

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

FCC ID: 2AT9T-8000

Product: Tablet

Trade Mark: ulefone

Model No.: Armor Pad 5 Ultra

Family Model: GQ8000, Armor Pad 5 Pro, Armor Pad 5,
Armor Pad 5E, Armor Pad 5S,
Armor Pad 5 Lite, Armor Pad 5 Pro+,
Armor Pad 5s, Armor Pad 5s Pro

Report No.: S25062002107006

Issue Date: Aug. 21, 2025

Prepared for

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Prepared by

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TEST RESULT CERTIFICATION

Applicant's name : Shenzhen Ulefone Technology CO., LTD.
Address..... : 7A01, Building A, Block 1, Anhongji Tianyao Plaza, Longhua District, Shenzhen City, Guangdong Province China
Manufacturer's Name..... : Shenzhen Gotron Electronic CO.,LTD.
Address..... : 7B01, Building A, Block 1, Anhongji Tianyao Plaza, Longhua District, Shenzhen City, Guangdong Province China
Product name..... : Tablet
Model and/or type reference .. : Armor Pad 5 Ultra
Trade Mark..... : ulefone
Family Model..... : GQ8000, Armor Pad 5 Pro, Armor Pad 5, Armor Pad 5E, Armor Pad 5S, Armor Pad 5 Lite, Armor Pad 5 Pro+, Armor Pad 5s, Armor Pad 5s Pro
Test Sample Number : S250620021007
Date of Test..... : Jun. 20, 2025 ~ Aug. 21, 2025
Standards..... : FCC CFR 47 Part 22H, Part 24E, Part 27
Test procedure ANSI C63.26:2015
 ANSI/TIA-603-E-2016

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

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

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1. GENERAL INFORMATION

1.1 PRODUCT DESCRIPTION

A major technical description of EUT is described as following:

Product Designation:	Tablet
Trade Mark	ulefone
Model Name	Armor Pad 5 Ultra
Family Model	GQ8000, Armor Pad 5 Pro, Armor Pad 5, Armor Pad 5E, Armor Pad 5S, Armor Pad 5 Lite, Armor Pad 5 Pro+, Armor Pad 5s, Armor Pad 5s Pro
Model Difference	All models are the same circuit and RF module, except for model names.
FCC ID:	2AT9T-8000
Frequency Bands:	U.S. Bands: ☒ LTE FDD Band 2,4,5,12,17,66 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 12 Uplink: 699MHz-716MHz, Downlink: 729MHz-746MHz; LTE FDD Band 17 Uplink: 704MHz-716MHz, Downlink: 734MHz-746MHz; LTE TDD Band 41 Uplink: 2535MHz-2655MHz, LTE FDD 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:	FPC Antenna
Antenna gain:	Band 2: -1.0 dBi, Band 4: 1.37 dBi, Band 5: -1.2dBi, Band 12: -0.7 dBi, Band 17: -0.7dBi, Band 41: 1.0 dBi, Band 66:1.37dBi
Adapter	Model: HJ-PD120W-US Input: 100-240V~50/60Hz, 1.8A Output: 5.0V---3.0A 15.0W OR 9.0V---3.0A 27.0W OR 12.0V---3.0A 36.0W OR 15.0V---3.0A 45.0W OR 20.0V---5.0A 100.0W MAX PPS:3.6V-20.0V---6.0A 120.0W MAX
Battery	DC 7.74V 12100mAh 93.654Wh
Power Rating	DC 7.74V from battery or DC 5V/9V/12V/15V/20V from adapter
Extreme Vol. Limits:	DC 6.58V to DC 8.90V (Nominal DC 7.74V) (Note 1)
HW Version	N/A
SW Version	N/A
** Note1: The High Voltage DC 8.90V and Low Voltage 6.58V 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: 2AT9T-8000** filing to comply with the FCC Part 22H&24E&27.

1.3 TEST METHODOLOGY

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

1.4 TEST FACILITY

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

ShenZhen NTEK Testing Technology Co., Ltd.

No. 24 Xinfu East Road, Xiangshan Community, Xinqiao Street, Baoan District, Shenzhen, Guangdong, People's Republic of 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 expanded 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% ($U = 2U_c(y)$)	2.5dB

1.5 SPECIAL ACCESSORIES

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

1.6 WORST-CASE CONFIGURATION AND MODE

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

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

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	Tablet	Armor Pad 5 Ultra	FCC ID: 2AT9T-8000	EUT

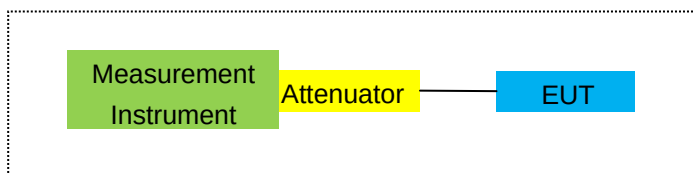
*Note: All the accessories have been used during the test.
the following "EUT" in setup diagram means EUT system.*

2.4 TEST SETUP

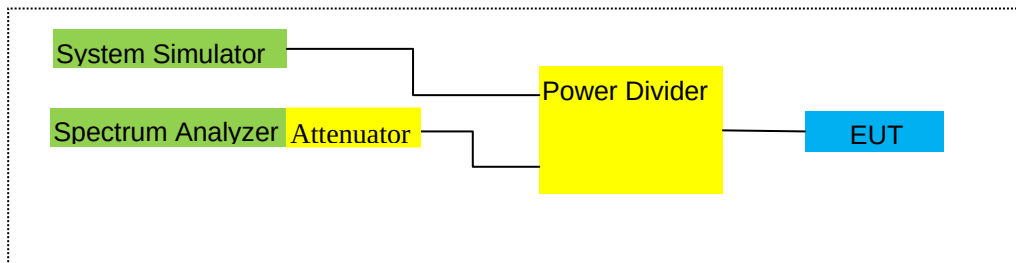
For Radiated Test Cases



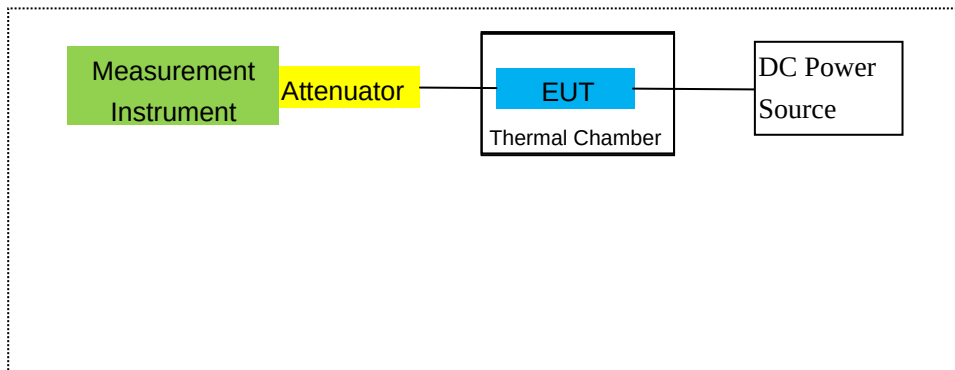
For Conducted Output Power



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	2025.04.17	2026.04.16	1 year
2	Test Receiver	R&S	ESPI	101318	2025.04.17	2026.04.16	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2025.04.17	2026.04.16	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2024.04.26	2027.04.25	3 year
5	Broadband Horn Antenna	SCHWARZBECK	BBHA 9120 D	2816	2024.5.18	2027.5.17	3 year
6	Broadband Horn Antenna	SCHWARZBECK	BBHA 9120 D	2817	2024.5.18	2027.5.17	3 year
7	Amplifier	EM	EM-30180	060538	2025.04.17	2026.04.16	1 year
8	Active Loop Antenna	SCHWARZBECK	FMZB 1519 B	055	2024.05.17	2027.05.16	3 year
9	Power Meter	R&S	NRVS	100696	2025.04.17	2026.04.16	1 year
10	Power Sensor	R&S	URV5-Z4	0395.1619.05	2025.04.17	2026.04.16	1 year
11	Test Cable	N/A	R-01	N/A	2023.06.17	2026.06.16	3 year
12	Test Cable	N/A	R-02	N/A	2023.06.17	2026.06.16	3 year
13	Test Cable	N/A	R-03	N/A	2023.06.17	2026.06.16	3 year
14	Test Receiver	R&S	ESCI	101160	2025.04.17	2026.04.16	1 year
15	LISN	R&S	ENV216	101313	2025.04.17	2026.04.16	1 year
16	LISN	EMCO	3816/2	00042990	2025.04.17	2026.04.16	1 year
17	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2024.04.26	2027.04.25	3 year
18	Field strength probe	narda	EP601	711WX81278	2025.04.17	2026.04.16	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	Spectrum Analyzer	Agilent	E4440A	MY41000130	2025.04.17	2026.04.16	1 year
23	EMI Test Receiver	R&S	ESCI	101160	2025.04.17	2026.04.16	1 year
24	Universal Radio Communication Tester	R&S	CMU200	105747	2025.04.17	2026.04.16	1 year

25	High and Low Temperature Box	WEISS	WT 20/40 EMC Simpac	58226119460030	2024.05.30	2027.05.29	3 year
26	DC Power Source	N/A	PS-6005D	20170402923	2024.04.25	2027.04.24	3 year
27	MXG Vector Signal Generator	Agilent	N5183B	MY57280984	2025.04.17	2026.04.16	1 year
28	Log-Periodic Antenna	SCHWARZBECK	VULB 9162	584	2025.04.17	2026.04.16	1 year
29	Log-Periodic Antenna	SCHWARZBECK	VULB 9162	586	2025.04.17	2026.04.16	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.

Measurement Software

Item	Manufacturer	Software Name	Software Version	Description
1	MWRFTtest	MTS 8200	2.0	RF Conducted Test
2	Farad	EZ-EMC_RE	AIT-03A	RadiatedTest
3	raditeq	RadiMation	2023.1.3	RadiatedTest

4. OUTPUT POWER

4.1 OUTPUT POWER MEASUREMENT

LTE Measurement Procedure:

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

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

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

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

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

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

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

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

Test data reference attachment.

5. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

LIMITS

For reporting purposes only

TEST PROCEDURE

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

MODES TESTED

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

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

FCC: §22.359

LIMITS

FCC: §22.917, §24.238, §27.53

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

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

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

TEST PROCEDURE

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

For each band edge measurement:

Set the spectrum analyzer span to include the block edge frequency

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

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

MODES TESTED

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

RESULTS

Test data reference attachment.

7. OUT OF BAND EMISSIONS

RULE PART(S)

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

LIMITS

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

TEST PROCEDURE

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

For each out of band emissions measurement:

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

MODES TESTED

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

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

LIMITS:

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

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

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

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

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

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

TEST PROCEDURE

ANSI/TIA-603-E Clause 2.2.17

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

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

MODES TESTED

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

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)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP		
							Average		
							(mW)		
1.4MHz Band QPSK	1/#Mid	1850.7	-3.58	3.76	28.24	20.90	123.027	Horizontal	Pass
		1880	-3.39	3.91	28.22	20.92	123.595	Horizontal	Pass
		1909.3	-3.30	3.93	28.20	20.97	125.026	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-3.64	3.77	28.23	20.82	120.781	Horizontal	Pass
		1880	-3.49	3.91	28.24	20.84	121.339	Horizontal	Pass
		1908.5	-3.36	3.94	28.25	20.95	124.451	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-3.53	3.77	28.31	21.01	126.183	Horizontal	Pass
		1880	-3.15	3.91	28.22	21.16	130.617	Horizontal	Pass
		1907.5	-3.08	3.94	28.20	21.18	131.220	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1855	-3.39	3.79	28.33	21.15	130.317	Horizontal	Pass
		1880	-3.09	3.95	28.22	21.18	131.220	Horizontal	Pass
		1905	-2.98	3.97	28.19	21.24	133.045	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1857.5	-3.35	3.79	28.34	21.20	131.826	Horizontal	Pass
		1880	-3.14	3.95	28.22	21.13	129.718	Horizontal	Pass
		1902.5	-3.00	3.97	28.18	21.21	132.130	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1860	-3.34	3.81	28.35	21.20	131.826	Horizontal	Pass
		1880	-3.01	3.96	28.22	21.25	133.352	Horizontal	Pass
		1900	-2.95	4.00	28.16	21.21	132.130	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1850.7	-4.75	3.76	28.24	19.73	93.972	Vertical	Pass
		1880	-4.21	3.91	28.22	20.10	102.329	Vertical	Pass
		1909.3	-4.41	3.93	28.20	19.86	96.828	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-3.93	3.77	28.23	20.53	112.980	Vertical	Pass
		1880	-3.99	3.91	28.24	20.34	108.143	Vertical	Pass
		1908.5	-4.47	3.94	28.25	19.84	96.383	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-4.71	3.77	28.31	19.83	96.161	Vertical	Pass
		1880	-4.17	3.91	28.22	20.14	103.276	Vertical	Pass
		1907.5	-4.12	3.94	28.20	20.14	103.276	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1855	-4.87	3.79	28.33	19.67	92.683	Vertical	Pass
		1880	-3.91	3.95	28.22	20.36	108.643	Vertical	Pass
		1905	-3.75	3.97	28.19	20.47	111.429	Vertical	Pass

15.0MHz	1/#Mid	1857.5	-4.61	3.79	28.34	19.94	98.628	Vertical	Pass
Band		1880	-4.55	3.95	28.22	19.72	93.756	Vertical	Pass
QPSK		1902.5	-4.51	3.97	28.18	19.70	93.325	Vertical	Pass
20.0MHz	1/#Mid	1860	-3.95	3.81	28.35	20.59	114.551	Vertical	Pass
Band		1880	-4.47	3.96	28.22	19.79	95.280	Vertical	Pass
QPSK		1900	-4.36	4.00	28.16	19.80	95.499	Vertical	Pass

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	Polarization Of Max. ERP	
							Average (mW)		
1.4MHz Band 16 QAM	1/#Mid	1850.7	-4.70	3.76	28.24	19.78	95.060	Horizontal	Pass
		1880	-4.17	3.91	28.22	20.14	103.276	Horizontal	Pass
		1909.3	-4.10	3.93	28.20	20.17	103.992	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-4.20	3.77	28.23	20.26	106.170	Horizontal	Pass
		1880	-4.28	3.91	28.24	20.05	101.158	Horizontal	Pass
		1908.5	-4.49	3.94	28.25	19.82	95.940	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-4.14	3.77	28.31	20.40	109.648	Horizontal	Pass
		1880	-4.05	3.91	28.22	20.26	106.170	Horizontal	Pass
		1907.5	-3.73	3.94	28.20	20.53	112.980	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-4.19	3.79	28.33	20.35	108.393	Horizontal	Pass
		1880	-4.18	3.95	28.22	20.09	102.094	Horizontal	Pass
		1905	-3.65	3.97	28.19	20.57	114.025	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-4.17	3.79	28.34	20.38	109.144	Horizontal	Pass
		1880	-3.96	3.95	28.22	20.31	107.399	Horizontal	Pass
		1902.5	-3.92	3.97	28.18	20.29	106.905	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1860	-4.06	3.81	28.35	20.48	111.686	Horizontal	Pass
		1880	-3.76	3.96	28.22	20.50	112.202	Horizontal	Pass
		1900	-3.58	4.00	28.16	20.58	114.288	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1850.7	-5.27	3.76	28.24	19.21	83.368	Vertical	Pass
		1880	-5.19	3.91	28.22	19.12	81.658	Vertical	Pass
		1909.3	-4.98	3.93	28.20	19.29	84.918	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-5.11	3.77	28.23	19.35	86.099	Vertical	Pass
		1880	-4.82	3.91	28.24	19.51	89.331	Vertical	Pass
		1908.5	-5.44	3.94	28.25	18.87	77.090	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-5.05	3.77	28.31	19.49	88.920	Vertical	Pass
		1880	-4.87	3.91	28.22	19.44	87.902	Vertical	Pass
		1907.5	-5.42	3.94	28.20	18.84	76.560	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-5.45	3.79	28.33	19.09	81.096	Vertical	Pass
		1880	-5.32	3.95	28.22	18.95	78.524	Vertical	Pass
		1905	-5.32	3.97	28.19	18.90	77.625	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-5.81	3.79	28.34	18.74	74.817	Vertical	Pass
		1880	-5.44	3.95	28.22	18.83	76.384	Vertical	Pass
		1902.5	-5.39	3.97	28.18	18.82	76.208	Vertical	Pass
20.0MHz	1/#Mid	1860	-5.36	3.81	28.35	19.18	82.794	Vertical	Pass

Band 16		1880	-5.31	3.96	28.22	18.95	78.524	Vertical	Pass
QAM		1900	-4.99	4.00	28.16	19.17	82.604	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

8.3 LTE BAND 4

Radiated Power (EIRP) for Band 4									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	1710.7	-3.49	3.12	27.58	20.97	125.026	Horizontal	Pass
		1732.5	-3.48	3.27	27.61	20.86	121.899	Horizontal	Pass
		1754.3	-3.46	3.29	27.63	20.88	122.462	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-3.66	3.13	27.61	20.82	120.781	Horizontal	Pass
		1732.5	-3.58	3.27	27.61	20.76	119.124	Horizontal	Pass
		1753.5	-3.50	3.30	27.62	20.82	120.781	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-3.43	3.13	27.63	21.07	127.938	Horizontal	Pass
		1732.5	-3.33	3.27	27.61	21.01	126.183	Horizontal	Pass
		1752.5	-3.21	3.30	27.60	21.09	128.529	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1715	-3.37	3.15	27.64	21.12	129.420	Horizontal	Pass
		1732.5	-3.14	3.31	27.61	21.16	130.617	Horizontal	Pass
		1750	-3.16	3.33	27.59	21.10	128.825	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-3.38	3.15	27.65	21.12	129.420	Horizontal	Pass
		1732.5	-3.22	3.31	27.61	21.08	128.233	Horizontal	Pass
		1747.5	-3.16	3.33	27.57	21.08	128.233	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1720	-3.32	3.17	27.66	21.17	130.918	Horizontal	Pass
		1732.5	-3.15	3.32	27.61	21.14	130.017	Horizontal	Pass
		1745	-3.09	3.36	27.56	21.11	129.122	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1710.7	-4.29	3.12	27.58	20.17	103.992	Vertical	Pass
		1732.5	-4.67	3.27	27.61	19.67	92.683	Vertical	Pass
		1754.3	-4.27	3.29	27.63	20.07	101.625	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-4.19	3.13	27.61	20.29	106.905	Vertical	Pass
		1732.5	-3.72	3.27	27.61	20.62	115.345	Vertical	Pass
		1753.5	-4.56	3.30	27.62	19.76	94.624	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-4.05	3.13	27.63	20.45	110.917	Vertical	Pass
		1732.5	-3.89	3.27	27.61	20.45	110.917	Vertical	Pass
		1752.5	-4.12	3.30	27.60	20.18	104.232	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1715	-4.62	3.15	27.64	19.87	97.051	Vertical	Pass
		1732.5	-4.11	3.31	27.61	20.19	104.472	Vertical	Pass
		1750	-4.29	3.33	27.59	19.97	99.312	Vertical	Pass

15.0MHz Band QPSK	1/#Mid	1717.5	-4.82	3.15	27.65	19.68	92.897	Vertical	Pass
		1732.5	-4.39	3.31	27.61	19.91	97.949	Vertical	Pass
		1747.5	-4.55	3.33	27.57	19.69	93.111	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	1720	-4.78	3.17	27.66	19.71	93.541	Vertical	Pass
		1732.5	-3.73	3.32	27.61	20.56	113.763	Vertical	Pass
		1745	-4.34	3.36	27.56	19.86	96.828	Vertical	Pass

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	-4.30	3.12	27.58	20.16	103.753	Horizontal	Pass
		1732.5	-4.15	3.27	27.61	20.19	104.472	Horizontal	Pass
		1754.3	-4.15	3.29	27.63	20.19	104.472	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-4.24	3.13	27.61	20.24	105.682	Horizontal	Pass
		1732.5	-4.37	3.27	27.61	19.97	99.312	Horizontal	Pass
		1753.5	-4.59	3.30	27.62	19.73	93.972	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-4.07	3.13	27.63	20.43	110.408	Horizontal	Pass
		1732.5	-4.03	3.27	27.61	20.31	107.399	Horizontal	Pass
		1752.5	-3.72	3.30	27.60	20.58	114.288	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-4.14	3.15	27.64	20.35	108.393	Horizontal	Pass
		1732.5	-4.33	3.31	27.61	19.97	99.312	Horizontal	Pass
		1750	-3.71	3.33	27.59	20.55	113.501	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-3.94	3.15	27.65	20.56	113.763	Horizontal	Pass
		1732.5	-4.00	3.31	27.61	20.30	107.152	Horizontal	Pass
		1747.5	-4.02	3.33	27.57	20.22	105.196	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-3.89	3.17	27.66	20.60	114.815	Horizontal	Pass
		1732.5	-3.90	3.32	27.61	20.39	109.396	Horizontal	Pass
		1745	-3.71	3.36	27.56	20.49	111.944	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	-4.94	3.12	27.58	19.52	89.536	Vertical	Pass
		1732.5	-5.20	3.27	27.61	19.14	82.035	Vertical	Pass
		1754.3	-5.44	3.29	27.63	18.90	77.625	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-5.13	3.13	27.61	19.35	86.099	Vertical	Pass
		1732.5	-5.03	3.27	27.61	19.31	85.310	Vertical	Pass
		1753.5	-5.07	3.30	27.62	19.25	84.140	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-5.69	3.13	27.63	18.81	76.033	Vertical	Pass
		1732.5	-5.40	3.27	27.61	18.94	78.343	Vertical	Pass
		1752.5	-5.01	3.30	27.60	19.29	84.918	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-5.82	3.15	27.64	18.67	73.621	Vertical	Pass
		1732.5	-5.16	3.31	27.61	19.14	82.035	Vertical	Pass
		1750	-5.29	3.33	27.59	18.97	78.886	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-5.72	3.15	27.65	18.78	75.509	Vertical	Pass
		1732.5	-5.64	3.31	27.61	18.66	73.451	Vertical	Pass
		1747.5	-5.61	3.33	27.57	18.63	72.946	Vertical	Pass
20.0MHz	1/#Mid	1720	-5.18	3.17	27.66	19.31	85.310	Vertical	Pass

Band 16 QAM		1732.5	-5.36	3.32	27.61	18.93	78.163	Vertical	Pass
		1745	-5.02	3.36	27.56	19.18	82.794	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

8.4 LTE BAND 5

Radiated Power (ERP) for Band 5										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. ERP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	3/#Mid	824.7	5.56	2.01	19.68	2.15	21.08	128.233	Horizontal	Pass
		836.5	5.44	2.01	19.77	2.15	21.05	127.350	Horizontal	Pass
		848.3	5.24	2.02	19.82	2.15	20.89	122.744	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	825.5	5.33	2.01	19.70	2.15	20.87	122.180	Horizontal	Pass
		836.5	5.23	2.01	19.77	2.15	20.84	121.339	Horizontal	Pass
		847.5	5.10	2.02	19.81	2.15	20.74	118.577	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	826.5	5.61	2.01	19.71	2.15	21.16	130.617	Horizontal	Pass
		836.5	5.49	2.01	19.77	2.15	21.10	128.825	Horizontal	Pass
		846.5	5.33	2.02	19.79	2.15	20.95	124.451	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	829	5.63	2.01	19.73	2.15	21.20	131.826	Horizontal	Pass
		836.5	5.58	2.01	19.77	2.15	21.19	131.522	Horizontal	Pass
		844	5.48	2.02	19.78	2.15	21.09	128.529	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	824.7	4.15	2.01	19.68	2.15	19.67	92.683	Vertical	Pass
		836.5	4.19	2.01	19.77	2.15	19.80	95.499	Vertical	Pass
		848.3	4.52	2.02	19.82	2.15	20.17	103.992	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	825.5	4.83	2.01	19.70	2.15	20.37	108.893	Vertical	Pass
		836.5	4.32	2.01	19.77	2.15	19.93	98.401	Vertical	Pass
		847.5	4.34	2.02	19.81	2.15	19.98	99.541	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	826.5	4.07	2.01	19.71	2.15	19.62	91.622	Vertical	Pass
		836.5	4.27	2.01	19.77	2.15	19.88	97.275	Vertical	Pass
		846.5	4.34	2.02	19.79	2.15	19.96	99.083	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	829	3.93	2.01	19.73	2.15	19.50	89.125	Vertical	Pass
		836.5	4.51	2.01	19.77	2.15	20.12	102.802	Vertical	Pass
		844	4.74	2.02	19.78	2.15	20.35	108.393	Vertical	Pass

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. ERP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	3/#Mid	824.7	4.96	2.01	19.68	2.15	20.48	111.686	Horizontal	Pass
		836.5	4.89	2.01	19.77	2.15	20.50	112.202	Horizontal	Pass
		848.3	4.73	2.02	19.82	2.15	20.38	109.144	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	5.04	2.01	19.70	2.15	20.58	114.288	Horizontal	Pass
		836.5	4.75	2.01	19.77	2.15	20.36	108.643	Horizontal	Pass
		847.5	4.23	2.02	19.81	2.15	19.87	97.051	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	5.36	2.01	19.71	2.15	20.91	123.310	Horizontal	Pass
		836.5	5.13	2.01	19.77	2.15	20.74	118.577	Horizontal	Pass
		846.5	4.88	2.02	19.79	2.15	20.50	112.202	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	829	5.36	2.01	19.73	2.15	20.93	123.880	Horizontal	Pass
		836.5	5.08	2.01	19.77	2.15	20.69	117.220	Horizontal	Pass
		844	4.62	2.02	19.78	2.15	20.23	105.439	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	824.7	4.10	2.01	19.68	2.15	19.62	91.622	Vertical	Pass
		836.5	5.01	2.01	19.77	2.15	20.62	115.345	Vertical	Pass
		848.3	4.53	2.02	19.82	2.15	20.18	104.232	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	4.41	2.01	19.70	2.15	19.95	98.855	Vertical	Pass
		836.5	3.35	2.01	19.77	2.15	18.96	78.705	Vertical	Pass
		847.5	4.02	2.02	19.81	2.15	19.66	92.470	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	4.06	2.01	19.71	2.15	19.61	91.411	Vertical	Pass
		836.5	3.60	2.01	19.77	2.15	19.21	83.368	Vertical	Pass
		846.5	3.02	2.02	19.79	2.15	18.64	73.114	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	829	3.57	2.01	19.73	2.15	19.14	82.035	Vertical	Pass
		836.5	3.44	2.01	19.77	2.15	19.05	80.353	Vertical	Pass
		844	3.84	2.02	19.78	2.15	19.45	88.105	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)

ERP(dBm)=EIRP-2.15

8.5 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. ERP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	699.7	6.18	1.91	19.21	2.15	21.33	135.831	Vertical	Pass
		707.5	6.10	1.91	19.26	2.15	21.30	134.896	Vertical	Pass
		715.3	5.88	1.93	19.34	2.15	21.14	130.017	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	700.5	5.97	1.91	19.21	2.15	21.12	129.420	Vertical	Pass
		707.5	5.89	1.91	19.26	2.15	21.09	128.529	Vertical	Pass
		714.5	5.73	1.93	19.34	2.15	20.99	125.603	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	701.5	6.24	1.91	19.23	2.15	21.41	138.357	Vertical	Pass
		707.5	6.15	1.91	19.26	2.15	21.35	136.458	Vertical	Pass
		713.5	5.94	1.92	19.33	2.15	21.20	131.826	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	704	6.26	1.91	19.25	2.15	21.45	139.637	Vertical	Pass
		707.5	6.24	1.91	19.26	2.15	21.44	139.316	Vertical	Pass
		711	6.09	1.92	19.32	2.15	21.34	136.144	Vertical	Pass
1.4MHz Band QPSK	1/#Mid	699.7	5.10	1.91	19.21	2.15	20.25	105.925	Horizontal	Pass
		707.5	5.41	1.91	19.26	2.15	20.61	115.080	Horizontal	Pass
		715.3	5.25	1.93	19.34	2.15	20.51	112.460	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	700.5	4.48	1.91	19.21	2.15	19.63	91.833	Horizontal	Pass
		707.5	4.52	1.91	19.26	2.15	19.72	93.756	Horizontal	Pass
		714.5	4.66	1.93	19.34	2.15	19.92	98.175	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	701.5	5.03	1.91	19.23	2.15	20.20	104.713	Horizontal	Pass
		707.5	4.71	1.91	19.26	2.15	19.91	97.949	Horizontal	Pass
		713.5	5.04	1.92	19.33	2.15	20.30	107.152	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	704	5.26	1.91	19.25	2.15	20.45	110.917	Horizontal	Pass
		707.5	4.93	1.91	19.26	2.15	20.13	103.039	Horizontal	Pass
		711	5.12	1.92	19.32	2.15	20.37	108.893	Horizontal	Pass

Radiated Power (ERP) for Band 12										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. ERP	Max. ERP	Polarization Of Max. ERP	
							Average	Average		
							(dBm)	(mW)		
1.4MHz Band 16 QAM	1/#Mid	699.7	6.09	1.91	19.21	2.15	21.24	133.045	Vertical	Pass
		707.5	6.01	1.91	19.26	2.15	21.21	132.130	Vertical	Pass
		715.3	5.79	1.93	19.34	2.15	21.05	127.350	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	700.5	5.88	1.91	19.21	2.15	21.03	126.765	Vertical	Pass
		707.5	5.80	1.91	19.26	2.15	21.00	125.893	Vertical	Pass
		714.5	5.64	1.93	19.34	2.15	20.90	123.027	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	701.5	6.15	1.91	19.23	2.15	21.32	135.519	Vertical	Pass
		707.5	6.06	1.91	19.26	2.15	21.26	133.660	Vertical	Pass
		713.5	5.85	1.92	19.33	2.15	21.11	129.122	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	704	6.17	1.91	19.25	2.15	21.36	136.773	Vertical	Pass
		707.5	6.15	1.91	19.26	2.15	21.35	136.458	Vertical	Pass
		711	6.00	1.92	19.32	2.15	21.25	133.352	Vertical	Pass
1.4MHz Band 16 QAM	1/#Mid	699.7	4.73	1.91	19.21	2.15	19.88	97.275	Horizontal	Pass
		707.5	4.75	1.91	19.26	2.15	19.95	98.855	Horizontal	Pass
		715.3	4.80	1.93	19.34	2.15	20.06	101.391	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	700.5	4.79	1.91	19.21	2.15	19.94	98.628	Horizontal	Pass
		707.5	4.90	1.91	19.26	2.15	20.10	102.329	Horizontal	Pass
		714.5	4.63	1.93	19.34	2.15	19.89	97.499	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	701.5	5.13	1.91	19.23	2.15	20.30	107.152	Horizontal	Pass
		707.5	4.97	1.91	19.26	2.15	20.17	103.992	Horizontal	Pass
		713.5	5.13	1.92	19.33	2.15	20.39	109.396	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	704	4.61	1.91	19.25	2.15	19.80	95.499	Horizontal	Pass
		707.5	4.38	1.91	19.26	2.15	19.58	90.782	Horizontal	Pass
		711	4.54	1.92	19.32	2.15	19.79	95.280	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)

ERP(dBm)=EIRP-2.15

8.6 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. ERP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band QPSK	1/#Mid	706.5	6.55	1.91	19.23	2.15	21.72	148.594	Vertical	Pass
		710	6.41	1.91	19.26	2.15	21.61	144.877	Vertical	Pass
		713.5	6.31	1.92	19.33	2.15	21.57	143.549	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	709	6.56	1.91	19.25	2.15	21.75	149.624	Vertical	Pass
		710	6.51	1.91	19.26	2.15	21.71	148.252	Vertical	Pass
		711	6.47	1.92	19.32	2.15	21.72	148.594	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	706.5	5.12	1.91	19.23	2.15	20.29	106.905	Horizontal	Pass
		710	4.94	1.91	19.26	2.15	20.14	103.276	Horizontal	Pass
		713.5	5.35	1.92	19.33	2.15	20.61	115.080	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	709	6.16	1.91	19.25	2.15	21.35	136.458	Horizontal	Pass
		710	5.82	1.91	19.26	2.15	21.02	126.474	Horizontal	Pass
		711	4.91	1.92	19.32	2.15	20.16	103.753	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. ERP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	1/#Mid	706.5	5.77	1.91	19.23	2.15	20.94	124.165	Vertical	Pass
		710	5.68	1.91	19.26	2.15	20.88	122.462	Vertical	Pass
		713.5	5.48	1.92	19.33	2.15	20.74	118.577	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	709	5.31	1.91	19.25	2.15	20.50	112.202	Vertical	Pass
		710	5.84	1.91	19.26	2.15	21.04	127.057	Vertical	Pass
		711	5.57	1.92	19.32	2.15	20.82	120.781	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	706.5	4.86	1.91	19.23	2.15	20.03	100.693	Horizontal	Pass
		710	4.72	1.91	19.26	2.15	19.92	98.175	Horizontal	Pass
		713.5	4.31	1.92	19.33	2.15	19.57	90.573	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	709	4.41	1.91	19.25	2.15	19.60	91.201	Horizontal	Pass
		710	4.21	1.91	19.26	2.15	19.41	87.297	Horizontal	Pass
		711	4.45	1.92	19.32	2.15	19.70	93.325	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)

ERP=EIRP-2.15

8.7 LTE BAND 41

Radiated Power (EIRP) for Band 41									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP	Max. EIRP	Polarization Of Max. ERP	
			(dBm)			Average	Average		
						(dBm)	(mW)		
5.0MHz Band QPSK	1/##Mid	2537.5	-2.29	4.54	27.75	20.92	123.595	Horizontal	Pass
		2595	-2.14	4.69	27.72	20.89	122.744	Horizontal	Pass
		2652.5	-2.02	4.71	27.71	20.98	125.314	Horizontal	Pass
10.0MHz Band QPSK	1/##Mid	2540	-2.37	4.55	27.76	20.84	121.339	Horizontal	Pass
		2595	-2.23	4.69	27.72	20.80	120.226	Horizontal	Pass
		2650	-2.22	4.72	27.70	20.76	119.124	Horizontal	Pass
15.0MHz Band QPSK	1/##Mid	2542.5	-2.20	4.55	27.77	21.02	126.474	Horizontal	Pass
		2595	-1.92	4.69	27.72	21.11	129.122	Horizontal	Pass
		2647.5	-1.97	4.72	27.69	21.00	125.893	Horizontal	Pass
20.0MHz Band QPSK	1/##Mid	2545	-1.81	4.57	27.78	21.40	138.038	Horizontal	Pass
		2595	-1.86	4.73	27.72	21.13	129.718	Horizontal	Pass
		2645	-1.86	4.75	27.68	21.07	127.938	Horizontal	Pass
5.0MHz Band QPSK	1/##Mid	2537.5	-2.09	4.54	27.75	21.12	129.420	Vertical	Pass
		2595	-2.00	4.69	27.72	21.03	126.765	Vertical	Pass
		2652.5	-1.98	4.71	27.71	21.02	126.474	Vertical	Pass
10.0MHz Band QPSK	1/##Mid	2540	-2.07	4.55	27.76	21.14	130.017	Vertical	Pass
		2595	-1.91	4.69	27.72	21.12	129.420	Vertical	Pass
		2650	-1.98	4.72	27.70	21.00	125.893	Vertical	Pass
15.0MHz Band QPSK	1/##Mid	2542.5	-3.57	4.55	27.77	19.65	92.257	Vertical	Pass
		2595	-3.29	4.69	27.72	19.74	94.189	Vertical	Pass
		2647.5	-3.20	4.72	27.69	19.77	94.842	Vertical	Pass
20.0MHz Band QPSK	1/##Mid	2545	-3.36	4.57	27.78	19.85	96.605	Vertical	Pass
		2595	-3.26	4.73	27.72	19.73	93.972	Vertical	Pass
		2645	-3.39	4.75	27.68	19.54	89.950	Vertical	Pass

Radiated Power (EIRP) for Band 41									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP	Max. EIRP	Polarization Of Max. ERP	
			(dBm)			Average	Average		
						(dBm)	(mW)		
5.0MHz	1/#Mid	2537.5	-2.35	4.54	27.75	20.86	121.899	Horizontal	Pass
Band 16		2595	-2.20	4.69	27.72	20.83	121.060	Horizontal	Pass
QAM		2652.5	-2.08	4.71	27.71	20.92	123.595	Horizontal	Pass
10.0MHz	1/#Mid	2540	-2.43	4.55	27.76	20.78	119.674	Horizontal	Pass
Band 16		2595	-2.29	4.69	27.72	20.74	118.577	Horizontal	Pass
QAM		2650	-2.28	4.72	27.70	20.70	117.490	Horizontal	Pass
15.0MHz	1/#Mid	2542.5	-2.26	4.55	27.77	20.96	124.738	Horizontal	Pass
Band 16		2595	-1.98	4.69	27.72	21.05	127.350	Horizontal	Pass
QAM		2647.5	-2.03	4.72	27.69	20.94	124.165	Horizontal	Pass
20.0MHz	1/#Mid	2545	-1.98	4.57	27.78	21.23	132.739	Horizontal	Pass
Band 16		2595	-1.92	4.73	27.72	21.07	127.938	Horizontal	Pass
QAM		2645	-1.92	4.75	27.68	21.01	126.183	Horizontal	Pass
5.0MHz	1/#Mid	2537.5	-2.15	4.54	27.75	21.06	127.644	Vertical	Pass
Band 16		2595	-2.06	4.69	27.72	20.97	125.026	Vertical	Pass
QAM		2652.5	-2.04	4.71	27.71	20.96	124.738	Vertical	Pass
10.0MHz	1/#Mid	2540	-2.13	4.55	27.76	21.08	128.233	Vertical	Pass
Band 16		2595	-1.97	4.69	27.72	21.06	127.644	Vertical	Pass
QAM		2650	-2.04	4.72	27.70	20.94	124.165	Vertical	Pass
15.0MHz	1/#Mid	2542.5	-3.14	4.55	27.77	20.08	101.859	Vertical	Pass
Band 16		2595	-2.87	4.69	27.72	20.16	103.753	Vertical	Pass
QAM		2647.5	-3.50	4.72	27.69	19.47	88.512	Vertical	Pass
20.0MHz	1/#Mid	2545	-3.40	4.57	27.78	19.81	95.719	Vertical	Pass
Band 16		2595	-2.65	4.73	27.72	20.34	108.143	Vertical	Pass
QAM		2645	-3.18	4.75	27.68	19.75	94.406	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

8.8 LTE BAND 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	Polarization Of Max. ERP	
							Average		
							(mW)		
1.4MHz Band QPSK	1/##Mid	1710.7	-3.62	3.76	28.24	20.86	121.899	Horizontal	Pass
		1745	-3.48	3.91	28.22	20.83	121.060	Horizontal	Pass
		1779.3	-3.35	3.93	28.2	20.92	123.595	Horizontal	Pass
3.0MHz Band QPSK	1/##Mid	1711.5	-3.68	3.77	28.23	20.78	119.674	Horizontal	Pass
		1745	-3.59	3.91	28.24	20.74	118.577	Horizontal	Pass
		1778.5	-3.61	3.94	28.25	20.70	117.490	Horizontal	Pass
5.0MHz Band QPSK	1/##Mid	1712.5	-3.58	3.77	28.31	20.96	124.738	Horizontal	Pass
		1745	-3.26	3.91	28.22	21.05	127.350	Horizontal	Pass
		1777.5	-3.32	3.94	28.2	20.94	124.165	Horizontal	Pass
10.0MHz Band QPSK	1/##Mid	1715	-3.47	3.79	28.33	21.07	127.938	Horizontal	Pass
		1745	-3.20	3.95	28.22	21.07	127.938	Horizontal	Pass
		1775	-3.21	3.97	28.19	21.01	126.183	Horizontal	Pass
15.0MHz Band QPSK	1/##Mid	1717.5	-3.49	3.79	28.34	21.06	127.644	Horizontal	Pass
		1745	-3.30	3.95	28.22	20.97	125.026	Horizontal	Pass
		1772.5	-3.25	3.97	28.18	20.96	124.738	Horizontal	Pass
20.0MHz Band QPSK	1/##Mid	1720	-3.46	3.81	28.35	21.08	128.233	Horizontal	Pass
		1745	-3.20	3.96	28.22	21.06	127.644	Horizontal	Pass
		1770	-3.22	4	28.16	20.94	124.165	Horizontal	Pass
1.4MHz Band QPSK	1/##Mid	1710.7	-4.88	3.76	28.24	19.60	91.201	Vertical	Pass
		1745	-4.63	3.91	28.22	19.68	92.897	Vertical	Pass
		1779.3	-4.59	3.93	28.2	19.68	92.897	Vertical	Pass
3.0MHz Band QPSK	1/##Mid	1711.5	-4.69	3.77	28.23	19.77	94.842	Vertical	Pass
		1745	-3.99	3.91	28.24	20.34	108.143	Vertical	Pass
		1778.5	-4.36	3.94	28.25	19.95	98.855	Vertical	Pass
5.0MHz Band QPSK	1/##Mid	1712.5	-4.80	3.77	28.31	19.74	94.189	Vertical	Pass
		1745	-4.21	3.91	28.22	20.10	102.329	Vertical	Pass
		1777.5	-4.27	3.94	28.2	19.99	99.770	Vertical	Pass
10.0MHz	1/##Mid	1715	-4.62	3.79	28.34	19.93	98.401	Vertical	Pass

Band QPSK		1745	-4.22	3.95	28.22	20.05	101.158	Vertical	Pass
		1775	-3.91	3.97	28.18	20.30	107.152	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-4.38	3.81	28.35	20.16	103.753	Vertical	Pass
		1745	-4.85	3.96	28.22	19.41	87.297	Vertical	Pass
		1772.5	-4.58	4	28.16	19.58	90.782	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	1720	-4.87	3.79	28.34	19.68	92.897	Vertical	Pass
		1745	-4.08	3.95	28.22	20.19	104.472	Vertical	Pass
		1770	-4.82	3.97	28.18	19.39	86.896	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	Polarization Of Max. ERP	
							Average		
							(mW)		
1.4MHz Band 16 QAM	1/#Mid	1710.7	-4.59	3.76	28.24	19.89	97.499	Horizontal	Pass
		1745	-4.20	3.91	28.22	20.11	102.565	Horizontal	Pass
		1779.3	-4.38	3.93	28.2	19.89	97.499	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-4.98	3.77	28.23	19.48	88.716	Horizontal	Pass
		1745	-4.23	3.91	28.24	20.10	102.329	Horizontal	Pass
		1778.5	-4.52	3.94	28.25	19.79	95.280	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-4.40	3.77	28.31	20.14	103.276	Horizontal	Pass
		1745	-4.46	3.91	28.22	19.85	96.605	Horizontal	Pass
		1777.5	-4.13	3.94	28.2	20.13	103.039	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-4.45	3.79	28.33	20.09	102.094	Horizontal	Pass
		1745	-4.11	3.95	28.22	20.16	103.753	Horizontal	Pass
		1775	-4.43	3.97	28.19	19.79	95.280	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-4.44	3.79	28.34	20.11	102.565	Horizontal	Pass
		1745	-4.26	3.95	28.22	20.01	100.231	Horizontal	Pass
		1772.5	-4.05	3.97	28.18	20.16	103.753	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-4.27	3.81	28.35	20.27	106.414	Horizontal	Pass
		1745	-4.05	3.96	28.22	20.21	104.954	Horizontal	Pass
		1770	-3.99	4	28.16	20.17	103.992	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	-4.67	3.76	28.24	19.81	95.719	Vertical	Pass
		1745	-6.02	3.91	28.22	18.29	67.453	Vertical	Pass
		1779.3	-4.42	3.93	28.2	19.85	96.605	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-6.06	3.77	28.23	18.40	69.183	Vertical	Pass
		1745	-4.51	3.91	28.24	19.82	95.940	Vertical	Pass
		1778.5	-6.11	3.94	28.25	18.20	66.069	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-5.80	3.77	28.31	18.74	74.817	Vertical	Pass
		1745	-5.98	3.91	28.22	18.33	68.077	Vertical	Pass
		1777.5	-5.67	3.94	28.2	18.59	72.277	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-4.46	3.79	28.34	20.09	102.094	Vertical	Pass
		1745	-4.92	3.95	28.22	19.35	86.099	Vertical	Pass
		1775	-5.97	3.97	28.18	18.24	66.681	Vertical	Pass
15.0MHz	1/#Mid	1717.5	-6.31	3.81	28.35	18.23	66.527	Vertical	Pass

Band 16 QAM		1745	-4.30	3.96	28.22	19.96	99.083	Vertical	Pass
		1772.5	-4.59	4	28.16	19.57	90.573	Vertical	Pass
20.0MHz	1/#Mid	1720	-6.00	3.79	28.34	18.55	71.614	Vertical	Pass
Band 16		1745	-5.37	3.95	28.22	18.90	77.625	Vertical	Pass
QAM		1770	-4.28	3.97	28.18	19.93	98.401	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

LIMIT

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

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

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

TEST PROCEDURE

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

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

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

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

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

MODES TESTED

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

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	-45.71	4.04	33.51	-16.24	-13	-3.24	Horizontal
3701.4	-46.93	4.04	33.51	-17.46	-13	-4.46	Vertical
5552.1	-51.58	5.24	35.84	-20.98	-13	-7.98	Vertical
5552.1	-52.92	5.24	35.84	-22.32	-13	-9.32	Horizontal
202.4	-39.10	1.43	16.02	-24.51	-13	-11.51	Vertical
282.2	-38.43	1.30	17.99	-21.74	-13	-8.74	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-47.45	4.04	33.56	-17.93	-13	-4.93	Horizontal
3760.0	-53.82	4.04	33.56	-24.30	-13	-11.30	Vertical
5640.0	-53.92	5.24	35.91	-23.25	-13	-10.25	Vertical
5640.0	-53.05	5.24	35.91	-22.38	-13	-9.38	Horizontal
186.6	-38.44	1.62	16.97	-23.09	-13	-10.09	Vertical
320.6	-34.70	1.74	15.98	-20.47	-13	-7.47	Horizontal
Test Results for High Channel 1909.3MHz							
3818.6	-52.34	4.04	34.00	-22.38	-13	-9.38	Horizontal
3818.6	-50.24	4.04	34.00	-20.28	-13	-7.28	Vertical
5727.9	-49.66	5.24	36.04	-18.86	-13	-5.86	Vertical
5727.9	-52.19	5.24	36.04	-21.39	-13	-8.39	Horizontal
181.7	-41.42	1.42	17.29	-25.55	-13	-12.55	Vertical
437.5	-35.79	1.50	17.90	-19.38	-13	-6.38	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	-50.03	4.07	33.54	-20.56	-13	-7.56	Horizontal
3720.0	-44.13	4.07	33.54	-14.66	-13	-1.66	Vertical
5580.0	-48.10	5.28	35.86	-17.52	-13	-4.52	Vertical
5580.0	-50.12	5.28	35.86	-19.54	-13	-6.54	Horizontal
208.4	-34.19	1.58	16.89	-18.87	-13	-5.87	Vertical
235.9	-36.60	1.76	17.26	-21.10	-13	-8.10	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-44.71	4.04	33.56	-15.19	-13	-2.19	Horizontal
3760.0	-47.79	4.04	33.56	-18.27	-13	-5.27	Vertical
5640.0	-44.31	5.24	35.91	-13.64	-13	-0.64	Vertical
5640.0	-50.78	5.24	35.91	-20.11	-13	-7.11	Horizontal
178.9	-42.28	1.46	16.27	-27.47	-13	-14.47	Vertical
347.2	-43.08	1.59	15.15	-29.52	-13	-16.52	Horizontal
Test Results for High Channel 1900MHz							
3800.0	-47.44	4.04	34.00	-17.48	-13	-4.48	Horizontal
3800.0	-51.35	4.04	34.00	-21.39	-13	-8.39	Vertical
5700.0	-48.85	5.24	36.04	-18.05	-13	-5.05	Vertical
5700.0	-51.57	5.24	36.04	-20.77	-13	-7.77	Horizontal
206.7	-41.77	1.36	17.39	-25.73	-13	-12.73	Vertical
235.8	-34.57	1.66	15.39	-20.84	-13	-7.84	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 Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3421.4	-48.88	4.02	29.80	-23.10	-13	-10.10	Horizontal
3421.4	-47.52	4.02	29.80	-21.74	-13	-8.74	Vertical
5132.1	-51.85	5.24	35.84	-21.25	-13	-8.25	Vertical
5132.1	-49.37	5.24	35.84	-18.77	-13	-5.77	Horizontal
199.3	-43.31	1.68	16.04	-28.95	-13	-15.95	Vertical
435.0	-44.15	1.78	17.74	-28.19	-13	-15.19	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-50.90	4.03	30.00	-24.93	-13	-11.93	Horizontal
3465.0	-53.55	4.03	30.00	-27.58	-13	-14.58	Vertical
5197.5	-53.69	5.25	35.86	-23.08	-13	-10.08	Vertical
5197.5	-52.18	5.25	35.86	-21.57	-13	-8.57	Horizontal
188.5	-39.12	1.72	17.69	-23.15	-13	-10.15	Vertical
409.2	-37.50	1.62	16.02	-23.09	-13	-10.09	Horizontal
Test Results for High Channel 1754.3MHz							
3508.6	-51.76	4.05	30.01	-25.80	-13	-12.80	Horizontal
3508.6	-49.44	4.05	30.01	-23.48	-13	-10.48	Vertical
5262.9	-49.67	5.26	35.86	-19.07	-13	-6.07	Vertical
5262.9	-49.21	5.26	35.86	-18.61	-13	-5.61	Horizontal
194.5	-35.42	1.80	16.69	-20.53	-13	-7.53	Vertical
455.7	-35.41	1.75	16.66	-20.51	-13	-7.51	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	-45.39	4.02	29.80	-19.61	-13	-6.61	Horizontal
3440.0	-51.36	4.02	29.80	-25.58	-13	-12.58	Vertical
5160.0	-53.60	5.24	35.84	-23.00	-13	-10.00	Vertical
5160.0	-51.99	5.24	35.84	-21.39	-13	-8.39	Horizontal
179.4	-40.39	1.57	17.26	-24.70	-13	-11.70	Vertical
339.7	-35.55	1.78	16.35	-20.98	-13	-7.98	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-51.67	4.03	30.00	-25.70	-13	-12.70	Horizontal
3465.0	-47.76	4.03	30.00	-21.79	-13	-8.79	Vertical
5197.5	-49.19	5.25	35.86	-18.58	-13	-5.58	Vertical
5197.5	-52.99	5.25	35.86	-22.38	-13	-9.38	Horizontal
202.4	-38.39	1.44	17.95	-21.88	-13	-8.88	Vertical
328.6	-38.66	1.65	16.09	-24.22	-13	-11.22	Horizontal
Test Results for High Channel 1745MHz							
3490.0	-52.19	2.91	27.68	-27.42	-13	-14.42	Horizontal
3490.0	-50.54	2.91	27.68	-25.77	-13	-12.77	Vertical
5235.0	-52.40	5.26	35.86	-21.80	-13	-8.80	Vertical
5235.0	-52.51	5.26	35.86	-21.91	-13	-8.91	Horizontal
198.4	-34.15	1.61	16.85	-18.91	-13	-5.91	Vertical
455.4	-43.07	1.61	15.19	-29.49	-13	-16.49	Horizontal

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

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

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

9.3 LTE BAND 5

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

Test Results for Low Channel 824.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1649.4	-53.91	2.78	27.50	-29.19	-13	-16.19	Horizontal
1649.4	-44.46	2.78	27.50	-19.74	-13	-6.74	Vertical
2474.1	-50.93	2.90	27.80	-26.03	-13	-13.03	Vertical
2474.1	-50.90	2.90	27.80	-26.00	-13	-13.00	Horizontal
196.2	-36.25	1.76	17.59	-20.42	-13	-7.42	Vertical
283.6	-42.26	1.63	15.87	-28.02	-13	-15.02	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-53.62	2.80	27.48	-28.94	-13	-15.94	Horizontal
1673.0	-45.72	2.80	27.48	-21.04	-13	-8.04	Vertical
2509.5	-53.79	2.91	27.70	-29.00	-13	-16.00	Vertical
2509.5	-52.48	2.91	27.70	-27.69	-13	-14.69	Horizontal
178.8	-44.81	1.61	15.68	-30.74	-13	-17.74	Vertical
323.9	-40.25	1.59	17.52	-24.33	-13	-11.33	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-44.75	2.82	27.43	-20.14	-13	-7.14	Horizontal
1696.6	-49.46	2.82	27.43	-24.85	-13	-11.85	Vertical
2544.9	-44.37	2.92	27.74	-19.55	-13	-6.55	Vertical
2544.9	-52.62	2.92	27.74	-27.80	-13	-14.80	Horizontal
191.0	-44.09	1.69	16.67	-29.10	-13	-16.10	Vertical
444.3	-34.48	1.70	17.18	-19.00	-13	-6.00	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	-49.48	2.78	27.50	-24.76	-13	-11.76	Horizontal
1658.0	-50.33	2.78	27.50	-25.61	-13	-12.61	Vertical
2487.0	-50.81	2.90	27.80	-25.91	-13	-12.91	Vertical
2487.0	-50.28	2.90	27.80	-25.38	-13	-12.38	Horizontal
177.6	-34.42	1.71	15.57	-20.56	-13	-7.56	Vertical
269.8	-42.30	1.34	16.40	-27.24	-13	-14.24	Horizontal
Test Results for Mid Channel 836.5MHz							
1673.0	-50.87	2.80	27.48	-26.19	-13	-13.19	Horizontal
1673.0	-50.65	2.80	27.48	-25.97	-13	-12.97	Vertical
2509.5	-44.75	2.91	27.70	-19.96	-13	-6.96	Vertical
2509.5	-51.75	2.91	27.70	-26.96	-13	-13.96	Horizontal
199.9	-43.61	1.44	17.04	-28.01	-13	-15.01	Vertical
347.3	-44.31	1.76	17.62	-28.45	-13	-15.45	Horizontal
Test Results for High Channel 844MHz							
1688.0	-46.34	2.82	27.43	-21.73	-13	-8.73	Horizontal
1688.0	-51.35	2.82	27.43	-26.74	-13	-13.74	Vertical
2532.0	-52.55	2.92	27.74	-27.73	-13	-14.73	Vertical
2532.0	-53.71	2.92	27.74	-28.89	-13	-15.89	Horizontal
187.8	-35.53	1.74	17.70	-19.57	-13	-6.57	Vertical
255.8	-44.51	1.41	17.46	-28.45	-13	-15.45	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.

9.4 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	-45.21	2.60	27.20	-20.61	-13	-7.61	Horizontal
1399.4	-47.70	2.60	27.20	-23.10	-13	-10.10	Vertical
2099.1	-44.11	2.85	27.54	-19.42	-13	-6.42	Vertical
2099.1	-52.83	2.85	27.54	-28.14	-13	-15.14	Horizontal
195.5	-37.65	1.49	17.78	-21.36	-13	-8.36	Vertical
355.7	-36.57	1.36	17.33	-20.60	-13	-7.60	Horizontal
Test Results For Mid Channel 707.5MHz							
1415.0	-51.59	2.61	27.28	-26.92	-13	-13.92	Horizontal
1415.0	-51.96	2.61	27.28	-27.29	-13	-14.29	Vertical
2122.5	-50.69	2.87	27.59	-25.97	-13	-12.97	Vertical
2122.5	-52.49	2.87	27.59	-27.77	-13	-14.77	Horizontal
213.0	-44.05	1.73	15.74	-30.04	-13	-17.04	Vertical
390.5	-43.26	1.62	15.79	-29.09	-13	-16.09	Horizontal
Test Results for High Channel 715.3MHz							
1430.6	-46.30	2.63	27.28	-21.65	-13	-8.65	Horizontal
1430.6	-46.77	2.63	27.28	-22.12	-13	-9.12	Vertical
2145.9	-46.51	2.88	27.60	-21.79	-13	-8.79	Vertical
2145.9	-53.46	2.88	27.60	-28.74	-13	-15.74	Horizontal
205.1	-34.27	1.61	18.00	-17.88	-13	-4.88	Vertical
408.0	-39.44	1.45	15.49	-25.41	-13	-12.41	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	-45.67	2.61	27.26	-21.02	-13	-8.02	Horizontal
1408.0	-51.84	2.61	27.26	-27.19	-13	-14.19	Vertical
2112.0	-46.75	2.87	27.58	-22.04	-13	-9.04	Vertical
2112.0	-52.83	2.87	27.58	-28.12	-13	-15.12	Horizontal
187.1	-41.35	1.31	16.97	-25.69	-13	-12.69	Vertical
288.7	-44.62	1.65	16.70	-29.57	-13	-16.57	Horizontal
Test Results for Mid Channel 707.5MHz							
1415.0	-48.46	2.61	27.28	-23.79	-13	-10.79	Horizontal
1415.0	-45.37	2.61	27.28	-20.70	-13	-7.70	Vertical
2122.5	-44.97	2.87	27.59	-20.25	-13	-7.25	Vertical
2122.5	-50.85	2.87	27.59	-26.13	-13	-13.13	Horizontal
207.0	-34.55	1.72	17.99	-18.28	-13	-5.28	Vertical
428.8	-42.97	1.73	17.94	-26.76	-13	-13.76	Horizontal
Test Results for High Channel 711MHz							
1422.0	-51.13	2.62	27.28	-26.47	-13	-13.47	Horizontal
1422.0	-53.19	2.62	27.28	-28.53	-13	-15.53	Vertical
2133.0	-53.49	2.87	27.60	-28.76	-13	-15.76	Vertical
2133.0	-49.23	2.87	27.60	-24.50	-13	-11.50	Horizontal
194.6	-42.79	1.58	15.93	-28.44	-13	-15.44	Vertical
368.5	-35.75	1.36	15.59	-21.52	-13	-8.52	Horizontal

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

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

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

9.5 LTE BAND 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	-51.26	2.61	27.28	-26.59	-13	-13.59	Horizontal
1413.0	-52.62	2.61	27.28	-27.95	-13	-14.95	Vertical
2119.5	-50.40	2.87	27.59	-25.68	-13	-12.68	Vertical
2119.5	-51.55	2.87	27.59	-26.83	-13	-13.83	Horizontal
178.6	-35.08	1.71	16.15	-20.64	-13	-7.64	Vertical
453.0	-36.02	1.41	17.32	-20.11	-13	-7.11	Horizontal
Test Results For Mid Channel 710MHz							
1420.0	-46.42	2.62	27.30	-21.74	-13	-8.74	Horizontal
1420.0	-47.70	2.62	27.30	-23.02	-13	-10.02	Vertical
2130.0	-48.66	2.87	27.62	-23.91	-13	-10.91	Vertical
2130.0	-53.73	2.87	27.62	-28.98	-13	-15.98	Horizontal
195.4	-37.05	1.42	15.25	-23.23	-13	-10.23	Vertical
349.6	-43.21	1.36	17.19	-27.38	-13	-14.38	Horizontal
Test Results for High Channel 713.5MHz							
1427.0	-48.54	2.66	27.28	-23.92	-13	-10.92	Horizontal
1427.0	-53.78	2.66	27.28	-29.16	-13	-16.16	Vertical
2140.5	-49.09	2.88	27.60	-24.37	-13	-11.37	Vertical
2140.5	-53.12	2.88	27.60	-28.40	-13	-15.40	Horizontal
192.7	-39.03	1.32	17.29	-23.06	-13	-10.06	Vertical
450.9	-40.41	1.72	16.89	-25.24	-13	-12.24	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	-47.23	2.62	27.30	-22.55	-13	-9.55	Horizontal
1418.0	-46.53	2.62	27.30	-21.85	-13	-8.85	Vertical
2127.0	-50.59	2.87	27.62	-25.84	-13	-12.84	Vertical
2127.0	-51.15	2.87	27.62	-26.40	-13	-13.40	Horizontal
176.9	-42.85	1.35	16.91	-27.29	-13	-14.29	Vertical
236.9	-36.82	1.62	16.31	-22.13	-13	-9.13	Horizontal
Test Results for Mid Channel 710MHz							
1420.0	-51.69	2.62	27.30	-27.01	-13	-14.01	Horizontal
1420.0	-45.59	2.62	27.30	-20.91	-13	-7.91	Vertical
2130.0	-53.77	2.87	27.62	-29.02	-13	-16.02	Vertical
2130.0	-53.38	2.87	27.62	-28.63	-13	-15.63	Horizontal
178.2	-44.40	1.51	17.14	-28.77	-13	-15.77	Vertical
326.4	-44.90	1.77	16.88	-29.79	-13	-16.79	Horizontal
Test Results for High Channel 711MHz							
1422.0	-51.24	2.62	27.30	-26.56	-13	-13.56	Horizontal
1422.0	-44.14	2.62	27.30	-19.46	-13	-6.46	Vertical
2133.0	-52.33	2.87	27.62	-27.58	-13	-14.58	Vertical
2133.0	-52.77	2.87	27.62	-28.02	-13	-15.02	Horizontal
188.9	-41.62	1.78	15.95	-27.45	-13	-14.45	Vertical
263.5	-42.19	1.34	17.95	-25.59	-13	-12.59	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 41

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

Test Results for Low Channel 2537.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5075.0	-60.85	5.23	35.81	-30.27	-25	-5.27	Horizontal
5075.0	-62.43	5.23	35.81	-31.85	-25	-6.85	Vertical
7612.5	-62.22	5.67	36.85	-31.04	-25	-6.04	Vertical
7612.5	-64.32	5.67	36.85	-33.14	-25	-8.14	Horizontal
435.3	-49.31	1.38	15.98	-34.71	-25	-9.71	Vertical
465.8	-45.03	1.62	15.66	-30.99	-25	-5.99	Horizontal
Test Results for Mid Channel 2595MHz							
5190.0	-60.06	5.23	35.82	-29.47	-25	-4.47	Horizontal
5190.0	-63.02	5.23	35.82	-32.43	-25	-7.43	Vertical
7785.0	-59.79	5.67	36.85	-28.61	-25	-3.61	Vertical
7785.0	-59.73	5.67	36.85	-28.55	-25	-3.55	Horizontal
510.4	-46.11	1.62	16.17	-31.56	-25	-6.56	Vertical
562.9	-45.19	1.74	17.63	-29.30	-25	-4.30	Horizontal
Test Results for High Channel 2652.5MHz							
5305.0	-60.18	5.24	35.83	-29.59	-25	-4.59	Horizontal
5305.0	-62.54	5.24	35.83	-31.95	-25	-6.95	Vertical
7957.5	-59.64	5.68	36.87	-28.45	-25	-3.45	Vertical
7957.5	-59.53	5.68	36.87	-28.34	-25	-3.34	Horizontal
197.6	-47.61	1.55	15.84	-33.32	-25	-8.32	Vertical
353.1	-45.97	1.51	17.06	-30.42	-25	-5.42	Horizontal

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

Test Results for Low Channel 2545MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5090.0	-64.77	5.23	35.82	-34.18	-25	-9.18	Horizontal
5090.0	-63.92	5.23	35.82	-33.33	-25	-8.33	Vertical
7635.0	-62.35	5.67	36.86	-31.16	-25	-6.16	Vertical
7635.0	-59.23	5.67	36.86	-28.04	-25	-3.04	Horizontal
128.9	-48.99	1.43	15.51	-34.91	-25	-9.91	Vertical
344.8	-46.52	1.40	16.97	-30.95	-25	-5.95	Horizontal
Test Results for Mid Channel 2595MHz							
5190.0	-62.96	5.23	35.82	-32.37	-25	-7.37	Horizontal
5190.0	-62.62	5.23	35.82	-32.03	-25	-7.03	Vertical
7785.0	-64.54	5.67	36.85	-33.36	-25	-8.36	Vertical
7785.0	-60.66	5.67	36.85	-29.48	-25	-4.48	Horizontal
100.8	-44.37	1.77	16.72	-29.42	-25	-4.42	Vertical
263.5	-45.09	1.31	16.99	-29.41	-25	-4.41	Horizontal
Test Results for High Channel 2645MHz							
5290.0	-63.09	5.24	35.83	-32.50	-25	-7.50	Horizontal
5290.0	-59.95	5.24	35.83	-29.36	-25	-4.36	Vertical
7935.0	-63.97	5.70	36.88	-32.79	-25	-7.79	Vertical
7935.0	-64.12	5.70	36.88	-32.94	-25	-7.94	Horizontal
349.9	-46.56	1.70	15.73	-32.53	-25	-7.53	Vertical
110.3	-45.53	1.75	17.33	-29.95	-25	-4.95	Horizontal

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

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

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

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

9.7 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	-54.76	4.02	29.80	-28.98	-13	-15.98	Horizontal
3421.4	-45.42	4.02	29.80	-19.64	-13	-6.64	Vertical
5132.1	-50.84	5.24	35.84	-20.24	-13	-7.24	Vertical
5132.1	-48.93	5.24	35.84	-18.33	-13	-5.33	Horizontal
112.6	-45.75	1.52	15.57	-31.70	-13	-18.70	Vertical
220.5	-46.99	1.33	17.14	-31.18	-13	-18.18	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-53.69	4.03	30.00	-27.72	-13	-14.72	Horizontal
3490.0	-45.19	4.03	30.00	-19.22	-13	-6.22	Vertical
5235.0	-51.89	5.25	35.86	-21.28	-13	-8.28	Vertical
5235.0	-54.46	5.25	35.86	-23.85	-13	-10.85	Horizontal
157.3	-49.69	1.53	17.13	-34.09	-13	-21.09	Vertical
213.1	-45.53	1.41	15.95	-30.99	-13	-17.99	Horizontal
Test Results for High Channel 1779.3MHz							
3558.6	-50.48	4.05	30.01	-24.52	-13	-11.52	Horizontal
3558.6	-47.05	4.05	30.01	-21.09	-13	-8.09	Vertical
5337.9	-50.32	5.26	35.86	-19.72	-13	-6.72	Vertical
5337.9	-51.74	5.26	35.86	-21.14	-13	-8.14	Horizontal
170.6	-48.07	1.44	15.51	-34.00	-13	-21.00	Vertical
169.0	-53.92	1.78	15.76	-39.94	-13	-26.94	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	-46.71	4.02	29.80	-20.93	-13	-7.93	Horizontal
3440.0	-46.64	4.02	29.80	-20.86	-13	-7.86	Vertical
5160.0	-52.68	5.24	35.84	-22.08	-13	-9.08	Vertical
5160.0	-49.29	5.24	35.84	-18.69	-13	-5.69	Horizontal
268.8	-53.44	1.62	17.02	-38.04	-13	-25.04	Vertical
161.4	-54.02	1.32	17.31	-38.03	-13	-25.03	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-54.40	4.03	30.00	-28.43	-13	-15.43	Horizontal
3490.0	-46.38	4.03	30.00	-20.41	-13	-7.41	Vertical
5235.0	-51.24	5.25	35.86	-20.63	-13	-7.63	Vertical
5235.0	-47.20	5.25	35.86	-16.59	-13	-3.59	Horizontal
159.9	-45.07	1.45	15.17	-31.35	-13	-18.35	Vertical
172.1	-48.80	1.48	17.82	-32.46	-13	-19.46	Horizontal
Test Results for High Channel 1770MHz							
3540.0	-49.75	2.91	27.68	-24.98	-13	-11.98	Horizontal
3540.0	-50.30	2.91	27.68	-25.53	-13	-12.53	Vertical
5310.0	-51.67	5.26	35.86	-21.07	-13	-8.07	Vertical
5310.0	-50.99	5.26	35.86	-20.39	-13	-7.39	Horizontal
197.3	-45.88	1.76	16.38	-31.26	-13	-18.26	Vertical
158.5	-48.05	1.43	17.13	-32.35	-13	-19.35	Horizontal

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

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

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

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

10. FREQUENCY STABILITY

RULE PART(S)

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

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 6.58V, Normal, DC 7.74V and High voltage, DC 8.90V.

Frequency Stability vs Temperature:

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

Frequency Stability vs Voltage:

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

MODES TESTED

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

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]
6.58	1880	12.4	0.006612	2.5
7.74	1880	13.5	0.007164	2.5
8.90	1880	13.6	0.007241	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	12.5	0.006668	2.5
Extreme (50C)	1880	11.8	0.006276	2.5
Extreme (40C)	1880	14.2	0.007536	2.5
Extreme (30C)	1880	13.9	0.007388	2.5
Extreme (10C)	1880	13.8	0.007364	2.5
Extreme (0C)	1880	11.9	0.006341	2.5
Extreme (-10C)	1880	13.2	0.007045	2.5
Extreme (-20C)	1880	13.7	0.007282	2.5
Extreme (-30C)	1880	15.0	0.007961	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]
6.58	1880	9.4	0.004999	2.5
7.74	1880	9.4	0.004993	2.5
8.90	1880	8.0	0.004235	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	9.3	0.004949	2.5
Extreme (50C)	1880	8.6	0.004592	2.5
Extreme (40C)	1880	8.0	0.004267	2.5
Extreme (30C)	1880	9.3	0.004962	2.5
Extreme (10C)	1880	8.5	0.004541	2.5
Extreme (0C)	1880	7.7	0.004096	2.5
Extreme (-10C)	1880	8.7	0.004649	2.5
Extreme (-20C)	1880	8.8	0.004691	2.5
Extreme (-30C)	1880	8.2	0.004351	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]
6.58	1732.5	9.1	0.005270	2.5
7.74	1732.5	9.3	0.005384	2.5
8.90	1732.5	8.1	0.004678	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	8.1	0.004684	2.5
Extreme (50C)	1732.5	9.2	0.005333	2.5
Extreme (40C)	1732.5	7.7	0.004443	2.5
Extreme (30C)	1732.5	6.3	0.003642	2.5
Extreme (10C)	1732.5	6.8	0.003942	2.5
Extreme (0C)	1732.5	9.8	0.005685	2.5
Extreme (-10C)	1732.5	8.7	0.005028	2.5
Extreme (-20C)	1732.5	6.6	0.003826	2.5
Extreme (-30C)	1732.5	8.5	0.004902	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]
6.58	1732.5	9.4	0.005404	2.5
7.74	1732.5	9.3	0.005375	2.5
8.90	1732.5	8.2	0.004706	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	9.6	0.005531	2.5
Extreme (50C)	1732.5	9.1	0.005281	2.5
Extreme (40C)	1732.5	7.7	0.004468	2.5
Extreme (30C)	1732.5	9.1	0.005239	2.5
Extreme (10C)	1732.5	9.0	0.005198	2.5
Extreme (0C)	1732.5	7.8	0.004503	2.5
Extreme (-10C)	1732.5	8.8	0.005052	2.5
Extreme (-20C)	1732.5	8.7	0.005050	2.5
Extreme (-30C)	1732.5	8.0	0.004635	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]
6.58	836.5	5.4	0.006486	2.5
7.74	836.5	7.0	0.008411	2.5
8.90	836.5	4.4	0.005247	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	5.6	0.006730	2.5
Extreme (50C)	836.5	5.9	0.007042	2.5
Extreme (40C)	836.5	6.1	0.007262	2.5
Extreme (30C)	836.5	6.5	0.007741	2.5
Extreme (10C)	836.5	5.6	0.006663	2.5
Extreme (0C)	836.5	5.8	0.006876	2.5
Extreme (-10C)	836.5	5.7	0.006853	2.5
Extreme (-20C)	836.5	5.9	0.007011	2.5
Extreme (-30C)	836.5	5.8	0.006960	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]
6.58	836.5	5.5	0.006574	2.5
7.74	836.5	6.4	0.007662	2.5
8.90	836.5	4.6	0.005481	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	5.9	0.007031	2.5
Extreme (50C)	836.5	5.6	0.006645	2.5
Extreme (40C)	836.5	5.7	0.006765	2.5
Extreme (30C)	836.5	6.6	0.007852	2.5
Extreme (10C)	836.5	5.5	0.006614	2.5
Extreme (0C)	836.5	5.6	0.006719	2.5
Extreme (-10C)	836.5	5.9	0.007014	2.5
Extreme (-20C)	836.5	6.4	0.007606	2.5
Extreme (-30C)	836.5	6.6	0.007905	2.5

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

10.4 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]
6.58	707.5	9.0	0.012747	2.5
7.74	707.5	9.7	0.013748	2.5
8.90	707.5	8.7	0.012230	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	707.5	8.8	0.012462	2.5
Extreme (50C)	707.5	7.7	0.010888	2.5
Extreme (40C)	707.5	7.0	0.009894	2.5
Extreme (30C)	707.5	8.0	0.011251	2.5
Extreme (10C)	707.5	7.7	0.010954	2.5
Extreme (0C)	707.5	8.5	0.012045	2.5
Extreme (-10C)	707.5	8.9	0.012579	2.5
Extreme (-20C)	707.5	8.4	0.011879	2.5
Extreme (-30C)	707.5	7.5	0.010603	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]
6.58	707.5	7.7	0.010912	2.5
7.74	707.5	8.1	0.011483	2.5
8.90	707.5	7.2	0.010108	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.

10.5 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]
6.58	710.0	9.4	0.013188	2.5
7.74	710.0	8.8	0.012384	2.5
8.90	710.0	7.8	0.010955	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	9.7	0.013634	2.5
Extreme (50C)	710.0	9.1	0.012760	2.5
Extreme (40C)	710.0	7.6	0.010774	2.5
Extreme (30C)	710.0	8.6	0.012180	2.5
Extreme (10C)	710.0	9.1	0.012797	2.5
Extreme (0C)	710.0	8.1	0.011478	2.5
Extreme (-10C)	710.0	8.6	0.012117	2.5
Extreme (-20C)	710.0	8.6	0.012058	2.5
Extreme (-30C)	710.0	8.3	0.011752	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]
6.58	710.0	10.1	0.014219	2.5
7.74	710.0	8.7	0.012205	2.5
8.90	710.0	8.8	0.012417	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	9.6	0.013578	2.5
Extreme (50C)	710.0	9.3	0.013142	2.5
Extreme (40C)	710.0	8.7	0.012318	2.5
Extreme (30C)	710.0	8.7	0.012305	2.5
Extreme (10C)	710.0	8.5	0.011986	2.5
Extreme (0C)	710.0	7.9	0.011191	2.5
Extreme (-10C)	710.0	9.5	0.013358	2.5
Extreme (-20C)	710.0	9.1	0.012791	2.5
Extreme (-30C)	710.0	8.1	0.011390	2.5

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

10.6 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]
6.58	2595	8.1	0.003126	2.5
7.74	2595	6.3	0.002447	2.5
8.90	2595	7.9	0.003030	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2595	7.6	0.002948	2.5
Extreme (50C)	2595	5.0	0.001931	2.5
Extreme (40C)	2595	5.8	0.002222	2.5
Extreme (30C)	2595	4.7	0.001831	2.5
Extreme (10C)	2595	6.8	0.002626	2.5
Extreme (0C)	2595	4.6	0.001786	2.5
Extreme (-10C)	2595	9.2	0.003532	2.5
Extreme (-20C)	2595	10.4	0.004026	2.5
Extreme (-30C)	2595	6.1	0.002365	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]
6.58	2595	8.2	0.003178	2.5
7.74	2595	6.8	0.002638	2.5
8.90	2595	6.3	0.002438	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2595	7.1	0.002734	2.5
Extreme (50C)	2595	5.1	0.001979	2.5
Extreme (40C)	2595	5.9	0.002258	2.5
Extreme (30C)	2595	5.2	0.002011	2.5
Extreme (10C)	2595	6.8	0.002628	2.5
Extreme (0C)	2595	5.0	0.001921	2.5
Extreme (-10C)	2595	9.8	0.003792	2.5
Extreme (-20C)	2595	10.9	0.004190	2.5
Extreme (-30C)	2595	6.2	0.002410	2.5

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

10.7 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]
6.58	1745	12.4	0.00713	2.5
7.74	1745	13.9	0.00796	2.5
8.90	1745	13.3	0.00764	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1745	7.0	0.004016	2.5
Extreme (50C)	1745	4.5	0.002553	2.5
Extreme (40C)	1745	5.4	0.003079	2.5
Extreme (30C)	1745	4.8	0.002766	2.5
Extreme (10C)	1745	6.4	0.003670	2.5
Extreme (0C)	1745	5.3	0.003013	2.5
Extreme (-10C)	1745	9.3	0.005349	2.5
Extreme (-20C)	1745	10.7	0.006153	2.5
Extreme (-30C)	1745	6.1	0.003510	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]
6.58	1745	12.6	0.007201	2.5
7.74	1745	13.7	0.007834	2.5
8.90	1745	13.4	0.007681	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1745	7.9	0.004505	2.5
Extreme (50C)	1745	4.5	0.002555	2.5
Extreme (40C)	1745	5.5	0.003169	2.5
Extreme (30C)	1745	4.3	0.002488	2.5
Extreme (10C)	1745	6.4	0.003661	2.5
Extreme (0C)	1745	4.6	0.002661	2.5
Extreme (-10C)	1745	9.7	0.005571	2.5
Extreme (-20C)	1745	10.7	0.006108	2.5
Extreme (-30C)	1745	6.4	0.003653	2.5

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

11. Peak-to-Average Ratio

11.1 Description of the PAR Measurement

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

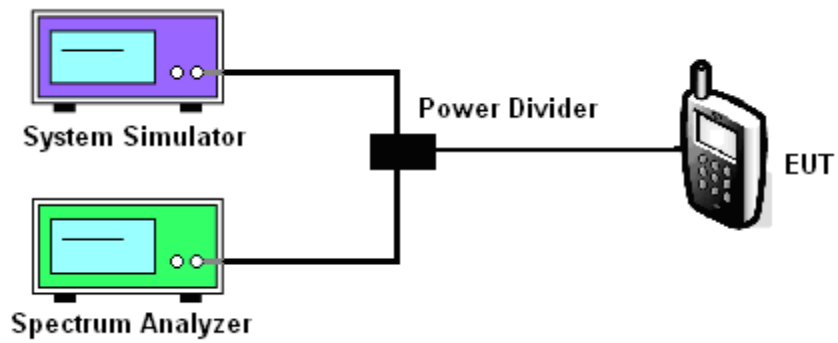
11.2 Measuring Instruments

See list of measuring instruments of this test report.

11.3 Test Procedures

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

11.4 Test Setup



MODES TESTED

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

Test data reference attachment.

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