.05.29	2024.05.28	1 year
11	Test Cable	N/A	R-01	N/A	2022.06.17	2025.06.16	3 year
12	Test Cable	N/A	R-02	N/A	2022.06.17	2025.06.16	3 year
13	Test Receiver	R&S	ESCI	101160	2023.03.27	2024.03.26	1 year
14	LISN	R&S	ENV216	101313	2023.03.27	2024.03.26	1 year
15	LISN	EMCO	3816/2	00042990	2023.03.27	2024.03.26	1 year
16	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2023.03.27	2024.03.26	1 year
17	Passive Voltage Probe	R&S	ESH2-Z3	100196	2023.03.27	2024.03.26	1 year
18	Test Cable	N/A	C01	N/A	2023.05.06	2026.05.05	3 year
19	Spectrum Analyzer	agilent	e4440a	us44300399	2023.03.27	2024.03.26	1 year
20	test receiver	R&S	ESCI	a0304218	2023.03.27	2024.03.26	1 year
21	Thermal Chamber	Ten Billion	TTC-B3C	TBN-960502	2023.03.27	2024.03.26	1 year
22	DC Power Source	N/A	PS-6005D	20170402923	2023.05.06	2026.05.05	3 year
23	Wireless Communications Test Set	R&S	CMW500	1100.008.02	2023.05.29	2024.05.28	1 year

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	13	10	Table 6.2.4-2	Table 6.2.4-2
	6.6.3.3.2				
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23 ¹	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
--					
NS_32	-	-	-	-	-

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

Test data reference attachment.

5. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

LIMITS

For reporting purposes only

TEST PROCEDURE

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

MODES TESTED

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

RESULTS

PASS

Test data reference attachment.

6. BANDEDGE AND EMISSION MASK

RULE PART(S)

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

FCC: §22.359

LIMITS

FCC: §22.917, §24.238, §27.53

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

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

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

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

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

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

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

TEST PROCEDURE

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

For each band edge measurement:

Set the spectrum analyzer span to include the block edge frequency

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

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

MODES TESTED

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

RESULTS

Test data reference attachment.

7. OUT OF BAND EMISSIONS

RULE PART(S)

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

LIMITS

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

TEST PROCEDURE

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

For each out of band emissions measurement:

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

MODES TESTED

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

7.1 MEASUREMENT METHOD

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

Test data reference attachment.

8. RADIATED MEASUREMENT

8.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

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

LIMITS:

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

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

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

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

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

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

TEST PROCEDURE

ANSI/TIA-603-E Clause 2.2.17

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

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

MODES TESTED

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

RESULTS

Pass

8.2 LTE BAND 2

Radiated Power (EIRP) for Band 2									
Mode	RB/RB SIZE	Frequency	Result					Polarization Of Max. ERP	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP		
							Average (mW)		
1.4MHz Band QPSK	1/#Mid	1850.7	-3.78	3.76	28.24	20.70	117.490	Horizontal	Pass
		1880	-3.60	3.91	28.22	20.71	117.761	Horizontal	Pass
		1909.3	-3.54	3.93	28.20	20.73	118.304	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-3.79	3.77	28.23	20.67	116.681	Horizontal	Pass
		1880	-3.70	3.91	28.24	20.63	115.611	Horizontal	Pass
		1908.5	-3.68	3.94	28.25	20.63	115.611	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-3.88	3.77	28.31	20.66	116.413	Horizontal	Pass
		1880	-3.64	3.91	28.22	20.67	116.681	Horizontal	Pass
		1907.5	-3.71	3.94	28.20	20.55	113.501	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1855	-3.82	3.79	28.33	20.72	118.032	Horizontal	Pass
		1880	-3.66	3.95	28.22	20.61	115.080	Horizontal	Pass
		1905	-3.55	3.97	28.19	20.67	116.681	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1857.5	-3.94	3.79	28.34	20.61	115.080	Horizontal	Pass
		1880	-3.63	3.95	28.22	20.64	115.878	Horizontal	Pass
		1902.5	-3.55	3.97	28.18	20.66	116.413	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1860	-3.89	3.81	28.35	20.65	116.145	Horizontal	Pass
		1880	-3.57	3.96	28.22	20.69	117.220	Horizontal	Pass
		1900	-3.47	4.00	28.16	20.69	117.220	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1850.7	-3.89	3.76	28.24	20.59	114.551	Vertical	Pass
		1880	-3.67	3.91	28.22	20.64	115.878	Vertical	Pass
		1909.3	-3.64	3.93	28.20	20.63	115.611	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-3.73	3.77	28.23	20.73	118.304	Vertical	Pass
		1880	-3.66	3.91	28.24	20.67	116.681	Vertical	Pass
		1908.5	-3.72	3.94	28.25	20.59	114.551	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-3.90	3.77	28.31	20.64	115.878	Vertical	Pass
		1880	-3.72	3.91	28.22	20.59	114.551	Vertical	Pass
		1907.5	-3.67	3.94	28.20	20.59	114.551	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1855	-3.95	3.79	28.33	20.59	114.551	Vertical	Pass
		1880	-3.62	3.95	28.22	20.65	116.145	Vertical	Pass
		1905	-3.58	3.97	28.19	20.64	115.878	Vertical	Pass

15.0MHz Band QPSK	1/#Mid	1857.5	-3.95	3.79	28.34	20.60	114.815	Vertical	Pass
		1880	-3.66	3.95	28.22	20.61	115.080	Vertical	Pass
		1902.5	-3.54	3.97	28.18	20.67	116.681	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	1860	-3.77	3.81	28.35	20.77	119.399	Vertical	Pass
		1880	-3.49	3.96	28.22	20.77	119.399	Vertical	Pass
		1900	-3.41	4.00	28.16	20.75	118.850	Vertical	Pass

Radiated Power (EIRP) for Band 2										
Mode	RB/RB SIZE	Frequency	Result						Polarization Of Max. ERP	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)			
1.4MHz Band 16 QAM	1/#Mid	1850.7	-4.08	3.76	28.24	20.40	109.648	Horizontal	Pass	
		1880	-3.85	3.91	28.22	20.46	111.173	Horizontal	Pass	
		1909.3	-3.81	3.93	28.20	20.46	111.173	Horizontal	Pass	
3.0MHz Band 16 QAM	1/#Mid	1851.5	-4.01	3.77	28.23	20.45	110.917	Horizontal	Pass	
		1880	-3.81	3.91	28.24	20.52	112.720	Horizontal	Pass	
		1908.5	-3.89	3.94	28.25	20.42	110.154	Horizontal	Pass	
5.0MHz Band 16 QAM	1/#Mid	1852.5	-4.01	3.77	28.31	20.53	112.980	Horizontal	Pass	
		1880	-3.88	3.91	28.22	20.43	110.408	Horizontal	Pass	
		1907.5	-3.73	3.94	28.20	20.53	112.980	Horizontal	Pass	
10.0MHz Band 16 QAM	1/#Mid	1855	-4.05	3.79	28.33	20.49	111.944	Horizontal	Pass	
		1880	-3.77	3.95	28.22	20.50	112.202	Horizontal	Pass	
		1905	-3.76	3.97	28.19	20.46	111.173	Horizontal	Pass	
15.0MHz Band 16 QAM	1/#Mid	1857.5	-4.08	3.79	28.34	20.47	111.429	Horizontal	Pass	
		1880	-3.89	3.95	28.22	20.38	109.144	Horizontal	Pass	
		1902.5	-3.80	3.97	28.18	20.41	109.901	Horizontal	Pass	
20.0MHz Band 16 QAM	1/#Mid	1860	-4.05	3.81	28.35	20.49	111.944	Horizontal	Pass	
		1880	-3.74	3.96	28.22	20.52	112.720	Horizontal	Pass	
		1900	-3.70	4.00	28.16	20.46	111.173	Horizontal	Pass	
1.4MHz Band 16 QAM	1/#Mid	1850.7	-3.96	3.76	28.24	20.52	112.720	Vertical	Pass	
		1880	-3.82	3.91	28.22	20.49	111.944	Vertical	Pass	
		1909.3	-3.76	3.93	28.20	20.51	112.460	Vertical	Pass	
3.0MHz Band 16 QAM	1/#Mid	1851.5	-4.04	3.77	28.23	20.42	110.154	Vertical	Pass	
		1880	-3.81	3.91	28.24	20.52	112.720	Vertical	Pass	
		1908.5	-3.90	3.94	28.25	20.41	109.901	Vertical	Pass	
5.0MHz	1/#Mid	1852.5	-4.01	3.77	28.31	20.53	112.980	Vertical	Pass	

Band 16		1880	-3.94	3.91	28.22	20.37	108.893	Vertical	Pass
QAM		1907.5	-3.74	3.94	28.20	20.52	112.720	Vertical	Pass
10.0MHz	1/#Mid	1855	-4.10	3.79	28.33	20.44	110.662	Vertical	Pass
Band 16		1880	-3.79	3.95	28.22	20.48	111.686	Vertical	Pass
QAM		1905	-3.84	3.97	28.19	20.38	109.144	Vertical	Pass
15.0MHz	1/#Mid	1857.5	-4.03	3.79	28.34	20.52	112.720	Vertical	Pass
Band 16		1880	-3.80	3.95	28.22	20.47	111.429	Vertical	Pass
QAM		1902.5	-3.75	3.97	28.18	20.46	111.173	Vertical	Pass
20.0MHz	1/#Mid	1860	-3.99	3.81	28.35	20.55	113.501	Vertical	Pass
Band 16		1880	-3.70	3.96	28.22	20.56	113.763	Vertical	Pass
QAM		1900	-3.62	4.00	28.16	20.54	113.240	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

8.3 LTE BAND 4

Radiated Power (EIRP) for Band 4									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level	Cable Loss (dBm)	Factor (dB)	Max. EIRP	Max. EIRP	Polarization Of Max. ERP	
			(dBm)			Average (dBm)	Average (mW)		
1.4MHz Band QPSK	1/#Mid	1710.7	-4.95	3.12	27.58	19.51	89.331	Horizontal	Pass
		1732.5	-4.81	3.27	27.61	19.53	89.743	Horizontal	Pass
		1754.3	-4.81	3.29	27.63	19.53	89.743	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-5.04	3.13	27.61	19.44	87.902	Horizontal	Pass
		1732.5	-4.85	3.27	27.61	19.49	88.920	Horizontal	Pass
		1753.5	-4.80	3.30	27.62	19.52	89.536	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-5.07	3.13	27.63	19.43	87.700	Horizontal	Pass
		1732.5	-4.96	3.27	27.61	19.38	86.696	Horizontal	Pass
		1752.5	-4.88	3.30	27.60	19.42	87.498	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1715	-5.06	3.15	27.64	19.43	87.700	Horizontal	Pass
		1732.5	-4.80	3.31	27.61	19.50	89.125	Horizontal	Pass
		1750	-4.74	3.33	27.59	19.52	89.536	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-4.98	3.15	27.65	19.52	89.536	Horizontal	Pass
		1732.5	-4.81	3.31	27.61	19.49	88.920	Horizontal	Pass
		1747.5	-4.82	3.33	27.57	19.42	87.498	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1720	-5.02	3.17	27.66	19.47	88.512	Horizontal	Pass
		1732.5	-4.79	3.32	27.61	19.50	89.125	Horizontal	Pass
		1745	-4.71	3.36	27.56	19.49	88.920	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1710.7	-5.00	3.12	27.58	19.46	88.308	Vertical	Pass
		1732.5	-4.83	3.27	27.61	19.51	89.331	Vertical	Pass
		1754.3	-4.90	3.29	27.63	19.44	87.902	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-4.96	3.13	27.61	19.52	89.536	Vertical	Pass
		1732.5	-4.88	3.27	27.61	19.46	88.308	Vertical	Pass
		1753.5	-4.81	3.30	27.62	19.51	89.331	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-5.09	3.13	27.63	19.41	87.297	Vertical	Pass
		1732.5	-4.89	3.27	27.61	19.45	88.105	Vertical	Pass
		1752.5	-4.78	3.30	27.60	19.52	89.536	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1715	-5.04	3.15	27.64	19.45	88.105	Vertical	Pass
		1732.5	-4.88	3.31	27.61	19.42	87.498	Vertical	Pass
		1750	-4.86	3.33	27.59	19.40	87.096	Vertical	Pass

15.0MHz Band QPSK	1/#Mid	1717.5	-5.05	3.15	27.65	19.45	88.105	Vertical	Pass
		1732.5	-4.80	3.31	27.61	19.50	89.125	Vertical	Pass
		1747.5	-4.76	3.33	27.57	19.48	88.716	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	1720	-4.91	3.17	27.66	19.58	90.782	Vertical	Pass
		1732.5	-4.74	3.32	27.61	19.55	90.157	Vertical	Pass
		1745	-4.60	3.36	27.56	19.60	91.201	Vertical	Pass

Radiated Power (EIRP) for Band 4										
Mode	RB/RB SIZE	Frequency	Result						Polarization Of Max. ERP	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Max. EIRP	Max. EIRP			
						Average	Average			
						(dBm)	(mW)			
1.4MHz Band 16 QAM	1/#Mid	1710.7	-5.13	3.12	27.58	19.33	85.704	Horizontal	Pass	
		1732.5	-5.13	3.27	27.61	19.21	83.368	Horizontal	Pass	
		1754.3	-5.07	3.29	27.63	19.27	84.528	Horizontal	Pass	
3.0MHz Band 16 QAM	1/#Mid	1711.5	-5.14	3.13	27.61	19.34	85.901	Horizontal	Pass	
		1732.5	-5.05	3.27	27.61	19.29	84.918	Horizontal	Pass	
		1753.5	-5.02	3.30	27.62	19.30	85.114	Horizontal	Pass	
5.0MHz Band 16 QAM	1/#Mid	1712.5	-5.31	3.13	27.63	19.19	82.985	Horizontal	Pass	
		1732.5	-5.05	3.27	27.61	19.29	84.918	Horizontal	Pass	
		1752.5	-5.10	3.30	27.60	19.20	83.176	Horizontal	Pass	
10.0MHz Band 16 QAM	1/#Mid	1715	-5.15	3.15	27.64	19.34	85.901	Horizontal	Pass	
		1732.5	-4.97	3.31	27.61	19.33	85.704	Horizontal	Pass	
		1750	-4.95	3.33	27.59	19.31	85.310	Horizontal	Pass	
15.0MHz Band 16 QAM	1/#Mid	1717.5	-5.28	3.15	27.65	19.22	83.560	Horizontal	Pass	
		1732.5	-4.99	3.31	27.61	19.31	85.310	Horizontal	Pass	
		1747.5	-4.99	3.33	27.57	19.25	84.140	Horizontal	Pass	
20.0MHz Band 16 QAM	1/#Mid	1720	-5.18	3.17	27.66	19.31	85.310	Horizontal	Pass	
		1732.5	-5.02	3.32	27.61	19.27	84.528	Horizontal	Pass	
		1745	-5.00	3.36	27.56	19.20	83.176	Horizontal	Pass	
1.4MHz Band 16 QAM	1/#Mid	1710.7	-5.12	3.12	27.58	19.34	85.901	Vertical	Pass	
		1732.5	-5.02	3.27	27.61	19.32	85.507	Vertical	Pass	
		1754.3	-5.07	3.29	27.63	19.27	84.528	Vertical	Pass	
3.0MHz Band 16 QAM	1/#Mid	1711.5	-5.19	3.13	27.61	19.29	84.918	Vertical	Pass	
		1732.5	-4.99	3.27	27.61	19.35	86.099	Vertical	Pass	
		1753.5	-5.09	3.30	27.62	19.23	83.753	Vertical	Pass	
5.0MHz	1/#Mid	1712.5	-5.26	3.13	27.63	19.24	83.946	Vertical	Pass	

Band 16		1732.5	-5.15	3.27	27.61	19.19	82.985	Vertical	Pass
QAM		1752.5	-5.01	3.30	27.60	19.29	84.918	Vertical	Pass
10.0MHz	1/#Mid	1715	-5.19	3.15	27.64	19.30	85.114	Vertical	Pass
Band 16		1732.5	-4.99	3.31	27.61	19.31	85.310	Vertical	Pass
QAM		1750	-4.99	3.33	27.59	19.27	84.528	Vertical	Pass
15.0MHz	1/#Mid	1717.5	-5.26	3.15	27.65	19.24	83.946	Vertical	Pass
Band 16		1732.5	-5.06	3.31	27.61	19.24	83.946	Vertical	Pass
QAM		1747.5	-4.90	3.33	27.57	19.34	85.901	Vertical	Pass
20.0MHz	1/#Mid	1720	-5.10	3.17	27.66	19.39	86.896	Vertical	Pass
Band 16		1732.5	-4.93	3.32	27.61	19.36	86.298	Vertical	Pass
QAM		1745	-4.84	3.36	27.56	19.36	86.298	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

8.4 LTE BAND 5

Radiated Power (ERP) for Band 5											
Mode	RB/RB SIZE	Frequency	Result							Polarization Of Max. ERP	Conclusion
			SG Level	Cable Loss (dBm)	Factor (dB)	Correction (dB)	Max. ERP	Max. ERP			
			(dBm)				Average	Average			
							(dBm)	(mW)			
1.4MHz Band QPSK	1/#Mid	824.7	-0.72	2.01	19.68	2.15	14.80	30.200	Horizontal	Pass	
		836.5	-0.78	2.01	19.77	2.15	14.83	30.409	Horizontal	Pass	
		848.3	-0.83	2.02	19.82	2.15	14.82	30.339	Horizontal	Pass	
3.0MHz Band QPSK	1/#Mid	825.5	-0.78	2.01	19.70	2.15	14.76	29.923	Horizontal	Pass	
		836.5	-0.81	2.01	19.77	2.15	14.80	30.200	Horizontal	Pass	
		847.5	-0.86	2.02	19.81	2.15	14.78	30.061	Horizontal	Pass	
5.0MHz Band QPSK	1/#Mid	826.5	-0.87	2.01	19.71	2.15	14.68	29.376	Horizontal	Pass	
		836.5	-0.81	2.01	19.77	2.15	14.80	30.200	Horizontal	Pass	
		846.5	-0.81	2.02	19.79	2.15	14.81	30.269	Horizontal	Pass	
10.0MHz Band QPSK	1/#Mid	829	-0.89	2.01	19.73	2.15	14.68	29.376	Horizontal	Pass	
		836.5	-0.91	2.01	19.77	2.15	14.70	29.512	Horizontal	Pass	
		844	-0.94	2.02	19.78	2.15	14.67	29.309	Horizontal	Pass	
1.4MHz Band QPSK	1/#Mid	824.7	-0.71	2.01	19.68	2.15	14.81	30.269	Vertical	Pass	
		836.5	-0.92	2.01	19.77	2.15	14.69	29.444	Vertical	Pass	
		848.3	-0.87	2.02	19.82	2.15	14.78	30.061	Vertical	Pass	
3.0MHz Band QPSK	1/#Mid	825.5	-0.78	2.01	19.70	2.15	14.76	29.923	Vertical	Pass	
		836.5	-0.84	2.01	19.77	2.15	14.77	29.992	Vertical	Pass	
		847.5	-0.95	2.02	19.81	2.15	14.69	29.444	Vertical	Pass	
5.0MHz Band QPSK	1/#Mid	826.5	-0.75	2.01	19.71	2.15	14.80	30.200	Vertical	Pass	
		836.5	-0.87	2.01	19.77	2.15	14.74	29.785	Vertical	Pass	
		846.5	-0.80	2.02	19.79	2.15	14.82	30.339	Vertical	Pass	
10.0MHz Band QPSK	1/#Mid	829	-0.72	2.01	19.73	2.15	14.85	30.549	Vertical	Pass	
		836.5	-0.74	2.01	19.77	2.15	14.87	30.690	Vertical	Pass	
		844	-0.74	2.02	19.78	2.15	14.87	30.690	Vertical	Pass	

Radiated Power (ERP) for Band 5										
Mode	RB/RB SIZE	Frequency	Result							Conclu sion
			SG Level	Cable Loss (dBm)	Factor (dB)	Correction (dB)	Max. ERP	Max. ERP	Polarization Of Max. ERP	
			(dBm)				Average	Average		
							(dBm)	(mW)		
1.4MHz Band 16 QAM	1/#Mid	824.7	-1.51	2.01	19.68	2.15	14.01	25.177	Horizontal	Pass
		836.5	-1.62	2.01	19.77	2.15	13.99	25.061	Horizontal	Pass
		848.3	-1.67	2.02	19.82	2.15	13.98	25.003	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	-1.42	2.01	19.70	2.15	14.12	25.823	Horizontal	Pass
		836.5	-1.55	2.01	19.77	2.15	14.06	25.468	Horizontal	Pass
		847.5	-1.51	2.02	19.81	2.15	14.13	25.882	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	-1.54	2.01	19.71	2.15	14.01	25.177	Horizontal	Pass
		836.5	-1.55	2.01	19.77	2.15	14.06	25.468	Horizontal	Pass
		846.5	-1.55	2.02	19.79	2.15	14.07	25.527	Horizontal	Pass
10.0MH z Band 16 QAM	1/#Mid	829	-1.57	2.01	19.73	2.15	14.00	25.119	Horizontal	Pass
		836.5	-1.58	2.01	19.77	2.15	14.03	25.293	Horizontal	Pass
		844	-1.67	2.02	19.78	2.15	13.94	24.774	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	824.7	-1.43	2.01	19.68	2.15	14.09	25.645	Vertical	Pass
		836.5	-1.53	2.01	19.77	2.15	14.08	25.586	Vertical	Pass
		848.3	-1.56	2.02	19.82	2.15	14.09	25.645	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	-1.44	2.01	19.70	2.15	14.10	25.704	Vertical	Pass
		836.5	-1.52	2.01	19.77	2.15	14.09	25.645	Vertical	Pass
		847.5	-1.56	2.02	19.81	2.15	14.08	25.586	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	-1.47	2.01	19.71	2.15	14.08	25.586	Vertical	Pass
		836.5	-1.49	2.01	19.77	2.15	14.12	25.823	Vertical	Pass
		846.5	-1.59	2.02	19.79	2.15	14.03	25.293	Vertical	Pass
10.0MH z Band 16 QAM	1/#Mid	829	-1.44	2.01	19.73	2.15	14.13	25.882	Vertical	Pass
		836.5	-1.45	2.01	19.77	2.15	14.16	26.062	Vertical	Pass
		844	-1.43	2.02	19.78	2.15	14.18	26.182	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

8.5 LTE BAND 7

Radiated Power (EIRP) for Band 7									
Mode	RB/RB SIZE	Frequency	Result					Polarization Of Max. ERP	Conclusion
			SG Level	Cable Loss	Factor (dB)	Max. EIRP	Max. EIRP		
			(dBm)	(dBm)		Average	Average		
					(dBm)	(mW)			
5.0MHz Band QPSK	1/#Mid	2502.5	0.18	4.54	27.75	23.39	218.273	Horizontal	Pass
		2535	0.47	4.69	27.72	23.50	223.872	Horizontal	Pass
		2567.5	0.52	4.71	27.71	23.52	224.905	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	2505	0.29	4.55	27.76	23.50	223.872	Horizontal	Pass
		2535	0.36	4.69	27.72	23.39	218.273	Horizontal	Pass
		2565	0.52	4.72	27.70	23.50	223.872	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	0.15	4.55	27.77	23.37	217.270	Horizontal	Pass
		2535	0.50	4.69	27.72	23.53	225.424	Horizontal	Pass
		2562.5	0.55	4.72	27.69	23.52	224.905	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	2510	0.19	4.57	27.78	23.40	218.776	Horizontal	Pass
		2535	0.47	4.73	27.72	23.46	221.820	Horizontal	Pass
		2560	0.52	4.75	27.68	23.45	221.309	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	2502.5	0.28	4.54	27.75	23.49	223.357	Vertical	Pass
		2535	0.44	4.69	27.72	23.47	222.331	Vertical	Pass
		2567.5	0.47	4.71	27.71	23.47	222.331	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	2505	0.19	4.55	27.76	23.40	218.776	Vertical	Pass
		2535	0.46	4.69	27.72	23.49	223.357	Vertical	Pass
		2565	0.42	4.72	27.70	23.40	218.776	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	0.20	4.55	27.77	23.42	219.786	Vertical	Pass
		2535	0.49	4.69	27.72	23.52	224.905	Vertical	Pass
		2562.5	0.47	4.72	27.69	23.44	220.800	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	2510	0.34	4.57	27.78	23.55	226.464	Vertical	Pass
		2535	0.60	4.73	27.72	23.59	228.560	Vertical	Pass
		2560	0.61	4.75	27.68	23.54	225.944	Vertical	Pass

Radiated Power (EIRP) for Band 7									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Max. EIRP	Max. EIRP	Polarization Of Max. ERP	
						Average	Average		
						(dBm)	(mW)		
5.0MHz Band 16 QAM	1/#Mid	2502.5	-0.29	4.54	27.75	22.92	195.884	Horizontal	Pass
		2535	-0.14	4.69	27.72	22.89	194.536	Horizontal	Pass
		2567.5	0.03	4.71	27.71	23.03	200.909	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	-0.30	4.55	27.76	22.91	195.434	Horizontal	Pass
		2535	-0.11	4.69	27.72	22.92	195.884	Horizontal	Pass
		2565	-0.09	4.72	27.70	22.89	194.536	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	-0.20	4.55	27.77	23.02	200.447	Horizontal	Pass
		2535	-0.12	4.69	27.72	22.91	195.434	Horizontal	Pass
		2562.5	0.01	4.72	27.69	22.98	198.609	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	-0.27	4.57	27.78	22.94	196.789	Horizontal	Pass
		2535	0.01	4.73	27.72	23.00	199.526	Horizontal	Pass
		2560	0.05	4.75	27.68	22.98	198.609	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	2502.5	-0.20	4.54	27.75	23.01	199.986	Vertical	Pass
		2535	-0.01	4.69	27.72	23.02	200.447	Vertical	Pass
		2567.5	0.03	4.71	27.71	23.03	200.909	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	-0.21	4.55	27.76	23.00	199.526	Vertical	Pass
		2535	-0.02	4.69	27.72	23.01	199.986	Vertical	Pass
		2565	0.00	4.72	27.70	22.98	198.609	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	-0.19	4.55	27.77	23.03	200.909	Vertical	Pass
		2535	0.00	4.69	27.72	23.03	200.909	Vertical	Pass
		2562.5	-0.04	4.72	27.69	22.93	196.336	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	-0.15	4.57	27.78	23.06	202.302	Vertical	Pass
		2535	0.10	4.73	27.72	23.09	203.704	Vertical	Pass
		2560	0.11	4.75	27.68	23.04	201.372	Vertical	Pass

Note:

SG Level= Signal generator output

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

8.6 LTE BAND 12

Radiated Power (ERP) for Band 12											
Mode	RB/RB SIZE	Frequency	Result							Polarization Of Max. ERP	Conclusion
			SG Level	Cable Loss (dBm)	Factor (dB)	Correction	Max. ERP	Max. ERP			
			(dBm)			(dB)	Average	Average			
						(dBm)	(mW)				
1.4MHz Band QPSK	1/#Mid	699.7	-1.69	1.91	19.21	2.15	13.46	22.182	Vertical	Pass	
		707.5	-1.67	1.91	19.26	2.15	13.53	22.542	Vertical	Pass	
		715.3	-1.74	1.93	19.34	2.15	13.52	22.491	Vertical	Pass	
3.0MHz Band QPSK	1/#Mid	700.5	-1.72	1.91	19.21	2.15	13.43	22.029	Vertical	Pass	
		707.5	-1.67	1.91	19.26	2.15	13.53	22.542	Vertical	Pass	
		714.5	-1.82	1.93	19.34	2.15	13.44	22.080	Vertical	Pass	
5.0MHz Band QPSK	1/#Mid	701.5	-1.77	1.91	19.23	2.15	13.40	21.878	Vertical	Pass	
		707.5	-1.74	1.91	19.26	2.15	13.46	22.182	Vertical	Pass	
		713.5	-1.83	1.92	19.33	2.15	13.43	22.029	Vertical	Pass	
10.0MHz Band QPSK	1/#Mid	704	-1.66	1.91	19.25	2.15	13.53	22.542	Vertical	Pass	
		707.5	-1.80	1.91	19.26	2.15	13.40	21.878	Vertical	Pass	
		711	-1.83	1.92	19.32	2.15	13.42	21.979	Vertical	Pass	
1.4MHz Band QPSK	1/#Mid	699.7	-1.63	1.91	19.21	2.15	13.52	22.491	Horizontal	Pass	
		707.5	-1.66	1.91	19.26	2.15	13.54	22.594	Horizontal	Pass	
		715.3	-1.79	1.93	19.34	2.15	13.47	22.233	Horizontal	Pass	
3.0MHz Band QPSK	1/#Mid	700.5	-1.72	1.91	19.21	2.15	13.43	22.029	Horizontal	Pass	
		707.5	-1.74	1.91	19.26	2.15	13.46	22.182	Horizontal	Pass	
		714.5	-1.72	1.93	19.34	2.15	13.54	22.594	Horizontal	Pass	
5.0MHz Band QPSK	1/#Mid	701.5	-1.78	1.91	19.23	2.15	13.39	21.827	Horizontal	Pass	
		707.5	-1.79	1.91	19.26	2.15	13.41	21.928	Horizontal	Pass	
		713.5	-1.83	1.92	19.33	2.15	13.43	22.029	Horizontal	Pass	
10.0MHz Band QPSK	1/#Mid	704	-1.64	1.91	19.25	2.15	13.55	22.646	Horizontal	Pass	
		707.5	-1.64	1.91	19.26	2.15	13.56	22.699	Horizontal	Pass	
		711	-1.67	1.92	19.32	2.15	13.58	22.803	Horizontal	Pass	

Radiated Power (ERP) for Band 12											
Mode	RB/RB SIZE	Frequency	Result							Polarization Of Max. ERP	Conclusion
			SG Level	Cable Loss (dBm)	Factor (dB)	Correction	Max. ERP	Max. ERP			
			(dBm)			(dB)	Average	Average			
							(dBm)	(mW)			
1.4MHz Band 16 QAM	1/#Mid	699.7	-2.66	1.91	19.21	2.15	12.49	17.742	Vertical	Pass	
		707.5	-2.62	1.91	19.26	2.15	12.58	18.113	Vertical	Pass	
		715.3	-2.74	1.93	19.34	2.15	12.52	17.865	Vertical	Pass	
3.0MHz Band 16 QAM	1/#Mid	700.5	-2.55	1.91	19.21	2.15	12.60	18.197	Vertical	Pass	
		707.5	-2.62	1.91	19.26	2.15	12.58	18.113	Vertical	Pass	
		714.5	-2.64	1.93	19.34	2.15	12.62	18.281	Vertical	Pass	
5.0MHz Band 16 QAM	1/#Mid	701.5	-2.63	1.91	19.23	2.15	12.54	17.947	Vertical	Pass	
		707.5	-2.72	1.91	19.26	2.15	12.48	17.701	Vertical	Pass	
		713.5	-2.66	1.92	19.33	2.15	12.60	18.197	Vertical	Pass	
10.0MHz Band 16 QAM	1/#Mid	704	-2.74	1.91	19.25	2.15	12.45	17.579	Vertical	Pass	
		707.5	-2.74	1.91	19.26	2.15	12.46	17.620	Vertical	Pass	
		711	-2.66	1.92	19.32	2.15	12.59	18.155	Vertical	Pass	
1.4MHz Band 16 QAM	1/#Mid	699.7	-2.64	1.91	19.21	2.15	12.51	17.824	Horizontal	Pass	
		707.5	-2.62	1.91	19.26	2.15	12.58	18.113	Horizontal	Pass	
		715.3	-2.74	1.93	19.34	2.15	12.52	17.865	Horizontal	Pass	
3.0MHz Band 16 QAM	1/#Mid	700.5	-2.56	1.91	19.21	2.15	12.59	18.155	Horizontal	Pass	
		707.5	-2.63	1.91	19.26	2.15	12.57	18.072	Horizontal	Pass	
		714.5	-2.76	1.93	19.34	2.15	12.50	17.783	Horizontal	Pass	
5.0MHz Band 16 QAM	1/#Mid	701.5	-2.67	1.91	19.23	2.15	12.50	17.783	Horizontal	Pass	
		707.5	-2.71	1.91	19.26	2.15	12.49	17.742	Horizontal	Pass	
		713.5	-2.73	1.92	19.33	2.15	12.53	17.906	Horizontal	Pass	
10.0MHz Band 16 QAM	1/#Mid	704	-2.55	1.91	19.25	2.15	12.64	18.365	Horizontal	Pass	
		707.5	-2.55	1.91	19.26	2.15	12.65	18.408	Horizontal	Pass	
		711	-2.58	1.92	19.32	2.15	12.67	18.493	Horizontal	Pass	

Note:

SG Level= Signal generator output

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

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

8.7 LTE BAND 13

Radiated Power (ERP) for Band 13										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Correction (dB)	Max. ERP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	1/#Mid	779.5	-1.20	1.95	19.23	2.15	13.93	24.717	Vertical	Pass
		782	-1.30	1.95	19.26	2.15	13.86	24.322	Vertical	Pass
		784.5	-1.38	1.96	19.33	2.15	13.84	24.210	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	782	-1.24	1.95	19.25	2.15	13.91	24.604	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	779.5	-1.19	1.95	19.23	2.15	13.94	24.774	Horizontal	Pass
		782	-1.33	1.95	19.26	2.15	13.83	24.155	Horizontal	Pass
		784.5	-1.29	1.96	19.33	2.15	13.93	24.717	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	782	-1.18	1.95	19.25	2.15	13.97	24.946	Horizontal	Pass

Radiated Power (ERP) for Band 13										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level	Cable Loss (dBm)	Factor (dB)	Correction (dB)	Max. EPR	Max. EPR	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	1/#Mid	779.5	-1.20	1.95	19.23	2.15	13.93	24.717	Vertical	Pass
		782	-1.30	1.95	19.26	2.15	13.86	24.322	Vertical	Pass
		784.5	-1.38	1.96	19.33	2.15	13.84	24.210	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	782	-1.24	1.95	19.25	2.15	13.91	24.604	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	779.5	-1.19	1.95	19.23	2.15	13.94	24.774	Horizontal	Pass
		782	-1.33	1.95	19.26	2.15	13.83	24.155	Horizontal	Pass
		784.5	-1.29	1.96	19.33	2.15	13.93	24.717	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	782	-1.18	1.95	19.25	2.15	13.97	24.946	Horizontal	Pass

Note:

SG Level= Signal generator output

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

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

8.8 LTE BAND 17

Radiated Power (ERP) for Band 17											
Mode	RB/RB SIZE	Frequency	Result							Polarization Of Max. ERP	Conclusion
			SG Level	Cable Loss	Factor (dB)	Correction	Max. ERP	Max. ERP			
			(dBm)				Average	Average			
				(dB)	(dBm)	(mW)					
5.0MHz Band QPSK	1/#Mid	706.5	-1.95	1.91	19.23	2.15	13.22	20.989	Vertical	Pass	
		710	-1.87	1.91	19.26	2.15	13.33	21.528	Vertical	Pass	
		713.5	-2.03	1.92	19.33	2.15	13.23	21.038	Vertical	Pass	
10.0MHz Band QPSK	1/#Mid	709	-1.98	1.91	19.25	2.15	13.21	20.941	Vertical	Pass	
		710	-1.99	1.91	19.26	2.15	13.21	20.941	Vertical	Pass	
		711	-1.92	1.92	19.32	2.15	13.33	21.528	Vertical	Pass	
5.0MHz Band QPSK	1/#Mid	706.5	-1.95	1.91	19.23	2.15	13.22	20.989	Horizontal	Pass	
		710	-2.01	1.91	19.26	2.15	13.19	20.845	Horizontal	Pass	
		713.5	-1.99	1.92	19.33	2.15	13.27	21.232	Horizontal	Pass	
10.0MHz Band QPSK	1/#Mid	709	-1.84	1.91	19.25	2.15	13.35	21.627	Horizontal	Pass	
		710	-1.83	1.91	19.26	2.15	13.37	21.727	Horizontal	Pass	
		711	-1.91	1.92	19.32	2.15	13.34	21.577	Horizontal	Pass	

Radiated Power (ERP) for Band 17										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level	Cable Loss	Factor (dB)	Correction (dB)	Max. ERP	Max. ERP	Polarization Of Max. ERP	
			(dBm)				Average	Average		
							(dBm)	(mW)		
5.0MHz Band 16 QAM	1/#Mid	706.5	-2.36	1.91	19.23	2.15	12.81	19.099	Vertical	Pass
		710	-2.37	1.91	19.26	2.15	12.83	19.187	Vertical	Pass
		713.5	-2.43	1.92	19.33	2.15	12.83	19.187	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	709	-2.40	1.91	19.25	2.15	12.79	19.011	Vertical	Pass
		710	-2.43	1.91	19.26	2.15	12.77	18.923	Vertical	Pass
		711	-2.44	1.92	19.32	2.15	12.81	19.099	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	706.5	-2.33	1.91	19.23	2.15	12.84	19.231	Horizontal	Pass
		710	-2.38	1.91	19.26	2.15	12.82	19.143	Horizontal	Pass
		713.5	-2.32	1.92	19.33	2.15	12.94	19.679	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	709	-2.20	1.91	19.25	2.15	12.99	19.907	Horizontal	Pass
		710	-2.25	1.91	19.26	2.15	12.95	19.724	Horizontal	Pass
		711	-2.29	1.92	19.32	2.15	12.96	19.770	Horizontal	Pass

Note:

ERP=EIRP-2.15

SG Level= Signal generator output

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

8.9 LTE BAND 66

Radiated Power (EIRP) for Band 66									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	1710.7	-4.40	3.76	28.24	20.08	101.859	Horizontal	Pass
		1745	-4.15	3.91	28.22	20.16	103.753	Horizontal	Pass
		1779.3	-4.13	3.93	28.2	20.14	103.276	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-4.33	3.77	28.23	20.13	103.039	Horizontal	Pass
		1745	-4.24	3.91	28.24	20.09	102.094	Horizontal	Pass
		1778.5	-4.21	3.94	28.25	20.10	102.329	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-4.51	3.77	28.31	20.03	100.693	Horizontal	Pass
		1745	-4.28	3.91	28.22	20.03	100.693	Horizontal	Pass
		1777.5	-4.21	3.94	28.2	20.05	101.158	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1715	-4.42	3.79	28.33	20.12	102.802	Horizontal	Pass
		1745	-4.11	3.95	28.22	20.16	103.753	Horizontal	Pass
		1775	-4.20	3.97	28.19	20.02	100.462	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-4.43	3.79	28.34	20.12	102.802	Horizontal	Pass
		1745	-4.21	3.95	28.22	20.06	101.391	Horizontal	Pass
		1772.5	-4.20	3.97	28.18	20.01	100.231	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1720	-4.47	3.81	28.35	20.07	101.625	Horizontal	Pass
		1745	-4.21	3.96	28.22	20.05	101.158	Horizontal	Pass
		1770	-4.00	4	28.16	20.16	103.753	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1710.7	-4.44	3.76	28.24	20.04	100.925	Vertical	Pass
		1745	-4.17	3.91	28.22	20.14	103.276	Vertical	Pass
		1779.3	-4.17	3.93	28.2	20.10	102.329	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-4.35	3.77	28.23	20.11	102.565	Vertical	Pass
		1745	-4.20	3.91	28.24	20.13	103.039	Vertical	Pass
		1778.5	-4.19	3.94	28.25	20.12	102.802	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-4.41	3.77	28.31	20.13	103.039	Vertical	Pass
		1745	-4.17	3.91	28.22	20.14	103.276	Vertical	Pass
		1777.5	-4.22	3.94	28.2	20.04	100.925	Vertical	Pass
10.0MHz Band	1/#Mid	1715	-4.51	3.79	28.34	20.04	100.925	Vertical	Pass
		1745	-4.12	3.95	28.22	20.15	103.514	Vertical	Pass

QPSK		1775	-4.09	3.97	28.18	20.12	102.802	Vertical	Pass
15.0MHz	1/#Mid	1717.5	-4.46	3.81	28.35	20.08	101.859	Vertical	Pass
Band		1745	-4.21	3.96	28.22	20.05	101.158	Vertical	Pass
QPSK		1772.5	-4.12	4	28.16	20.04	100.925	Vertical	Pass
20.0MHz	1/#Mid	1720	-4.35	3.79	28.34	20.20	104.713	Vertical	Pass
Band		1745	-4.09	3.95	28.22	20.18	104.232	Vertical	Pass
QPSK		1770	-4.04	3.97	28.18	20.17	103.992	Vertical	Pass

Radiated Power (EIRP) for Band 66									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mid	1710.7	-4.63	3.76	28.24	19.85	96.605	Horizontal	Pass
		1745	-4.47	3.91	28.22	19.84	96.383	Horizontal	Pass
		1779.3	-4.33	3.93	28.2	19.94	98.628	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-4.62	3.77	28.23	19.84	96.383	Horizontal	Pass
		1745	-4.38	3.91	28.24	19.95	98.855	Horizontal	Pass
		1778.5	-4.44	3.94	28.25	19.87	97.051	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-4.64	3.77	28.31	19.90	97.724	Horizontal	Pass
		1745	-4.44	3.91	28.22	19.87	97.051	Horizontal	Pass
		1777.5	-4.38	3.94	28.2	19.88	97.275	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-4.65	3.79	28.33	19.89	97.499	Horizontal	Pass
		1745	-4.32	3.95	28.22	19.95	98.855	Horizontal	Pass
		1775	-4.31	3.97	28.19	19.91	97.949	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-4.68	3.79	28.34	19.87	97.051	Horizontal	Pass
		1745	-4.47	3.95	28.22	19.80	95.499	Horizontal	Pass
		1772.5	-4.26	3.97	28.18	19.95	98.855	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-4.62	3.81	28.35	19.92	98.175	Horizontal	Pass
		1745	-4.32	3.96	28.22	19.94	98.628	Horizontal	Pass
		1770	-4.27	4	28.16	19.89	97.499	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	-4.53	3.76	28.24	19.95	98.855	Vertical	Pass
		1745	-4.42	3.91	28.22	19.89	97.499	Vertical	Pass
		1779.3	-4.34	3.93	28.2	19.93	98.401	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-4.64	3.77	28.23	19.82	95.940	Vertical	Pass
		1745	-4.38	3.91	28.24	19.95	98.855	Vertical	Pass
		1778.5	-4.46	3.94	28.25	19.85	96.605	Vertical	Pass

5.0MHz	Band 16 QAM	1712.5	-4.62	3.77	28.31	19.92	98.175	Vertical	Pass
		1745	-4.39	3.91	28.22	19.92	98.175	Vertical	Pass
		1777.5	-4.31	3.94	28.2	19.95	98.855	Vertical	Pass
10.0MHz	Band 16 QAM	1715	-4.72	3.79	28.34	19.83	96.161	Vertical	Pass
		1745	-4.37	3.95	28.22	19.90	97.724	Vertical	Pass
		1775	-4.34	3.97	28.18	19.87	97.051	Vertical	Pass
15.0MHz	Band 16 QAM	1717.5	-4.61	3.81	28.35	19.93	98.401	Vertical	Pass
		1745	-4.35	3.96	28.22	19.91	97.949	Vertical	Pass
		1772.5	-4.28	4	28.16	19.88	97.275	Vertical	Pass
20.0MHz	Band 16 QAM	1720	-4.58	3.79	28.34	19.97	99.312	Vertical	Pass
		1745	-4.28	3.95	28.22	19.99	99.770	Vertical	Pass
		1770	-4.23	3.97	28.18	19.98	99.541	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

9. SPURIOUS RADIATION EMISSION

RULE PART(S)

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

LIMIT

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

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

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

TEST PROCEDURE

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

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

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

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

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

MODES TESTED

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

RESULTS

PASS

9.1 LTE BAND 2

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

Test Results for Low Channel 1850.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3701.4	-49.01	4.04	33.51	-19.54	-13	-6.54	Horizontal
3701.4	-52.49	4.04	33.51	-23.02	-13	-10.02	Vertical
5552.1	-46.06	5.24	35.84	-15.46	-13	-2.46	Vertical
5552.1	-50.51	5.24	35.84	-19.91	-13	-6.91	Horizontal
188.2	-42.82	1.43	16.02	-28.23	-13	-15.23	Vertical
393.2	-36.01	1.30	17.99	-19.32	-13	-6.32	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-46.96	4.04	33.56	-17.44	-13	-4.44	Horizontal
3760.0	-53.12	4.04	33.56	-23.60	-13	-10.60	Vertical
5640.0	-48.84	5.24	35.91	-18.17	-13	-5.17	Vertical
5640.0	-51.49	5.24	35.91	-20.82	-13	-7.82	Horizontal
186.2	-36.52	1.62	16.97	-21.17	-13	-8.17	Vertical
284.0	-36.15	1.74	15.98	-21.92	-13	-8.92	Horizontal
Test Results for High Channel 1909.3MHz							
3818.6	-45.95	4.04	34.00	-15.99	-13	-2.99	Horizontal
3818.6	-48.92	4.04	34.00	-18.96	-13	-5.96	Vertical
5727.9	-50.56	5.24	36.04	-19.76	-13	-6.76	Vertical
5727.9	-49.64	5.24	36.04	-18.84	-13	-5.84	Horizontal
197.0	-41.71	1.42	17.29	-25.84	-13	-12.84	Vertical
376.3	-38.59	1.50	17.90	-22.18	-13	-9.18	Horizontal

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

Test Results for Low Channel 1860MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3720.0	-44.80	4.07	33.54	-15.33	-13	-2.33	Horizontal
3720.0	-48.72	4.07	33.54	-19.25	-13	-6.25	Vertical
5580.0	-45.26	5.28	35.86	-14.68	-13	-1.68	Vertical
5580.0	-49.52	5.28	35.86	-18.94	-13	-5.94	Horizontal
211.2	-44.58	1.58	16.89	-29.26	-13	-16.26	Vertical
291.4	-43.95	1.76	17.26	-28.45	-13	-15.45	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-48.01	4.04	33.56	-18.49	-13	-5.49	Horizontal
3760.0	-44.11	4.04	33.56	-14.59	-13	-1.59	Vertical
5640.0	-51.55	5.24	35.91	-20.88	-13	-7.88	Vertical
5640.0	-50.20	5.24	35.91	-19.53	-13	-6.53	Horizontal
212.4	-39.57	1.46	16.27	-24.76	-13	-11.76	Vertical
295.3	-40.65	1.59	15.15	-27.09	-13	-14.09	Horizontal
Test Results for High Channel 1900MHz							
3800.0	-51.24	4.04	34.00	-21.28	-13	-8.28	Horizontal
3800.0	-49.22	4.04	34.00	-19.26	-13	-6.26	Vertical
5700.0	-46.89	5.24	36.04	-16.09	-13	-3.09	Vertical
5700.0	-49.71	5.24	36.04	-18.91	-13	-5.91	Horizontal
206.2	-42.93	1.36	17.39	-26.89	-13	-13.89	Vertical
312.5	-42.48	1.66	15.39	-28.75	-13	-15.75	Horizontal

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

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

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

9.2 LTE BAND 4

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

Test Results for Low Channel 1710.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3421.4	-51.92	4.02	29.80	-26.14	-13	-13.14	Horizontal
3421.4	-49.92	4.02	29.80	-24.14	-13	-11.14	Vertical
5132.1	-46.08	5.24	35.84	-15.48	-13	-2.48	Vertical
5132.1	-52.39	5.24	35.84	-21.79	-13	-8.79	Horizontal
208.2	-36.06	1.68	16.04	-21.70	-13	-8.70	Vertical
365.0	-43.32	1.78	17.74	-27.36	-13	-14.36	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-53.34	4.03	30.00	-27.37	-13	-14.37	Horizontal
3465.0	-48.55	4.03	30.00	-22.58	-13	-9.58	Vertical
5197.5	-47.45	5.25	35.86	-16.84	-13	-3.84	Vertical
5197.5	-50.95	5.25	35.86	-20.34	-13	-7.34	Horizontal
186.8	-42.50	1.72	17.69	-26.53	-13	-13.53	Vertical
380.7	-35.45	1.62	16.02	-21.04	-13	-8.04	Horizontal
Test Results for High Channel 1754.3MHz							
3508.6	-48.56	4.05	30.01	-22.60	-13	-9.60	Horizontal
3508.6	-44.21	4.05	30.01	-18.25	-13	-5.25	Vertical
5262.9	-51.50	5.26	35.86	-20.90	-13	-7.90	Vertical
5262.9	-50.44	5.26	35.86	-19.84	-13	-6.84	Horizontal
182.4	-44.03	1.80	16.69	-29.14	-13	-16.14	Vertical
344.2	-43.67	1.75	16.66	-28.77	-13	-15.77	Horizontal

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

Test Results for Low Channel 1720MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3440.0	-51.04	4.02	29.80	-25.26	-13	-12.26	Horizontal
3440.0	-53.58	4.02	29.80	-27.80	-13	-14.80	Vertical
5160.0	-48.70	5.24	35.84	-18.10	-13	-5.10	Vertical
5160.0	-53.92	5.24	35.84	-23.32	-13	-10.32	Horizontal
178.6	-38.47	1.57	17.26	-22.78	-13	-9.78	Vertical
382.1	-42.56	1.78	16.35	-27.99	-13	-14.99	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-53.69	4.03	30.00	-27.72	-13	-14.72	Horizontal
3465.0	-51.35	4.03	30.00	-25.38	-13	-12.38	Vertical
5197.5	-45.40	5.25	35.86	-14.79	-13	-1.79	Vertical
5197.5	-50.04	5.25	35.86	-19.43	-13	-6.43	Horizontal
191.2	-34.73	1.44	17.95	-18.22	-13	-5.22	Vertical
363.8	-42.72	1.65	16.09	-28.28	-13	-15.28	Horizontal
Test Results for High Channel 1745MHz							
3490.0	-50.68	4.05	27.68	-27.05	-13	-14.05	Horizontal
3490.0	-53.61	4.05	27.68	-29.98	-13	-16.98	Vertical
5235.0	-45.29	5.26	35.86	-14.69	-13	-1.69	Vertical
5235.0	-50.14	5.26	35.86	-19.54	-13	-6.54	Horizontal
184.8	-37.48	1.61	16.85	-22.24	-13	-9.24	Vertical
312.2	-36.50	1.61	15.19	-22.92	-13	-9.92	Horizontal

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

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

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

9.3 LTE BAND 5

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

Test Results for Low Channel 824.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1649.4	-51.31	2.78	27.50	-26.59	-13	-13.59	Horizontal
1649.4	-50.52	2.78	27.50	-25.80	-13	-12.80	Vertical
2474.1	-44.66	2.90	27.80	-19.76	-13	-6.76	Vertical
2474.1	-49.17	2.90	27.80	-24.27	-13	-11.27	Horizontal
205.3	-40.08	1.76	17.59	-24.25	-13	-11.25	Vertical
397.0	-44.17	1.63	15.87	-29.93	-13	-16.93	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-44.83	2.80	27.48	-20.15	-13	-7.15	Horizontal
1673.0	-51.37	2.80	27.48	-26.69	-13	-13.69	Vertical
2509.5	-47.35	2.91	27.70	-22.56	-13	-9.56	Vertical
2509.5	-52.68	2.91	27.70	-27.89	-13	-14.89	Horizontal
204.6	-44.81	1.61	15.68	-30.74	-13	-17.74	Vertical
313.4	-44.68	1.59	17.52	-28.76	-13	-15.76	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-45.62	2.82	27.43	-21.01	-13	-8.01	Horizontal
1696.6	-47.09	2.82	27.43	-22.48	-13	-9.48	Vertical
2544.9	-53.32	2.92	27.74	-28.50	-13	-15.50	Vertical
2544.9	-50.85	2.92	27.74	-26.03	-13	-13.03	Horizontal
201.0	-38.63	1.69	16.67	-23.64	-13	-10.64	Vertical
313.5	-43.85	1.70	17.18	-28.37	-13	-15.37	Horizontal

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

Test Results for Low Channel 829MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1658.0	-52.20	2.78	27.50	-27.48	-13	-14.48	Horizontal
1658.0	-49.56	2.78	27.50	-24.84	-13	-11.84	Vertical
2487.0	-52.04	2.90	27.80	-27.14	-13	-14.14	Vertical
2487.0	-52.90	2.90	27.80	-28.00	-13	-15.00	Horizontal
191.2	-42.79	1.71	15.57	-28.93	-13	-15.93	Vertical
322.0	-34.37	1.34	16.40	-19.31	-13	-6.31	Horizontal
Test Results for Mid Channel 836.5MHz							
1673.0	-51.13	2.80	27.48	-26.45	-13	-13.45	Horizontal
1673.0	-52.02	2.80	27.48	-27.34	-13	-14.34	Vertical
2509.5	-52.49	2.91	27.70	-27.70	-13	-14.70	Vertical
2509.5	-53.52	2.91	27.70	-28.73	-13	-15.73	Horizontal
179.7	-40.31	1.44	17.04	-24.71	-13	-11.71	Vertical
414.6	-41.71	1.76	17.62	-25.85	-13	-12.85	Horizontal
Test Results for High Channel 844MHz							
1688.0	-48.94	2.82	27.43	-24.33	-13	-11.33	Horizontal
1688.0	-52.26	2.82	27.43	-27.65	-13	-14.65	Vertical
2532.0	-52.03	2.92	27.74	-27.21	-13	-14.21	Vertical
2532.0	-51.08	2.92	27.74	-26.26	-13	-13.26	Horizontal
185.1	-40.21	1.74	17.70	-24.25	-13	-11.25	Vertical
380.4	-43.33	1.41	17.46	-27.27	-13	-14.27	Horizontal

Note: $P_{Mea}(dBm) = Power(dBm) + ARpl(dBm)$

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

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

9.4 LTE BAND 7

QPSK EIRP POWER FOR LTE BAND 7 (5.0MHZ BANDWIDTH)

Test Results for Low Channel 2502.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5005.0	-61.12	5.23	35.81	-30.54	-25	-5.54	Horizontal
5005.0	-59.18	5.23	35.81	-28.60	-25	-3.60	Vertical
7507.5	-61.16	5.67	36.85	-29.98	-25	-4.98	Vertical
7507.5	-63.33	5.67	36.85	-32.15	-25	-7.15	Horizontal
186.9	-53.76	1.73	17.97	-37.52	-25	-12.52	Vertical
456.7	-52.85	1.38	15.11	-39.12	-25	-14.12	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-59.65	5.23	35.82	-29.06	-25	-4.06	Horizontal
5070.0	-60.56	5.23	35.82	-29.97	-25	-4.97	Vertical
7605.0	-60.53	5.67	36.85	-29.35	-25	-4.35	Vertical
7605.0	-59.04	5.67	36.85	-27.86	-25	-2.86	Horizontal
206.6	-53.20	1.77	16.17	-38.79	-25	-13.79	Vertical
445.1	-45.53	1.63	15.21	-31.95	-25	-6.95	Horizontal
Test Results for High Channel 2567.5MHz							
5135.0	-64.31	5.24	35.83	-33.72	-25	-8.72	Horizontal
5135.0	-60.04	5.24	35.83	-29.45	-25	-4.45	Vertical
7702.5	-59.97	5.68	36.87	-28.78	-25	-3.78	Vertical
7702.5	-64.35	5.68	36.87	-33.16	-25	-8.16	Horizontal
180.0	-46.59	1.58	17.56	-30.61	-25	-5.61	Vertical
405.0	-54.37	1.45	16.58	-39.24	-25	-14.24	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	-61.18	5.23	35.82	-30.59	-25	-5.59	Horizontal
5020.0	-61.76	5.23	35.82	-31.17	-25	-6.17	Vertical
7530.0	-62.04	5.67	36.86	-30.85	-25	-5.85	Vertical
7530.0	-64.67	5.67	36.86	-33.48	-25	-8.48	Horizontal
206.5	-54.57	1.63	15.76	-40.44	-25	-15.44	Vertical
303.3	-45.21	1.71	15.44	-31.48	-25	-6.48	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-62.64	5.23	35.82	-32.05	-25	-7.05	Horizontal
5070.0	-60.53	5.23	35.82	-29.94	-25	-4.94	Vertical
7605.0	-62.20	5.67	36.85	-31.02	-25	-6.02	Vertical
7605.0	-61.13	5.67	36.85	-29.95	-25	-4.95	Horizontal
210.9	-46.98	1.79	16.84	-31.92	-25	-6.92	Vertical
240.7	-52.81	1.71	17.64	-36.88	-25	-11.88	Horizontal
Test Results for High Channel 2560MHz							
5120.0	-64.81	5.24	35.83	-34.22	-25	-9.22	Horizontal
5120.0	-64.76	5.24	35.83	-34.17	-25	-9.17	Vertical
7680.0	-64.93	5.70	36.88	-33.75	-25	-8.75	Vertical
7680.0	-61.42	5.70	36.88	-30.24	-25	-5.24	Horizontal
189.6	-47.31	1.79	16.84	-32.25	-25	-7.25	Vertical
353.3	-44.54	1.71	17.64	-28.61	-25	-3.61	Horizontal

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

. Margin = Spurious Emission Level - Limit

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

9.5 LTE BAND 12

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

Test Results for Low Channel 699.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1399.4	-47.27	2.60	27.20	-22.67	-13	-9.67	Horizontal
1399.4	-46.86	2.60	27.20	-22.26	-13	-9.26	Vertical
2099.1	-45.82	2.85	27.54	-21.13	-13	-8.13	Vertical
2099.1	-52.81	2.85	27.54	-28.12	-13	-15.12	Horizontal
186.1	-42.06	1.49	17.78	-25.77	-13	-12.77	Vertical
299.7	-40.85	1.36	17.33	-24.88	-13	-11.88	Horizontal
Test Results For Mid Channel 707.5MHz							
1415.0	-48.40	2.61	27.28	-23.73	-13	-10.73	Horizontal
1415.0	-44.93	2.61	27.28	-20.26	-13	-7.26	Vertical
2122.5	-47.53	2.87	27.59	-22.81	-13	-9.81	Vertical
2122.5	-52.58	2.87	27.59	-27.86	-13	-14.86	Horizontal
203.8	-38.30	1.73	15.74	-24.29	-13	-11.29	Vertical
305.4	-38.03	1.62	15.79	-23.86	-13	-10.86	Horizontal
Test Results for High Channel 715.3MHz							
1430.6	-52.65	2.63	27.28	-28.00	-13	-15.00	Horizontal
1430.6	-46.32	2.63	27.28	-21.67	-13	-8.67	Vertical
2145.9	-48.57	2.88	27.60	-23.85	-13	-10.85	Vertical
2145.9	-53.67	2.88	27.60	-28.95	-13	-15.95	Horizontal
199.8	-37.83	1.61	18.00	-21.44	-13	-8.44	Vertical
295.1	-35.62	1.45	15.49	-21.59	-13	-8.59	Horizontal

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

Test Results for Low Channel 704MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1408.0	-45.06	2.61	27.26	-20.41	-13	-7.41	Horizontal
1408.0	-50.86	2.61	27.26	-26.21	-13	-13.21	Vertical
2112.0	-45.87	2.87	27.58	-21.16	-13	-8.16	Vertical
2112.0	-53.68	2.87	27.58	-28.97	-13	-15.97	Horizontal
207.5	-37.00	1.31	16.97	-21.34	-13	-8.34	Vertical
363.7	-38.63	1.65	16.70	-23.58	-13	-10.58	Horizontal
Test Results for Mid Channel 707.5MHz							
1415.0	-51.00	2.61	27.28	-26.33	-13	-13.33	Horizontal
1415.0	-50.46	2.61	27.28	-25.79	-13	-12.79	Vertical
2122.5	-47.38	2.87	27.59	-22.66	-13	-9.66	Vertical
2122.5	-49.95	2.87	27.59	-25.23	-13	-12.23	Horizontal
202.5	-40.78	1.72	17.99	-24.51	-13	-11.51	Vertical
345.4	-34.79	1.73	17.94	-18.58	-13	-5.58	Horizontal
Test Results for High Channel 711MHz							
1422.0	-53.78	2.62	27.28	-29.12	-13	-16.12	Horizontal
1422.0	-53.23	2.62	27.28	-28.57	-13	-15.57	Vertical
2133.0	-52.08	2.87	27.60	-27.35	-13	-14.35	Vertical
2133.0	-52.76	2.87	27.60	-28.03	-13	-15.03	Horizontal
201.1	-41.15	1.58	15.93	-26.80	-13	-13.80	Vertical
254.4	-34.21	1.36	15.59	-19.98	-13	-6.98	Horizontal

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

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

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

9.6 LTE BAND 13

QPSK EIRP POWER FOR LTE BAND 13 (5MHZ BANDWIDTH)

Test Results for Low Channel 779.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1559.0	-73.96	2.61	27.28	-49.29	-40	-9.29	Horizontal
1559.0	-72.73	2.61	27.28	-48.06	-40	-8.06	Vertical
2338.5	-72.41	2.87	27.59	-47.69	-13	-34.69	Vertical
2338.5	-73.96	2.87	27.59	-49.24	-13	-36.24	Horizontal
180.2	-73.82	1.71	16.15	-59.38	-13	-46.38	Vertical
290.7	-72.93	1.41	17.32	-57.02	-13	-44.02	Horizontal
Test Results For Mid Channel 782MHz							
1564.0	-67.08	2.62	27.30	-42.40	-40	-2.40	Horizontal
1564.0	-71.25	2.62	27.30	-46.57	-40	-6.57	Vertical
2346.0	-67.90	2.87	27.62	-43.15	-13	-30.15	Vertical
2346.0	-70.58	2.87	27.62	-45.83	-13	-32.83	Horizontal
188.8	-73.10	1.42	15.25	-59.28	-13	-46.28	Vertical
308.6	-73.62	1.36	17.19	-57.79	-13	-44.79	Horizontal
Test Results for High Channel 784.5MHz							
1569.0	-70.21	2.66	27.28	-45.59	-40	-5.59	Horizontal
1569.0	-73.99	2.66	27.28	-49.37	-40	-9.37	Vertical
2353.5	-71.28	2.88	27.60	-46.56	-13	-33.56	Vertical
2353.5	-72.33	2.88	27.60	-47.61	-13	-34.61	Horizontal
186.5	-70.82	1.32	17.29	-54.85	-13	-41.85	Vertical
349.3	-74.93	1.72	16.89	-59.76	-13	-46.76	Horizontal

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

Test Results for Low Channel 782MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1564.0	-72.03	2.62	27.30	-47.35	-40	-7.35	Horizontal
1564.0	-74.20	2.62	27.30	-49.52	-40	-9.52	Vertical
2346.0	-74.95	2.87	27.62	-50.20	-13	-37.20	Vertical
2346.0	-74.30	2.87	27.62	-49.55	-13	-36.55	Horizontal
200.6	-73.01	1.35	16.91	-57.45	-13	-44.45	Vertical
275.0	-68.86	1.62	16.31	-54.17	-13	-41.17	Horizontal

Note: Spurious Emission Level = Spectrum Analyzer Read Value + Cable Loss+ Antenna Factor + 11.74
 . Margin = Spurious Emission Level - Limit
 . Both QPSK and 16QAM has been tested, the worst case is QPSK mode, the report just reported the worst case.

9.7 LTE BAND 17

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

Test Results for Low Channel 706.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1413.0	-52.06	2.61	27.28	-27.39	-13	-14.39	Horizontal
1413.0	-49.87	2.61	27.28	-25.20	-13	-12.20	Vertical
2119.5	-44.94	2.87	27.59	-20.22	-13	-7.22	Vertical
2119.5	-49.40	2.87	27.59	-24.68	-13	-11.68	Horizontal
188.8	-40.55	1.71	16.15	-26.11	-13	-13.11	Vertical
275.9	-38.75	1.41	17.32	-22.84	-13	-9.84	Horizontal
Test Results For Mid Channel 710MHz							
1420.0	-45.59	2.62	27.30	-20.91	-13	-7.91	Horizontal
1420.0	-51.70	2.62	27.30	-27.02	-13	-14.02	Vertical
2130.0	-48.41	2.87	27.62	-23.66	-13	-10.66	Vertical
2130.0	-53.40	2.87	27.62	-28.65	-13	-15.65	Horizontal
180.7	-39.02	1.42	15.25	-25.20	-13	-12.20	Vertical
366.3	-34.27	1.36	17.19	-18.44	-13	-5.44	Horizontal
Test Results for High Channel 713.5MHz							
1427.0	-50.60	2.66	27.28	-25.98	-13	-12.98	Horizontal
1427.0	-47.86	2.66	27.28	-23.24	-13	-10.24	Vertical
2140.5	-49.33	2.88	27.60	-24.61	-13	-11.61	Vertical
2140.5	-52.29	2.88	27.60	-27.57	-13	-14.57	Horizontal
193.3	-42.56	1.32	17.29	-26.59	-13	-13.59	Vertical
437.3	-39.06	1.72	16.89	-23.89	-13	-10.89	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	-45.15	2.62	27.30	-20.47	-13	-7.47	Horizontal
1418.0	-45.80	2.62	27.30	-21.12	-13	-8.12	Vertical
2127.0	-44.83	2.87	27.62	-20.08	-13	-7.08	Vertical
2127.0	-49.56	2.87	27.62	-24.81	-13	-11.81	Horizontal
185.3	-36.61	1.35	16.91	-21.05	-13	-8.05	Vertical
348.6	-35.51	1.62	16.31	-20.82	-13	-7.82	Horizontal
Test Results for Mid Channel 710MHz							
1420.0	-44.65	2.62	27.30	-19.97	-13	-6.97	Horizontal
1420.0	-45.39	2.62	27.30	-20.71	-13	-7.71	Vertical
2130.0	-49.97	2.87	27.62	-25.22	-13	-12.22	Vertical
2130.0	-49.68	2.87	27.62	-24.93	-13	-11.93	Horizontal
200.0	-39.96	1.51	17.14	-24.33	-13	-11.33	Vertical
405.0	-39.82	1.77	16.88	-24.71	-13	-11.71	Horizontal
Test Results for High Channel 711MHz							
1422.0	-49.00	2.62	27.30	-24.32	-13	-11.32	Horizontal
1422.0	-49.27	2.62	27.30	-24.59	-13	-11.59	Vertical
2133.0	-51.78	2.87	27.62	-27.03	-13	-14.03	Vertical
2133.0	-49.32	2.87	27.62	-24.57	-13	-11.57	Horizontal
188.8	-39.56	1.78	15.95	-25.39	-13	-12.39	Vertical
317.9	-43.22	1.34	17.95	-26.62	-13	-13.62	Horizontal

Note: Spurious Emission Level = Spectrum Analyzer Read Value + Cable Loss+ Antenna Factor + 11.74
 . Margin = Spurious Emission Level - Limit
 . Both QPSK and 16QAM has been tested, the worst case is QPSK mode, the report just reported the worst case.

9.8 LTE BAND 66

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

Test Results for Low Channel 1710.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3421.4	-61.81	3.84	35.81	-29.84	-13	-16.84	Horizontal
3421.4	-64.39	3.84	35.81	-32.42	-13	-19.42	Vertical
5132.1	-63.70	5.18	36.85	-32.03	-13	-19.03	Vertical
5132.1	-63.87	5.18	36.85	-32.20	-13	-19.20	Horizontal
181.8	-44.97	1.56	17.97	-28.56	-13	-15.56	Vertical
433.0	-45.88	1.33	15.11	-32.10	-13	-19.10	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-64.59	3.85	35.82	-32.62	-13	-19.62	Horizontal
3490.0	-59.79	3.85	35.82	-27.82	-13	-14.82	Vertical
5235.0	-64.26	5.21	36.85	-32.62	-13	-19.62	Vertical
5235.0	-59.59	5.21	36.85	-27.95	-13	-14.95	Horizontal
189.4	-49.92	1.77	16.17	-35.51	-13	-22.51	Vertical
381.7	-53.23	1.63	15.21	-39.65	-13	-26.65	Horizontal
Test Results for High Channel 1779.3MHz							
3558.6	-60.69	3.86	35.83	-28.72	-13	-15.72	Horizontal
3558.6	-59.95	3.86	35.83	-27.98	-13	-14.98	Vertical
5337.9	-62.59	5.24	36.87	-30.96	-13	-17.96	Vertical
5337.9	-60.79	5.24	36.87	-29.16	-13	-16.16	Horizontal
184.2	-50.88	1.58	17.56	-34.90	-13	-21.90	Vertical
236.8	-47.01	1.45	16.58	-31.88	-13	-18.88	Horizontal

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

Test Results for Low Channel 1720MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3440.0	-59.42	3.84	35.82	-27.44	-13	-14.44	Horizontal
3440.0	-62.46	3.84	35.82	-30.48	-13	-17.48	Vertical
5160.0	-62.28	5.18	36.86	-30.60	-13	-17.60	Vertical
5160.0	-62.53	5.18	36.86	-30.85	-13	-17.85	Horizontal
210.8	-48.69	1.56	15.76	-34.49	-13	-21.49	Vertical
369.0	-54.96	1.33	15.44	-40.85	-13	-27.85	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-64.05	3.85	35.82	-32.08	-13	-19.08	Horizontal
3490.0	-60.26	3.85	35.82	-28.29	-13	-15.29	Vertical
5235.0	-63.73	5.21	36.85	-32.09	-13	-19.09	Vertical
5235.0	-62.28	5.21	36.85	-30.64	-13	-17.64	Horizontal
203.2	-54.32	1.77	16.84	-39.24	-13	-26.24	Vertical
405.1	-49.19	1.63	17.64	-33.18	-13	-20.18	Horizontal
Test Results for High Channel 1770MHz							
3540.0	-61.06	3.86	35.83	-29.09	-13	-16.09	Horizontal
3540.0	-61.66	3.86	35.83	-29.69	-13	-16.69	Vertical
5310.0	-62.32	5.24	36.88	-30.68	-13	-17.68	Vertical
5310.0	-60.96	5.24	36.88	-29.32	-13	-16.32	Horizontal
202.2	-49.24	1.58	16.84	-33.97	-13	-20.97	Vertical
330.6	-45.10	1.45	17.64	-28.91	-13	-15.91	Horizontal

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

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

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

10. FREQUENCY STABILITY

RULE PART(S)

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

LIMITS

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

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

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

- Temp. = -30° to $+50^{\circ}\text{C}$
- Voltage = low voltage, DC 3.29, Normal, DC 3.87V and High voltage, DC 4.45V.

Frequency Stability vs Temperature:

The EUT is placed inside a temperature chamber. The temperature is set to -30°C and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until $+50^{\circ}\text{C}$ is reached.

Frequency Stability vs Voltage:

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

MODES TESTED

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

RESULTS

See the following pages.

10.1 LTE BAND 2

Band 2 QPSK, (20MHz BANDWIDTH RB size 100 RB Offset 0)
Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	1880	12.5	0.006651	2.5
3.87	1880	13.3	0.007081	2.5
4.45	1880	13.7	0.007263	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	12.6	0.006726	2.5
Extreme (50C)	1880	11.5	0.006111	2.5
Extreme (40C)	1880	14.0	0.007445	2.5
Extreme (30C)	1880	14.0	0.007426	2.5
Extreme (10C)	1880	13.5	0.007177	2.5
Extreme (0C)	1880	12.2	0.006464	2.5
Extreme (-10C)	1880	13.0	0.006896	2.5
Extreme (-20C)	1880	14.3	0.007586	2.5
Extreme (-30C)	1880	15.2	0.008067	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	1880	9.7	0.005180	2.5
3.87	1880	9.0	0.004802	2.5
4.45	1880	8.5	0.004533	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	9.8	0.005233	2.5
Extreme (50C)	1880	9.3	0.004951	2.5
Extreme (40C)	1880	8.3	0.004392848	2.5
Extreme (30C)	1880	9.0	0.004799243	2.5
Extreme (10C)	1880	8.5	0.004503121	2.5
Extreme (0C)	1880	8.1	0.004287528	2.5
Extreme (-10C)	1880	8.6	0.004594283	2.5
Extreme (-20C)	1880	9.3	0.004924907	2.5
Extreme (-30C)	1880	8.6	0.004550562	2.5

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

10.2 LTE BAND 4

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	1732.5	8.6	0.004966	2.5
3.87	1732.5	9.2	0.005306	2.5
4.45	1732.5	8.5	0.004878	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	8.2	0.004734	2.5
Extreme (50C)	1732.5	9.1	0.005233	2.5
Extreme (40C)	1732.5	7.4	0.004278	2.5
Extreme (30C)	1732.5	5.4	0.003118	2.5
Extreme (10C)	1732.5	6.9	0.003999	2.5
Extreme (0C)	1732.5	9.6	0.005521	2.5
Extreme (-10C)	1732.5	8.2	0.004722	2.5
Extreme (-20C)	1732.5	6.7	0.003840	2.5
Extreme (-30C)	1732.5	8.3	0.004796	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	1732.5	9.3	0.005392	2.5
3.87	1732.5	9.3	0.005386	2.5
4.45	1732.5	7.9	0.004564	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	9.8	0.005646	2.5
Extreme (50C)	1732.5	9.1	0.005260	2.5
Extreme (40C)	1732.5	7.9	0.004535	2.5
Extreme (30C)	1732.5	9.5	0.005459	2.5
Extreme (10C)	1732.5	8.5	0.004898	2.5
Extreme (0C)	1732.5	8.6	0.004948	2.5
Extreme (-10C)	1732.5	9.3	0.005395	2.5
Extreme (-20C)	1732.5	9.2	0.005310	2.5
Extreme (-30C)	1732.5	8.2	0.004729	2.5

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

10.3 LTE BAND 5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	836.5	5.4	0.006422	2.5
3.87	836.5	6.8	0.008140	2.5
4.45	836.5	5.2	0.006250	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	6.1	0.007321	2.5
Extreme (50C)	836.5	5.5	0.006586	2.5
Extreme (40C)	836.5	6.1	0.007281	2.5
Extreme (30C)	836.5	6.4	0.007625	2.5
Extreme (10C)	836.5	5.1	0.006063	2.5
Extreme (0C)	836.5	5.7	0.006788	2.5
Extreme (-10C)	836.5	5.9	0.007058	2.5
Extreme (-20C)	836.5	5.8	0.006993	2.5
Extreme (-30C)	836.5	6.7	0.008053	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	836.5	5.8	0.006921	2.5
3.87	836.5	6.7	0.008011	2.5
4.45	836.5	5.2	0.006263	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	5.7	0.006842	2.5
Extreme (50C)	836.5	5.7	0.006829	2.5
Extreme (40C)	836.5	6.0	0.007130	2.5
Extreme (30C)	836.5	6.0	0.007150	2.5
Extreme (10C)	836.5	5.3	0.006370	2.5
Extreme (0C)	836.5	5.7	0.006831	2.5
Extreme (-10C)	836.5	5.7	0.006864	2.5
Extreme (-20C)	836.5	6.6	0.007872	2.5
Extreme (-30C)	836.5	6.5	0.007774	2.5

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

10.4 LTE BAND 7

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	2535	10.0	0.003952	2.5
3.87	2535	8.8	0.003480	2.5
4.45	2535	8.0	0.003166	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2535	9.1	0.003608	2.5
Extreme (50C)	2535	8.4	0.003323	2.5
Extreme (40C)	2535	8.6	0.003401	2.5
Extreme (30C)	2535	8.7	0.003445	2.5
Extreme (10C)	2535	7.7	0.003020	2.5
Extreme (0C)	2535	8.0	0.003138	2.5
Extreme (-10C)	2535	9.6	0.003793	2.5
Extreme (-20C)	2535	9.1	0.003603	2.5
Extreme (-30C)	2535	8.8	0.003484	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	2535	6.9	0.002722	2.5
3.87	2535	6.8	0.002675	2.5
4.45	2535	6.1	0.002409	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2535	6.9	0.002722	2.5
Extreme (50C)	2535	5.2	0.002069	2.5
Extreme (40C)	2535	5.8	0.002297	2.5
Extreme (30C)	2535	7.0	0.002767	2.5
Extreme (10C)	2535	5.6	0.002200	2.5
Extreme (0C)	2535	4.7	0.001857	2.5
Extreme (-10C)	2535	5.0	0.001984	2.5
Extreme (-20C)	2535	6.2	0.002440	2.5
Extreme (-30C)	2535	5.8	0.002269	2.5

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

10.5 LTE BAND 12

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	707.5	8.9	0.012590	2.5
3.87	707.5	9.7	0.013755	2.5
4.45	707.5	8.3	0.011688	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	707.5	8.6	0.012226	2.5
Extreme (50C)	707.5	7.5	0.010601	2.5
Extreme (40C)	707.5	7.7	0.010920	2.5
Extreme (30C)	707.5	8.0	0.011356	2.5
Extreme (10C)	707.5	7.2	0.010177	2.5
Extreme (0C)	707.5	9.0	0.012653	2.5
Extreme (-10C)	707.5	8.0	0.011270	2.5
Extreme (-20C)	707.5	8.9	0.012578	2.5
Extreme (-30C)	707.5	7.4	0.010505	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	707.5	7.1	0.009970	2.5
3.87	707.5	8.0	0.011377	2.5
4.45	707.5	7.5	0.010659	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	707.5	8.8	0.012419	2.5
Extreme (50C)	707.5	8.7	0.012288	2.5
Extreme (40C)	707.5	9.2	0.012933	2.5
Extreme (30C)	707.5	7.5	0.010582	2.5
Extreme (10C)	707.5	9.1	0.012794	2.5
Extreme (0C)	707.5	7.5	0.010592	2.5
Extreme (-10C)	707.5	7.1	0.010021	2.5
Extreme (-20C)	707.5	8.9	0.012519	2.5
Extreme (-30C)	707.5	8.4	0.011931	2.5

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

10.6 LTE BAND 13

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	782.0	12.8	0.016432	2.5
3.87	782.0	14.0	0.017869	2.5
4.45	782.0	13.5	0.017273	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	782.0	14.8	0.018922	2.5
Extreme (50C)	782.0	13.4	0.017133	2.5
Extreme (40C)	782.0	15.2	0.019392	2.5
Extreme (30C)	782.0	14.2	0.018187	2.5
Extreme (10C)	782.0	13.5	0.017240	2.5
Extreme (0C)	782.0	13.7	0.017480	2.5
Extreme (-10C)	782.0	13.7	0.017533	2.5
Extreme (-20C)	782.0	14.5	0.018578	2.5
Extreme (-30C)	782.0	13.2	0.016885	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	782.0	12.8	0.016378	2.5
3.87	782.0	14.1	0.018000	2.5
4.45	782.0	13.5	0.017298	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	782.0	12.7	0.016220	2.5
Extreme (50C)	782.0	12.0	0.015282	2.5
Extreme (40C)	782.0	13.4	0.017082	2.5
Extreme (30C)	782.0	13.6	0.017376	2.5
Extreme (10C)	782.0	13.7	0.017551	2.5
Extreme (0C)	782.0	11.8	0.015118	2.5
Extreme (-10C)	782.0	12.7	0.016233	2.5
Extreme (-20C)	782.0	14.3	0.018307	2.5
Extreme (-30C)	782.0	15.0	0.019124	2.5

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

10.7 LTE BAND 17

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	710.0	9.6	0.013574	2.5
3.87	710.0	9.2	0.012901	2.5
4.45	710.0	8.3	0.011735	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	9.7	0.013678	2.5
Extreme (50C)	710.0	9.1	0.012799	2.5
Extreme (40C)	710.0	8.5	0.012003	2.5
Extreme (30C)	710.0	8.9	0.012509	2.5
Extreme (10C)	710.0	8.8	0.012378	2.5
Extreme (0C)	710.0	8.5	0.011971	2.5
Extreme (-10C)	710.0	8.8	0.012427	2.5
Extreme (-20C)	710.0	8.9	0.012578	2.5
Extreme (-30C)	710.0	8.0	0.011289	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	710.0	9.9	0.013959	2.5
3.87	710.0	8.6	0.012111	2.5
4.45	710.0	7.9	0.011177	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	9.5	0.013312	2.5
Extreme (50C)	710.0	9.2	0.012984	2.5
Extreme (40C)	710.0	8.5	0.012000	2.5
Extreme (30C)	710.0	9.1	0.012806	2.5
Extreme (10C)	710.0	7.8	0.010947	2.5
Extreme (0C)	710.0	8.6	0.012166	2.5
Extreme (-10C)	710.0	9.4	0.013175	2.5
Extreme (-20C)	710.0	8.5	0.011913	2.5
Extreme (-30C)	710.0	8.7	0.012313	2.5

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

10.8 LTE BAND 66

Band 66 QPSK, (20MHz BANDWIDTH RB size 100 RB Offset 0
Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	1745	6.4	0.003660	2.5
3.87	1745	7.0	0.004039	2.5
4.45	1745	7.3	0.004188	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1745	5.6	0.003225	2.5
Extreme (50C)	1745	7.6	0.004382	2.5
Extreme (40C)	1745	6.6	0.003783	2.5
Extreme (30C)	1745	7.2	0.004111	2.5
Extreme (10C)	1745	7.9	0.004541	2.5
Extreme (0C)	1745	6.9	0.003928	2.5
Extreme (-10C)	1745	5.9	0.003383	2.5
Extreme (-20C)	1745	6.8	0.003895	2.5
Extreme (-30C)	1745	5.5	0.003155	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	1745	8.2	0.004705	2.5
3.87	1745	7.1	0.004075	2.5
4.45	1745	10.0	0.005728	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1745	8.7	0.004971	2.5
Extreme (50C)	1745	7.8	0.004498	2.5
Extreme (40C)	1745	8.9	0.005100	2.5
Extreme (30C)	1745	7.9	0.004520	2.5
Extreme (10C)	1745	8.0	0.004587	2.5
Extreme (0C)	1745	6.2	0.003539	2.5
Extreme (-10C)	1745	8.8	0.005064	2.5
Extreme (-20C)	1745	8.3	0.004772	2.5
Extreme (-30C)	1745	5.3	0.003012	2.5

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

11. Peak-to-Average Ratio

11.1 Description of the PAR Measurement

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

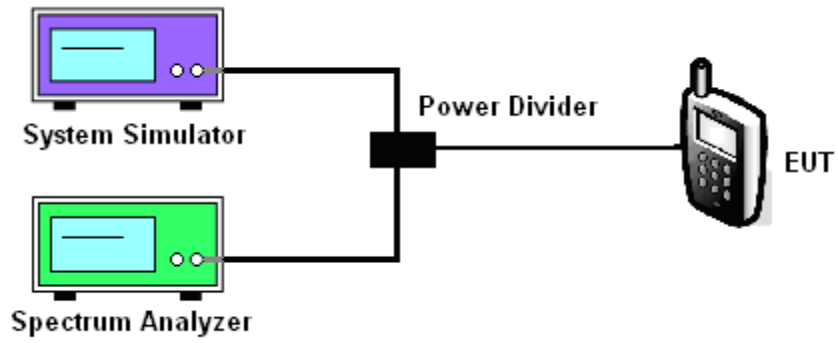
11.2 Measuring Instruments

See list of measuring instruments of this test report.

11.3 Test Procedures

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

11.4 Test Setup



MODES TESTED

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

Test data reference attachment.

----END OF REPORT----