

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

FCC ID:2AHZ5DURA

Product: Smartphone

Trade Mark: CUBOT

Model No.: KINGKONG Dura

Family Model: KINGKONG Dura 3, KINGKONG Dura Pro, A50, A60,
NOTE 70, NOTE 80, P100

Report No.: N26051506117E

Issue Date: Jul. 14, 2026

Prepared for

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TEST RESULT CERTIFICATION

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Longgang District, Shenzhen, P.R. China

Product name: Smartphone

Model and/or type reference: KINGKONG Dura

Trade Mark: CUBOT

Family Model: KINGKONG Dura 3, KINGKONG Dura Pro, A50, A60, NOTE 70,
NOTE 80, P100

Test Sample Number: S2605200330-1#

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 May. 15, 2026 ~ Jul. 14, 2026

Date of Issue Jul. 14, 2026

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:	Smartphone
Trade Mark	CUBOT
Model Name	KINGKONG Dura
Family Model	KINGKONG Dura 3, KINGKONG Dura Pro, A50, A60, NOTE 70, NOTE 80, P100
Model Difference	All models have the same circuit and RF module, except for model names and appearances.
FCC ID:	2AHZ5DURA
Frequency Bands:	U.S. Bands: ☒ LTE FDD Band 2, 4, 5, 7, 12, 17, 41
Frequency Range:	LTE FDD Band 2 Uplink: 1850MHz-1910MHz, Downlink: 1930MHz-1990MHz; LTE FDD Band 4 Uplink: 1710MHz-1755MHz, Downlink: 2110MHz-2155MHz; LTE FDD Band 5 Uplink: 824MHz-849MHz, Downlink: 869MHz-894MHz; LTE-FDD Band 7 Uplink: 2500MHz-2570MHz, Downlink: 2620MHz-2690MHz; LTE FDD Band 12 Uplink: 699MHz-716MHz, Downlink: 729MHz-746MHz; LTE FDD Band 17 Uplink: 704MHz-716MHz, Downlink: 734MHz-746MHz; LTE TDD Band 41 :Uplink & Downlink: 2535MHz-2655MHz
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 2:0.92 dBi, Band 4: 0.41 dBi, Band 5: -2.54 dBi, Band 7: -1.04 dBi, Band 12: -4.42 dBi, Band 17: -4.42 dBi, Band41:-1.04 dBi
Adapter	Model 1: HJ-PD18W-US Input: 100-240V~50/60Hz 0.6A Output: DC 5.0V---3.0A, 15.0W OR 9.0V--- 2.0A, 18.0W OR 12.0V---1.5A, 18.0W MAX Model 2: TPD-203A120167UF01 Input: 100-240V~50/60Hz 0.6A Output: DC 5.0V---3.0A OR 9.0V--- 2.2A OR 12.0V---1.67A
Battery	DC 3.87V, 4850mAh, 18.77Wh
Power supply	DC 3.87V from battery or DC 5V/9V/12V from adapter
Extreme Vol. Limits:	DC 3.29V to DC 4.45V (Nominal DC 3.87V) (Note 1)
HW Version	G2510T-UF-V1.1
SW Version	CUBOT_KINGKONG_Dura_G051_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.

1.2 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID:2AHZ5DURA** 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 Xinfa 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 expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

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

1.5 SPECIAL ACCESSORIES

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

1.6 WORST-CASE CONFIGURATION AND MODE

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

The device has LTE Bands of: Band 2/4/5/7/12/17/41

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	Smartphone	KINGKONG Dura	FCC ID: 2AHZ5DURA	EUT

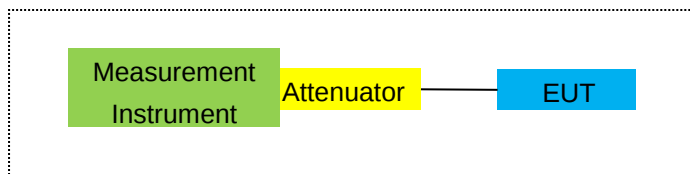
*Note: All the accessories have been used during the test.
the following "EUT" in setup diagram means EUT system.*

2.4 TEST SETUP

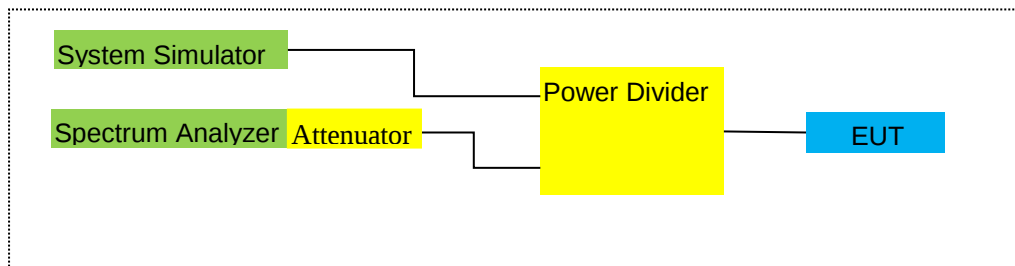
For Radiated Test Cases



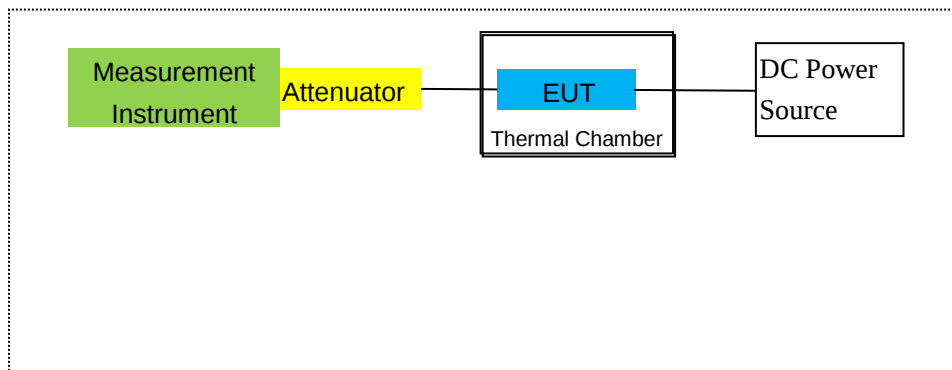
For Conducted Output Power



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	2026.04.08	2027.04.07	1 year
2	Test Receiver	R&S	ESPI3	101417	2025/7/23	2026/7/22	1 year
3	Bilog Antenna	ETS	3142E	00214344	2024/6/1	2027/5/30	3 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2024.04.26	2027.04.25	3 year
5	Horn Antenna	EM	EM-AH-10180	2011071402	2024.05.12	2027.05.11	3 year
6	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2024.05.12	2027.05.11	3 year
7	Amplifier	EM	EM-30180	060538	2026.04.08	2027.04.07	1 year
8	Loop Antenna	ARA	PLA-1030/B	1029	2026.04.08	2027.04.07	1 year
9	Power Meter	R&S	NRVS	100696	2026.04.08	2027.04.07	1 year
10	Power Sensor	R&S	URV5-Z4	0395.1619.05	2026.04.08	2027.04.07	1 year
11	Test Cable	N/A	R-01	N/A	2024.06.16	2027.06.15	3 year
12	Test Cable	N/A	R-02	N/A	2024.06.16	2027.06.15	3 year
13	Test Cable	N/A	R-03	N/A	2024.06.16	2027.06.15	3 year
14	Test Receiver	R&S	ESCI	101160	2026.04.08	2027.04.07	1 year
15	LISN	R&S	ENV216	101313	2026.04.08	2027.04.07	1 year
16	LISN	EMCO	3816/2	00042990	2026.04.08	2027.04.07	1 year
17	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2026.04.08	2027.04.07	1 year
18	Passive Voltage Probe	R&S	ESH2-Z3	100196	2026.04.08	2027.04.07	1 year
19	Test Cable	N/A	C01	N/A	2024.05.06	2027.05.05	3 year
20	Test Cable	N/A	C02	N/A	2024.05.06	2027.05.05	3 year
21	Test Cable	N/A	C03	N/A	2024.05.06	2027.05.05	3 year
22	Attenuator	MCE	24-10-34	BN9258	2026.04.08	2027.04.07	1 year
23	Spectrum Analyzer	agilent	e4440a	us44300399	2026.04.08	2027.04.07	1 year
24	test receiver	R&S	ESCI	a0304218	2026.04.08	2027.04.07	1 year
25	Communication Tester	R&S	CMU200	A0304247	2026.04.08	2027.04.07	1 year
26	Thermal Chamber	Ten Billion	TTC-B3C	TBN-960502	2026.04.08	2027.04.07	1 year

27	DC Power Source	N/A	PS-6005D	20170402923	2024.05.06	2027.05.05	3 year
28	MXG Vector Signal Generator	Agilent	N5182A	MY47070317	2026.04.08	2027.04.07	1 year
29	Communication Tester	R&S	CMW500	148500	2026.04.27	2027.04.26	1 year
30	Log-Periodic Antenna	SCHWARZBECK	VULB 9168	1742	2025/11/1	2026/10/31	1 year
31	Horn Antenna	SCHWARZBECK	BBHA 9120D	2816	2024.05.18	2027.05.17	3 year
32	PSG Analog Signal Generator	Agilent	E8257D	MY51110112	2026/4/27	2027/4/26	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
64 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".

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 2/4/5/7/12/17/41

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 2/4/5/7/12/17/41

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 2/4/5/7/12/17/41

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.

24.232 (c) Mobile and portable stations are limited to 2 watts EIRP.

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

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

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

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

TEST PROCEDURE

ANSI/TIA-603-E Clause 2.2.17

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

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

MODES TESTED

Band 2/4/5/7/12/17/41

RESULTS

Pass

8.2 LTE BAND 2

		Radiated Power (EIRP) for Band 2								
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP		
									Limit	
1.4MHz Band QPSK	1/#Mid	1850.7	-3.89	3.76	28.24	20.59	114.551	Horizontal	2	Pass
		1880	-3.70	3.91	28.22	20.61	115.080	Horizontal	2	Pass
		1909.3	-3.61	3.93	28.20	20.66	116.413	Horizontal	2	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-3.95	3.77	28.23	20.51	112.460	Horizontal	2	Pass
		1880	-3.80	3.91	28.24	20.53	112.980	Horizontal	2	Pass
		1908.5	-3.67	3.94	28.25	20.64	115.878	Horizontal	2	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-3.84	3.77	28.31	20.70	117.490	Horizontal	2	Pass
		1880	-3.46	3.91	28.22	20.85	121.619	Horizontal	2	Pass
		1907.5	-3.39	3.94	28.20	20.87	122.180	Horizontal	2	Pass
10.0MHz Band QPSK	1/#Mid	1855	-3.70	3.79	28.33	20.84	121.339	Horizontal	2	Pass
		1880	-3.40	3.95	28.22	20.87	122.180	Horizontal	2	Pass
		1905	-3.29	3.97	28.19	20.93	123.880	Horizontal	2	Pass
15.0MHz Band QPSK	1/#Mid	1857.5	-3.66	3.79	28.34	20.89	122.744	Horizontal	2	Pass
		1880	-3.45	3.95	28.22	20.82	120.781	Horizontal	2	Pass
		1902.5	-3.31	3.97	28.18	20.90	123.027	Horizontal	2	Pass
20.0MHz Band QPSK	1/#Mid	1860	-3.65	3.81	28.35	20.89	122.744	Horizontal	2	Pass
		1880	-3.32	3.96	28.22	20.94	124.165	Horizontal	2	Pass
		1900	-3.26	4.00	28.16	20.90	123.027	Horizontal	2	Pass
1.4MHz Band QPSK	1/#Mid	1850.7	-5.06	3.76	28.24	19.42	87.498	Vertical	2	Pass
		1880	-4.52	3.91	28.22	19.79	95.280	Vertical	2	Pass
		1909.3	-4.72	3.93	28.20	19.55	90.157	Vertical	2	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-4.24	3.77	28.23	20.22	105.196	Vertical	2	Pass
		1880	-4.30	3.91	28.24	20.03	100.693	Vertical	2	Pass
		1908.5	-4.78	3.94	28.25	19.53	89.743	Vertical	2	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-5.02	3.77	28.31	19.52	89.536	Vertical	2	Pass
		1880	-4.48	3.91	28.22	19.83	96.161	Vertical	2	Pass
		1907.5	-4.43	3.94	28.20	19.83	96.161	Vertical	2	Pass
10.0MHz Band QPSK	1/#Mid	1855	-5.18	3.79	28.33	19.36	86.298	Vertical	2	Pass
		1880	-4.22	3.95	28.22	20.05	101.158	Vertical	2	Pass
		1905	-4.06	3.97	28.19	20.16	103.753	Vertical	2	Pass
15.0MHz	1/#Mid	1857.5	-4.92	3.79	28.34	19.63	91.833	Vertical	2	Pass

Band QPSK		1880	-4.86	3.95	28.22	19.41	87.297	Vertical	2	Pass
		1902.5	-4.82	3.97	28.18	19.39	86.896	Vertical	2	Pass
20.0MHz	1/#Mid	1860	-4.26	3.81	28.35	20.28	106.660	Vertical	2	Pass
Band		1880	-4.78	3.96	28.22	19.48	88.716	Vertical	2	Pass
QPSK		1900	-4.67	4.00	28.16	19.49	88.920	Vertical	2	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		Limit	
							(mW)		(W)	
1.4MHz Band 16 QAM	1/##Mid	1850.7	-5.01	3.76	28.24	19.47	88.512	Horizontal	2	Pass
		1880	-4.48	3.91	28.22	19.83	96.161	Horizontal	2	Pass
		1909.3	-4.41	3.93	28.20	19.86	96.828	Horizontal	2	Pass
3.0MHz Band 16 QAM	1/##Mid	1851.5	-4.51	3.77	28.23	19.95	98.855	Horizontal	2	Pass
		1880	-4.59	3.91	28.24	19.74	94.189	Horizontal	2	Pass
		1908.5	-4.80	3.94	28.25	19.51	89.331	Horizontal	2	Pass
5.0MHz Band 16 QAM	1/##Mid	1852.5	-4.45	3.77	28.31	20.09	102.094	Horizontal	2	Pass
		1880	-4.36	3.91	28.22	19.95	98.855	Horizontal	2	Pass
		1907.5	-4.04	3.94	28.20	20.22	105.196	Horizontal	2	Pass
10.0MHz Band 16 QAM	1/##Mid	1855	-4.50	3.79	28.33	20.04	100.925	Horizontal	2	Pass
		1880	-4.49	3.95	28.22	19.78	95.060	Horizontal	2	Pass
		1905	-3.96	3.97	28.19	20.26	106.170	Horizontal	2	Pass
15.0MHz Band 16 QAM	1/##Mid	1857.5	-4.48	3.79	28.34	20.07	101.625	Horizontal	2	Pass
		1880	-4.27	3.95	28.22	20.00	100.000	Horizontal	2	Pass
		1902.5	-4.23	3.97	28.18	19.98	99.541	Horizontal	2	Pass
20.0MHz Band 16 QAM	1/##Mid	1860	-4.37	3.81	28.35	20.17	103.992	Horizontal	2	Pass
		1880	-4.07	3.96	28.22	20.19	104.472	Horizontal	2	Pass
		1900	-3.89	4.00	28.16	20.27	106.414	Horizontal	2	Pass
1.4MHz Band 16 QAM	1/##Mid	1850.7	-5.58	3.76	28.24	18.90	77.625	Vertical	2	Pass
		1880	-5.50	3.91	28.22	18.81	76.033	Vertical	2	Pass
		1909.3	-5.29	3.93	28.20	18.98	79.068	Vertical	2	Pass
3.0MHz Band 16 QAM	1/##Mid	1851.5	-5.42	3.77	28.23	19.04	80.168	Vertical	2	Pass
		1880	-5.13	3.91	28.24	19.20	83.176	Vertical	2	Pass
		1908.5	-5.75	3.94	28.25	18.56	71.779	Vertical	2	Pass
5.0MHz Band 16 QAM	1/##Mid	1852.5	-5.36	3.77	28.31	19.18	82.794	Vertical	2	Pass
		1880	-5.18	3.91	28.22	19.13	81.846	Vertical	2	Pass
		1907.5	-5.73	3.94	28.20	18.53	71.285	Vertical	2	Pass
10.0MHz Band 16 QAM	1/##Mid	1855	-5.76	3.79	28.33	18.78	75.509	Vertical	2	Pass
		1880	-5.63	3.95	28.22	18.64	73.114	Vertical	2	Pass
		1905	-5.63	3.97	28.19	18.59	72.277	Vertical	2	Pass
15.0MHz Band 16 QAM	1/##Mid	1857.5	-6.12	3.79	28.34	18.43	69.663	Vertical	2	Pass
		1880	-5.75	3.95	28.22	18.52	71.121	Vertical	2	Pass
		1902.5	-5.70	3.97	28.18	18.51	70.958	Vertical	2	Pass

20.0MHz		1860	-5.67	3.81	28.35	18.87	77.090	Vertical	2	Pass
Band 16	1/#Mid	1880	-5.62	3.96	28.22	18.64	73.114	Vertical	2	Pass
QAM		1900	-5.30	4.00	28.16	18.86	76.913	Vertical	2	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		
									Limit	
1.4MHz Band QPSK	1/#Mid	1710.7	-3.80	3.12	27.58	20.66	116.413	Horizontal	1	Pass
		1732.5	-3.79	3.27	27.61	20.55	113.501	Horizontal	1	Pass
		1754.3	-3.77	3.29	27.63	20.57	114.025	Horizontal	1	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-3.97	3.13	27.61	20.51	112.460	Horizontal	1	Pass
		1732.5	-3.89	3.27	27.61	20.45	110.917	Horizontal	1	Pass
		1753.5	-3.81	3.30	27.62	20.51	112.460	Horizontal	1	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-3.74	3.13	27.63	20.76	119.124	Horizontal	1	Pass
		1732.5	-3.64	3.27	27.61	20.70	117.490	Horizontal	1	Pass
		1752.5	-3.52	3.30	27.60	20.78	119.674	Horizontal	1	Pass
10.0MHz Band QPSK	1/#Mid	1715	-3.68	3.15	27.64	20.81	120.504	Horizontal	1	Pass
		1732.5	-3.45	3.31	27.61	20.85	121.619	Horizontal	1	Pass
		1750	-3.47	3.33	27.59	20.79	119.950	Horizontal	1	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-3.69	3.15	27.65	20.81	120.504	Horizontal	1	Pass
		1732.5	-3.53	3.31	27.61	20.77	119.399	Horizontal	1	Pass
		1747.5	-3.47	3.33	27.57	20.77	119.399	Horizontal	1	Pass
20.0MHz Band QPSK	1/#Mid	1720	-3.63	3.17	27.66	20.86	121.899	Horizontal	1	Pass
		1732.5	-3.46	3.32	27.61	20.83	121.060	Horizontal	1	Pass
		1745	-3.40	3.36	27.56	20.80	120.226	Horizontal	1	Pass
1.4MHz Band QPSK	1/#Mid	1710.7	-4.60	3.12	27.58	19.86	96.828	Vertical	1	Pass
		1732.5	-4.98	3.27	27.61	19.36	86.298	Vertical	1	Pass
		1754.3	-4.58	3.29	27.63	19.76	94.624	Vertical	1	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-4.50	3.13	27.61	19.98	99.541	Vertical	1	Pass
		1732.5	-4.03	3.27	27.61	20.31	107.399	Vertical	1	Pass
		1753.5	-4.87	3.30	27.62	19.45	88.105	Vertical	1	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-4.36	3.13	27.63	20.14	103.276	Vertical	1	Pass
		1732.5	-4.20	3.27	27.61	20.14	103.276	Vertical	1	Pass
		1752.5	-4.43	3.30	27.60	19.87	97.051	Vertical	1	Pass
10.0MHz Band QPSK	1/#Mid	1715	-4.93	3.15	27.64	19.56	90.365	Vertical	1	Pass
		1732.5	-4.42	3.31	27.61	19.88	97.275	Vertical	1	Pass
		1750	-4.60	3.33	27.59	19.66	92.470	Vertical	1	Pass

15.0MHz	Band QPSK	1/#Mid	1717.5	-5.13	3.15	27.65	19.37	86.497	Vertical	1	Pass
			1732.5	-4.70	3.31	27.61	19.60	91.201	Vertical	1	Pass
			1747.5	-4.86	3.33	27.57	19.38	86.696	Vertical	1	Pass
20.0MHz	Band QPSK	1/#Mid	1720	-5.09	3.17	27.66	19.40	87.096	Vertical	1	Pass
			1732.5	-4.04	3.32	27.61	20.25	105.925	Vertical	1	Pass
			1745	-4.65	3.36	27.56	19.55	90.157	Vertical	1	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		
									Limit	
1.4MHz Band 16 QAM	1/#Mid	1710.7	-4.61	3.12	27.58	19.85	96.605	Horizontal	1	Pass
		1732.5	-4.46	3.27	27.61	19.88	97.275	Horizontal	1	Pass
		1754.3	-4.46	3.29	27.63	19.88	97.275	Horizontal	1	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-4.55	3.13	27.61	19.93	98.401	Horizontal	1	Pass
		1732.5	-4.68	3.27	27.61	19.66	92.470	Horizontal	1	Pass
		1753.5	-4.90	3.30	27.62	19.42	87.498	Horizontal	1	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-4.38	3.13	27.63	20.12	102.802	Horizontal	1	Pass
		1732.5	-4.34	3.27	27.61	20.00	100.000	Horizontal	1	Pass
		1752.5	-4.03	3.30	27.60	20.27	106.414	Horizontal	1	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-4.45	3.15	27.64	20.04	100.925	Horizontal	1	Pass
		1732.5	-4.64	3.31	27.61	19.66	92.470	Horizontal	1	Pass
		1750	-4.02	3.33	27.59	20.24	105.682	Horizontal	1	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-4.25	3.15	27.65	20.25	105.925	Horizontal	1	Pass
		1732.5	-4.31	3.31	27.61	19.99	99.770	Horizontal	1	Pass
		1747.5	-4.33	3.33	27.57	19.91	97.949	Horizontal	1	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-4.20	3.17	27.66	20.29	106.905	Horizontal	1	Pass
		1732.5	-4.21	3.32	27.61	20.08	101.859	Horizontal	1	Pass
		1745	-4.02	3.36	27.56	20.18	104.232	Horizontal	1	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	-5.25	3.12	27.58	19.21	83.368	Vertical	1	Pass
		1732.5	-5.51	3.27	27.61	18.83	76.384	Vertical	1	Pass
		1754.3	-5.75	3.29	27.63	18.59	72.277	Vertical	1	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-5.44	3.13	27.61	19.04	80.168	Vertical	1	Pass
		1732.5	-5.34	3.27	27.61	19.00	79.433	Vertical	1	Pass
		1753.5	-5.38	3.30	27.62	18.94	78.343	Vertical	1	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-6.00	3.13	27.63	18.50	70.795	Vertical	1	Pass
		1732.5	-5.71	3.27	27.61	18.63	72.946	Vertical	1	Pass
		1752.5	-5.32	3.30	27.60	18.98	79.068	Vertical	1	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-6.13	3.15	27.64	18.36	68.549	Vertical	1	Pass
		1732.5	-5.47	3.31	27.61	18.83	76.384	Vertical	1	Pass
		1750	-5.60	3.33	27.59	18.66	73.451	Vertical	1	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-6.03	3.15	27.65	18.47	70.307	Vertical	1	Pass
		1732.5	-5.95	3.31	27.61	18.35	68.391	Vertical	1	Pass
		1747.5	-5.92	3.33	27.57	18.32	67.920	Vertical	1	Pass

20.0MHz	1/#Mid	1720	-5.49	3.17	27.66	19.00	79.433	Vertical	1	Pass
Band 16		1732.5	-5.67	3.32	27.61	18.62	72.778	Vertical	1	Pass
QAM		1745	-5.33	3.36	27.56	18.87	77.090	Vertical	1	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. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP		
										Limit	
1.4MHz Band QPSK	3/#Mid	824.7	5.50	2.01	19.68	2.15	21.02	126.474	Horizontal	7	Pass
		836.5	5.38	2.01	19.77	2.15	20.99	125.603	Horizontal	7	Pass
		848.3	5.18	2.02	19.82	2.15	20.83	121.060	Horizontal	7	Pass
3.0MHz Band QPSK	1/#Mid	825.5	5.27	2.01	19.70	2.15	20.81	120.504	Horizontal	7	Pass
		836.5	5.17	2.01	19.77	2.15	20.78	119.674	Horizontal	7	Pass
		847.5	5.04	2.02	19.81	2.15	20.68	116.950	Horizontal	7	Pass
5.0MHz Band QPSK	1/#Mid	826.5	5.55	2.01	19.71	2.15	21.10	128.825	Horizontal	7	Pass
		836.5	5.43	2.01	19.77	2.15	21.04	127.057	Horizontal	7	Pass
		846.5	5.27	2.02	19.79	2.15	20.89	122.744	Horizontal	7	Pass
10.0MHz Band QPSK	1/#Mid	829	5.57	2.01	19.73	2.15	21.14	130.017	Horizontal	7	Pass
		836.5	5.52	2.01	19.77	2.15	21.13	129.718	Horizontal	7	Pass
		844	5.42	2.02	19.78	2.15	21.03	126.765	Horizontal	7	Pass
1.4MHz Band QPSK	1/#Mid	824.7	4.09	2.01	19.68	2.15	19.61	91.411	Vertical	7	Pass
		836.5	4.13	2.01	19.77	2.15	19.74	94.189	Vertical	7	Pass
		848.3	4.46	2.02	19.82	2.15	20.11	102.565	Vertical	7	Pass
3.0MHz Band QPSK	1/#Mid	825.5	4.77	2.01	19.70	2.15	20.31	107.399	Vertical	7	Pass
		836.5	4.26	2.01	19.77	2.15	19.87	97.051	Vertical	7	Pass
		847.5	4.28	2.02	19.81	2.15	19.92	98.175	Vertical	7	Pass
5.0MHz Band QPSK	1/#Mid	826.5	4.01	2.01	19.71	2.15	19.56	90.365	Vertical	7	Pass
		836.5	4.21	2.01	19.77	2.15	19.82	95.940	Vertical	7	Pass
		846.5	4.28	2.02	19.79	2.15	19.90	97.724	Vertical	7	Pass
10.0MHz Band QPSK	1/#Mid	829	3.87	2.01	19.73	2.15	19.44	87.902	Vertical	7	Pass
		836.5	4.45	2.01	19.77	2.15	20.06	101.391	Vertical	7	Pass
		844	4.68	2.02	19.78	2.15	20.29	106.905	Vertical	7	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. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP		
										Limit	
										(W)	
1.4MHz Band 16 QAM	3/#Mid	824.7	4.65	2.01	19.68	2.15	20.17	103.992	Horizontal	7	Pass
		836.5	4.58	2.01	19.77	2.15	20.19	104.472	Horizontal	7	Pass
		848.3	4.42	2.02	19.82	2.15	20.07	101.625	Horizontal	7	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	4.73	2.01	19.70	2.15	20.27	106.414	Horizontal	7	Pass
		836.5	4.44	2.01	19.77	2.15	20.05	101.158	Horizontal	7	Pass
		847.5	3.92	2.02	19.81	2.15	19.56	90.365	Horizontal	7	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	5.05	2.01	19.71	2.15	20.60	114.815	Horizontal	7	Pass
		836.5	4.82	2.01	19.77	2.15	20.43	110.408	Horizontal	7	Pass
		846.5	4.57	2.02	19.79	2.15	20.19	104.472	Horizontal	7	Pass
10.0MHz Band 16 QAM	1/#Mid	829	5.05	2.01	19.73	2.15	20.62	115.345	Horizontal	7	Pass
		836.5	4.77	2.01	19.77	2.15	20.38	109.144	Horizontal	7	Pass
		844	4.31	2.02	19.78	2.15	19.92	98.175	Horizontal	7	Pass
1.4MHz Band 16 QAM	1/#Mid	824.7	3.79	2.01	19.68	2.15	19.31	85.310	Vertical	7	Pass
		836.5	4.70	2.01	19.77	2.15	20.31	107.399	Vertical	7	Pass
		848.3	4.22	2.02	19.82	2.15	19.87	97.051	Vertical	7	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	4.10	2.01	19.70	2.15	19.64	92.045	Vertical	7	Pass
		836.5	3.04	2.01	19.77	2.15	18.65	73.282	Vertical	7	Pass
		847.5	3.71	2.02	19.81	2.15	19.35	86.099	Vertical	7	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	3.75	2.01	19.71	2.15	19.30	85.114	Vertical	7	Pass
		836.5	3.29	2.01	19.77	2.15	18.90	77.625	Vertical	7	Pass
		846.5	2.71	2.02	19.79	2.15	18.33	68.077	Vertical	7	Pass
10.0MHz Band 16 QAM	1/#Mid	829	3.26	2.01	19.73	2.15	18.83	76.384	Vertical	7	Pass
		836.5	3.13	2.01	19.77	2.15	18.74	74.817	Vertical	7	Pass
		844	3.53	2.02	19.78	2.15	19.14	82.035	Vertical	7	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 7

		Radiated Power (EIRP) for Band 7								
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP		
									Limit	
5.0MHz Band QPSK	1/#Mid	2502.5	-2.08	4.54	27.75	21.13	129.718	Horizontal	2	Pass
		2535	-1.91	4.69	27.72	21.12	129.420	Horizontal	2	Pass
		2567.5	-1.84	4.71	27.71	21.16	130.617	Horizontal	2	Pass
10.0MHz Band QPSK	1/#Mid	2505	-2.01	4.55	27.76	21.20	131.826	Horizontal	2	Pass
		2535	-1.82	4.69	27.72	21.21	132.130	Horizontal	2	Pass
		2565	-1.74	4.72	27.70	21.24	133.045	Horizontal	2	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	-2.02	4.55	27.77	21.20	131.826	Horizontal	2	Pass
		2535	-1.88	4.69	27.72	21.15	130.317	Horizontal	2	Pass
		2562.5	-1.78	4.72	27.69	21.19	131.522	Horizontal	2	Pass
20.0MHz Band QPSK	1/#Mid	2510	-1.96	4.57	27.78	21.25	133.352	Horizontal	2	Pass
		2535	-1.78	4.73	27.72	21.21	132.130	Horizontal	2	Pass
		2560	-1.74	4.75	27.68	21.19	131.522	Horizontal	2	Pass
5.0MHz Band QPSK	1/#Mid	2502.5	-3.88	4.54	27.75	19.33	85.704	Vertical	2	Pass
		2535	-3.65	4.69	27.72	19.38	86.696	Vertical	2	Pass
		2567.5	-3.00	4.71	27.71	20.00	100.000	Vertical	2	Pass
10.0MHz Band QPSK	1/#Mid	2505	-3.28	4.55	27.76	19.93	98.401	Vertical	2	Pass
		2535	-2.94	4.69	27.72	20.09	102.094	Vertical	2	Pass
		2565	-3.55	4.72	27.70	19.43	87.700	Vertical	2	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	-3.18	4.55	27.77	20.04	100.925	Vertical	2	Pass
		2535	-2.88	4.69	27.72	20.15	103.514	Vertical	2	Pass
		2562.5	-3.66	4.72	27.69	19.31	85.310	Vertical	2	Pass
20.0MHz Band QPSK	1/#Mid	2510	-2.97	4.57	27.78	20.24	105.682	Vertical	2	Pass
		2535	-3.43	4.73	27.72	19.56	90.365	Vertical	2	Pass
		2560	-3.61	4.75	27.68	19.32	85.507	Vertical	2	Pass

		Radiated Power (EIRP) for Band 7								
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP		
									Limit	
									(W)	
5.0MHz Band 16 QAM	1/##Mid	2502.5	-2.77	4.54	27.75	20.44	110.662	Horizontal	2	Pass
		2535	-2.46	4.69	27.72	20.57	114.025	Horizontal	2	Pass
		2567.5	-2.54	4.71	27.71	20.46	111.173	Horizontal	2	Pass
10.0MHz Band 16 QAM	1/##Mid	2505	-2.66	4.55	27.76	20.55	113.501	Horizontal	2	Pass
		2535	-2.67	4.69	27.72	20.36	108.643	Horizontal	2	Pass
		2565	-2.94	4.72	27.70	20.04	100.925	Horizontal	2	Pass
15.0MHz Band 16 QAM	1/##Mid	2507.5	-2.84	4.55	27.77	20.38	109.144	Horizontal	2	Pass
		2535	-2.81	4.69	27.72	20.22	105.196	Horizontal	2	Pass
		2562.5	-2.42	4.72	27.69	20.55	113.501	Horizontal	2	Pass
20.0MHz Band 16 QAM	1/##Mid	2510	-2.72	4.57	27.78	20.49	111.944	Horizontal	2	Pass
		2535	-2.39	4.73	27.72	20.60	114.815	Horizontal	2	Pass
		2560	-2.49	4.75	27.68	20.44	110.662	Horizontal	2	Pass
5.0MHz Band 16 QAM	1/##Mid	2502.5	-4.14	4.54	27.75	19.07	80.724	Vertical	2	Pass
		2535	-4.22	4.69	27.72	18.81	76.033	Vertical	2	Pass
		2567.5	-2.92	4.71	27.71	20.08	101.859	Vertical	2	Pass
10.0MHz Band 16 QAM	1/##Mid	2505	-3.03	4.55	27.76	20.18	104.232	Vertical	2	Pass
		2535	-3.47	4.69	27.72	19.56	90.365	Vertical	2	Pass
		2565	-3.51	4.72	27.70	19.47	88.512	Vertical	2	Pass
15.0MHz Band 16 QAM	1/##Mid	2507.5	-3.41	4.55	27.77	19.81	95.719	Vertical	2	Pass
		2535	-3.67	4.69	27.72	19.36	86.298	Vertical	2	Pass
		2562.5	-3.85	4.72	27.69	19.12	81.658	Vertical	2	Pass
20.0MHz Band 16 QAM	1/##Mid	2510	-4.40	4.57	27.78	18.81	76.033	Vertical	2	Pass
		2535	-4.15	4.73	27.72	18.84	76.560	Vertical	2	Pass
		2560	-3.26	4.75	27.68	19.67	92.683	Vertical	2	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								Conclusio n
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP		
										Limit	
1.4MHz	1/#Mid	699.7	5.87	1.91	19.21	2.15	21.02	126.474	Vertical	3	Pass
Band		707.5	5.79	1.91	19.26	2.15	20.99	125.603	Vertical	3	Pass
QPSK		715.3	5.57	1.93	19.34	2.15	20.83	121.060	Vertical	3	Pass
3.0MHz	1/#Mid	700.5	5.66	1.91	19.21	2.15	20.81	120.504	Vertical	3	Pass
Band		707.5	5.58	1.91	19.26	2.15	20.78	119.674	Vertical	3	Pass
QPSK		714.5	5.42	1.93	19.34	2.15	20.68	116.950	Vertical	3	Pass
5.0MHz	1/#Mid	701.5	5.93	1.91	19.23	2.15	21.10	128.825	Vertical	3	Pass
Band		707.5	5.84	1.91	19.26	2.15	21.04	127.057	Vertical	3	Pass
QPSK		713.5	5.63	1.92	19.33	2.15	20.89	122.744	Vertical	3	Pass
10.0MHz	1/#Mid	704	5.95	1.91	19.25	2.15	21.14	130.017	Vertical	3	Pass
Band		707.5	5.93	1.91	19.26	2.15	21.13	129.718	Vertical	3	Pass
QPSK		711	5.78	1.92	19.32	2.15	21.03	126.765	Vertical	3	Pass
1.4MHz	1/#Mid	699.7	4.79	1.91	19.21	2.15	19.94	98.628	Horizontal	3	Pass
Band		707.5	5.10	1.91	19.26	2.15	20.30	107.152	Horizontal	3	Pass
QPSK		715.3	4.94	1.93	19.34	2.15	20.20	104.713	Horizontal	3	Pass
3.0MHz	1/#Mid	700.5	4.17	1.91	19.21	2.15	19.32	85.507	Horizontal	3	Pass
Band		707.5	4.21	1.91	19.26	2.15	19.41	87.297	Horizontal	3	Pass
QPSK		714.5	4.35	1.93	19.34	2.15	19.61	91.411	Horizontal	3	Pass
5.0MHz	1/#Mid	701.5	4.72	1.91	19.23	2.15	19.89	97.499	Horizontal	3	Pass
Band		707.5	4.40	1.91	19.26	2.15	19.60	91.201	Horizontal	3	Pass
QPSK		713.5	4.73	1.92	19.33	2.15	19.99	99.770	Horizontal	3	Pass
10.0MHz	1/#Mid	704	4.95	1.91	19.25	2.15	20.14	103.276	Horizontal	3	Pass
Band		707.5	4.62	1.91	19.26	2.15	19.82	95.940	Horizontal	3	Pass
QPSK		711	4.81	1.92	19.32	2.15	20.06	101.391	Horizontal	3	Pass

		Radiated Power (ERP) for Band 12									
Mode	RB/RB SIZE	Frequency	Result								Conclusion
			SG Level	Cable Loss (dBm)	Antenna Factor (dB)	Correction	Max. EIRP	Max. EIRP	Polarization Of Max. ERP		
						(dB)	Average	Average		Limit	
							(dBm)	(mW)		(W)	
1.4MHz Band 16 QAM	1/##Mid	699.7	5.75	1.91	19.21	2.15	20.90	123.027	Vertical	3	Pass
		707.5	5.67	1.91	19.26	2.15	20.87	122.180	Vertical	3	Pass
		715.3	5.45	1.93	19.34	2.15	20.71	117.761	Vertical	3	Pass
3.0MHz Band 16 QAM	1/##Mid	700.5	5.54	1.91	19.21	2.15	20.69	117.220	Vertical	3	Pass
		707.5	5.46	1.91	19.26	2.15	20.66	116.413	Vertical	3	Pass
		714.5	5.30	1.93	19.34	2.15	20.56	113.763	Vertical	3	Pass
5.0MHz Band 16 QAM	1/##Mid	701.5	5.81	1.91	19.23	2.15	20.98	125.314	Vertical	3	Pass
		707.5	5.72	1.91	19.26	2.15	20.92	123.595	Vertical	3	Pass
		713.5	5.51	1.92	19.33	2.15	20.77	119.399	Vertical	3	Pass
10.0MHz Band 16 QAM	1/##Mid	704	5.83	1.91	19.25	2.15	21.02	126.474	Vertical	3	Pass
		707.5	5.81	1.91	19.26	2.15	21.01	126.183	Vertical	3	Pass
		711	5.66	1.92	19.32	2.15	20.91	123.310	Vertical	3	Pass
1.4MHz Band 16 QAM	1/##Mid	699.7	4.39	1.91	19.21	2.15	19.54	89.950	Horizontal	3	Pass
		707.5	4.41	1.91	19.26	2.15	19.61	91.411	Horizontal	3	Pass
		715.3	4.46	1.93	19.34	2.15	19.72	93.756	Horizontal	3	Pass
3.0MHz Band 16 QAM	1/##Mid	700.5	4.45	1.91	19.21	2.15	19.60	91.201	Horizontal	3	Pass
		707.5	4.56	1.91	19.26	2.15	19.76	94.624	Horizontal	3	Pass
		714.5	4.29	1.93	19.34	2.15	19.55	90.157	Horizontal	3	Pass
5.0MHz Band 16 QAM	1/##Mid	701.5	4.79	1.91	19.23	2.15	19.96	99.083	Horizontal	3	Pass
		707.5	4.63	1.91	19.26	2.15	19.83	96.161	Horizontal	3	Pass
		713.5	4.79	1.92	19.33	2.15	20.05	101.158	Horizontal	3	Pass
10.0MHz Band 16 QAM	1/##Mid	704	4.27	1.91	19.25	2.15	19.46	88.308	Horizontal	3	Pass
		707.5	4.04	1.91	19.26	2.15	19.24	83.946	Horizontal	3	Pass
		711	4.20	1.92	19.32	2.15	19.45	88.105	Horizontal	3	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

8.7 LTE BAND 17

		Radiated Power (ERP) for Band 17									
Mode	RB/RB SIZE	Frequency	Result								Conclusio n
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP		
										Limit	
										(W)	
5.0MHz Band QPSK	1/#Mid	706.5	6.21	1.91	19.23	2.15	21.38	137.404	Vertical	3	Pass
		710	6.07	1.91	19.26	2.15	21.27	133.968	Vertical	3	Pass
		713.5	5.97	1.92	19.33	2.15	21.23	132.739	Vertical	3	Pass
10.0MHz Band QPSK	1/#Mid	709	6.22	1.91	19.25	2.15	21.41	138.357	Vertical	3	Pass
		710	6.17	1.91	19.26	2.15	21.37	137.088	Vertical	3	Pass
		711	6.13	1.92	19.32	2.15	21.38	137.404	Vertical	3	Pass
5.0MHz Band QPSK	1/#Mid	706.5	4.78	1.91	19.23	2.15	19.95	98.855	Horizontal	3	Pass
		710	4.60	1.91	19.26	2.15	19.80	95.499	Horizontal	3	Pass
		713.5	5.01	1.92	19.33	2.15	20.27	106.414	Horizontal	3	Pass
10.0MHz Band QPSK	1/#Mid	709	5.82	1.91	19.25	2.15	21.01	126.183	Horizontal	3	Pass
		710	5.48	1.91	19.26	2.15	20.68	116.950	Horizontal	3	Pass
		711	4.57	1.92	19.32	2.15	19.82	95.940	Horizontal	3	Pass

		Radiated Power (ERP) for Band 17									
Mode	RB/RB SIZE	Frequency	Result								Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP		
										Limit	
										(W)	
5.0MHz Band 16 QAM	1/##Mid	706.5	5.38	1.91	19.23	2.15	20.55	113.501	Vertical	3	Pass
		710	5.29	1.91	19.26	2.15	20.49	111.944	Vertical	3	Pass
		713.5	5.09	1.92	19.33	2.15	20.35	108.393	Vertical	3	Pass
10.0MHz Band 16 QAM	1/##Mid	709	4.92	1.91	19.25	2.15	20.11	102.565	Vertical	3	Pass
		710	5.45	1.91	19.26	2.15	20.65	116.145	Vertical	3	Pass
		711	5.18	1.92	19.32	2.15	20.43	110.408	Vertical	3	Pass
5.0MHz Band 16 QAM	1/##Mid	706.5	4.47	1.91	19.23	2.15	19.64	92.045	Horizontal	3	Pass
		710	4.33	1.91	19.26	2.15	19.53	89.743	Horizontal	3	Pass
		713.5	3.92	1.92	19.33	2.15	19.18	82.794	Horizontal	3	Pass
10.0MHz Band 16 QAM	1/##Mid	709	4.02	1.91	19.25	2.15	19.21	83.368	Horizontal	3	Pass
		710	3.82	1.91	19.26	2.15	19.02	79.799	Horizontal	3	Pass
		711	4.06	1.92	19.32	2.15	19.31	85.310	Horizontal	3	Pass

Note:

ERP=EIRP-2.15

SG Level= Signal generator output

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

8.11 LTE BAND 41

		Radiated Power (EIRP) for Band 41								
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP	Max. EIRP	Polarization Of Max. ERP		
						Average	Average		Limit	
						(dBm)	(mW)		(W)	
5.0MHz	1/#Mid	2572.5	-2.68	4.54	27.75	20.53	112.980	Horizontal	2	Pass
Band		2595	-2.53	4.69	27.72	20.50	112.202	Horizontal	2	Pass
QPSK		2617.5	-2.41	4.71	27.71	20.59	114.551	Horizontal	2	Pass
10.0MHz	1/#Mid	2575	-2.76	4.55	27.76	20.45	110.917	Horizontal	2	Pass
Band		2595	-2.62	4.69	27.72	20.41	109.901	Horizontal	2	Pass
QPSK		2615	-2.61	4.72	27.70	20.37	108.893	Horizontal	2	Pass
15.0MHz	1/#Mid	2577.5	-2.59	4.55	27.77	20.63	115.611	Horizontal	2	Pass
Band		2595	-2.31	4.69	27.72	20.72	118.032	Horizontal	2	Pass
QPSK		2612.5	-2.36	4.72	27.69	20.61	115.080	Horizontal	2	Pass
20.0MHz	1/#Mid	2580	-2.20	4.57	27.78	21.01	126.183	Horizontal	2	Pass
Band		2595	-2.25	4.73	27.72	20.74	118.577	Horizontal	2	Pass
QPSK		2610	-2.25	4.75	27.68	20.68	116.950	Horizontal	2	Pass
5.0MHz	1/#Mid	2572.5	-2.48	4.54	27.75	20.73	118.304	Vertical	2	Pass
Band		2595	-2.39	4.69	27.72	20.64	115.878	Vertical	2	Pass
QPSK		2617.5	-2.37	4.71	27.71	20.63	115.611	Vertical	2	Pass
10.0MHz	1/#Mid	2575	-2.46	4.55	27.76	20.75	118.850	Vertical	2	Pass
Band		2595	-2.30	4.69	27.72	20.73	118.304	Vertical	2	Pass
QPSK		2615	-2.37	4.72	27.70	20.61	115.080	Vertical	2	Pass
15.0MHz	1/#Mid	2577.5	-3.50	4.55	27.77	19.72	93.756	Vertical	2	Pass
Band		2595	-3.76	4.69	27.72	19.27	84.528	Vertical	2	Pass
QPSK		2612.5	-3.48	4.72	27.69	19.49	88.920	Vertical	2	Pass
20.0MHz	1/#Mid	2580	-3.65	4.57	27.78	19.56	90.365	Vertical	2	Pass
Band		2595	-3.01	4.73	27.72	19.98	99.541	Vertical	2	Pass
QPSK		2610	-3.92	4.75	27.68	19.01	79.616	Vertical	2	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		
						Average	Average		Limit	
						(dBm)	(mW)		(W)	
5.0MHz Band 16 QAM	1/#Mid	2572.5	-2.74	4.54	27.75	20.47	111.429	Horizontal	2	Pass
		2595	-2.59	4.69	27.72	20.44	110.662	Horizontal	2	Pass
		2617.5	-2.47	4.71	27.71	20.53	112.980	Horizontal	2	Pass
10.0MHz Band 16 QAM	1/#Mid	2575	-2.82	4.55	27.76	20.39	109.396	Horizontal	2	Pass
		2595	-2.68	4.69	27.72	20.35	108.393	Horizontal	2	Pass
		2615	-2.67	4.72	27.70	20.31	107.399	Horizontal	2	Pass
15.0MHz Band 16 QAM	1/#Mid	2577.5	-2.65	4.55	27.77	20.57	114.025	Horizontal	2	Pass
		2595	-2.37	4.69	27.72	20.66	116.413	Horizontal	2	Pass
		2612.5	-2.42	4.72	27.69	20.55	113.501	Horizontal	2	Pass
20.0MHz Band 16 QAM	1/#Mid	2580	-2.37	4.57	27.78	20.84	121.339	Horizontal	2	Pass
		2595	-2.31	4.73	27.72	20.68	116.950	Horizontal	2	Pass
		2610	-2.31	4.75	27.68	20.62	115.345	Horizontal	2	Pass
5.0MHz Band 16 QAM	1/#Mid	2572.5	-2.54	4.54	27.75	20.67	116.681	Vertical	2	Pass
		2595	-2.45	4.69	27.72	20.58	114.288	Vertical	2	Pass
		2617.5	-2.43	4.71	27.71	20.57	114.025	Vertical	2	Pass
10.0MHz Band 16 QAM	1/#Mid	2575	-2.52	4.55	27.76	20.69	117.220	Vertical	2	Pass
		2595	-2.36	4.69	27.72	20.67	116.681	Vertical	2	Pass
		2615	-2.43	4.72	27.70	20.55	113.501	Vertical	2	Pass
15.0MHz Band 16 QAM	1/#Mid	2577.5	-3.36	4.55	27.77	19.86	96.828	Vertical	2	Pass
		2595	-4.01	4.69	27.72	19.02	79.799	Vertical	2	Pass
		2612.5	-3.31	4.72	27.69	19.66	92.470	Vertical	2	Pass
20.0MHz Band 16 QAM	1/#Mid	2580	-3.53	4.57	27.78	19.68	92.897	Vertical	2	Pass
		2595	-3.88	4.73	27.72	19.11	81.470	Vertical	2	Pass
		2610	-3.87	4.75	27.68	19.06	80.538	Vertical	2	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 and §90.691 (a): Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log (P)$ dB.

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

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

TEST PROCEDURE

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

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

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

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

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

MODES TESTED

LTE Band 2/4/5/7/12/17/41

RESULTS

PASS

9.1 LTE BAND 2

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

Test Results for Low Channel 1850.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3701.4	-51.27	4.04	33.51	-21.80	-13	-8.80	Horizontal
3701.4	-53.94	4.04	33.51	-24.47	-13	-11.47	Vertical
5552.1	-48.79	5.24	35.84	-18.19	-13	-5.19	Vertical
5552.1	-52.03	5.24	35.84	-21.43	-13	-8.43	Horizontal
177.8	-42.12	1.43	16.02	-27.53	-13	-14.53	Vertical
309.4	-42.18	1.30	17.99	-25.49	-13	-12.49	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-47.69	4.04	33.56	-18.17	-13	-5.17	Horizontal
3760.0	-44.14	4.04	33.56	-14.62	-13	-1.62	Vertical
5640.0	-53.10	5.24	35.91	-22.43	-13	-9.43	Vertical
5640.0	-50.62	5.24	35.91	-19.95	-13	-6.95	Horizontal
196.2	-34.67	1.62	16.97	-19.32	-13	-6.32	Vertical
430.9	-34.53	1.74	15.98	-20.30	-13	-7.30	Horizontal
Test Results for High Channel 1909.3MHz							
3818.6	-48.43	4.04	34.00	-18.47	-13	-5.47	Horizontal
3818.6	-53.91	4.04	34.00	-23.95	-13	-10.95	Vertical
5727.9	-52.94	5.24	36.04	-22.14	-13	-9.14	Vertical
5727.9	-50.16	5.24	36.04	-19.36	-13	-6.36	Horizontal
205.0	-42.47	1.42	17.29	-26.60	-13	-13.60	Vertical
338.5	-41.25	1.50	17.90	-24.84	-13	-11.84	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	-51.65	4.07	33.54	-22.18	-13	-9.18	Horizontal
3720.0	-51.95	4.07	33.54	-22.48	-13	-9.48	Vertical
5580.0	-48.83	5.28	35.86	-18.25	-13	-5.25	Vertical
5580.0	-53.12	5.28	35.86	-22.54	-13	-9.54	Horizontal
194.1	-39.78	1.58	16.89	-24.46	-13	-11.46	Vertical
275.9	-40.79	1.76	17.26	-25.29	-13	-12.29	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-46.70	4.04	33.56	-17.18	-13	-4.18	Horizontal
3760.0	-51.54	4.04	33.56	-22.02	-13	-9.02	Vertical
5640.0	-49.53	5.24	35.91	-18.86	-13	-5.86	Vertical
5640.0	-51.94	5.24	35.91	-21.27	-13	-8.27	Horizontal
203.5	-42.08	1.46	16.27	-27.27	-13	-14.27	Vertical
320.1	-42.29	1.59	15.15	-28.73	-13	-15.73	Horizontal
Test Results for High Channel 1900MHz							
3800.0	-51.54	4.04	34.00	-21.58	-13	-8.58	Horizontal
3800.0	-52.71	4.04	34.00	-22.75	-13	-9.75	Vertical
5700.0	-46.63	5.24	36.04	-15.83	-13	-2.83	Vertical
5700.0	-52.74	5.24	36.04	-21.94	-13	-8.94	Horizontal
211.7	-35.16	1.36	17.39	-19.12	-13	-6.12	Vertical
361.3	-37.62	1.66	15.39	-23.89	-13	-10.89	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	-53.87	4.02	29.80	-28.09	-13	-15.09	Horizontal
3421.4	-48.33	4.02	29.80	-22.55	-13	-9.55	Vertical
5132.1	-49.61	5.24	35.84	-19.01	-13	-6.01	Vertical
5132.1	-50.72	5.24	35.84	-20.12	-13	-7.12	Horizontal
192.4	-40.90	1.68	16.04	-26.54	-13	-13.54	Vertical
423.3	-40.69	1.78	17.74	-24.73	-13	-11.73	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-47.41	4.03	30.00	-21.44	-13	-8.44	Horizontal
3465.0	-46.24	4.03	30.00	-20.27	-13	-7.27	Vertical
5197.5	-48.72	5.25	35.86	-18.11	-13	-5.11	Vertical
5197.5	-50.69	5.25	35.86	-20.08	-13	-7.08	Horizontal
201.5	-42.24	1.72	17.69	-26.27	-13	-13.27	Vertical
379.3	-37.44	1.62	16.02	-23.03	-13	-10.03	Horizontal
Test Results for High Channel 1754.3MHz							
3508.6	-51.78	4.05	30.01	-25.82	-13	-12.82	Horizontal
3508.6	-47.58	4.05	30.01	-21.62	-13	-8.62	Vertical
5262.9	-50.58	5.26	35.86	-19.98	-13	-6.98	Vertical
5262.9	-53.67	5.26	35.86	-23.07	-13	-10.07	Horizontal
191.6	-34.69	1.80	16.69	-19.80	-13	-6.80	Vertical
304.1	-41.29	1.75	16.66	-26.39	-13	-13.39	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	-46.14	4.02	29.80	-20.36	-13	-7.36	Horizontal
3440.0	-52.42	4.02	29.80	-26.64	-13	-13.64	Vertical
5160.0	-52.61	5.24	35.84	-22.01	-13	-9.01	Vertical
5160.0	-50.48	5.24	35.84	-19.88	-13	-6.88	Horizontal
193.6	-41.39	1.57	17.26	-25.70	-13	-12.70	Vertical
346.8	-38.23	1.78	16.35	-23.66	-13	-10.66	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-46.96	4.03	30.00	-20.99	-13	-7.99	Horizontal
3465.0	-48.96	4.03	30.00	-22.99	-13	-9.99	Vertical
5197.5	-53.86	5.25	35.86	-23.25	-13	-10.25	Vertical
5197.5	-52.77	5.25	35.86	-22.16	-13	-9.16	Horizontal
207.4	-39.73	1.44	17.95	-23.22	-13	-10.22	Vertical
266.6	-40.60	1.65	16.09	-26.16	-13	-13.16	Horizontal
Test Results for High Channel 1745MHz							
3490.0	-47.80	2.91	27.68	-23.03	-13	-10.03	Horizontal
3490.0	-46.90	2.91	27.68	-22.13	-13	-9.13	Vertical
5235.0	-47.01	5.26	35.86	-16.41	-13	-3.41	Vertical
5235.0	-51.51	5.26	35.86	-20.91	-13	-7.91	Horizontal
195.2	-38.27	1.61	16.85	-23.03	-13	-10.03	Vertical
388.9	-37.25	1.61	15.19	-23.67	-13	-10.67	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	-52.19	2.78	27.50	-27.47	-13	-14.47	Horizontal
1649.4	-50.46	2.78	27.50	-25.74	-13	-12.74	Vertical
2474.1	-47.61	2.90	27.80	-22.71	-13	-9.71	Vertical
2474.1	-53.48	2.90	27.80	-28.58	-13	-15.58	Horizontal
175.4	-35.73	1.76	17.59	-19.90	-13	-6.90	Vertical
387.7	-34.71	1.63	15.87	-20.47	-13	-7.47	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-49.03	2.80	27.48	-24.35	-13	-11.35	Horizontal
1673.0	-47.18	2.80	27.48	-22.50	-13	-9.50	Vertical
2509.5	-53.64	2.91	27.70	-28.85	-13	-15.85	Vertical
2509.5	-50.75	2.91	27.70	-25.96	-13	-12.96	Horizontal
176.0	-42.43	1.61	15.68	-28.36	-13	-15.36	Vertical
307.3	-39.84	1.59	17.52	-23.92	-13	-10.92	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-48.93	2.82	27.43	-24.32	-13	-11.32	Horizontal
1696.6	-48.61	2.82	27.43	-24.00	-13	-11.00	Vertical
2544.9	-45.60	2.92	27.74	-20.78	-13	-7.78	Vertical
2544.9	-52.51	2.92	27.74	-27.69	-13	-14.69	Horizontal
176.2	-34.23	1.69	16.67	-19.24	-13	-6.24	Vertical
408.9	-37.67	1.70	17.18	-22.19	-13	-9.19	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	-52.48	2.78	27.50	-27.76	-13	-14.76	Horizontal
1658.0	-47.27	2.78	27.50	-22.55	-13	-9.55	Vertical
2487.0	-51.84	2.90	27.80	-26.94	-13	-13.94	Vertical
2487.0	-53.37	2.90	27.80	-28.47	-13	-15.47	Horizontal
176.4	-43.91	1.71	15.57	-30.05	-13	-17.05	Vertical
234.6	-40.43	1.34	16.40	-25.37	-13	-12.37	Horizontal
Test Results for Mid Channel 836.5MHz							
1673.0	-46.01	2.80	27.48	-21.33	-13	-8.33	Horizontal
1673.0	-44.79	2.80	27.48	-20.11	-13	-7.11	Vertical
2509.5	-44.70	2.91	27.70	-19.91	-13	-6.91	Vertical
2509.5	-49.33	2.91	27.70	-24.54	-13	-11.54	Horizontal
190.2	-37.26	1.44	17.04	-21.66	-13	-8.66	Vertical
443.5	-38.25	1.76	17.62	-22.39	-13	-9.39	Horizontal
Test Results for High Channel 844MHz							
1688.0	-47.12	2.82	27.43	-22.51	-13	-9.51	Horizontal
1688.0	-45.99	2.82	27.43	-21.38	-13	-8.38	Vertical
2532.0	-53.43	2.92	27.74	-28.61	-13	-15.61	Vertical
2532.0	-50.18	2.92	27.74	-25.36	-13	-12.36	Horizontal
189.1	-35.28	1.74	17.70	-19.32	-13	-6.32	Vertical
390.5	-42.75	1.41	17.46	-26.69	-13	-13.69	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 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	-59.68	5.23	35.81	-29.10	-25	-4.10	Horizontal
5005.0	-61.44	5.23	35.81	-30.86	-25	-5.86	Vertical
7507.5	-60.82	5.67	36.85	-29.64	-25	-4.64	Vertical
7507.5	-59.07	5.67	36.85	-27.89	-25	-2.89	Horizontal
188.3	-54.87	1.73	17.97	-38.63	-25	-13.63	Vertical
365.4	-44.15	1.38	15.11	-30.42	-25	-5.42	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-63.10	5.23	35.82	-32.51	-25	-7.51	Horizontal
5070.0	-59.90	5.23	35.82	-29.31	-25	-4.31	Vertical
7605.0	-60.86	5.67	36.85	-29.68	-25	-4.68	Vertical
7605.0	-61.67	5.67	36.85	-30.49	-25	-5.49	Horizontal
192.3	-47.17	1.77	16.17	-32.76	-25	-7.76	Vertical
344.2	-52.02	1.63	15.21	-38.44	-25	-13.44	Horizontal
Test Results for High Channel 2567.5MHz							
5135.0	-61.29	5.24	35.83	-30.70	-25	-5.70	Horizontal
5135.0	-59.65	5.24	35.83	-29.06	-25	-4.06	Vertical
7702.5	-61.20	5.68	36.87	-30.01	-25	-5.01	Vertical
7702.5	-59.45	5.68	36.87	-28.26	-25	-3.26	Horizontal
182.9	-49.67	1.58	17.56	-33.69	-25	-8.69	Vertical
287.3	-46.30	1.45	16.58	-31.17	-25	-6.17	Horizontal

QPSK EIRP POWER FOR LTE BAND 7 (20.0MHZ BANDWIDTH)

Test Results for Low Channel 2510MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5020.0	-60.92	5.23	35.82	-30.33	-25	-5.33	Horizontal
5020.0	-59.10	5.23	35.82	-28.51	-25	-3.51	Vertical
7530.0	-60.21	5.67	36.86	-29.02	-25	-4.02	Vertical
7530.0	-59.89	5.67	36.86	-28.70	-25	-3.70	Horizontal
199.0	-48.90	1.63	15.76	-34.77	-25	-9.77	Vertical
422.2	-46.77	1.71	15.44	-33.04	-25	-8.04	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-59.69	5.23	35.82	-29.10	-25	-4.10	Horizontal
5070.0	-61.86	5.23	35.82	-31.27	-25	-6.27	Vertical
7605.0	-63.37	5.67	36.85	-32.19	-25	-7.19	Vertical
7605.0	-61.69	5.67	36.85	-30.51	-25	-5.51	Horizontal
207.7	-51.51	1.79	16.84	-36.45	-25	-11.45	Vertical
310.9	-46.89	1.71	17.64	-30.96	-25	-5.96	Horizontal
Test Results for High Channel 2560MHz							
5120.0	-60.05	5.24	35.83	-29.46	-25	-4.46	Horizontal
5120.0	-59.31	5.24	35.83	-28.72	-25	-3.72	Vertical
7680.0	-61.50	5.70	36.88	-30.32	-25	-5.32	Vertical
7680.0	-61.73	5.70	36.88	-30.55	-25	-5.55	Horizontal
201.8	-44.49	1.79	16.84	-29.43	-25	-4.43	Vertical
272.6	-46.45	1.71	17.64	-30.52	-25	-5.52	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 Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1399.4	-52.19	2.60	27.20	-27.59	-13	-14.59	Horizontal
1399.4	-46.56	2.60	27.20	-21.96	-13	-8.96	Vertical
2099.1	-45.33	2.85	27.54	-20.64	-13	-7.64	Vertical
2099.1	-49.24	2.85	27.54	-24.55	-13	-11.55	Horizontal
194.2	-35.52	1.49	17.78	-19.23	-13	-6.23	Vertical
429.1	-35.89	1.36	17.33	-19.92	-13	-6.92	Horizontal
Test Results For Mid Channel 707.5MHz							
1415.0	-48.84	2.61	27.28	-24.17	-13	-11.17	Horizontal
1415.0	-47.46	2.61	27.28	-22.79	-13	-9.79	Vertical
2122.5	-45.13	2.87	27.59	-20.41	-13	-7.41	Vertical
2122.5	-50.25	2.87	27.59	-25.53	-13	-12.53	Horizontal
181.1	-34.02	1.73	15.74	-20.01	-13	-7.01	Vertical
426.2	-44.41	1.62	15.79	-30.24	-13	-17.24	Horizontal
Test Results for High Channel 715.3MHz							
1430.6	-46.42	2.63	27.28	-21.77	-13	-8.77	Horizontal
1430.6	-53.18	2.63	27.28	-28.53	-13	-15.53	Vertical
2145.9	-45.12	2.88	27.60	-20.40	-13	-7.40	Vertical
2145.9	-51.94	2.88	27.60	-27.22	-13	-14.22	Horizontal
210.8	-38.74	1.61	18.00	-22.35	-13	-9.35	Vertical
249.1	-43.66	1.45	15.49	-29.63	-13	-16.63	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	-46.11	2.61	27.26	-21.46	-13	-8.46	Horizontal
1408.0	-45.77	2.61	27.26	-21.12	-13	-8.12	Vertical
2112.0	-49.33	2.87	27.58	-24.62	-13	-11.62	Vertical
2112.0	-53.54	2.87	27.58	-28.83	-13	-15.83	Horizontal
209.1	-43.09	1.31	16.97	-27.43	-13	-14.43	Vertical
453.5	-44.06	1.65	16.70	-29.01	-13	-16.01	Horizontal
Test Results for Mid Channel 707.5MHz							
1415.0	-50.71	2.61	27.28	-26.04	-13	-13.04	Horizontal
1415.0	-48.35	2.61	27.28	-23.68	-13	-10.68	Vertical
2122.5	-46.09	2.87	27.59	-21.37	-13	-8.37	Vertical
2122.5	-51.05	2.87	27.59	-26.33	-13	-13.33	Horizontal
207.8	-37.34	1.72	17.99	-21.07	-13	-8.07	Vertical
450.1	-43.40	1.73	17.94	-27.19	-13	-14.19	Horizontal
Test Results for High Channel 711MHz							
1422.0	-46.59	2.62	27.28	-21.93	-13	-8.93	Horizontal
1422.0	-51.26	2.62	27.28	-26.60	-13	-13.60	Vertical
2133.0	-53.03	2.87	27.60	-28.30	-13	-15.30	Vertical
2133.0	-52.07	2.87	27.60	-27.34	-13	-14.34	Horizontal
190.7	-34.90	1.58	15.93	-20.55	-13	-7.55	Vertical
289.3	-42.64	1.36	15.59	-28.41	-13	-15.41	Horizontal

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

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

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

9.6 LTE BAND 17

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

Test Results for Low Channel 706.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1413.0	-48.23	2.61	27.28	-23.56	-13	-10.56	Horizontal
1413.0	-44.89	2.61	27.28	-20.22	-13	-7.22	Vertical
2119.5	-46.46	2.87	27.59	-21.74	-13	-8.74	Vertical
2119.5	-53.61	2.87	27.59	-28.89	-13	-15.89	Horizontal
198.1	-36.29	1.71	16.15	-21.85	-13	-8.85	Vertical
328.2	-39.29	1.41	17.32	-23.38	-13	-10.38	Horizontal
Test Results For Mid Channel 710MHz							
1420.0	-44.01	2.62	27.30	-19.33	-13	-6.33	Horizontal
1420.0	-48.50	2.62	27.30	-23.82	-13	-10.82	Vertical
2130.0	-52.72	2.87	27.62	-27.97	-13	-14.97	Vertical
2130.0	-53.11	2.87	27.62	-28.36	-13	-15.36	Horizontal
212.5	-37.72	1.42	15.25	-23.90	-13	-10.90	Vertical
279.8	-43.32	1.36	17.19	-27.49	-13	-14.49	Horizontal
Test Results for High Channel 713.5MHz							
1427.0	-49.91	2.66	27.28	-25.29	-13	-12.29	Horizontal
1427.0	-51.91	2.66	27.28	-27.29	-13	-14.29	Vertical
2140.5	-45.71	2.88	27.60	-20.99	-13	-7.99	Vertical
2140.5	-53.45	2.88	27.60	-28.73	-13	-15.73	Horizontal
203.0	-44.67	1.32	17.29	-28.70	-13	-15.70	Vertical
400.7	-39.45	1.72	16.89	-24.28	-13	-11.28	Horizontal

QPSK EIRP POWER FOR LTE BAND 17 (10MHZ BANDWIDTH)

Test Results for Low Channel 709MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1418.0	-46.90	2.62	27.30	-22.22	-13	-9.22	Horizontal
1418.0	-51.92	2.62	27.30	-27.24	-13	-14.24	Vertical
2127.0	-45.04	2.87	27.62	-20.29	-13	-7.29	Vertical
2127.0	-53.12	2.87	27.62	-28.37	-13	-15.37	Horizontal
193.2	-40.07	1.35	16.91	-24.51	-13	-11.51	Vertical
339.7	-39.49	1.62	16.31	-24.80	-13	-11.80	Horizontal
Test Results for Mid Channel 710MHz							
1420.0	-49.90	2.62	27.30	-25.22	-13	-12.22	Horizontal
1420.0	-47.10	2.62	27.30	-22.42	-13	-9.42	Vertical
2130.0	-45.11	2.87	27.62	-20.36	-13	-7.36	Vertical
2130.0	-53.21	2.87	27.62	-28.46	-13	-15.46	Horizontal
181.9	-40.50	1.51	17.14	-24.87	-13	-11.87	Vertical
331.9	-41.52	1.77	16.88	-26.41	-13	-13.41	Horizontal
Test Results for High Channel 711MHz							
1422.0	-44.53	2.62	27.30	-19.85	-13	-6.85	Horizontal
1422.0	-44.47	2.62	27.30	-19.79	-13	-6.79	Vertical
2133.0	-50.06	2.87	27.62	-25.31	-13	-12.31	Vertical
2133.0	-50.82	2.87	27.62	-26.07	-13	-13.07	Horizontal
192.8	-44.19	1.78	15.95	-30.02	-13	-17.02	Vertical
437.7	-37.32	1.34	17.95	-20.72	-13	-7.72	Horizontal

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

. Margin = Spurious Emission Level - Limit

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

9.7 LTE BAND 41

LTE BAND 41 (5MHZ BANDWIDTH)

Test Results for Low Channel 2572.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5145.0	-62.03	5.23	35.81	-31.45	-25	-6.45	Horizontal
5145.0	-63.52	5.23	35.81	-32.94	-25	-7.94	Vertical
7717.5	-59.67	5.67	36.85	-28.49	-25	-3.49	Vertical
7717.5	-62.04	5.67	36.85	-30.86	-25	-5.86	Horizontal
435.3	-44.22	1.38	15.98	-29.62	-25	-4.62	Vertical
465.8	-46.78	1.62	15.66	-32.74	-25	-7.74	Horizontal
Test Results For Mid Channel 2595MHz							
5190.0	-60.60	5.23	35.82	-30.01	-25	-5.01	Horizontal
5190.0	-62.13	5.23	35.82	-31.54	-25	-6.54	Vertical
7785.0	-61.59	5.67	36.85	-30.41	-25	-5.41	Vertical
7785.0	-63.39	5.67	36.85	-32.21	-25	-7.21	Horizontal
510.4	-44.68	1.62	16.17	-30.13	-25	-5.13	Vertical
562.9	-45.70	1.74	17.63	-29.81	-25	-4.81	Horizontal
Test Results for High Channel 2617.5MHz							
5235.0	-61.52	5.24	35.83	-30.93	-25	-5.93	Horizontal
5235.0	-63.69	5.24	35.83	-33.10	-25	-8.10	Vertical
7852.5	-61.55	5.68	36.87	-30.36	-25	-5.36	Vertical
7852.5	-62.56	5.68	36.87	-31.37	-25	-6.37	Horizontal
197.6	-45.95	1.55	15.84	-31.66	-25	-6.66	Vertical
353.1	-46.84	1.51	17.06	-31.29	-25	-6.29	Horizontal

LTE BAND 41 (20MHZ BANDWIDTH)

Test Results for Channel 2580MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5160.0	-60.84	5.23	35.82	-30.25	-25	-5.25	Horizontal
5160.0	-61.59	5.23	35.82	-31.00	-25	-6.00	Vertical
7740.0	-63.75	5.67	36.86	-32.56	-25	-7.56	Vertical
7740.0	-61.40	5.67	36.86	-30.21	-25	-5.21	Horizontal
128.9	-44.73	1.43	15.51	-30.65	-25	-5.65	Vertical
344.8	-48.90	1.40	16.97	-33.33	-25	-8.33	Horizontal
Test Results For Mid Channel 2595MHz							
5190.0	-63.62	5.23	35.82	-33.03	-25	-8.03	Horizontal
5190.0	-61.64	5.23	35.82	-31.05	-25	-6.05	Vertical
7785.0	-64.72	5.67	36.85	-33.54	-25	-8.54	Vertical
7785.0	-64.17	5.67	36.85	-32.99	-25	-7.99	Horizontal
100.8	-45.30	1.77	16.72	-30.35	-25	-5.35	Vertical
263.5	-48.08	1.31	16.99	-32.40	-25	-7.40	Horizontal
Test Results for High Channel 2610MHz							
5220.0	-61.78	5.24	35.83	-31.19	-25	-6.19	Horizontal
5220.0	-62.90	5.24	35.83	-32.31	-25	-7.31	Vertical
7830.0	-64.64	5.70	36.88	-33.46	-25	-8.46	Vertical
7830.0	-61.62	5.70	36.88	-30.44	-25	-5.44	Horizontal
349.9	-44.08	1.70	15.73	-30.05	-25	-5.05	Vertical
110.3	-45.25	1.75	17.33	-29.67	-25	-4.67	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.

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 3.29V, 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 2/4/5/7/12/17/41

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	13.1	0.006950	2.5
3.87	1880	13.7	0.007283	2.5
4.45	1880	13.0	0.006928	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	13.2	0.007007	2.5
Extreme (50C)	1880	11.7	0.006204	2.5
Extreme (40C)	1880	13.6	0.007234	2.5
Extreme (30C)	1880	13.3	0.007055	2.5
Extreme (10C)	1880	13.6	0.007257	2.5
Extreme (0C)	1880	11.7	0.006228	2.5
Extreme (-10C)	1880	13.3	0.007082	2.5
Extreme (-20C)	1880	14.2	0.007544	2.5
Extreme (-30C)	1880	14.7	0.007796	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	9.8	0.005212	2.5
3.87	1880	8.4	0.004473	2.5
4.45	1880	7.7	0.004078	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	9.8	0.005193	2.5
Extreme (50C)	1880	8.9	0.004719	2.5
Extreme (40C)	1880	8.2	0.004348	2.5
Extreme (30C)	1880	8.5	0.004541	2.5
Extreme (10C)	1880	9.2	0.004886	2.5
Extreme (0C)	1880	8.0	0.004258	2.5
Extreme (-10C)	1880	8.7	0.004608	2.5
Extreme (-20C)	1880	8.9	0.004718	2.5
Extreme (-30C)	1880	8.4	0.004479	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	8.8	0.005068	2.5
3.87	1732.5	9.3	0.005392	2.5
4.45	1732.5	8.8	0.005058	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	8.8	0.005064	2.5
Extreme (50C)	1732.5	9.3	0.005358	2.5
Extreme (40C)	1732.5	7.2	0.004147	2.5
Extreme (30C)	1732.5	5.8	0.003352	2.5
Extreme (10C)	1732.5	6.7	0.003889	2.5
Extreme (0C)	1732.5	9.8	0.005685	2.5
Extreme (-10C)	1732.5	8.0	0.004600	2.5
Extreme (-20C)	1732.5	7.3	0.004186	2.5
Extreme (-30C)	1732.5	8.8	0.005100	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	0.005387	2.5
3.87	1732.5	9.1	0.005259	2.5
4.45	1732.5	8.0	0.004623	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	9.7	0.005588	2.5
Extreme (50C)	1732.5	8.9	0.005161	2.5
Extreme (40C)	1732.5	8.4	0.004834	2.5
Extreme (30C)	1732.5	9.5	0.005461	2.5
Extreme (10C)	1732.5	8.6	0.004951	2.5
Extreme (0C)	1732.5	8.5	0.004908	2.5
Extreme (-10C)	1732.5	9.2	0.005332	2.5
Extreme (-20C)	1732.5	8.6	0.004959	2.5
Extreme (-30C)	1732.5	8.1	0.004688	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	5.3	0.006365	2.5
3.87	836.5	6.5	0.007734	2.5
4.45	836.5	5.2	0.006157	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	5.7	0.006861	2.5
Extreme (50C)	836.5	5.6	0.006672	2.5
Extreme (40C)	836.5	6.3	0.007479	2.5
Extreme (30C)	836.5	6.4	0.007651	2.5
Extreme (10C)	836.5	5.5	0.006529	2.5
Extreme (0C)	836.5	5.0	0.006006	2.5
Extreme (-10C)	836.5	5.1	0.006102	2.5
Extreme (-20C)	836.5	6.6	0.007858	2.5
Extreme (-30C)	836.5	6.5	0.007761	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	5.5	0.006572	2.5
3.87	836.5	6.7	0.008014	2.5
4.45	836.5	5.2	0.006185	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	5.9	0.007053	2.5
Extreme (50C)	836.5	5.6	0.006649	2.5
Extreme (40C)	836.5	6.0	0.007222	2.5
Extreme (30C)	836.5	6.4	0.007657	2.5
Extreme (10C)	836.5	5.8	0.006909	2.5
Extreme (0C)	836.5	5.6	0.006692	2.5
Extreme (-10C)	836.5	6.0	0.007156	2.5
Extreme (-20C)	836.5	6.5	0.007720	2.5
Extreme (-30C)	836.5	6.7	0.007996	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	9.9	0.003906	2.5
3.87	2535	9.0	0.003546	2.5
4.45	2535	8.3	0.003289	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2535	9.0	0.003569	2.5
Extreme (50C)	2535	8.6	0.003382	2.5
Extreme (40C)	2535	7.9	0.003117	2.5
Extreme (30C)	2535	9.1	0.003585	2.5
Extreme (10C)	2535	7.6	0.003000	2.5
Extreme (0C)	2535	8.4	0.003309	2.5
Extreme (-10C)	2535	9.4	0.003702	2.5
Extreme (-20C)	2535	8.8	0.003473	2.5
Extreme (-30C)	2535	8.1	0.003187	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	7.1	0.002795	2.5
3.87	2535	6.7	0.002659	2.5
4.45	2535	5.8	0.002286	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	5.5	0.002165	2.5
Extreme (40C)	2535	5.0	0.001963	2.5
Extreme (30C)	2535	6.4	0.002527	2.5
Extreme (10C)	2535	5.8	0.002274	2.5
Extreme (0C)	2535	5.1	0.002003	2.5
Extreme (-10C)	2535	5.6	0.002199	2.5
Extreme (-20C)	2535	5.6	0.002222	2.5
Extreme (-30C)	2535	5.3	0.002083	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	9.1	0.012890	2.5
3.87	707.5	10.4	0.014692	2.5
4.45	707.5	8.3	0.011799	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	707.5	8.5	0.011944	2.5
Extreme (50C)	707.5	7.2	0.010240	2.5
Extreme (40C)	707.5	7.1	0.010024	2.5
Extreme (30C)	707.5	7.9	0.011186	2.5
Extreme (10C)	707.5	7.1	0.009985	2.5
Extreme (0C)	707.5	9.2	0.013041	2.5
Extreme (-10C)	707.5	8.8	0.012370	2.5
Extreme (-20C)	707.5	8.9	0.012578	2.5
Extreme (-30C)	707.5	7.6	0.010793	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	7.7	0.010848	2.5
3.87	707.5	8.5	0.012052	2.5
4.45	707.5	7.7	0.010931	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	707.5	8.8	0.012424	2.5
Extreme (50C)	707.5	8.7	0.012279	2.5
Extreme (40C)	707.5	8.8	0.012438	2.5
Extreme (30C)	707.5	7.5	0.010573	2.5
Extreme (10C)	707.5	8.6	0.012204	2.5
Extreme (0C)	707.5	7.3	0.010252	2.5
Extreme (-10C)	707.5	7.7	0.010885	2.5
Extreme (-20C)	707.5	9.0	0.012723	2.5
Extreme (-30C)	707.5	8.8	0.012462	2.5

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

10.6 LTE BAND 17

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	710.0	10.0	0.014098	2.5
3.87	710.0	8.6	0.012045	2.5
4.45	710.0	7.8	0.010995	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	9.6	0.013527	2.5
Extreme (50C)	710.0	9.0	0.012633	2.5
Extreme (40C)	710.0	7.7	0.010806	2.5
Extreme (30C)	710.0	8.9	0.012518	2.5
Extreme (10C)	710.0	8.5	0.012022	2.5
Extreme (0C)	710.0	8.2	0.011504	2.5
Extreme (-10C)	710.0	8.7	0.012213	2.5
Extreme (-20C)	710.0	8.4	0.011895	2.5
Extreme (-30C)	710.0	7.9	0.011173	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	10.5	0.014756	2.5
3.87	710.0	8.8	0.012378	2.5
4.45	710.0	8.1	0.011467	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	9.6	0.013471	2.5
Extreme (50C)	710.0	9.2	0.012944	2.5
Extreme (40C)	710.0	8.4	0.011806	2.5
Extreme (30C)	710.0	9.1	0.012864	2.5
Extreme (10C)	710.0	8.3	0.011700	2.5
Extreme (0C)	710.0	8.8	0.012384	2.5
Extreme (-10C)	710.0	9.8	0.013807	2.5
Extreme (-20C)	710.0	8.9	0.012504	2.5
Extreme (-30C)	710.0	8.4	0.011765	2.5

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

10.7 LTE BAND 41

Band 41 QPSK, (20MHz BANDWIDTH RB size 100 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	2593	8.8	0.003402	2.5
3.87	2593	6.3	0.002423	2.5
4.45	2593	7.3	0.002811	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2593	7.0	0.002689	2.5
Extreme (50C)	2593	4.9	0.001895	2.5
Extreme (40C)	2593	5.9	0.002271	2.5
Extreme (30C)	2593	5.2	0.002019	2.5
Extreme (10C)	2593	6.5	0.002522	2.5
Extreme (0C)	2593	4.9	0.001881	2.5
Extreme (-10C)	2593	9.6	0.003722	2.5
Extreme (-20C)	2593	11.3	0.004360	2.5
Extreme (-30C)	2593	5.9	0.002287	2.5

Band 41 16QAM, (20MHz BANDWIDTH RB size 100 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	2593	8.8	0.003409	2.5
3.87	2593	7.0	0.002688	2.5
4.45	2593	6.6	0.002562	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2593	7.9	0.003032	2.5
Extreme (50C)	2593	5.1	0.001979	2.5
Extreme (40C)	2593	5.6	0.002167	2.5
Extreme (30C)	2593	5.0	0.001910	2.5
Extreme (10C)	2593	6.7	0.002574	2.5
Extreme (0C)	2593	5.0	0.001924	2.5
Extreme (-10C)	2593	9.5	0.003679	2.5
Extreme (-20C)	2593	10.5	0.004057	2.5
Extreme (-30C)	2593	6.1	0.002349	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.

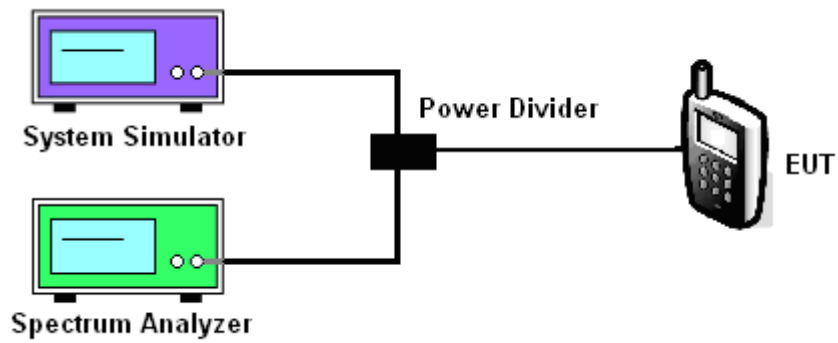
11.2 Measuring Instruments

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 2/4/5/7/12/17/41

Test data reference attachment.

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