

FCC CFR47 PART 22H, 24E, 27, 90S CERTIFICATION TEST REPORT FCC ID: 2ANMU-C17MINI

Product: Smart phone

Trade Mark: OUKITEL

Model No.: C17 Mini

Family Model: C17, C17 GT, C17 S, C17 Pro, C17 Plus, C17
Ultra, C17 MAX, C17 4G, C17 5G

Report No.: N26052808817E

Issue Date: Aug. 28, 2026

Prepared for

SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO.,LTD
A2 2F BUILDING ENET NEW INDUSTRIAL PARK, DAFU INDUSTRIAL ZONE,
GUANLAN, LONGHUA SHENZHEN, 518XXX China

Prepared by

Shenzhen NTEK Testing Technology Co., Ltd.
No. 24 Xinfu East Road, Xiangshan Community, Xinqiao Street,
Baoan District, Shenzhen, Guangdong, People's Republic of China
Tel. 0755-23200050 Website: <http://www.ntek.org.cn>

TEST RESULT CERTIFICATION

Applicant's name: SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO.,LTD
Address: A2 2F BUILDING ENET NEW INDUSTRIAL PARK,
DAFU INDUSTRIAL ZONE, GUANLAN, LONGHUA
SHENZHEN, 518XXX China
Manufacturer's Name: SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO.,LTD
Address: A2 2F BUILDING ENET NEW INDUSTRIAL PARK,
DAFU INDUSTRIAL ZONE, GUANLAN, LONGHUA
SHENZHEN, 518XXX China
Product name: Smart phone
Model and/or type reference: C17 Mini
Trade Mark: OUKITEL
Family Model: C17, C17 GT, C17 S, C17 Pro, C17 Plus, C17 Ultra, C17 MAX, C17
4G, C17 5G
Test Sample Number: S2607160351-1#
Date of Test: Jul. 21, 2026 ~ Aug. 27, 2026
Standards: FCC CFR 47 Part 22H, Part 24E, Part 27, 90S
Test procedure: ANSI C63.26:2015
ANSI/TIA-603-E-2016

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

This report shall not be reproduced except in full, without the written approval of NTEK, this document may be altered or revised by NTEK, personal only, and shall be noted in the revision of the document.

Prepared : Donjon Huang
By : Donjon Huang
(Project Engineer)

Reviewed : Aaron Cheng
By : Aaron Cheng
(Supervisor)

Approved : Alex Li
By : Alex Li
(Manager)

TABLE OF CONTENTS

1. GENERAL INFORMATION	6
1.1 PRODUCT DESCRIPTION	6
1.3 TEST METHODOLOGY	8
1.4 TEST FACILITY	8
MEASUREMENT UNCERTAINTY	8
1.5 SPECIAL ACCESSORIES	8
1.6 WORST-CASE CONFIGURATION AND MODE	8
1.7 SUMMARY OF TEST RESULTS	9
2. SYSTEM TEST CONFIGURATION	10
2.1 EUT CONFIGURATION	10
2.2 EUT EXERCISE	10
2.3 CONFIGURATION OF EUT SYSTEM	10
2.4 TEST SETUP	11
3. TEST AND MEASUREMENT EQUIPMENT	12
4. OUTPUT POWER	14
4.1 OUTPUT POWER MEASUREMENT	14
6. BANDEDGE AND EMISSION MASK	17
7.1 MEASUREMENT METHOD	20
8. RADIATED MEASUREMENT	21
8.1. RADIATED POWER (ERP & EIRP)	21
8.2 LTE BAND 2	22
8.3 LTE BAND 4	26
8.4 LTE BAND 5	30
8.5 LTE BAND 7	32

8.6 LTE BAND 12	34
8.7 LTE BAND 17	36
8.8 LTE BAND 25	38
8.9 LTE BAND 26 A	42
8.10 LTE BAND 26B	44
8.11 LTE BAND 66	48
9. SPURIOUS RADIATION EMISSION	52
9.1 LTE BAND 2	55
9.2 LTE BAND 4	57
9.3 LTE BAND 5	59
9.4 LTE BAND 7	61
9.5 LTE BAND 12	63
9.6 LTE BAND 17	65
9.7 LTE BAND 25	67
9.8 LTE BAND 26A	69
9.9 LTE BAND 26B	71
9.10 LTE BAND 66	73
10. FREQUENCY STABILITY	75
10.1 LTE BAND 2	76
10.2 LTE BAND 4	77
10.3 LTE BAND 5	78
10.4 LTE BAND 7	79
10.5 LTE BAND 12	80
10.6 LTE BAND 17	81
10.7 LTE BAND 25	82
10.8 LTE BAND 26A	83
10.9 LTE BAND 26B	84
10.10 LTE BAND 66	85

11. PEAK-TO-AVERAGE RATIO	86
11.1 Description of the PAR Measurement	86
11.2 Measuring Instruments	86
11.3 Test Procedures.....	86
11.4 Test Setup.....	87

1. GENERAL INFORMATION

1.1 PRODUCT DESCRIPTION

A major technical description of EUT is described as following:

Product Designation:	Smart phone
Trade Mark	OUKITEL
Model Name	C17 Mini
Family Model	C17, C17 GT, C17 S, C17 Pro, C17 Plus, C17 Ultra, C17 MAX, C17 4G, C17 5G
Model Difference	All models have the same circuit and RF module, except for model names.
FCC ID:	2ANMU-C17MINI
Frequency Bands:	U.S. Bands: ☒ LTE FDD Band 2, 4, 5, 7, 12, 17, 25, 26, 66
Frequency Range:	LTE FDD Band 2 Uplink: 1850MHz-1910MHz, Downlink: 1930MHz-1990MHz; LTE FDD Band 4 Uplink: 1710MHz-1755MHz, Downlink: 2110MHz-2155MHz; LTE FDD Band 5 Uplink: 824MHz-849MHz, Downlink: 869MHz-894MHz; LTE-FDD Band 7 Uplink: 2500MHz-2570MHz, Downlink: 2620MHz-2690MHz; LTE FDD Band 12 Uplink: 699MHz-716MHz, Downlink: 729MHz-746MHz; LTE FDD Band 17 Uplink: 704MHz-716MHz, Downlink: 734MHz-746MHz; LTE FDD Band 25 Uplink: 1850MHz-1915MHz, Downlink: 1930MHz-1995MHz; LTE FDD Band 26A Uplink: 814MHz-824MHz, Downlink: 859MHz-869MHz; LTE FDD Band 26B Uplink: 824MHz-849MHz, Downlink: 869MHz-894MHz; LTE FDD Band 66 Uplink: 1710MHz-1780MHz, Downlink: 2110MHz-2200MHz;
Type of Modulation:	QPSK/16QAM/64QAM(Only Downlink)
Power Class	Class 3
Antenna:	PIFA Antenna
Antenna gain:	B2: 1.79dBi; B4: 2.25dBi; B5: -0.89dBi; B7: 3.48dBi; B12: -6.53dBi; B17: -6.53dBi; B25: 1.79dBi; B26: -0.89dBi; B66: 2.25dBi
Adapter	Model: HJ-050200ON2-US Input: 100-240V~50/60Hz 0.3A Output: 5.0V---2.0A 10.0W

Battery	DC 3.85V, 2300mAh, 8.855Wh
Power supply	DC 3.85V from battery or DC 5V from adapter
Extreme Vol. Limits:	DC 3.27V to DC 4.43V (Nominal DC 3.85V) (Note 1)
HW Version	N/A
SW Version	V04
Note1: The High Voltage DC 4.43V and Low Voltage 3.27V 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: 2ANMU-C17MINI** filing to comply with the FCC Part 22H&24E&27&90S.

1.3 TEST METHODOLOGY

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

1.4 TEST FACILITY

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

ShenZhen NTEK Testing Technology Co., Ltd.

1/F, Building E, Fenda Science Park Sanwei, Xixiang, Bao'an District, Shenzhen, Guangdong, China.

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

FCC Registration No.:463705

IC Registration No.:9270A-1,

CNAS Registration No.:L5516

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

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.

1.7 SUMMARY OF TEST RESULTS

FCC Part22, Subpart H/ FCC Part24, Subpart E, FCC Part27, Part 90 KDB 971168 D01 Power Meas License Digital Systems v03r01			
FCC Rule	Test Item	Verdict	Remark
2.1046	Conducted Output Power	PASS	
22.913(d) 24.232(d) 27.50(d)(5) KDB 971168 D01 Clause 5.7	Peak-to-Average Ratio	PASS	
2.1049 22.917(b) 24.238(b) KDB 971168 D01 Clause 4.2	Occupied Bandwidth	PASS	
2.1051 22.917(a) 24.238(a) 27.53(g), (h), (m) 90.543 90.691 KDB 971168 D01 Clause 6	Band Edge	PASS	
22.913(a)(2) 27.50(b)(10), (c)(10) 90.542 90.635 KDB 971168 D01 Clause 5.6	Effective Radiated Power	PASS	
24.232(c) 27.50(h)(2), (d)(4) 90.542 90.635 KDB 971168 D01 Clause 5.6	Equivalent Isotropic Radiated Power	PASS	
2.1053 22.917(a) 24.238(a) 27.53(g), (h), (m) 90.543 90.691 KDB 971168 D01 Clause 7	Field Strength of Spurious Radiation	PASS	
2.1055 22.355 24.235 27.54 90.213 90.539 KDB 971168 D01 Clause 9	Frequency Stability for Temperature & Voltage	PASS	

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

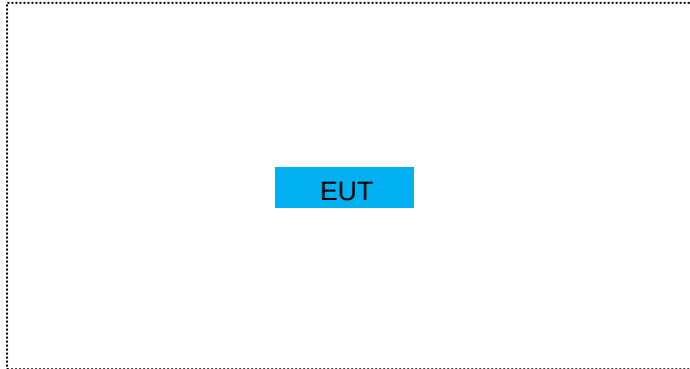
Table 2-1 Equipment Used in EUT System

Item	Equipment	Model No.	ID or Specification	Note
1	Smart phone	C17 Mini	FCC ID: 2ANMU-C17MINI	EUT

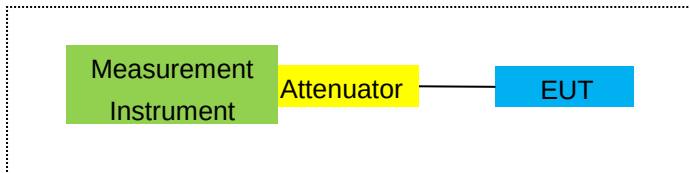
*Note: All the accessories have been used during the test.
the following "EUT" in setup diagram means EUT system.*

2.4 TEST SETUP

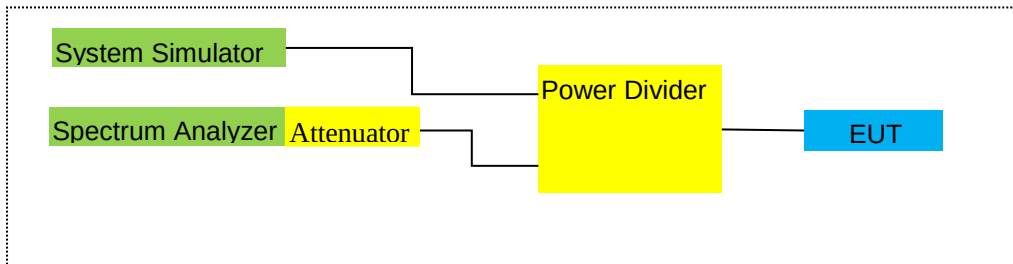
For Radiated Test Cases



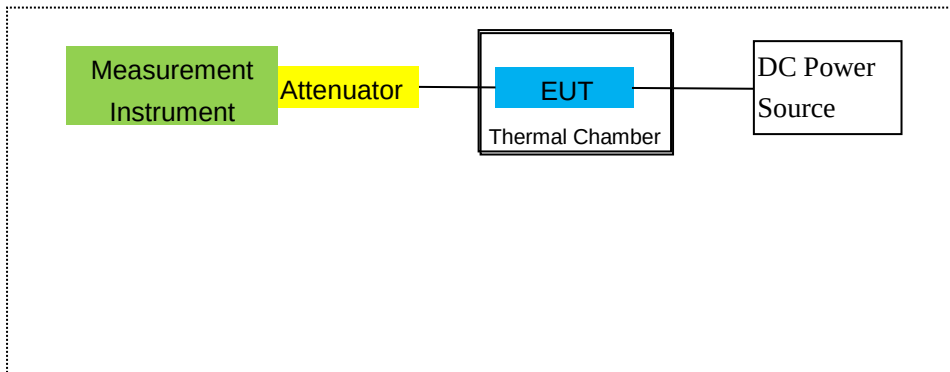
For Conducted Output Power



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	2025.07.23	2026.07.22	1 year
3	Log-Periodic Antenna	SCHWARZBECK	VULB 9162	584	2026.04.11	2027.04.10	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	2025.11.01	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	2026.04.27	2027.04.26	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 2/4/5/7/12/17/25/26/66

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;

(f) For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

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

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

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

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$

decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

90.543 (e) For operations in the 758-768 MHz and the 788-798 MHz bands, the power of any emission outside the 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, in accordance with the following:

(1) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than $76 + 10 \log (P)$ dB in a 6.25 kHz band segment, for base and fixed stations.

(2) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations.

(3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least $43 + 10 \log (P)$ dB.

(4) Compliance with the provisions of paragraphs (e)(1) and (2) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

(5) Compliance with the provisions of paragraph (e)(3) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of 30 kHz may be employed.

90.543 (f) For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

—

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

RESULTS

Test data reference attachment.

7. OUT OF BAND EMISSIONS

RULE PART(S)

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

LIMITS

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

TEST PROCEDURE

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

For each out of band emissions measurement:

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

MODES TESTED

Band 2/4/5/7/12/17/25/26/66

7.1 MEASUREMENT METHOD

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

Test data reference attachment.

8. RADIATED MEASUREMENT

8.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

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

LIMITS:

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

24.232 (c) Mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

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

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

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

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

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

TEST PROCEDURE

ANSI/TIA-603-E Clause 2.2.17

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

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

MODES TESTED

Band 2/4/5/7/12/17/25/26/66

RESULTS

Pass

8.2 LTE BAND 2

Radiated Power (EIRP) for Band 2										
Mode	RB/RB SIZE	Frequency	Result						Limit (W)	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dBi)	Max. EIRP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. EIRP		
1.4MHz Band QPSK	6/0	1850.7	20.00	3.76	8.90	25.14	326.588	Horizontal	2	Pass
		1880	19.91	3.91	8.90	24.90	309.030	Horizontal	2	Pass
		1909.3	20.06	3.93	8.90	25.03	318.420	Horizontal	2	Pass
3.0MHz Band QPSK	15/0	1851.5	19.65	3.77	8.90	24.78	300.608	Horizontal	2	Pass
		1880	19.91	3.91	8.90	24.90	309.030	Horizontal	2	Pass
		1908.5	19.97	3.94	8.90	24.93	311.172	Horizontal	2	Pass
5.0MHz Band QPSK	25/0	1852.5	20.02	3.77	8.90	25.15	327.341	Horizontal	2	Pass
		1880	19.65	3.91	8.90	24.64	291.072	Horizontal	2	Pass
		1907.5	20.39	3.94	8.90	25.35	342.768	Horizontal	2	Pass
10.0MHz Band QPSK	50/0	1855	19.53	3.79	8.90	24.64	291.072	Horizontal	2	Pass
		1880	20.44	3.95	8.90	25.39	345.939	Horizontal	2	Pass
		1905	19.89	3.97	8.90	24.82	303.389	Horizontal	2	Pass
15.0MHz Band QPSK	75/0	1857.5	19.71	3.79	8.90	24.82	303.389	Horizontal	2	Pass
		1880	19.49	3.95	8.90	24.44	277.971	Horizontal	2	Pass
		1902.5	20.43	3.97	8.90	25.36	343.558	Horizontal	2	Pass
20.0MHz Band QPSK	100/0	1860	20.24	3.81	8.90	25.33	341.193	Horizontal	2	Pass
		1880	19.74	3.96	8.90	24.68	293.765	Horizontal	2	Pass
		1900	19.93	4.00	8.90	24.83	304.089	Horizontal	2	Pass
1.4MHz Band QPSK	6/0	1850.7	18.80	3.76	8.90	23.94	247.742	Vertical	2	Pass
		1880	17.94	3.91	8.90	22.93	196.336	Vertical	2	Pass
		1909.3	18.40	3.93	8.90	23.37	217.270	Vertical	2	Pass
3.0MHz Band QPSK	15/0	1851.5	18.35	3.77	8.90	23.48	222.844	Vertical	2	Pass
		1880	18.87	3.91	8.90	23.86	243.220	Vertical	2	Pass
		1908.5	18.30	3.94	8.90	23.26	211.836	Vertical	2	Pass
5.0MHz Band QPSK	25/0	1852.5	18.83	3.77	8.90	23.96	248.886	Vertical	2	Pass
		1880	17.72	3.91	8.90	22.71	186.638	Vertical	2	Pass
		1907.5	18.50	3.94	8.90	23.46	221.820	Vertical	2	Pass
10.0MHz Band QPSK	50/0	1855	17.55	3.79	8.90	22.66	184.502	Vertical	2	Pass
		1880	18.61	3.95	8.90	23.56	226.986	Vertical	2	Pass
		1905	18.26	3.97	8.90	23.19	208.449	Vertical	2	Pass

15.0MHz	75/0	1857.5	17.92	3.79	8.90	23.03	200.909	Vertical	2	Pass
Band		1880	17.73	3.95	8.90	22.68	185.353	Vertical	2	Pass
QPSK		1902.5	18.48	3.97	8.90	23.41	219.280	Vertical	2	Pass
20.0MHz	100/0	1860	18.26	3.81	8.90	23.35	216.272	Vertical	2	Pass
Band		1880	17.86	3.96	8.90	22.80	190.546	Vertical	2	Pass
QPSK		1900	17.97	4.00	8.90	22.87	193.642	Vertical	2	Pass

Radiated Power (EIRP) for Band 2										
Mode	RB/RB SIZE	Frequency	Result						Limit (W)	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dBi)	Max. EIRP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. EIRP		
1.4MHz Band 16 QAM	6/0	1850.7	14.60	3.76	8.90	24.12	258.226	Horizontal	2	Pass
		1880	15.75	3.91	8.90	23.45	221.309	Horizontal	2	Pass
		1909.3	15.45	3.93	8.90	24.05	254.097	Horizontal	2	Pass
3.0MHz Band 16 QAM	15/0	1851.5	15.29	3.77	8.90	24.24	265.461	Horizontal	2	Pass
		1880	14.95	3.91	8.90	23.65	231.739	Horizontal	2	Pass
		1908.5	14.55	3.94	8.90	24.09	256.448	Horizontal	2	Pass
5.0MHz Band 16 QAM	25/0	1852.5	15.14	3.77	8.90	23.55	226.464	Horizontal	2	Pass
		1880	15.50	3.91	8.90	23.92	246.604	Horizontal	2	Pass
		1907.5	14.00	3.94	8.90	23.61	229.615	Horizontal	2	Pass
10.0MHz Band 16 QAM	50/0	1855	15.35	3.79	8.90	23.91	246.037	Horizontal	2	Pass
		1880	14.05	3.95	8.90	24.02	252.348	Horizontal	2	Pass
		1905	15.36	3.97	8.90	23.42	219.786	Horizontal	2	Pass
15.0MHz Band 16 QAM	75/0	1857.5	13.68	3.79	8.90	23.68	233.346	Horizontal	2	Pass
		1880	15.77	3.95	8.90	24.03	252.930	Horizontal	2	Pass
		1902.5	15.65	3.97	8.90	23.49	223.357	Horizontal	2	Pass
20.0MHz Band 16 QAM	100/0	1860	13.84	3.81	8.90	24.38	274.157	Horizontal	2	Pass
		1880	16.17	3.96	8.90	23.41	219.280	Horizontal	2	Pass
		1900	14.55	4.00	8.90	24.07	255.270	Horizontal	2	Pass
1.4MHz Band 16 QAM	6/0	1850.7	14.61	3.76	8.90	22.84	192.309	Vertical	2	Pass
		1880	15.84	3.91	8.90	22.18	165.196	Vertical	2	Pass
		1909.3	15.13	3.93	8.90	22.55	179.887	Vertical	2	Pass
3.0MHz Band 16 QAM	15/0	1851.5	13.77	3.77	8.90	22.65	184.077	Vertical	2	Pass
		1880	14.83	3.91	8.90	22.54	179.473	Vertical	2	Pass
		1908.5	14.56	3.94	8.90	22.45	175.792	Vertical	2	Pass
5.0MHz Band 16 QAM	25/0	1852.5	13.76	3.77	8.90	21.83	152.405	Vertical	2	Pass
		1880	15.05	3.91	8.90	22.47	176.604	Vertical	2	Pass
		1907.5	15.69	3.94	8.90	21.99	158.125	Vertical	2	Pass
10.0MHz Band 16 QAM	50/0	1855	13.98	3.79	8.90	22.27	168.655	Vertical	2	Pass
		1880	15.57	3.95	8.90	22.46	176.198	Vertical	2	Pass
		1905	15.12	3.97	8.90	22.34	171.396	Vertical	2	Pass
15.0MHz	75/0	1857.5	13.85	3.79	8.90	22.15	164.059	Vertical	2	Pass

Band 16 QAM		1880	14.87	3.95	8.90	22.89	194.536	Vertical	2	Pass
		1902.5	13.66	3.97	8.90	22.41	174.181	Vertical	2	Pass
20.0MHz	100/0	1860	14.29	3.81	8.90	23.17	207.491	Vertical	2	Pass
Band 16		1880	14.90	3.96	8.90	22.34	171.396	Vertical	2	Pass
QAM		1900	13.78	4.00	8.90	22.81	190.985	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						Limit (W)	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dBi)	Max. EirP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. EIRP		
1.4MHz Band QPSK	6/0	1710.7	19.00	3.12	8.90	24.78	300.608	Horizontal	1	Pass
		1732.5	18.92	3.27	8.90	24.55	285.102	Horizontal	1	Pass
		1754.3	18.88	3.29	8.90	24.49	281.190	Horizontal	1	Pass
3.0MHz Band QPSK	15/0	1711.5	19.34	3.13	8.90	25.11	324.340	Horizontal	1	Pass
		1732.5	19.50	3.27	8.90	25.13	325.837	Horizontal	1	Pass
		1753.5	18.80	3.30	8.90	24.40	275.423	Horizontal	1	Pass
5.0MHz Band QPSK	25/0	1712.5	18.68	3.13	8.90	24.45	278.612	Horizontal	1	Pass
		1732.5	19.42	3.27	8.90	25.05	319.890	Horizontal	1	Pass
		1752.5	19.60	3.30	8.90	25.20	331.131	Horizontal	1	Pass
10.0MHz Band QPSK	50/0	1715	18.76	3.15	8.90	24.51	282.488	Horizontal	1	Pass
		1732.5	19.37	3.31	8.90	24.96	313.329	Horizontal	1	Pass
		1750	19.16	3.33	8.90	24.73	297.167	Horizontal	1	Pass
15.0MHz Band QPSK	75/0	1717.5	18.91	3.15	8.90	24.66	292.415	Horizontal	1	Pass
		1732.5	18.69	3.31	8.90	24.28	267.917	Horizontal	1	Pass
		1747.5	18.73	3.33	8.90	24.30	269.153	Horizontal	1	Pass
20.0MHz Band QPSK	100/0	1720	18.64	3.17	8.90	24.37	273.527	Horizontal	1	Pass
		1732.5	19.57	3.32	8.90	25.15	327.341	Horizontal	1	Pass
		1745	19.32	3.36	8.90	24.86	306.196	Horizontal	1	Pass
1.4MHz Band QPSK	6/0	1710.7	17.02	3.12	8.90	22.80	190.546	Vertical	1	Pass
		1732.5	17.22	3.27	8.90	22.85	192.752	Vertical	1	Pass
		1754.3	17.25	3.29	8.90	22.86	193.197	Vertical	1	Pass
3.0MHz Band QPSK	15/0	1711.5	17.40	3.13	8.90	23.17	207.491	Vertical	1	Pass
		1732.5	18.27	3.27	8.90	23.90	245.471	Vertical	1	Pass
		1753.5	17.38	3.30	8.90	22.98	198.609	Vertical	1	Pass
5.0MHz Band QPSK	25/0	1712.5	16.70	3.13	8.90	22.47	176.604	Vertical	1	Pass
		1732.5	18.36	3.27	8.90	23.99	250.611	Vertical	1	Pass
		1752.5	17.70	3.30	8.90	23.30	213.796	Vertical	1	Pass
10.0MHz Band	50/0	1715	17.23	3.15	8.90	22.98	198.609	Vertical	1	Pass
		1732.5	17.42	3.31	8.90	23.01	199.986	Vertical	1	Pass

QPSK		1750	18.16	3.33	8.90	23.73	236.048	Vertical	1	Pass
15.0MHz	75/0	1717.5	17.18	3.15	8.90	22.93	196.336	Vertical	1	Pass
Band		1732.5	17.48	3.31	8.90	23.07	202.768	Vertical	1	Pass
QPSK		1747.5	17.13	3.33	8.90	22.70	186.209	Vertical	1	Pass
20.0MHz	100/0	1720	17.06	3.17	8.90	22.79	190.108	Vertical	1	Pass
Band		1732.5	18.54	3.32	8.90	24.12	258.226	Vertical	1	Pass
QPSK		1745	17.96	3.36	8.90	23.50	223.872	Vertical	1	Pass

Radiated Power (EIRP) for Band 4										
Mode	RB/RB SIZE	Frequency	Result						Limit (W)	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dBi)	Max. EIRP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. EIRP		
1.4MHz Band 16 QAM	6/0	1710.7	18.02	3.12	8.90	23.80	239.883	Horizontal	1	Pass
		1732.5	17.68	3.27	8.90	23.31	214.289	Horizontal	1	Pass
		1754.3	17.86	3.29	8.90	23.47	222.331	Horizontal	1	Pass
3.0MHz Band 16 QAM	15/0	1711.5	17.58	3.13	8.90	23.35	216.272	Horizontal	1	Pass
		1732.5	18.59	3.27	8.90	24.22	264.241	Horizontal	1	Pass
		1753.5	18.21	3.30	8.90	23.81	240.436	Horizontal	1	Pass
5.0MHz Band 16 QAM	25/0	1712.5	17.56	3.13	8.90	23.33	215.278	Horizontal	1	Pass
		1732.5	18.17	3.27	8.90	23.80	239.883	Horizontal	1	Pass
		1752.5	18.44	3.30	8.90	24.04	253.513	Horizontal	1	Pass
10.0MHz Band 16 QAM	50/0	1715	18.38	3.15	8.90	24.13	258.821	Horizontal	1	Pass
		1732.5	18.42	3.31	8.90	24.01	251.768	Horizontal	1	Pass
		1750	17.88	3.33	8.90	23.45	221.309	Horizontal	1	Pass
15.0MHz Band 16 QAM	75/0	1717.5	18.32	3.15	8.90	24.07	255.270	Horizontal	1	Pass
		1732.5	18.21	3.31	8.90	23.80	239.883	Horizontal	1	Pass
		1747.5	18.43	3.33	8.90	24.00	251.189	Horizontal	1	Pass
20.0MHz Band 16 QAM	100/0	1720	17.90	3.17	8.90	23.63	230.675	Horizontal	1	Pass
		1732.5	18.59	3.32	8.90	24.17	261.216	Horizontal	1	Pass
		1745	18.62	3.36	8.90	24.16	260.615	Horizontal	1	Pass
1.4MHz Band 16 QAM	6/0	1710.7	16.25	3.12	8.90	22.03	159.588	Vertical	1	Pass
		1732.5	16.36	3.27	8.90	21.99	158.125	Vertical	1	Pass
		1754.3	16.56	3.29	8.90	22.17	164.816	Vertical	1	Pass
3.0MHz Band 16 QAM	15/0	1711.5	15.65	3.13	8.90	21.42	138.676	Vertical	1	Pass
		1732.5	17.28	3.27	8.90	22.91	195.434	Vertical	1	Pass
		1753.5	16.46	3.30	8.90	22.06	160.694	Vertical	1	Pass
5.0MHz Band 16 QAM	25/0	1712.5	15.75	3.13	8.90	21.52	141.906	Vertical	1	Pass
		1732.5	16.99	3.27	8.90	22.62	182.810	Vertical	1	Pass
		1752.5	16.71	3.30	8.90	22.31	170.216	Vertical	1	Pass
10.0MHz Band 16 QAM	50/0	1715	16.42	3.15	8.90	22.17	164.816	Vertical	1	Pass
		1732.5	16.68	3.31	8.90	22.27	168.655	Vertical	1	Pass
		1750	16.37	3.33	8.90	21.94	156.315	Vertical	1	Pass
15.0MHz Band 16	75/0	1717.5	17.28	3.15	8.90	23.03	200.909	Vertical	1	Pass
		1732.5	16.37	3.31	8.90	21.96	157.036	Vertical	1	Pass

QAM		1747.5	17.35	3.33	8.90	22.92	195.884	Vertical	1	Pass
20.0MHz	100/0	1720	16.46	3.17	8.90	22.19	165.577	Vertical	1	Pass
Band 16		1732.5	16.76	3.32	8.90	22.34	171.396	Vertical	1	Pass
QAM		1745	17.34	3.36	8.90	22.88	194.089	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							Limit (W)	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	6/0	824.7	18.30	2.01	5.30	2.15	19.44	87.902	Horizontal	7	Pass
		836.5	18.24	2.01	5.30	2.15	19.38	86.696	Horizontal	7	Pass
		848.3	17.94	2.02	5.70	2.15	19.47	88.512	Horizontal	7	Pass
3.0MHz Band QPSK	15/0	825.5	18.16	2.01	5.30	2.15	19.30	85.114	Horizontal	7	Pass
		836.5	18.13	2.01	5.30	2.15	19.27	84.528	Horizontal	7	Pass
		847.5	17.91	2.02	5.70	2.15	19.44	87.902	Horizontal	7	Pass
5.0MHz Band QPSK	25/0	826.5	18.58	2.01	5.30	2.15	19.72	93.756	Horizontal	7	Pass
		836.5	19.00	2.01	5.30	2.15	20.14	103.276	Horizontal	7	Pass
		846.5	18.13	2.02	5.70	2.15	19.66	92.470	Horizontal	7	Pass
10.0MHz Band QPSK	50/0	829	18.30	2.01	5.30	2.15	19.44	87.902	Horizontal	7	Pass
		836.5	18.78	2.01	5.30	2.15	19.92	98.175	Horizontal	7	Pass
		844	18.40	2.02	5.70	2.15	19.93	98.401	Horizontal	7	Pass
1.4MHz Band QPSK	6/0	824.7	16.62	2.01	5.30	2.15	17.76	59.704	Vertical	7	Pass
		836.5	17.24	2.01	5.30	2.15	18.38	68.865	Vertical	7	Pass
		848.3	16.69	2.02	5.70	2.15	18.22	66.374	Vertical	7	Pass
3.0MHz Band QPSK	15/0	825.5	16.51	2.01	5.30	2.15	17.65	58.210	Vertical	7	Pass
		836.5	16.34	2.01	5.30	2.15	17.48	55.976	Vertical	7	Pass
		847.5	16.80	2.02	5.70	2.15	18.33	68.077	Vertical	7	Pass
5.0MHz Band QPSK	25/0	826.5	16.65	2.01	5.30	2.15	17.79	60.117	Vertical	7	Pass
		836.5	17.39	2.01	5.30	2.15	18.53	71.285	Vertical	7	Pass
		846.5	16.39	2.02	5.70	2.15	17.92	61.944	Vertical	7	Pass
10.0MHz Band QPSK	50/0	829	16.79	2.01	5.30	2.15	17.93	62.087	Vertical	7	Pass
		836.5	16.82	2.01	5.30	2.15	17.96	62.517	Vertical	7	Pass
		844	16.69	2.02	5.70	2.15	18.22	66.374	Vertical	7	Pass

Radiated Power (ERP) for Band 5											
Mode	RB/RB SIZE	Frequency	Result							Limit (W)	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	6/0	824.7	17.56	2.01	5.30	2.15	18.70	74.131	Horizontal	7	Pass
		836.5	17.79	2.01	5.30	2.15	18.93	78.163	Horizontal	7	Pass
		848.3	17.43	2.02	5.70	2.15	18.96	78.705	Horizontal	7	Pass
3.0MHz Band 16 QAM	15/0	825.5	17.93	2.01	5.30	2.15	19.07	80.724	Horizontal	7	Pass
		836.5	17.12	2.01	5.30	2.15	18.26	66.988	Horizontal	7	Pass
		847.5	16.93	2.02	5.70	2.15	18.46	70.146	Horizontal	7	Pass
5.0MHz Band 16 QAM	25/0	826.5	17.89	2.01	5.30	2.15	19.03	79.983	Horizontal	7	Pass
		836.5	17.81	2.01	5.30	2.15	18.95	78.524	Horizontal	7	Pass
		846.5	17.37	2.02	5.70	2.15	18.90	77.625	Horizontal	7	Pass
10.0MHz Band 16 QAM	50/0	829	17.25	2.01	5.30	2.15	18.39	69.024	Horizontal	7	Pass
		836.5	17.14	2.01	5.30	2.15	18.28	67.298	Horizontal	7	Pass
		844	17.34	2.02	5.70	2.15	18.87	77.090	Horizontal	7	Pass
1.4MHz Band 16 QAM	6/0	824.7	15.82	2.01	5.30	2.15	16.96	49.659	Vertical	7	Pass
		836.5	16.34	2.01	5.30	2.15	17.48	55.976	Vertical	7	Pass
		848.3	15.99	2.02	5.70	2.15	17.52	56.494	Vertical	7	Pass
3.0MHz Band 16 QAM	15/0	825.5	16.75	2.01	5.30	2.15	17.89	61.518	Vertical	7	Pass
		836.5	15.71	2.01	5.30	2.15	16.85	48.417	Vertical	7	Pass
		847.5	15.43	2.02	5.70	2.15	16.96	49.659	Vertical	7	Pass
5.0MHz Band 16 QAM	25/0	826.5	16.79	2.01	5.30	2.15	17.93	62.087	Vertical	7	Pass
		836.5	16.19	2.01	5.30	2.15	17.33	54.075	Vertical	7	Pass
		846.5	16.02	2.02	5.70	2.15	17.55	56.885	Vertical	7	Pass
10.0MHz Band 16 QAM	50/0	829	15.53	2.01	5.30	2.15	16.67	46.452	Vertical	7	Pass
		836.5	15.49	2.01	5.30	2.15	16.63	46.026	Vertical	7	Pass
		844	16.30	2.02	5.70	2.15	17.83	60.674	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						Limit (W)	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dBi)	Max. EIRP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. EIRP		
5.0MHz Band QPSK	25/0	2502.5	23.61	4.54	9.00	28.07	641.210	Horizontal	2	Pass
		2535	23.94	4.69	9.00	28.25	668.344	Horizontal	2	Pass
		2567.5	23.37	4.71	9.00	27.66	583.445	Horizontal	2	Pass
10.0MHz Band QPSK	50/0	2505	22.94	4.55	9.00	27.39	548.277	Horizontal	2	Pass
		2535	23.54	4.69	9.00	27.85	609.537	Horizontal	2	Pass
		2565	23.72	4.72	9.00	28.00	630.957	Horizontal	2	Pass
15.0MHz Band QPSK	75/0	2507.5	23.03	4.55	9.00	27.48	559.758	Horizontal	2	Pass
		2535	23.67	4.69	9.00	27.98	628.058	Horizontal	2	Pass
		2562.5	23.37	4.72	9.00	27.65	582.103	Horizontal	2	Pass
20.0MHz Band QPSK	100/0	2510	23.75	4.57	9.00	28.18	657.658	Horizontal	2	Pass
		2535	23.14	4.73	9.00	27.41	550.808	Horizontal	2	Pass
		2560	23.50	4.75	9.00	27.75	595.662	Horizontal	2	Pass
5.0MHz Band QPSK	25/0	2502.5	22.59	4.54	9.00	27.05	506.991	Vertical	2	Pass
		2535	22.47	4.69	9.00	26.78	476.431	Vertical	2	Pass
		2567.5	21.93	4.71	9.00	26.22	418.794	Vertical	2	Pass
10.0MHz Band QPSK	50/0	2505	21.01	4.55	9.00	25.46	351.560	Vertical	2	Pass
		2535	21.72	4.69	9.00	26.03	400.867	Vertical	2	Pass
		2565	22.33	4.72	9.00	26.61	458.142	Vertical	2	Pass
15.0MHz Band QPSK	75/0	2507.5	21.96	4.55	9.00	26.41	437.522	Vertical	2	Pass
		2535	22.15	4.69	9.00	26.46	442.588	Vertical	2	Pass
		2562.5	21.44	4.72	9.00	25.72	373.250	Vertical	2	Pass
20.0MHz Band QPSK	100/0	2510	21.95	4.57	9.00	26.38	434.510	Vertical	2	Pass
		2535	21.27	4.73	9.00	25.54	358.096	Vertical	2	Pass
		2560	22.08	4.75	9.00	26.33	429.536	Vertical	2	Pass

Radiated Power (EIRP) for Band 7										
Mode	RB/RB SIZE	Frequency	Result						Limit (W)	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dBi)	Max. EIRP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. EIRP		
5.0MHz Band 16 QAM	25/0	2502.5	22.83	4.54	9.00	27.29	535.797	Horizontal	2	Pass
		2535	23.13	4.69	9.00	27.44	554.626	Horizontal	2	Pass
		2567.5	23.00	4.71	9.00	27.29	535.797	Horizontal	2	Pass
10.0MHz Band 16 QAM	50/0	2505	22.93	4.55	9.00	27.38	547.016	Horizontal	2	Pass
		2535	22.67	4.69	9.00	26.98	498.884	Horizontal	2	Pass
		2565	22.68	4.72	9.00	26.96	496.592	Horizontal	2	Pass
15.0MHz Band 16 QAM	75/0	2507.5	22.88	4.55	9.00	27.33	540.754	Horizontal	2	Pass
		2535	23.04	4.69	9.00	27.35	543.250	Horizontal	2	Pass
		2562.5	22.56	4.72	9.00	26.84	483.059	Horizontal	2	Pass
20.0MHz Band 16 QAM	100/0	2510	22.90	4.57	9.00	27.33	540.754	Horizontal	2	Pass
		2535	22.88	4.73	9.00	27.15	518.800	Horizontal	2	Pass
		2560	22.66	4.75	9.00	26.91	490.908	Horizontal	2	Pass
5.0MHz Band 16 QAM	25/0	2502.5	21.42	4.54	9.00	25.88	387.258	Vertical	2	Pass
		2535	21.23	4.69	9.00	25.54	358.096	Vertical	2	Pass
		2567.5	22.00	4.71	9.00	26.29	425.598	Vertical	2	Pass
10.0MHz Band 16 QAM	50/0	2505	21.51	4.55	9.00	25.96	394.457	Vertical	2	Pass
		2535	20.81	4.69	9.00	25.12	325.087	Vertical	2	Pass
		2565	20.83	4.72	9.00	25.11	324.340	Vertical	2	Pass
15.0MHz Band 16 QAM	75/0	2507.5	20.92	4.55	9.00	25.37	344.350	Vertical	2	Pass
		2535	21.80	4.69	9.00	26.11	408.319	Vertical	2	Pass
		2562.5	21.20	4.72	9.00	25.48	353.183	Vertical	2	Pass
20.0MHz Band 16 QAM	100/0	2510	21.32	4.57	9.00	25.75	375.837	Vertical	2	Pass
		2535	21.57	4.73	9.00	25.84	383.707	Vertical	2	Pass
		2560	21.49	4.75	9.00	25.74	374.973	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							Limit (W)	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	6/0	699.7	12.96	1.91	5.60	2.15	14.50	28.184	Horizontal	3	Pass
		707.5	13.23	1.91	5.70	2.15	14.87	30.690	Horizontal	3	Pass
		715.3	13.10	1.93	5.80	2.15	14.82	30.339	Horizontal	3	Pass
3.0MHz Band QPSK	15/0	700.5	13.07	1.91	5.60	2.15	14.61	28.907	Horizontal	3	Pass
		707.5	12.80	1.91	5.70	2.15	14.44	27.797	Horizontal	3	Pass
		714.5	13.15	1.93	5.80	2.15	14.87	30.690	Horizontal	3	Pass
5.0MHz Band QPSK	25/0	701.5	12.78	1.91	5.60	2.15	14.32	27.040	Horizontal	3	Pass
		707.5	12.52	1.91	5.70	2.15	14.16	26.062	Horizontal	3	Pass
		713.5	13.05	1.92	5.80	2.15	14.78	30.061	Horizontal	3	Pass
10.0MHz Band QPSK	50/0	704	12.47	1.91	5.60	2.15	14.01	25.177	Horizontal	3	Pass
		707.5	12.90	1.91	5.70	2.15	14.54	28.445	Horizontal	3	Pass
		711	12.35	1.92	5.80	2.15	14.08	25.586	Horizontal	3	Pass
1.4MHz Band QPSK	6/0	699.7	11.65	1.91	5.60	2.15	13.19	20.845	Vertical	3	Pass
		707.5	12.13	1.91	5.70	2.15	13.77	23.823	Vertical	3	Pass
		715.3	11.49	1.93	5.80	2.15	13.21	20.941	Vertical	3	Pass
3.0MHz Band QPSK	15/0	700.5	11.33	1.91	5.60	2.15	12.87	19.364	Vertical	3	Pass
		707.5	10.96	1.91	5.70	2.15	12.60	18.197	Vertical	3	Pass
		714.5	11.58	1.93	5.80	2.15	13.30	21.380	Vertical	3	Pass
5.0MHz Band QPSK	25/0	701.5	10.81	1.91	5.60	2.15	12.35	17.179	Vertical	3	Pass
		707.5	11.48	1.91	5.70	2.15	13.12	20.512	Vertical	3	Pass
		713.5	11.56	1.92	5.80	2.15	13.29	21.330	Vertical	3	Pass
10.0MHz Band QPSK	50/0	704	10.73	1.91	5.60	2.15	12.27	16.866	Vertical	3	Pass
		707.5	11.33	1.91	5.70	2.15	12.97	19.815	Vertical	3	Pass
		711	10.41	1.92	5.80	2.15	12.14	16.368	Vertical	3	Pass

Radiated Power (ERP) for Band 12											
Mode	RB/RB SIZE	Frequency	Result							Limit (W)	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	6/0	699.7	13.05	1.91	5.60	2.15	14.59	28.774	Horizontal	3	Pass
		707.5	12.83	1.91	5.70	2.15	14.47	27.990	Horizontal	3	Pass
		715.3	12.16	1.93	5.80	2.15	13.88	24.434	Horizontal	3	Pass
3.0MHz Band 16 QAM	15/0	700.5	12.53	1.91	5.60	2.15	14.07	25.527	Horizontal	3	Pass
		707.5	12.78	1.91	5.70	2.15	14.42	27.669	Horizontal	3	Pass
		714.5	13.04	1.93	5.80	2.15	14.76	29.923	Horizontal	3	Pass
5.0MHz Band 16 QAM	25/0	701.5	13.07	1.91	5.60	2.15	14.61	28.907	Horizontal	3	Pass
		707.5	12.75	1.91	5.70	2.15	14.39	27.479	Horizontal	3	Pass
		713.5	12.42	1.92	5.80	2.15	14.15	26.002	Horizontal	3	Pass
10.0MHz Band 16 QAM	50/0	704	12.45	1.91	5.60	2.15	13.99	25.061	Horizontal	3	Pass
		707.5	12.69	1.91	5.70	2.15	14.33	27.102	Horizontal	3	Pass
		711	12.96	1.92	5.80	2.15	14.69	29.444	Horizontal	3	Pass
1.4MHz Band 16 QAM	6/0	699.7	11.72	1.91	5.60	2.15	13.26	21.184	Vertical	3	Pass
		707.5	11.70	1.91	5.70	2.15	13.34	21.577	Vertical	3	Pass
		715.3	10.86	1.93	5.80	2.15	12.58	18.113	Vertical	3	Pass
3.0MHz Band 16 QAM	15/0	700.5	10.61	1.91	5.60	2.15	12.15	16.406	Vertical	3	Pass
		707.5	10.93	1.91	5.70	2.15	12.57	18.072	Vertical	3	Pass
		714.5	11.54	1.93	5.80	2.15	13.26	21.184	Vertical	3	Pass
5.0MHz Band 16 QAM	25/0	701.5	11.91	1.91	5.60	2.15	13.45	22.131	Vertical	3	Pass
		707.5	10.90	1.91	5.70	2.15	12.54	17.947	Vertical	3	Pass
		713.5	11.16	1.92	5.80	2.15	12.89	19.454	Vertical	3	Pass
10.0MHz Band 16 QAM	50/0	704	10.88	1.91	5.60	2.15	12.42	17.458	Vertical	3	Pass
		707.5	11.67	1.91	5.70	2.15	13.31	21.429	Vertical	3	Pass
		711	11.74	1.92	5.80	2.15	13.47	22.233	Vertical	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							Limit (W)	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	25/0	706.5	12.40	1.91	5.60	2.15	13.94	24.774	Horizontal	3	Pass
		710	12.31	1.91	5.70	2.15	13.95	24.831	Horizontal	3	Pass
		713.5	12.54	1.92	5.80	2.15	14.27	26.730	Horizontal	3	Pass
10.0MHz Band QPSK	50/0	709	11.94	1.91	5.60	2.15	13.48	22.284	Horizontal	3	Pass
		710	11.79	1.91	5.70	2.15	13.43	22.029	Horizontal	3	Pass
		711	12.17	1.92	5.80	2.15	13.90	24.547	Horizontal	3	Pass
5.0MHz Band QPSK	25/0	706.5	11.15	1.91	5.60	2.15	12.69	18.578	Vertical	3	Pass
		710	10.80	1.91	5.70	2.15	12.44	17.539	Vertical	3	Pass
		713.5	10.62	1.92	5.80	2.15	12.35	17.179	Vertical	3	Pass
10.0MHz Band QPSK	50/0	709	10.36	1.91	5.60	2.15	11.90	15.488	Vertical	3	Pass
		710	10.74	1.91	5.70	2.15	12.38	17.298	Vertical	3	Pass
		711	10.66	1.92	5.80	2.15	12.39	17.338	Vertical	3	Pass

Radiated Power (ERP) for Band 17											
Mode	RB/RB SIZE	Frequency	Result							Limit (W)	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	25/0	706.5	16.81	1.91	5.6	2.15	15.68	36.983	Horizontal	3	Pass
		710	16.39	1.91	5.7	2.15	15.21	33.189	Horizontal	3	Pass
		713.5	17.43	1.92	5.8	2.15	15.72	37.325	Horizontal	3	Pass
10.0MHz Band 16 QAM	50/0	709	15.91	1.91	5.6	2.15	15.61	36.392	Horizontal	3	Pass
		710	15.84	1.91	5.7	2.15	15.37	34.435	Horizontal	3	Pass
		711	15.59	1.92	5.8	2.15	15.52	35.645	Horizontal	3	Pass
5.0MHz Band 16 QAM	25/0	706.5	17.52	1.91	5.6	2.15	14.47	27.990	Vertical	3	Pass
		710	17.46	1.91	5.7	2.15	13.44	22.080	Vertical	3	Pass
		713.5	16.25	1.92	5.8	2.15	14.66	29.242	Vertical	3	Pass
10.0MHz Band 16 QAM	50/0	709	17.30	1.91	5.6	2.15	13.85	24.266	Vertical	3	Pass
		710	17.57	1.91	5.7	2.15	13.97	24.946	Vertical	3	Pass
		711	16.65	1.92	5.8	2.15	13.74	23.659	Vertical	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)

8.8 LTE BAND 25

Radiated Power (EIRP) for Band 25										
Mode	RB/RB SIZE	Frequency	Result						Limit (W)	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dBi)	Max. EirP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. EIRP		
1.4MHz Band QPSK	6/0	1850.7	19.67	3.12	8.90	25.45	350.752	Horizontal	2	Pass
		1882.5	19.36	3.27	8.90	24.99	315.500	Horizontal	2	Pass
		1914.3	19.83	3.29	8.90	25.44	349.945	Horizontal	2	Pass
3.0MHz Band QPSK	15/0	1851.5	19.08	3.13	8.90	24.85	305.492	Horizontal	2	Pass
		1882.5	19.61	3.27	8.90	25.24	334.195	Horizontal	2	Pass
		1913.5	19.25	3.30	8.90	24.85	305.492	Horizontal	2	Pass
5.0MHz Band QPSK	25/0	1852.5	18.86	3.13	8.90	24.63	290.402	Horizontal	2	Pass
		1882.5	19.19	3.27	8.90	24.82	303.389	Horizontal	2	Pass
		1912.5	19.18	3.30	8.90	24.78	300.608	Horizontal	2	Pass
10.0MHz Band QPSK	50/0	1855	18.84	3.15	8.90	24.59	287.740	Horizontal	2	Pass
		1882.5	19.88	3.31	8.90	25.47	352.371	Horizontal	2	Pass
		1910	19.42	3.33	8.90	24.99	315.500	Horizontal	2	Pass
15.0MHz Band QPSK	75/0	1857.5	19.00	3.15	8.90	24.75	298.538	Horizontal	2	Pass
		1882.5	19.04	3.31	8.90	24.63	290.402	Horizontal	2	Pass
		1907.5	19.09	3.33	8.90	24.66	292.415	Horizontal	2	Pass
20.0MHz Band QPSK	100/0	1860	19.26	3.17	8.90	24.99	315.500	Horizontal	2	Pass
		1882.5	19.21	3.32	8.90	24.79	301.301	Horizontal	2	Pass
		1905	19.03	3.36	8.90	24.57	286.418	Horizontal	2	Pass
1.4MHz Band QPSK	6/0	1850.7	18.01	3.12	8.90	23.79	239.332	Vertical	2	Pass
		1882.5	17.80	3.27	8.90	23.43	220.293	Vertical	2	Pass
		1914.3	18.81	3.29	8.90	24.42	276.694	Vertical	2	Pass
3.0MHz Band QPSK	15/0	1851.5	17.27	3.13	8.90	23.04	201.372	Vertical	2	Pass
		1882.5	17.86	3.27	8.90	23.49	223.357	Vertical	2	Pass
		1913.5	17.71	3.30	8.90	23.31	214.289	Vertical	2	Pass
5.0MHz Band QPSK	25/0	1852.5	16.91	3.13	8.90	22.68	185.353	Vertical	2	Pass
		1882.5	17.37	3.27	8.90	23.00	199.526	Vertical	2	Pass
		1912.5	17.90	3.30	8.90	23.50	223.872	Vertical	2	Pass
10.0MHz Band	50/0	1855	17.63	3.15	8.90	23.38	217.771	Vertical	2	Pass
		1882.5	18.68	3.31	8.90	24.27	267.301	Vertical	2	Pass

QPSK		1910	18.26	3.33	8.90	23.83	241.546	Vertical	2	Pass
15.0MHz	75/0	1857.5	17.05	3.15	8.90	22.80	190.546	Vertical	2	Pass
Band		1882.5	17.53	3.31	8.90	23.12	205.116	Vertical	2	Pass
QPSK		1907.5	17.39	3.33	8.90	22.96	197.697	Vertical	2	Pass
20.0MHz	100/0	1860	17.86	3.17	8.90	23.59	228.560	Vertical	2	Pass
Band		1882.5	18.14	3.32	8.90	23.72	235.505	Vertical	2	Pass
QPSK		1905	18.02	3.36	8.90	23.56	226.986	Vertical	2	Pass

Radiated Power (EIRP) for Band 25										
Mode	RB/RB SIZE	Frequency	Result						Limit (W)	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dBi)	Max. EIRP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. EIRP		
1.4MHz Band 16 QAM	6/0	1850.7	19.23	3.12	8.90	25.01	316.957	Horizontal	2	Pass
		1882.5	19.02	3.27	8.90	24.65	291.743	Horizontal	2	Pass
		1914.3	19.60	3.29	8.90	25.21	331.894	Horizontal	2	Pass
3.0MHz Band 16 QAM	15/0	1851.5	18.85	3.13	8.90	24.62	289.734	Horizontal	2	Pass
		1882.5	19.64	3.27	8.90	25.27	336.512	Horizontal	2	Pass
		1913.5	19.12	3.30	8.90	24.72	296.483	Horizontal	2	Pass
5.0MHz Band 16 QAM	25/0	1852.5	19.52	3.13	8.90	25.29	338.065	Horizontal	2	Pass
		1882.5	19.69	3.27	8.90	25.32	340.408	Horizontal	2	Pass
		1912.5	19.84	3.30	8.90	25.44	349.945	Horizontal	2	Pass
10.0MHz Band 16 QAM	50/0	1855	19.14	3.15	8.90	24.89	308.319	Horizontal	2	Pass
		1882.5	19.77	3.31	8.90	25.36	343.558	Horizontal	2	Pass
		1910	19.13	3.33	8.90	24.70	295.121	Horizontal	2	Pass
15.0MHz Band 16 QAM	75/0	1857.5	19.40	3.15	8.90	25.15	327.341	Horizontal	2	Pass
		1882.5	19.49	3.31	8.90	25.08	322.107	Horizontal	2	Pass
		1907.5	19.41	3.33	8.90	24.98	314.775	Horizontal	2	Pass
20.0MHz Band 16 QAM	100/0	1860	19.40	3.17	8.90	25.13	325.837	Horizontal	2	Pass
		1882.5	19.49	3.32	8.90	25.07	321.366	Horizontal	2	Pass
		1905	19.70	3.36	8.90	25.24	334.195	Horizontal	2	Pass
1.4MHz Band 16 QAM	6/0	1850.7	17.89	3.12	8.90	23.67	232.809	Vertical	2	Pass
		1882.5	17.21	3.27	8.90	22.84	192.309	Vertical	2	Pass
		1914.3	17.88	3.29	8.90	23.49	223.357	Vertical	2	Pass
3.0MHz Band 16 QAM	15/0	1851.5	17.34	3.13	8.90	23.11	204.644	Vertical	2	Pass
		1882.5	17.99	3.27	8.90	23.62	230.144	Vertical	2	Pass
		1913.5	17.16	3.30	8.90	22.76	188.799	Vertical	2	Pass
5.0MHz Band 16 QAM	25/0	1852.5	17.65	3.13	8.90	23.42	219.786	Vertical	2	Pass
		1882.5	17.77	3.27	8.90	23.40	218.776	Vertical	2	Pass
		1912.5	18.61	3.30	8.90	24.21	263.633	Vertical	2	Pass
10.0MHz Band 16 QAM	50/0	1855	17.16	3.15	8.90	22.91	195.434	Vertical	2	Pass
		1882.5	18.52	3.31	8.90	24.11	257.632	Vertical	2	Pass
		1910	17.43	3.33	8.90	23.00	199.526	Vertical	2	Pass
15.0MHz Band 16	75/0	1857.5	17.68	3.15	8.90	23.43	220.293	Vertical	2	Pass
		1882.5	17.65	3.31	8.90	23.24	210.863	Vertical	2	Pass

QAM		1907.5	18.33	3.33	8.90	23.90	245.471	Vertical	2	Pass
20.0MHz	100/0	1860	17.98	3.17	8.90	23.71	234.963	Vertical	2	Pass
Band 16		1882.5	18.34	3.32	8.90	23.92	246.604	Vertical	2	Pass
QAM		1905	18.53	3.36	8.90	24.07	255.270	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)

8.9 LTE BAND 26 A

Radiated Power (ERP) for Band 26(814-824)											
Mode	RB/RB SIZE	Frequency	Result							Limit (W)	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 BW QPSK	6/0	814.7	20.63	3.76	5.30	2.15	20.02	100.462	Horizontal	100	Pass
		819	21.05	3.91	5.30	2.15	20.29	106.905	Horizontal	100	Pass
		823.3	20.68	3.93	5.70	2.15	20.30	107.152	Horizontal	100	Pass
3.0MHz BW QPSK	15/0	815.5	20.43	3.77	5.30	2.15	19.81	95.719	Horizontal	100	Pass
		819	20.84	3.91	5.30	2.15	20.08	101.859	Horizontal	100	Pass
		822.5	20.47	3.94	5.70	2.15	20.08	101.859	Horizontal	100	Pass
5.0MHz BW QPSK	25/0	816.5	20.77	3.77	5.30	2.15	20.15	103.514	Horizontal	100	Pass
		819	20.55	3.91	5.30	2.15	19.79	95.280	Horizontal	100	Pass
		821.5	20.76	3.94	5.70	2.15	20.37	108.893	Horizontal	100	Pass
10.0MHz BW QPSK	50/0	819	20.56	3.91	5.30	2.15	19.80	95.499	Horizontal	100	Pass
1.4MHz BW QPSK	6/0	814.7	18.88	3.79	5.30	2.15	18.24	66.681	Vertical	100	Pass
		819	19.36	3.95	5.70	2.15	18.96	78.705	Vertical	100	Pass
		823.3	19.70	3.97	5.30	2.15	18.88	77.268	Vertical	100	Pass
3.0MHz BW QPSK	15/0	815.5	19.21	3.77	5.30	2.15	18.59	72.277	Vertical	100	Pass
		819	18.45	3.91	5.70	2.15	18.09	64.417	Vertical	100	Pass
		822.5	19.18	3.94	5.30	2.15	18.39	69.024	Vertical	100	Pass
5.0MHz BW QPSK	25/0	816.5	18.80	3.77	5.30	2.15	18.18	65.766	Vertical	100	Pass
		819	18.41	3.91	5.70	2.15	18.05	63.826	Vertical	100	Pass
		821.5	20.13	3.94	5.30	2.15	19.34	85.901	Vertical	100	Pass
10.0MHz BW QPSK	50/0	819	18.57	3.91	5.30	2.15	17.81	60.395	Vertical	100	Pass

Radiated Power (ERP) for Band 26(814-824)											
Mode	RB/RB SIZE	Frequency	Result							Limit (W)	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	6/0	814.7	20.62	3.76	5.30	2.15	20.01	100.231	Horizontal	100	Pass
BW 16		819	20.78	3.91	5.30	2.15	20.02	100.462	Horizontal	100	Pass
QAM		823.3	20.26	3.93	5.70	2.15	19.88	97.275	Horizontal	100	Pass
3.0MHz	15/0	815.5	20.08	3.77	5.30	2.15	19.46	88.308	Horizontal	100	Pass
BW 16		819	20.42	3.91	5.30	2.15	19.66	92.470	Horizontal	100	Pass
QAM		822.5	20.00	3.94	5.70	2.15	19.61	91.411	Horizontal	100	Pass
5.0MHz	25/0	816.5	20.58	3.77	5.30	2.15	19.96	99.083	Horizontal	100	Pass
BW 16		819	20.80	3.91	5.30	2.15	20.04	100.925	Horizontal	100	Pass
QAM		821.5	20.08	3.94	5.70	2.15	19.69	93.111	Horizontal	100	Pass
10.0MHz	50/0	819	20.32	3.91	5.30	2.15	19.56	90.365	Horizontal	100	Pass
1.4MHz	6/0	814.7	19.51	3.79	5.30	2.15	18.87	77.090	Vertical	100	Pass
BW 16		819	19.38	3.95	5.70	2.15	18.98	79.068	Vertical	100	Pass
QAM		823.3	18.86	3.97	5.30	2.15	18.04	63.680	Vertical	100	Pass
3.0MHz	15/0	815.5	18.13	3.77	5.30	2.15	17.51	56.364	Vertical	100	Pass
BW 16		819	18.69	3.91	5.70	2.15	18.33	68.077	Vertical	100	Pass
QAM		822.5	19.22	3.94	5.30	2.15	18.43	69.663	Vertical	100	Pass
5.0MHz	25/0	816.5	19.55	3.77	5.30	2.15	18.93	78.163	Vertical	100	Pass
BW 16		819	18.49	3.91	5.70	2.15	18.13	65.013	Vertical	100	Pass
QAM		821.5	19.37	3.94	5.30	2.15	18.58	72.111	Vertical	100	Pass
10.0MHz	50/0	819	19.03	3.91	5.30	2.15	18.27	67.143	Vertical	100	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

8.10 LTE BAND 26B

Radiated Power (ERP) for Band 26(824-849)											
Mode	RB/RB SIZE	Frequency	Result							Limit (W)	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	6/0	824.7	18.22	2.01	5.30	2.15	19.36	86.30	Horizontal	7	Pass
		836.5	18.88	2.01	5.30	2.15	20.02	100.46	Horizontal	7	Pass
		848.3	18.13	2.02	5.70	2.15	19.66	92.47	Horizontal	7	Pass
3.0MHz Band QPSK	15/0	825.5	18.59	2.01	5.30	2.15	19.73	93.97	Horizontal	7	Pass
		836.5	18.64	2.01	5.30	2.15	19.78	95.06	Horizontal	7	Pass
		847.5	17.91	2.02	5.70	2.15	19.44	87.90	Horizontal	7	Pass
5.0MHz Band QPSK	25/0	826.5	18.70	2.01	5.30	2.15	19.84	96.38	Horizontal	7	Pass
		836.5	18.64	2.01	5.30	2.15	19.78	95.06	Horizontal	7	Pass
		846.5	18.57	2.02	5.70	2.15	20.10	102.33	Horizontal	7	Pass
10.0MHz Band QPSK	50/0	829	18.86	2.01	5.30	2.15	20.00	100.00	Horizontal	7	Pass
		836.5	18.40	2.01	5.30	2.15	19.54	89.95	Horizontal	7	Pass
		844	18.17	2.02	5.70	2.15	19.70	93.33	Horizontal	7	Pass
15.0MHz Band QPSK	75/0	831.5	18.15	2.01	5.30	2.15	19.29	84.92	Horizontal	7	Pass
		836.5	18.19	2.01	5.30	2.15	19.33	85.70	Horizontal	7	Pass
		841.5	18.45	2.02	5.70	2.15	19.98	99.54	Horizontal	7	Pass
1.4MHz Band QPSK	6/0	824.7	16.87	2.01	5.30	2.15	18.01	63.24	Vertical	7	Pass
		836.5	17.80	2.01	5.30	2.15	18.94	78.34	Vertical	7	Pass
		848.3	16.62	2.02	5.70	2.15	18.15	65.31	Vertical	7	Pass
3.0MHz Band QPSK	15/0	825.5	16.74	2.01	5.30	2.15	17.88	61.38	Vertical	7	Pass
		836.5	17.01	2.01	5.30	2.15	18.15	65.31	Vertical	7	Pass
		847.5	16.42	2.02	5.70	2.15	17.95	62.37	Vertical	7	Pass
5.0MHz Band QPSK	25/0	826.5	16.98	2.01	5.30	2.15	18.12	64.86	Vertical	7	Pass
		836.5	17.50	2.01	5.30	2.15	18.64	73.11	Vertical	7	Pass
		846.5	17.55	2.02	5.70	2.15	19.08	80.91	Vertical	7	Pass
10.0MHz Band QPSK	50/0	829	17.46	2.01	5.30	2.15	18.60	72.44	Vertical	7	Pass
		836.5	17.36	2.01	5.30	2.15	18.50	70.79	Vertical	7	Pass
		844	16.69	2.02	5.70	2.15	18.22	66.37	Vertical	7	Pass

15.0MHz	75/0	831.5	16.92	2.01	5.30	2.15	18.06	63.97	Vertical	7	Pass
Band		836.5	17.06	2.01	5.30	2.15	18.20	66.07	Vertical	7	Pass
QPSK		841.5	16.98	2.02	5.70	2.15	18.51	70.96	Vertical	7	Pass

Radiated Power (ERP) for Band 26(824-849)											
Mode	RB/RB SIZE	Frequency	Result							Limit (W)	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	6/0	824.7	19.53	2.01	5.30	2.15	20.67	116.68	Horizontal	7	Pass
		836.5	19.13	2.01	5.30	2.15	20.27	106.41	Horizontal	7	Pass
		848.3	19.21	2.02	5.70	2.15	20.74	118.58	Horizontal	7	Pass
3.0MHz Band 16 QAM	15/0	825.5	19.89	2.01	5.30	2.15	21.03	126.77	Horizontal	7	Pass
		836.5	19.14	2.01	5.30	2.15	20.28	106.66	Horizontal	7	Pass
		847.5	18.96	2.02	5.70	2.15	20.49	111.94	Horizontal	7	Pass
5.0MHz Band 16 QAM	25/0	826.5	19.04	2.01	5.30	2.15	20.18	104.23	Horizontal	7	Pass
		836.5	19.38	2.01	5.30	2.15	20.52	112.72	Horizontal	7	Pass
		846.5	18.58	2.02	5.70	2.15	20.11	102.57	Horizontal	7	Pass
10.0MHz Band 16 QAM	50/0	829	19.81	2.01	5.30	2.15	20.95	124.45	Horizontal	7	Pass
		836.5	19.60	2.01	5.30	2.15	20.74	118.58	Horizontal	7	Pass
		844	19.42	2.02	5.70	2.15	20.95	124.45	Horizontal	7	Pass
15.0MHz Band QPSK	75/0	831.5	19.44	2.01	5.30	2.15	20.58	114.29	Horizontal	7	Pass
		836.5	18.98	2.01	5.30	2.15	20.12	102.80	Horizontal	7	Pass
		841.5	19.51	2.02	5.70	2.15	21.04	127.06	Horizontal	7	Pass
1.4MHz Band 16 QAM	6/0	824.7	17.67	2.01	5.30	2.15	18.81	76.03	Vertical	7	Pass
		836.5	17.26	2.01	5.30	2.15	18.40	69.18	Vertical	7	Pass
		848.3	17.38	2.02	5.70	2.15	18.91	77.80	Vertical	7	Pass
3.0MHz Band 16 QAM	15/0	825.5	18.21	2.01	5.30	2.15	19.35	86.10	Vertical	7	Pass
		836.5	17.51	2.01	5.30	2.15	18.65	73.28	Vertical	7	Pass
		847.5	17.57	2.02	5.70	2.15	19.10	81.28	Vertical	7	Pass
5.0MHz Band 16 QAM	25/0	826.5	17.35	2.01	5.30	2.15	18.49	70.63	Vertical	7	Pass
		836.5	17.78	2.01	5.30	2.15	18.92	77.98	Vertical	7	Pass
		846.5	17.21	2.02	5.70	2.15	18.74	74.82	Vertical	7	Pass
10.0MHz Band 16 QAM	50/0	829	18.43	2.01	5.30	2.15	19.57	90.57	Vertical	7	Pass
		836.5	18.02	2.01	5.30	2.15	19.16	82.41	Vertical	7	Pass
		844	18.34	2.02	5.70	2.15	19.87	97.05	Vertical	7	Pass

15.0MHz	75/0	831.5	17.52	2.01	5.30	2.15	18.66	73.45	Vertical	7	Pass
Band		836.5	17.20	2.01	5.30	2.15	18.34	68.23	Vertical	7	Pass
QPSK		841.5	18.34	2.02	5.70	2.15	19.87	97.05	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

8.11 LTE BAND 66

Radiated Power (EIRP) for Band 66										
Mode	RB/RB SIZE	Frequency	Result						Limit (W)	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dBi)	Max. EIRP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. EIRP		
1.4MHz Band QPSK	6/0	1710.7	15.09	3.12	8.90	24.49	281.190	Horizontal	1	Pass
		1745	13.86	3.27	8.90	24.78	300.608	Horizontal	1	Pass
		1779.3	16.28	3.29	8.90	25.03	318.420	Horizontal	1	Pass
3.0MHz Band QPSK	15/0	1711.5	14.20	3.13	8.90	24.27	267.301	Horizontal	1	Pass
		1745	14.87	3.27	8.90	24.68	293.765	Horizontal	1	Pass
		1778.5	15.56	3.30	8.90	25.01	316.957	Horizontal	1	Pass
5.0MHz Band QPSK	25/0	1712.5	16.05	3.13	8.90	25.08	322.107	Horizontal	1	Pass
		1745	16.21	3.27	8.90	24.74	297.852	Horizontal	1	Pass
		1777.5	14.87	3.30	8.90	24.72	296.483	Horizontal	1	Pass
10.0MHz Band QPSK	50/0	1715	15.19	3.15	8.90	24.77	299.916	Horizontal	1	Pass
		1745	15.29	3.31	8.90	24.63	290.402	Horizontal	1	Pass
		1775	16.10	3.33	8.90	24.58	287.078	Horizontal	1	Pass
15.0MHz Band QPSK	75/0	1717.5	15.36	3.15	8.90	25.05	319.890	Horizontal	1	Pass
		1745	15.89	3.31	8.90	25.15	327.341	Horizontal	1	Pass
		1772.5	16.64	3.33	8.90	24.62	289.734	Horizontal	1	Pass
20.0MHz Band QPSK	100/0	1720	13.97	3.17	8.90	24.82	303.389	Horizontal	1	Pass
		1745	15.42	3.32	8.90	24.56	285.759	Horizontal	1	Pass
		1770	15.22	3.36	8.90	24.56	285.759	Horizontal	1	Pass
1.4MHz Band QPSK	6/0	1710.7	15.71	3.12	8.90	22.64	183.654	Vertical	1	Pass
		1745	16.21	3.27	8.90	23.36	216.770	Vertical	1	Pass
		1779.3	15.56	3.29	8.90	23.57	227.510	Vertical	1	Pass
3.0MHz Band QPSK	15/0	1711.5	16.08	3.13	8.90	22.37	172.584	Vertical	1	Pass
		1745	16.14	3.27	8.90	23.56	226.986	Vertical	1	Pass
		1778.5	16.41	3.30	8.90	23.95	248.313	Vertical	1	Pass
5.0MHz Band QPSK	25/0	1712.5	15.17	3.13	8.90	23.34	215.774	Vertical	1	Pass
		1745	15.65	3.27	8.90	23.60	229.087	Vertical	1	Pass
		1777.5	14.24	3.30	8.90	23.05	201.837	Vertical	1	Pass
10.0MHz Band	50/0	1715	12.72	3.15	8.90	22.80	190.546	Vertical	1	Pass
		1745	16.63	3.31	8.90	23.59	228.560	Vertical	1	Pass

QPSK		1775	15.66	3.33	8.90	23.12	205.116	Vertical	1	Pass
15.0MHz	75/0	1717.5	16.69	3.15	8.90	23.61	229.615	Vertical	1	Pass
Band		1745	16.08	3.31	8.90	23.55	226.464	Vertical	1	Pass
QPSK		1772.5	15.30	3.33	8.90	23.05	201.837	Vertical	1	Pass
20.0MHz	100/0	1720	17.39	3.17	8.90	23.26	211.836	Vertical	1	Pass
Band		1745	17.54	3.32	8.90	23.18	207.970	Vertical	1	Pass
QPSK		1770	14.41	3.36	8.90	22.83	191.867	Vertical	1	Pass

Radiated Power (EIRP) for Band 66										
Mode	RB/RB SIZE	Frequency	Result						Limit (W)	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dBi)	Max. EIRP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. EIRP		
1.4MHz Band 16 QAM	6/0	1710.7	17.57	3.12	8.9	23.35	216.272	Horizontal	1	Pass
		1745	18.60	3.27	8.9	24.23	264.850	Horizontal	1	Pass
		1779.3	17.78	3.29	8.9	23.39	218.273	Horizontal	1	Pass
3.0MHz Band 16 QAM	15/0	1711.5	17.81	3.13	8.9	23.58	228.034	Horizontal	1	Pass
		1745	18.15	3.27	8.9	23.78	238.781	Horizontal	1	Pass
		1778.5	18.21	3.3	8.9	23.81	240.436	Horizontal	1	Pass
5.0MHz Band 16 QAM	25/0	1712.5	18.47	3.13	8.9	24.24	265.461	Horizontal	1	Pass
		1745	18.11	3.27	8.9	23.74	236.592	Horizontal	1	Pass
		1777.5	18.50	3.3	8.9	24.10	257.040	Horizontal	1	Pass
10.0MHz Band 16 QAM	50/0	1715	17.64	3.15	8.9	23.39	218.273	Horizontal	1	Pass
		1745	17.92	3.31	8.9	23.51	224.388	Horizontal	1	Pass
		1775	18.07	3.33	8.9	23.64	231.206	Horizontal	1	Pass
15.0MHz Band 16 QAM	75/0	1717.5	18.17	3.15	8.9	23.92	246.604	Horizontal	1	Pass
		1745	18.58	3.31	8.9	24.17	261.216	Horizontal	1	Pass
		1772.5	18.65	3.33	8.9	24.22	264.241	Horizontal	1	Pass
20.0MHz Band 16 QAM	100/0	1720	17.76	3.17	8.9	23.49	223.357	Horizontal	1	Pass
		1745	18.48	3.32	8.9	24.06	254.683	Horizontal	1	Pass
		1770	18.10	3.36	8.9	23.64	231.206	Horizontal	1	Pass
1.4MHz Band 16 QAM	6/0	1710.7	16.25	3.12	8.9	22.03	159.588	Vertical	1	Pass
		1745	17.02	3.27	8.9	22.65	184.077	Vertical	1	Pass
		1779.3	15.97	3.29	8.9	21.58	143.880	Vertical	1	Pass
3.0MHz Band 16 QAM	15/0	1711.5	16.57	3.13	8.9	22.34	171.396	Vertical	1	Pass
		1745	16.89	3.27	8.9	22.52	178.649	Vertical	1	Pass
		1778.5	16.33	3.3	8.9	21.93	155.955	Vertical	1	Pass
5.0MHz Band 16 QAM	25/0	1712.5	17.04	3.13	8.9	22.81	190.985	Vertical	1	Pass
		1745	16.74	3.27	8.9	22.37	172.584	Vertical	1	Pass
		1777.5	17.05	3.3	8.9	22.65	184.077	Vertical	1	Pass
10.0MHz Band 16 QAM	50/0	1715	16.40	3.15	8.9	22.15	164.059	Vertical	1	Pass
		1745	16.72	3.31	8.9	22.31	170.216	Vertical	1	Pass
		1775	16.28	3.33	8.9	21.85	153.109	Vertical	1	Pass
15.0MHz	75/0	1717.5	16.84	3.15	8.9	22.59	181.552	Vertical	1	Pass

Band 16 QAM		1745	17.46	3.31	8.9	23.05	201.837	Vertical	1	Pass
		1772.5	17.36	3.33	8.9	22.93	196.336	Vertical	1	Pass
20.0MHz	100/0	1720	16.65	3.17	8.9	22.38	172.982	Vertical	1	Pass
Band 16		1745	16.51	3.32	8.9	22.09	161.808	Vertical	1	Pass
QAM		1770	16.52	3.36	8.9	22.06	160.694	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)

9. SPURIOUS RADIATION EMISSION

RULE PART(S)

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

LIMIT

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

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

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

90.543 (e) For operations in the 758-768 MHz and the 788-798 MHz bands, the power of any emission outside the 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, in accordance with the following:

- (1) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than $76 + 10 \log (P)$ dB in a 6.25 kHz band segment, for base and fixed stations.
- (2) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations.
- (3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least $43 + 10 \log (P)$ dB.
- (4) Compliance with the provisions of paragraphs (e)(1) and (2) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.
- (5) Compliance with the provisions of paragraph (e)(3) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of 30 kHz may be employed.

90.543 (f) For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

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

RESULTS

PASS

9.1 LTE BAND 2

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

LTE BAND 2 (1.4MHZ BANDWIDTH)							
Test Results for Low Channel 1850.7MHz							
Frequency (MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3701.4	-73.21	4.04	33.51	-43.74	-13	-30.74	Horizontal
3701.4	-72.05	4.04	33.51	-42.58	-13	-29.58	Vertical
5552.1	-62.88	5.24	35.84	-32.28	-13	-19.28	Vertical
5552.1	-64.67	5.24	35.84	-34.07	-13	-21.07	Horizontal
Test Results for Mid Channel 1880MHz							
3760	-71.38	4.04	33.56	-41.86	-13	-28.86	Horizontal
3760	-74.46	4.04	33.56	-44.94	-13	-31.94	Vertical
5640	-63.75	5.24	35.91	-33.08	-13	-20.08	Vertical
5640	-64.01	5.24	35.91	-33.34	-13	-20.34	Horizontal
Test Results for High Channel 1909.3MHz							
3818.6	-71.67	4.04	34.00	-41.71	-13	-28.71	Horizontal
3818.6	-71.75	4.04	34.00	-41.79	-13	-28.79	Vertical
5727.9	-62.52	5.24	36.04	-31.72	-13	-18.72	Vertical
5727.9	-63.15	5.24	36.04	-32.35	-13	-19.35	Horizontal

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

LTE BAND 2 (20MHZ BANDWIDTH)							
Test Results for Low Channel 1860MHz							
Frequency (MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3720	-71.39	4.07	33.54	-41.92	-13	-28.92	Horizontal
3720	-71.92	4.07	33.54	-42.45	-13	-29.45	Vertical
5580	-63.78	5.28	35.86	-33.20	-13	-20.20	Vertical
5580	-61.56	5.28	35.86	-30.98	-13	-17.98	Horizontal
Test Results for Mid Channel 1880MHz							
3760	-74.39	4.04	33.56	-44.87	-13	-31.87	Horizontal
3760	-74.84	4.04	33.56	-45.32	-13	-32.32	Vertical
5640	-64.24	5.24	35.91	-33.57	-13	-20.57	Vertical
5640	-64.88	5.24	35.91	-34.21	-13	-21.21	Horizontal
Test Results for High Channel 1890MHz							
3780	-73.86	4.04	34.00	-43.90	-13	-30.90	Horizontal
3780	-73.12	4.04	34.00	-43.16	-13	-30.16	Vertical
5670	-61.22	5.24	36.04	-30.42	-13	-17.42	Vertical
5670	-63.75	5.24	36.04	-32.95	-13	-19.95	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)

LTE BAND 4 (1.4MHZ BANDWIDTH)							
Test Results for Low Channel 1710.7MHz							
Frequency (MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3421.4	-72.43	4.02	29.80	-46.65	-13	-33.65	Horizontal
3421.4	-74.93	4.02	29.80	-49.15	-13	-36.15	Vertical
5132.1	-64.45	5.24	35.84	-33.85	-13	-20.85	Vertical
5132.1	-61.69	5.24	35.84	-31.09	-13	-18.09	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465	-71.19	4.03	30.00	-45.22	-13	-32.22	Horizontal
3465	-71.26	4.03	30.00	-45.29	-13	-32.29	Vertical
5197.5	-63.42	5.25	35.86	-32.81	-13	-19.81	Vertical
5197.5	-64.78	5.25	35.86	-34.17	-13	-21.17	Horizontal
Test Results for High Channel 1754.3MHz							
3508.6	-74.26	4.05	30.01	-48.30	-13	-35.30	Horizontal
3508.6	-73.48	4.05	30.01	-47.52	-13	-34.52	Vertical
5262.9	-61.11	5.26	35.86	-30.51	-13	-17.51	Vertical
5262.9	-62.36	5.26	35.86	-31.76	-13	-18.76	Horizontal

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

LTE BAND 4 (20MHZ BANDWIDTH)							
Test Results for Low Channel 1720MHz							
Frequency (MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3440	-73.89	4.02	29.80	-48.11	-13	-35.11	Horizontal
3440	-73.63	4.02	29.80	-47.85	-13	-34.85	Vertical
5160	-61.12	5.24	35.84	-30.52	-13	-17.52	Vertical
5160	-62.00	5.24	35.84	-31.40	-13	-18.40	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465	-71.85	4.03	30.00	-45.88	-13	-32.88	Horizontal
3465	-74.07	4.03	30.00	-48.10	-13	-35.10	Vertical
5197.5	-63.07	5.25	35.86	-32.46	-13	-19.46	Vertical
5197.5	-61.17	5.25	35.86	-30.56	-13	-17.56	Horizontal
Test Results for High Channel 1745MHz							
2490	-74.08	2.91	27.68	-49.31	-13	-36.31	Horizontal
3490	-71.42	2.91	27.68	-46.65	-13	-33.65	Vertical
5235	-63.48	5.26	35.86	-32.88	-13	-19.88	Vertical
5235	-62.46	5.26	35.86	-31.86	-13	-18.86	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)

LTE BAND 5 (1.4MHZ BANDWIDTH)							
Test Results for Low Channel 824.7MHz							
Frequency (MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1649.4	-79.16	2.78	27.50	-54.44	-13	-41.44	Horizontal
1649.4	-77.17	2.78	27.50	-52.45	-13	-39.45	Vertical
2474.1	-74.08	2.90	27.80	-49.18	-13	-36.18	Vertical
2474.1	-72.67	2.90	27.80	-47.77	-13	-34.77	Horizontal
Test Results For Mid Channel 836.5MHz							
1673	-75.49	2.78	27.48	-50.79	-13	-37.79	Horizontal
1673	-76.93	2.78	27.48	-52.23	-13	-39.23	Vertical
2509.5	-74.77	2.91	27.70	-49.98	-13	-36.98	Vertical
2509.5	-74.59	2.91	27.70	-49.80	-13	-36.80	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-77.54	2.78	27.43	-52.89	-13	-39.89	Horizontal
1696.6	-77.11	2.78	27.43	-52.46	-13	-39.46	Vertical
2544.9	-72.41	2.92	27.74	-47.59	-13	-34.59	Vertical
2544.9	-72.91	2.92	27.74	-48.09	-13	-35.09	Horizontal

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

LTE BAND 5 (10MHZ BANDWIDTH)							
Test Results for Low Channel 824.7MHz							
Frequency (MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1649.4	-76.63	2.78	27.50	-51.91	-13	-38.91	Horizontal
1649.4	-75.52	2.78	27.50	-50.80	-13	-37.80	Vertical
2474.1	-72.29	2.90	27.80	-47.39	-13	-34.39	Vertical
2474.1	-73.04	2.90	27.80	-48.14	-13	-35.14	Horizontal
Test Results for Mid Channel 836.5MHz							
1673	-79.92	2.78	27.48	-55.22	-13	-42.22	Horizontal
1673	-78.95	2.78	27.48	-54.25	-13	-41.25	Vertical
2509.5	-73.04	2.91	27.70	-48.25	-13	-35.25	Vertical
2509.5	-72.89	2.91	27.70	-48.10	-13	-35.10	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-77.80	2.78	27.43	-53.15	-13	-40.15	Horizontal
1696.6	-75.01	2.78	27.43	-50.36	-13	-37.36	Vertical
2544.9	-72.46	2.92	27.74	-47.64	-13	-34.64	Vertical
2544.9	-74.98	2.92	27.74	-50.16	-13	-37.16	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)

LTE BAND 7 (5MHZ BANDWIDTH)							
Test Results for Low Channel 2502.5MHz							
Frequency (MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5005	-72.02	5.23	35.81	-41.44	-25	-16.44	Horizontal
5005	-72.01	5.23	35.81	-41.43	-25	-16.43	Vertical
7507.5	-69.10	5.67	36.85	-37.92	-25	-12.92	Vertical
7507.5	-67.99	5.67	36.85	-36.81	-25	-11.81	Horizontal
Test Results for Mid Channel 2535MHz							
5070	-72.88	5.23	35.82	-42.29	-25	-17.29	Horizontal
5070	-73.33	5.23	35.82	-42.74	-25	-17.74	Vertical
7605	-67.76	5.67	36.85	-36.58	-25	-11.58	Vertical
7605	-71.38	5.67	36.85	-40.20	-25	-15.20	Horizontal
Test Results for High Channel 2567.5MHz							
5135	-72.92	5.24	35.83	-42.33	-25	-17.33	Horizontal
5135	-72.30	5.24	35.83	-41.71	-25	-16.71	Vertical
7702.5	-69.61	5.68	36.87	-38.42	-25	-13.42	Vertical
7702.5	-68.63	5.68	36.87	-37.44	-25	-12.44	Horizontal

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

LTE BAND 7 (20MHZ BANDWIDTH)							
Test Results for Low Channel 2510MHz							
Frequency (MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5020	-74.26	5.23	35.82	-43.67	-25	-18.67	Horizontal
5020	-73.70	5.23	35.82	-43.11	-25	-18.11	Vertical
7530	-69.17	5.67	36.86	-37.98	-25	-12.98	Vertical
7530	-67.08	5.67	36.86	-35.89	-25	-10.89	Horizontal
Test Results for Mid Channel 2535MHz							
5070	-73.47	5.23	35.82	-42.88	-25	-17.88	Horizontal
5070	-74.13	5.23	35.82	-43.54	-25	-18.54	Vertical
7605	-67.20	5.67	36.85	-36.02	-25	-11.02	Vertical
7605	-67.42	5.67	36.85	-36.24	-25	-11.24	Horizontal
Test Results for High Channel 2560MHz							
5120	-73.15	5.24	35.83	-42.56	-25	-17.56	Horizontal
5120	-73.82	5.24	35.83	-43.23	-25	-18.23	Vertical
7680	-67.42	5.70	36.88	-36.24	-25	-11.24	Vertical
7680	-67.08	5.70	36.88	-35.90	-25	-10.90	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)

LTE BAND 12 (1.4MHZ BANDWIDTH)							
Test Results for Low Channel 699.7MHz							
Frequency (MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1399.4	-78.58	2.60	27.2	-53.98	-13	-40.98	Horizontal
1399.4	-79.71	2.60	27.2	-55.11	-13	-42.11	Vertical
2099.1	-73.63	2.85	27.54	-48.94	-13	-35.94	Vertical
2099.1	-73.80	2.85	27.54	-49.11	-13	-36.11	Horizontal
Test Results For Mid Channel 707.5MHz							
1415	-75.92	2.61	27.28	-51.25	-13	-38.25	Horizontal
1415	-78.63	2.61	27.28	-53.96	-13	-40.96	Vertical
2122.5	-72.38	2.87	27.59	-47.66	-13	-34.66	Vertical
2122.5	-73.35	2.87	27.59	-48.63	-13	-35.63	Horizontal
Test Results for High Channel 715.3MHz							
1430.6	-79.41	2.63	27.28	-54.76	-13	-41.76	Horizontal
1430.6	-78.50	2.63	27.28	-53.85	-13	-40.85	Vertical
2145.9	-73.82	2.88	27.60	-49.10	-13	-36.10	Vertical
2145.9	-74.73	2.88	27.60	-50.01	-13	-37.01	Horizontal

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

LTE BAND 12 (10MHZ BANDWIDTH)							
Test Results for Low Channel 704MHz							
Frequency (MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1408	-78.34	2.61	27.26	-53.69	-13	-40.69	Horizontal
1408	-75.12	2.61	27.26	-50.47	-13	-37.47	Vertical
2112	-74.26	2.87	27.58	-49.55	-13	-36.55	Vertical
2112	-72.49	2.87	27.58	-47.78	-13	-34.78	Horizontal
Test Results for Mid Channel 707.5MHz							
1415	-78.15	2.61	27.28	-53.48	-13	-40.48	Horizontal
1415	-75.48	2.61	27.28	-50.81	-13	-37.81	Vertical
2122.5	-72.50	2.87	27.59	-47.78	-13	-34.78	Vertical
2122.5	-75.00	2.87	27.59	-50.28	-13	-37.28	Horizontal
Test Results for High Channel 711MHz							
1422	-76.27	2.62	27.28	-51.61	-13	-38.61	Horizontal
1422	-75.11	2.62	27.28	-50.45	-13	-37.45	Vertical
2133	-72.37	2.87	27.60	-47.64	-13	-34.64	Vertical
2133	-73.86	2.87	27.60	-49.13	-13	-36.13	Horizontal

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

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

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

9.6 LTE BAND 17

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

LTE BAND 17 (5MHZ BANDWIDTH)							
Test Results for Low Channel 706.5MHz							
Frequency (MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1413	-53.02	2.61	27.28	-28.35	-13	-15.35	Horizontal
1413	-52.88	2.61	27.28	-28.21	-13	-15.21	Vertical
2119.5	-51.49	2.87	27.59	-26.77	-13	-13.77	Vertical
2119.5	-53.43	2.87	27.59	-28.71	-13	-15.71	Horizontal
Test Results For Mid Channel 710MHz							
1420	-50.96	2.62	27.30	-26.28	-13	-13.28	Horizontal
1420	-50.25	2.62	27.30	-25.57	-13	-12.57	Vertical
2130	-50.51	2.87	27.62	-25.76	-13	-12.76	Vertical
2130	-57.53	2.87	27.62	-32.78	-13	-19.78	Horizontal
Test Results for High Channel 713.5MHz							
1427	-53.51	2.66	27.28	-28.89	-13	-15.89	Horizontal
1427	-51.60	2.66	27.28	-26.98	-13	-13.98	Vertical
2140.5	-53.43	2.88	27.60	-28.71	-13	-15.71	Vertical
2140.5	-53.53	2.88	27.60	-28.81	-13	-15.81	Horizontal

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

LTE BAND 17 (10MHZ BANDWIDTH)							
Test Results for Low Channel 709MHz							
Frequency (MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1418	-50.94	2.62	27.30	-26.26	-13	-13.26	Horizontal
1418	-47.76	2.62	27.30	-23.08	-13	-10.08	Vertical
2127	-52.17	2.87	27.62	-27.42	-13	-14.42	Vertical
2127	-52.43	2.87	27.62	-27.68	-13	-14.68	Horizontal
Test Results for Mid Channel 710MHz							
1420	-48.92	2.62	27.30	-24.24	-13	-11.24	Horizontal
1420	-47.25	2.62	27.30	-22.57	-13	-9.57	Vertical
2130	-52.30	2.87	27.62	-27.55	-13	-14.55	Vertical
2130	-55.45	2.87	27.62	-30.70	-13	-17.70	Horizontal
Test Results for High Channel 711MHz							
1422	-53.78	2.62	27.30	-29.10	-13	-16.10	Horizontal
1422	-57.31	2.62	27.30	-32.63	-13	-19.63	Vertical
2133	-56.72	2.87	27.62	-31.97	-13	-18.97	Vertical
2133	-54.67	2.87	27.62	-29.92	-13	-16.92	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 25

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

LTE BAND 25 (1.4MHZ BANDWIDTH)							
Test Results for Low Channel 1850.7MHz							
Frequency (MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3701.4	-51.49	2.61	27.26	-26.84	-13	-13.84	Horizontal
3701.4	-50.32	2.61	27.26	-25.67	-13	-12.67	Vertical
5552.1	-49.42	2.87	27.58	-24.71	-13	-11.71	Vertical
5552.1	-56.70	2.87	27.58	-31.99	-13	-18.99	Horizontal
Test Results For Mid Channel 1882.5MHz							
3765	-47.17	2.63	27.28	-22.52	-13	-9.52	Horizontal
3765	-52.14	2.63	27.28	-27.49	-13	-14.49	Vertical
5647.5	-53.58	2.88	27.62	-28.84	-13	-15.84	Vertical
5647.5	-56.94	2.88	27.62	-32.20	-13	-19.20	Horizontal
Test Results for High Channel 1914.3MHz							
3828.6	-52.85	2.65	27.28	-28.22	-13	-15.22	Horizontal
3828.6	-49.83	2.65	27.28	-25.20	-13	-12.20	Vertical
5742.9	-57.64	2.88	27.70	-32.82	-13	-19.82	Vertical
5742.9	-53.77	2.88	27.70	-28.95	-13	-15.95	Horizontal

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

LTE BAND 25 (20MHZ BANDWIDTH)							
Test Results for Low Channel 1860MHz							
Frequency (MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3720	-50.67	2.62	27.30	-25.99	-13	-12.99	Horizontal
3720	-49.17	2.62	27.30	-24.49	-13	-11.49	Vertical
5580	-50.95	2.87	27.62	-26.20	-13	-13.20	Vertical
5580	-52.77	2.87	27.62	-28.02	-13	-15.02	Horizontal
Test Results for Mid Channel 1882.5MHz							
3765	-51.54	2.64	27.33	-26.85	-13	-13.85	Horizontal
3765	-53.31	2.64	27.33	-28.62	-13	-15.62	Vertical
5647.5	-51.72	2.88	27.67	-26.93	-13	-13.93	Vertical
5647.5	-57.68	2.88	27.67	-32.89	-13	-19.89	Horizontal
Test Results for High Channel 1905MHz							
3810	-52.95	2.64	27.33	-28.26	-13	-15.26	Horizontal
3810	-47.67	2.64	27.33	-22.98	-13	-9.98	Vertical
5715	-53.67	2.88	27.67	-28.88	-13	-15.88	Vertical
5715	-54.17	2.88	27.67	-29.38	-13	-16.38	Horizontal

9.8 LTE BAND 26A

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

LTE BAND 26 (814~824MHz) (1.4MHZ BANDWIDTH)							
Test Results for Low Channel 814.7MHz							
Frequency (MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1629.4	-53.59	2.78	27.5	-28.87	-13	-15.87	Horizontal
1629.4	-47.15	2.78	27.5	-22.43	-13	-9.43	Vertical
2444.1	-56.90	2.9	27.8	-32.00	-13	-19.00	Vertical
2444.1	-50.29	2.9	27.8	-25.39	-13	-12.39	Horizontal
Test Results For Mid Channel 819.0MHz							
1638	-52.78	2.8	27.48	-28.10	-13	-15.10	Horizontal
1638	-54.25	2.8	27.48	-29.57	-13	-16.57	Vertical
2457.5	-55.72	2.91	27.7	-30.93	-13	-17.93	Vertical
2457.5	-57.43	2.91	27.7	-32.64	-13	-19.64	Horizontal
Test Results for High Channel 821.5MHz							
1646.6	-54.51	2.82	27.43	-29.90	-13	-16.90	Horizontal
1646.6	-47.39	2.82	27.43	-22.78	-13	-9.78	Vertical
2469.9	-57.32	2.92	27.74	-32.50	-13	-19.50	Vertical
2469.9	-52.79	2.92	27.74	-27.97	-13	-14.97	Horizontal

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

LTE BAND 26 (814~824MHz) (10MHZ BANDWIDTH)							
Test Results for Low Channel 819MHz							
Frequency (MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1638	-51.37	2.82	27.43	-26.76	-13	-13.76	Horizontal
1638	-49.68	2.82	27.43	-25.07	-13	-12.07	Vertical
2457.5	-55.13	2.91	27.74	-30.30	-13	-17.30	Vertical
2457.5	-53.69	2.91	27.74	-28.86	-13	-15.86	Horizontal

9.9 LTE BAND 26B

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

LTE BAND 26 (824~849MHz) (1.4MHZ BANDWIDTH)							
Test Results for Low Channel 824.7MHz							
Frequency (MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1649.4	-49.21	2.78	27.28	-24.71	-13	-11.71	Horizontal
1649.4	-48.85	2.78	27.28	-24.35	-13	-11.35	Vertical
2474.1	-55.16	2.9	27.59	-30.47	-13	-17.47	Vertical
2474.1	-52.12	2.9	27.59	-27.43	-13	-14.43	Horizontal
Test Results For Mid Channel 836.5MHz							
1673	-48.72	2.78	27.3	-24.20	-13	-11.20	Horizontal
1673	-50.06	2.78	27.3	-25.54	-13	-12.54	Vertical
2509.4	-51.48	2.91	27.62	-26.77	-13	-13.77	Vertical
2509.4	-50.39	2.91	27.62	-25.68	-13	-12.68	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-54.86	2.78	27.28	-30.36	-13	-17.36	Horizontal
1696.6	-53.26	2.78	27.28	-28.76	-13	-15.76	Vertical
2544.9	-51.89	2.92	27.6	-27.21	-13	-14.21	Vertical
2544.9	-56.77	2.92	27.6	-32.09	-13	-19.09	Horizontal

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

LTE BAND 26 (824~849MHz) (15MHZ BANDWIDTH)							
Test Results for Low Channel 821.5MHz							
Frequency (MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1643	-52.91	2.78	27.3	-28.39	-13	-15.39	Horizontal
1643	-54.14	2.78	27.3	-29.62	-13	-16.62	Vertical
2464.5	-54.37	2.9	27.62	-29.65	-13	-16.65	Vertical
2464.5	-51.06	2.9	27.62	-26.34	-13	-13.34	Horizontal
Test Results For Mid Channel 836.5MHz							
1673	-50.56	2.78	27.3	-26.04	-13	-13.04	Horizontal
1673	-53.07	2.78	27.3	-28.55	-13	-15.55	Vertical
2509.5	-51.59	2.91	27.62	-26.88	-13	-13.88	Vertical
2509.5	-53.55	2.91	27.62	-28.84	-13	-15.84	Horizontal
Test Results for High Channel 841.5MHz							
1683	-54.96	2.78	27.3	-30.44	-13	-17.44	Horizontal
1683	-51.54	2.78	27.3	-27.02	-13	-14.02	Vertical
2524.5	-55.29	2.92	27.62	-30.59	-13	-17.59	Vertical
2524.5	-50.99	2.92	27.62	-26.29	-13	-13.29	Horizontal

9.10 LTE BAND 66

QPSK EIRP POWER FOR LTE BAND 66 (5MHZ BANDWIDTH)

LTE BAND 66 (5MHZ BANDWIDTH)							
Test Results for Low Channel 1710.7MHz							
Frequency (MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3421.4	-73.62	2.61	27.28	-48.95	-13	-35.95	Horizontal
3421.4	-72.55	2.61	27.28	-47.88	-13	-34.88	Vertical
5132.1	-63.29	2.87	27.59	-38.57	-13	-25.57	Vertical
5132.1	-61.12	2.87	27.59	-36.40	-13	-23.40	Horizontal
Test Results For Mid Channel 1745MHz							
3490	-74.52	2.62	27.3	-49.84	-13	-36.84	Horizontal
3490	-72.80	2.62	27.3	-48.12	-13	-35.12	Vertical
5337.9	-61.82	2.87	27.62	-37.07	-13	-24.07	Vertical
5337.9	-61.34	2.87	27.62	-36.59	-13	-23.59	Horizontal
Test Results for High Channel 779.3MHz							
3558.6	-73.26	2.66	27.28	-48.64	-13	-35.64	Horizontal
3558.6	-71.54	2.66	27.28	-46.92	-13	-33.92	Vertical
5337.9	-63.35	2.88	27.6	-38.63	-13	-25.63	Vertical
5337.9	-64.77	2.88	27.6	-40.05	-13	-27.05	Horizontal

QPSK EIRP POWER FOR LTE BAND 66 (10MHZ BANDWIDTH)

LTE BAND 66 (10MHZ BANDWIDTH)							
Test Results for Low Channel 1720MHz							
Frequency (MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3440	-72.60	2.62	27.3	-47.92	-13	-34.92	Horizontal
3440	-73.19	2.62	27.3	-48.51	-13	-35.51	Vertical
5160	-62.97	2.87	27.62	-38.22	-13	-25.22	Vertical
5160	-62.64	2.87	27.62	-37.89	-13	-24.89	Horizontal
Test Results for Mid Channel 1745MHz							
3490	-71.01	2.62	27.3	-46.33	-13	-33.33	Horizontal
3490	-74.06	2.62	27.3	-49.38	-13	-36.38	Vertical
5337.9	-62.53	2.87	27.62	-37.78	-13	-24.78	Vertical
5337.9	-63.39	2.87	27.62	-38.64	-13	-25.64	Horizontal
Test Results for High Channel 1770MHz							
3540	-71.64	2.62	27.3	-46.96	-13	-33.96	Horizontal
3540	-74.13	2.62	27.3	-49.45	-13	-36.45	Vertical
5310	-64.50	2.87	27.62	-39.75	-13	-26.75	Vertical
5310	-62.76	2.87	27.62	-38.01	-13	-25.01	Horizontal

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

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

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

10. FREQUENCY STABILITY

RULE PART(S)

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

LIMITS

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

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

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

Temp. = -30° to $+50^{\circ}\text{C}$

Voltage = low voltage, DC 3.27V, Normal, DC 3.85V and High voltage, DC 4.43V.

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

RESULTS

See the following pages.

10.1 LTE BAND 2

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.27	1880	5	0.002660	2.5
3.85	1880	5	0.002660	2.5
4.43	1880	5	0.002660	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	14	0.007447	2.5
Extreme (50C)	1880	15	0.007979	2.5
Extreme (40C)	1880	10	0.005319	2.5
Extreme (30C)	1880	14	0.007447	2.5
Extreme (10C)	1880	1	0.000532	2.5
Extreme (0C)	1880	22	0.011702	2.5
Extreme (-10C)	1880	10	0.005319	2.5
Extreme (-20C)	1880	20	0.010638	2.5
Extreme (-30C)	1880	6	0.003191	2.5

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]
3.27	1732.5	16	0.009235	2.5
3.85	1732.5	21	0.012121	2.5
4.43	1732.5	20	0.011544	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	1	0.000577	2.5
Extreme (50C)	1732.5	24	0.013853	2.5
Extreme (40C)	1732.5	2	0.001154	2.5
Extreme (30C)	1732.5	8	0.004618	2.5
Extreme (10C)	1732.5	15	0.008658	2.5
Extreme (0C)	1732.5	27	0.015584	2.5
Extreme (-10C)	1732.5	20	0.011544	2.5
Extreme (-20C)	1732.5	1	0.000577	2.5
Extreme (-30C)	1732.5	5	0.002886	2.5

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]
3.27	836.5	7	0.008368	2.5
3.85	836.5	15	0.017932	2.5
4.43	836.5	8	0.009564	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	24	0.028691	2.5
Extreme (50C)	836.5	21	0.025105	2.5
Extreme (40C)	836.5	17	0.020323	2.5
Extreme (30C)	836.5	17	0.020323	2.5
Extreme (10C)	836.5	27	0.032277	2.5
Extreme (0C)	836.5	26	0.031082	2.5
Extreme (-10C)	836.5	4	0.004782	2.5
Extreme (-20C)	836.5	10	0.011955	2.5
Extreme (-30C)	836.5	24	0.028691	2.5

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]
3.27	2535	22	0.008679	2.5
3.85	2535	12	0.004734	2.5
4.43	2535	11	0.004339	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2535	16	0.006312	2.5
Extreme (50C)	2535	5	0.001972	2.5
Extreme (40C)	2535	8	0.003156	2.5
Extreme (30C)	2535	1	0.000394	2.5
Extreme (10C)	2535	8	0.003156	2.5
Extreme (0C)	2535	25	0.009862	2.5
Extreme (-10C)	2535	21	0.008284	2.5
Extreme (-20C)	2535	13	0.005128	2.5
Extreme (-30C)	2535	0	0.000000	2.5

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]
3.27	707.5	26	0.036749	2.5
3.85	707.5	24	0.033922	2.5
4.43	707.5	1	0.001413	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	707.5	8	0.011307	2.5
Extreme (50C)	707.5	24	0.033922	2.5
Extreme (40C)	707.5	25	0.035336	2.5
Extreme (30C)	707.5	15	0.021201	2.5
Extreme (10C)	707.5	17	0.024028	2.5
Extreme (0C)	707.5	1	0.001413	2.5
Extreme (-10C)	707.5	11	0.015548	2.5
Extreme (-20C)	707.5	0	0.000000	2.5
Extreme (-30C)	707.5	13	0.018375	2.5

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

10.6 LTE BAND 17

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.27	710	11	0.015493	2.5
3.85	710	25	0.035211	2.5
4.43	710	26	0.036620	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710	24	0.033803	2.5
Extreme (50C)	710	18	0.025352	2.5
Extreme (40C)	710	9	0.012676	2.5
Extreme (30C)	710	21	0.029577	2.5
Extreme (10C)	710	26	0.036620	2.5
Extreme (0C)	710	1	0.001408	2.5
Extreme (-10C)	710	11	0.015493	2.5
Extreme (-20C)	710	18	0.025352	2.5
Extreme (-30C)	710	0	0.000000	2.5

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

10.7 LTE BAND 25

Band 25 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]
3.27	1882.5	10	0.005312	2.5
3.85	1882.5	21	0.011155	2.5
4.43	1882.5	9	0.004781	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1882.5	19	0.010093	2.5
Extreme (50C)	1882.5	16	0.008499	2.5
Extreme (40C)	1882.5	25	0.013280	2.5
Extreme (30C)	1882.5	18	0.009562	2.5
Extreme (10C)	1882.5	26	0.013811	2.5
Extreme (0C)	1882.5	26	0.013811	2.5
Extreme (-10C)	1882.5	26	0.013811	2.5
Extreme (-20C)	1882.5	18	0.009562	2.5
Extreme (-30C)	1882.5	8	0.004250	2.5

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

10.8 LTE BAND 26A

Band 26A QPSK, (10MHz BANDWIDTH RB size 50 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.27	819	10	0.012210	2.5
3.85	819	3	0.003663	2.5
4.43	819	24	0.029304	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	819	23	0.028083	2.5
Extreme (50C)	819	15	0.018315	2.5
Extreme (40C)	819	5	0.006105	2.5
Extreme (30C)	819	17	0.020757	2.5
Extreme (10C)	819	6	0.007326	2.5
Extreme (0C)	819	6	0.007326	2.5
Extreme (-10C)	819	18	0.021978	2.5
Extreme (-20C)	819	21	0.025641	2.5
Extreme (-30C)	819	19	0.023199	2.5

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

10.9 LTE BAND 26B

Band 26B QPSK, (15MHz BANDWIDTH RB size 75 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.27	836.5	4	0.004782	2.5
3.85	836.5	1	0.001195	2.5
4.43	836.5	23	0.027496	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	17	0.020323	2.5
Extreme (50C)	836.5	3	0.003586	2.5
Extreme (40C)	836.5	18	0.021518	2.5
Extreme (30C)	836.5	21	0.025105	2.5
Extreme (10C)	836.5	2	0.002391	2.5
Extreme (0C)	836.5	19	0.022714	2.5
Extreme (-10C)	836.5	0	0.000000	2.5
Extreme (-20C)	836.5	26	0.031082	2.5
Extreme (-30C)	836.5	12	0.014345	2.5

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

10.10 LTE BAND 66

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.27	1745	14	0.008023	2.5
3.85	1745	25	0.014327	2.5
4.43	1745	10	0.005731	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1745	17	0.009742	2.5
Extreme (50C)	1745	19	0.010888	2.5
Extreme (40C)	1745	14	0.008023	2.5
Extreme (30C)	1745	18	0.010315	2.5
Extreme (10C)	1745	3	0.001719	2.5
Extreme (0C)	1745	24	0.013754	2.5
Extreme (-10C)	1745	9	0.005158	2.5
Extreme (-20C)	1745	6	0.003438	2.5
Extreme (-30C)	1745	11	0.006304	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.

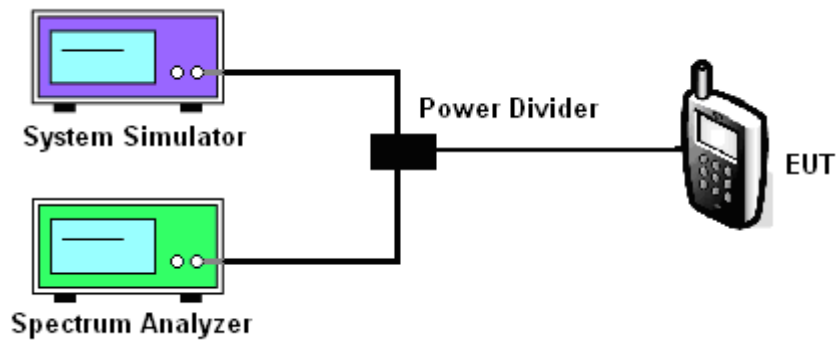
11.2 Measuring Instruments

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

Test data reference attachment.

----END OF REPORT----